

DISS. ETH NO. 25835

PLAY AMONG BOOKS

A Symposium on Architecture and Information Spelled in Atom-Letters

MIRO ROMAN

2019, CAAD, ETH, Zürich

DISS. ETH NO. 25835

PLAY AMONG BOOKS

A Symposium on Architecture and Information Spelled in Atom-Letters

A thesis submitted to attain the degree of
DOCTOR OF SCIENCES of ETH ZÜRICH
(Dr. sc. ETH Zürich)

Presented by

MIRO ROMAN

Dipl. Ing. Arch., Faculty of Architecture, University of Zagreb

MAS ETH ARCH/CAAD, ETH Zürich

born on 03.04.1983

citizen of Croatia

accepted on the recommendation of

Prof. Dr. Ludger Hovestadt

Prof. Dr. Vera Bühlmann

Prof. Dr. Maarten Delbeke

2019, Zürich

Abstract

Architecture and Information, abundance and connectivity, unsettling hierarchies. Clouds, streams, lists, indexes, pixels. What are they about and how do they shape the way we think about the world? How is coding changing the way in which we think about architecture? One way to approach this vast cloud is by thinking of coding as a literacy.

Play Among Books wants to offer one fantastic scenario of what such a literacy might be about. Not by explaining or defining what it is, but by performing a *Play Among Books*. This play is an attempt to talk about *architecture* and *information* on the level adequate to abstractness, speed and breadth of today's information technologies. It approaches *architecture* and *information* from an infinite flow of books. It strives to show a mode of handling objects as ambiguous and lively propositions, rather than finding their definitions. *Play Among Books* keeps concepts and books alive, open and implicit by placing them in the plenty, exposing them to different contexts, and taking into account their richness and beauty. In *Play among Books*, books start to open up to the world and grow. They become more, as one learns how they behave in different and new atmospheres. In this sense, coding as literacy becomes a way of approaching concepts and objects beyond specialised and disciplined perspectives, not by explaining and analysing them, but by indexing them in many manners, by taking snapshots of their informational faces, and by granting them intelligence.

Play among Books consists out of two main parts. One part is the articulation of the *Informational Instrument*, and the other part is a performance with it. The performance, in itself, consists out of two plays, played in inverted manners. The first play talks about *information* in an intimate way, by going from the spectrality of concepts towards their articulations in books. The second play seeks for architecture in the infinite flow of books by approaching it in *atom-letters*. It goes from the flow towards a subtle articulation of characters and concepts. Together, both plays form an infinite spiral where one talks to books and learns with concepts. Books start to express their many faces. They can become a letter and a mood, encode the subjective and the objective, symbolise its quantities and qualities, change masks and dresses, produce paradoxes, and stay unsettled.

Play Among Books is a symposium on *architecture* and *information* spelt in *Atom-Letters*.

Zusammenfassung

Architektur und Information, Fülle und Vernetzung, und die Überwindung von Hierarchien. Clouds, Datenströme, Listen, Indizes, Pixel. Worum geht es dabei und wie prägen sie die Art und Weise, wie wir die Welt denken? Wie verändert das Coding die Art, wie wir über Architektur nachdenken? Eine Möglichkeit, sich dieser unüberschaubaren Wolke zu nähern, besteht darin, das Erlernen von Codes als Alphabetisierung zu begreifen.

Play Among Books möchte ein fantastisches Szenario dafür anbieten, worum es bei einer solchen Alphabetisierung geht. Es lebt nicht durch Erklärung oder Definition, sondern durch die Aufführung eines Spiels unter Büchern. Dieses Spiel ist ein Versuch, mit Architektur und Information auf einer Ebene zu arbeiten, die der Abstraktion, Geschwindigkeit und Bandbreite heutiger Informationstechnologien angemessen ist. Es nähert sich Architektur und Information aus der unendlichen Flut von Büchern heraus. Es ist bestrebt, einen Umgang mit Objekten aufzuzeigen, der diese eher als mehrdeutige und lebendige Aussagen behandelt, denn als Festlegungen zu finden. *Play Among Books* erhält die Lebendigkeit der Konzepte und Bücher. Offenheit und Implikation werden bewahrt und ihr Reichtum und ihre Schönheit bleiben berücksichtigt, indem sie in ihrer Fülle und Vielfalt in unterschiedlichen Kontexten betrachtet werden. Durch das *Spiel zwischen Büchern* öffnen sie sich einander und der Welt und wachsen daran. Sie werden mehr, wenn man sehen kann, wie sie sich in unterschiedlichen und neuen Atmosphären verhalten. In diesem Sinne wird das Coding als Alphabetisierung zu einer Möglichkeit, sich Konzepten und Objekten jenseits spezialisierter und disziplinierter Perspektiven anzunähern: nicht indem sie erklärt und analysiert werden, sondern die Vielfalt ihrer Verweise erzeugt Momentaufnahmen im Angesicht der Information und verleiht ihnen Intelligenz.

Play Among Books besteht in der Hauptsache aus zwei Teilen. Ein Teil beschäftigt sich mit der Artikulation des informativen Instruments, der andere Teil mit der Verwendung desselben. Dieser Teil wiederum besteht selbst aus zwei Abschnitten, die einander als invertiert gegenüberstehen. Der erste Abschnitt präsentiert sich als Aufführung, die sich auf innige Weise mit Information beschäftigt. Er bewegt sich von einem breiten Spektrum an Konzepten zu deren Artikulation in Büchern. Der zweite strebt danach sich der Architektur im unendlichen Strom der Bücher durch *Atom-Letters* anzunähern. Er verweist von diesem Strom hin zu einer

nuancierten Artikulation von Charakteren und Konzepten. Auf diese Weise beginnen die Bücher die Vielfältigkeit ihrer Gesichter zu offenbaren. Sie können zu einem Zeichen werden, einer Laune, sowohl das Subjektive, wie auch das Objektive einschließen, Quantitäten, wie auch Qualitäten symbolisieren, ihre Masken und Verkleidungen wechseln, Paradoxa hervorbringen und unbestimmt verbleiben.

Play Among Books ist ein Symposium über Architektur und Information, geschrieben in *Atom-Letters*.

Acknowledgements

Writing of this thesis was a fantastic journey that would not have been possible without the discussions, challenges, and playfulness of concepts and ideas, which were fostered and cherished by Professor Ludger Hovestadt and Professor Vera Bühlmann. Thank you! Furthermore, I would like to thank Professor Maarten Delbeke for his support and beautiful collaboration in which plays from this thesis were given a new stage. I would also like to express my gratitude to Petra Tomljanović and Kulturfolger for being open to intense and memorable exchanges.

My sincerest thanks are also extended to my colleagues from the chair of CAAD for creating a truly unique and stimulating environment. For their advice, discussions, and support in the making of this thesis, I would like to extend my gratitude to Anneke Abhelakh, Diana Alvarez Marin, Mihye An, Pierre Cutellic, Frano Dulibić, FCL, Mario Guala, Dennis Lagemann, Jose Arthuro Martinez Garcia, Nikola Marinčić, Vahid Moosavi, Dunja Opatić, Jorge Orozco, Vlasta Roman, Živko Roman, David Schildberger, Mirza Tursić, Mohamed Zaghoul.

| | |
|----|-------------------|
| I | Abstract |
| II | Zusammenfassung |
| IV | Acknowledgments |
| V | Table of Contents |

1 1 PROLOGUE

2 *GENERICPOEM01: Forms of Radiation*

5 1.1 AMBIENCE

5 1.1.1 Two Galaxies

6 1.1.2 Scene 1: Mixtures of Many

7 1.1.3 Scene 2: Generic Fantasy

10 1.2 CHALLENGE

10 1.2.1 Abundance and Connectivity

12 1.2.2 Unsettling and Meaningless

15 1.2.3 Architecture and Information

19 1.2.4 Vector and Cloud

20 1.3 CODING

20 1.3.1 Digital Literacy

22 1.3.2 Computational Text

27 1.3.3 Probabilistic Alphabet

29 1.3.4 Algebraic Author

33 1.4 DRAMA

34 1.4.1 Play

34 1.4.2 Instrument

35 1.4.3 Elements

37 2 INFORMATIONAL INSTRUMENT

38 *GENERICPOEM02: Composing the Great Bear*

40 2.1 PROLEGOMENA TO AN INFORMATIONAL INSTRUMENT

| | |
|-----|---|
| 40 | 2.1.1 The promise of an Informational Instrument |
| 41 | 2.1.2 The nature of an Informational Instrument |
| 42 | 2.1.3 Elements of an Informational Instrument |
| 44 | 2.1.4 Mechanics of an Informational Instrument |
| 45 | 2.1.5 Playing an Informational Instrument |
| 46 | 2.1.6 A proposal for an assembly of an Informational Instrument |
| 47 | 2.2 BIBLIOTHEKA: Flow, Crawler, Generic Book |
| 47 | 2.2.1 The Generic Book |
| 48 | 2.2.2 Online Libraries |
| 51 | 2.2.3 Crawlers, Bots and Spiders |
| 54 | 2.3 XENOTHEKA: Actors, Data, Pre-Specific Library |
| 54 | 2.3.1 An Interest, A Question, A Mood |
| 55 | 2.3.2 Navigate Within the Relative |
| 56 | 2.3.3 A Book Is Never Alone |
| 57 | 2.3.4 A Play of Probabilities |
| 58 | 2.3.5 An Exchange |
| 59 | 2.4 GENERIC MACHINE: Stage, Algorithms, Encoding |
| 62 | 2.4.1 CURATING: Discretising the Stream |
| 62 | 2.4.1.1 Formatting |
| 62 | 2.4.1.2 Tokenization |
| 66 | 2.4.2 MEDIATING: Generic Profiles of Books |
| 66 | 2.4.2.1 Indexing |
| 69 | 2.4.2.2 Measuring |
| 72 | 2.4.2.3 Towards an Informational Face of a Book |
| 74 | 2.4.3 RELATING: A Constitution of an Informational Face |
| 74 | 2.4.3.1 Informational Face of a Library |
| 78 | 2.4.3.2 Texting with Xenotheka |
| 82 | 2.4.4 A Double Articulation |
| 85 | 2.5 MACHINE INTELLIGENCE: Play, Concepts, Atom-Letters |
| 86 | 2.5.0 Self-Organizing Map |
| 89 | 2.5.1 ABSTRACTION 1: Atom-Letters and Concepts |
| 91 | 2.5.1.1 A Galaxy of Concepts Articulated in Atom-Letters |
| 100 | 2.5.1.2 Face of a Book as a Spectral View of the Galaxy |

| | |
|-----|--|
| 104 | 2.5.1.3 Affairs Amid Books |
| 106 | 2.5.1.4 A Book and its Many Faces |
| 115 | 2.5.2 ABSTRACTION 1': Atom-Letters and Spectrums |
| 115 | 2.5.2.1 Six Characters of a Library |
| 117 | 2.5.2.2 Spectrum of a Library |
| 119 | 2.5.2.3 A Spectrality of Spectra |
| 119 | 2.5.3 ABSTRACTION 2: Atom-Letters and Characters |
| 121 | 2.5.3.1 Gathering of Books |
| 122 | 2.5.3.2 On the gathering for 12 in the Library 34 |
| 122 | 2.5.3.3 On the gathering for 12 in the Library 49 |
| 124 | 2.5.3.4 On the gathering for 12 in the Library 229 |
| 124 | 2.5.3.5 Multiple Encodings |
| 127 | 2.5.4 COMMUNICATING with the Flow |
| 130 | 2.6 A Note on an Informational Instrument |

133 3 PLENTIFUL PLAY

134 *GENERICPOEM03: A new Don Quixote*

136 3.0 Opening Note

137 3.1 PLAY 1: Unfolding of a Concept: INFORMATION

| | |
|-----|---|
| 139 | 3.1.0 NAVIGATING IN-BETWEEN CONCEPTS |
| 139 | 3.1.0.1 A Galaxy of a Personal Memory Which I Never Had |
| 139 | 3.1.0.2 Information |
| 143 | 3.1.0.3 Data |
| 146 | 3.1.0.4 Code |
| 149 | 3.1.0.5 Cipher |
| 151 | 3.1.0.6 Characters spelled in characters |
| 154 | 3.1.1 ACT 1: INFORMATION |
| 155 | 3.1.1.1 Dramatis Personae |
| 158 | 3.1.1.2 PART ONE: Quantum and Nonhuman Morals |
| 158 | 3.1.1.2.0 Prologue |

| | |
|------------|--|
| 159 | 3.1.1.2.1 Scene 1: On information |
| 167 | 3.1.1.2.2 Scene 2: Quantum |
| 171 | 3.1.1.2.3 Scene 3: Nonhuman Morals |
| 178 | 3.1.1.3 PART TWO: Algorithms, Pyramids and Self Reference |
| 178 | 3.1.1.3.0 Prologue |
| 181 | 3.1.1.3.1 Faces Looking at Each Other |
| 181 | 3.1.1.3.2 Scene 1: Information and Self-Reference |
| 191 | 3.1.1.3.3 Scene 2: Algorithms, Pyramids and Their Shadows |
| 198 | 3.1.2 ACT 2: DATA |
| 199 | 3.1.2.1 Dramatis Personae |
| 202 | 3.1.2.2 TABLE FOR FOUR: A Cloud of Data |
| 202 | 3.1.2.2.1 Prologue |
| 215 | 3.1.2.2.2 Scene: Law, Fantasy, Meditation and Chronicles |
| 228 | 3.1.3 ACT 3: CODE |
| 229 | 3.1.3.1 Dramatis Personae |
| 232 | 3.1.3.2 ARCHITECTURAL CODING: Three Articulations |
| 232 | 3.1.3.2.0 Prologue |
| 246 | 3.1.3.2.1 Scene 1: Autopoietic System |
| 253 | 3.1.3.2.2 Scene 2: Sympathy of Things |
| 259 | 3.1.3.2.3 Scene 3: A Black Box |
| 266 | 3.1.4 ACT 4: CIPHER |
| 267 | 3.1.4.1 Dramatis Personae |
| 269 | 3.1.4.2 THREE GUESTS: The Talk of Their Friends |
| 269 | 3.1.4.2.0 Prologue |
| 269 | 3.1.4.2.1 Scene 1: Guests Approaching |
| 272 | 3.1.4.2.2 Scene 2: Granting Hospitality |
| 274 | 3.1.4.2.3 Scene 3: Inviting a Stranger |
| 283 | 3.1.4.2.4 Scene 4: Asking a Question |
| 290 | 3.1.4.2.5 Scene 5: Looking for Friends |
| 299 | 3.2 PLAY 2: Partitioning Spectra: ARCHITECTURE |
| 300 | 3.2.1 SURFING IN THE FLOW |
| 302 | 3.2.1.1 Iteration 1: Searching for Consistencies: Architecture |

| | |
|-----|--|
| 304 | 3.2.1.2 Iteration 2: Searching for Consistencies: Architecture |
| 306 | 3.2.1.3 Iteration 3: Articulating Atmospheres: Six Characters |
| 309 | 3.2.2 Dramatis Personae |
| 310 | 3.2.2.1 ch_n1e99, Evaluating Masterpieces |
| 319 | 3.2.2.2 ch_n2e88, Crawling Time and Space |
| 328 | 3.2.2.3 ch_n3e81, Morphing with the Mood |
| 336 | 3.2.2.4 ch_n4e79, Architecture is not Enough |
| 346 | 3.2.2.5 ch_n5e172, A Substitutive Object |
| 358 | 3.2.2.6 ch_n6e110, Utility made Beautiful |
| 368 | 3.2.3 Scene: A Gathering for Six: Six Speeches |
| 370 | 3.2.3.1 Speech 1: <i>Determined by its Frequency</i> , by ch_n1e99 |
| 374 | 3.2.3.2 Speech 2: <i>Rebuilding the Eternal City</i> , by ch_n2e88 |
| 378 | 3.2.3.3 Speech 3: <i>Fragmentary Images</i> , by ch_n3e81 |
| 382 | 3.2.3.4 Speech 4: <i>A City is not a Work of Art</i> , by ch_n4e79 |
| 385 | 3.2.3.5 Speech 5: <i>Analytic and Synthetic</i> , by ch_n5e172, |
| 390 | 3.2.3.6 Speech 6: <i>An Idea of the City</i> , by ch_n6e110 |

395 4 EPILOGUE

| | |
|-----|--------------------------------|
| 396 | 4.1 A Weightless Spiral |
| 397 | 4.2 Writing in Atom-letters |
| 399 | 4.3 Characters Without Scripts |

402 *GENERICPOEM04: A Matter of Harmonies*

406 5 BIBLIOGRAPHY and ILLUSTRATIONS

415 6 APPENDIX

416 6.1 Index of Xenotheka

419 6.2 Index of Bibliotheka

433 7 CURICULUM VITAE

PROLOGUE

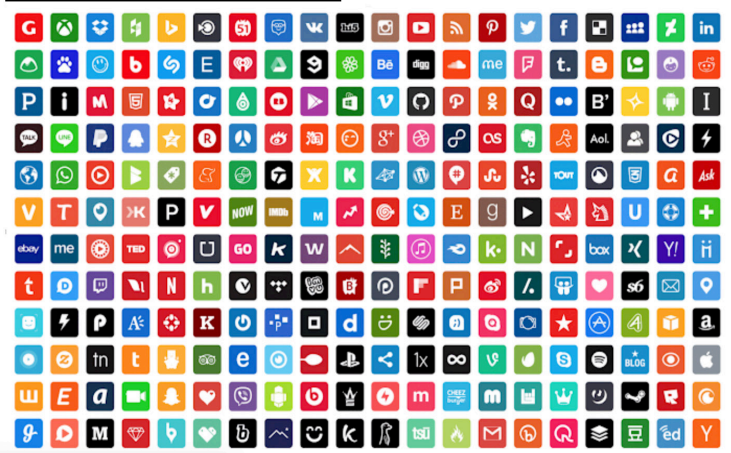
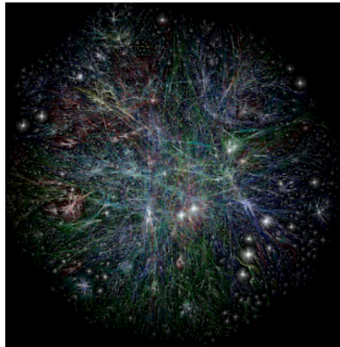
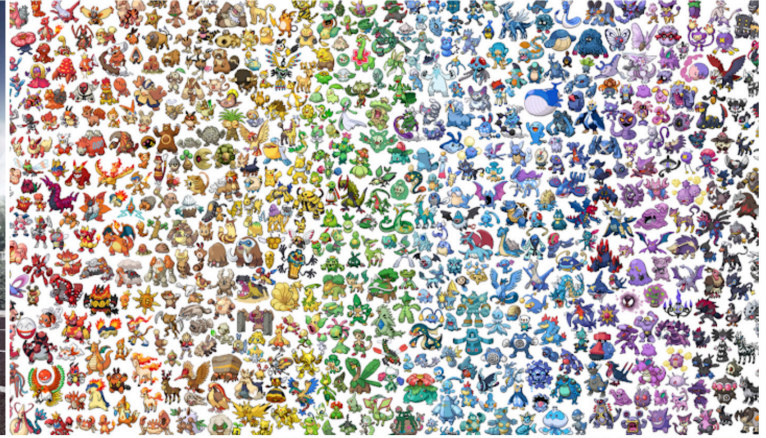
Forms of Radiation

The wine says a thousand things, moving from sense to information: spiritual.¹ The city atmosphere is suffused with a variety of sounds, colours, information and odours.² “I have,” say you, “a certain information of a Deity imprinted in my mind.”³ Information is becoming our primary and universal addiction.⁴ What I want is information: not useful information, of course, but useless information.⁵ Beyond the end, beyond all finality, we enter a paradoxical state—the state of too much reality, too much positivity, too much information.⁶ You gave me plenty of background information.⁷ The entropy increase is always larger than the information obtained.⁸ Newspapers, news, proceed by redundancy, in that they tell us what We “must” think, retain, expect, etc. Language is neither informational nor communicational.⁹ A century of more and more rapid movement of information by print had developed new sensibilities.¹⁰

They can manipulate several forms of information at the same time, yet they neither understand it, nor integrate it, nor synthesise it as do we, their ancestors.¹¹ They seemed to me to embody the same information, just coded in two complementary ways.¹² Information resides in informed mass, not in a materiality that would be the opposite of immaterial forms.¹³ Information can be changed into negentropy, and vice versa.¹⁴ The connection between entropy and information is absolutely essential for consistency.¹⁵ This means that the knowledge is stored not explicitly, but implicitly, in a spread about manner, rather than as a local “packet of information”.¹⁶ Whether this information is valuable or worthless does not concern us.¹⁷ The essential point is that all information is paid for in negentropy.¹⁸ From this negative entropy the demon obtains information.¹⁹ Knowledge is not gratuitous, information has a price.²⁰

An infinite amount of information is unattainable.²¹ We may have fluctuations in the information obtained in individual operations.²² The mathematical notion of information does not signify the quantity it captures, it indexes it.²³ Only if system elements have the chance, here or there, to be open or closed, does the system produce information.²⁴ Information is more a matter of process than of storage.²⁵ We miss the very character of information when we try to relate it to the passive representation of sense.²⁶ But we are in no position to investigate the process of thought, and we cannot, for the moment, introduce into our theory any element involving the human value of the information.²⁷ Information is information, not matter or energy.²⁸ I admit that, in the present state of my information, I do not understand it.²⁹ The information must be carried by some physical process, say some form of radiation.³⁰

^{1,4} Michel Serres, *The Five Senses*, ² Toyo Ito, *Tarzans in the Media Forest*, ³ Cicero, *Tusculan Disputations*, ⁵ Umberto Eco, *On Literature*, ⁶ Jean Baudrillard, *The Vital Illusion*, ⁷ Sigmund Freud, *The Psychopathology of Everyday Life*, ^{8,14, 15, 17, 18, 19, 21, 22, 27} Leon Brillouin, *Science and Information Theory*, ⁹ Gilles Deleuze and Felix Guattari, *A Thousand Plateaus: Capitalism and Schizophrenia*, ¹⁰ Marshall McLuhan, *The Gutenberg Galaxy*, ¹¹ Michel Serres, *Thumbelina: The Culture and Technology of Millennials*, ^{12,16} Douglas R. Hofstadter, *Gödel, Escher, Bach: An Eternal Golden Braid*, ^{13,20,23,26} Vera Bühlmann, *Mathematics and Information in the Philosophy of Michel Serres*, ²⁴ Friedrich Kittler, *The Truth of the Technological World: Essays on the Genealogy of Presence*, ^{25,28,30} Norbert Wiener, *Cybernetics: Or the Control and Communication in the Animal and the Machine*, ²⁹ Jacques Derrida, *Signature*



1.1 AMBIENCE

1.1.1 Two Galaxies

Architecture and information, two beautiful and old galaxies inhabited with concepts, ideas, artefacts, and spices. In the digital they shine with a new glow. Their faces and ambitions are changing. In writing this text, assembling an instrument, and articulating its plays I would like to perform with the shadows these galaxies cast around each other, and tell stories with and about them on the level adequate to the abstractness, speed, and breadth of today's information technologies. In an attempt to do so this text is neither scientific nor artistic; rather, it is architectural in its gesture of being a part of both traditions. An ancient couple *technē-ars* with its etymology takes us on a similar path. Greek word *technē*, whose meaning lies between art, craft, and skill, finds its equivalent in Latin word *ars* where it is indexed by agility, articulation, artifice, and trickery.¹ It is a counterintuitive spiral that opens, connects, and creates a whole spectrum of different meanings around the art-technology couple, no longer a dichotomy. This circular architectural openness is the atmosphere in which I want to write my plays.

This text is architectural in yet another manner. Most objects, elements, and information it deals with are already around, ready to be found and played with if one can acknowledge and operationalise them. The elements are not new; rather, the relations among them, their connectivity and the multiplicity of constellations they belong to in the digital are quite new. In this sense, *Play Among Books*, like architecture, is about bringing and weaving elements, parts, and things together.² It is about articulating constellations with an ever-increasing amount of parts: architecture, books, theories, blogs, information, and indexes. *A Play Among Books*, as a symposium of many voices,

¹ Greek word *technē* is most often translated as either craft or art. *Artes* was Cicero's Latin for the Greek *technai*. For more, see Richard Parry, "Episteme and Techne," ed. Edward N. Zalta, *The Stanford Encyclopedia of Philosophy*, 2014, <https://plato.stanford.edu/archives/fall2014/entries/episteme-technē/>.

² Latin *architectus*, from Greek *arkhitekton* "master builder, director of works," from *arkhi-* «chief» + *tektion* «builder, carpenter,» from PIE root *teks- "to weave," also "to fabricate." See "Architect | Origin and Meaning of Architect by Online Etymology Dictionary," accessed December 2, 2018, <https://www.etymonline.com/word/architect>.

characters and atmospheres, as a gathering of books, wants to deal with a lot, accommodate books, ideas and concepts while addressing architecture and information.

Challenges and intrigues of working with a *lot* are all already present in the etymology of the word. The word *lot* shows its beauty in its numerous etymological meanings.³ A *lot*, when looking into its etymology, can be anything from dice to straw, but also a chip of wood with an inscribed name used to determine someone's share—an encoding. A *lot* is that which falls to a person by lot; a plot of land which is given by fate, God, destiny or a game of chance—*lotto*. A *lot* is plenty. With its rich meanings, a *lot* can be read as an intriguing triangle: a plot, a lottery, and a collection, or in more abstract terms relevant for this work, as an encoding, a play of probabilities, and a great many. In diluting one common understanding, a *lot* becomes a play of many meanings. While escaping from one understanding of nature, it participates in many traditions.

In a similar manner by performing with information, its encodings and probabilities, *Play Among Books* will try to articulate ways in which one can think about architecture and information that come from a *lot*, from many traditions and lineages, from the big plenty, and the great many, while taking chance into account. This text cherishes the art of combining and relating elements without having a clear and precise notion what those elements are, but rather by indexing and opening them up in as many ways possible.

In the next two imagined scenes, I will unfold a lot in two different ways and try to set an atmosphere for the text, the instrument and the plays that are about to come.

1.1.2 Scene 1: Mixtures of Many

Play Among Books will grant hospitality to many libraries, books, concepts, and their avatars. Some of them will be complete strangers and aliens, some will be friendly mutants or perhaps personalised mixtures of many, others just nomads and migrants passing by. In a library they become lively characters of many alphabets, merging and mingling among themselves and other avatars, forming many objects and articulating different constellations, belonging to distinct

3 See Online Etymology Dictionary, "Lot (N.)," November 28, 2017, <https://www.etymonline.com/word/lot>.

natures, but still communicating, present in two or several places or nowhere all at once, as if they are *neither of heaven nor of earth, neither mortal nor immortal*.⁴ None of them are pure, all are always mixtures of many kinds of creatures, of multiple worlds, of reality and fiction, of various media, of particular concepts, restless and unsystematic..., their character is algebraic, informational, and computational. Always on the move, making noise, complementing each other, enriching capacities, and producing different constellations. This is what makes them interesting, but impossible to grasp. If one looks around, there are more and more mixtures, but the more you focus, the harder you'll see. No classes, no labels, no boxes, just clouds and crystals. Some avatars live in the cloud, on the *Informational planet*; they hang out among other avatars and aliens. Social media is their means of transportation, the manner in which they render their faces at a certain moment and in a specific locality. Yes, avatars have many faces and they tell a lot of stories. Branding is their way of expression; *Bitcoin* is their currency and the way of making contracts. However we look at them, they influence the world. They give the real many faces. They are not realistic but part of any specific reality; they are independent and dependent, a subject and an object, a collective. The internet, web, information, avatars, an immediate virtuality with fast and direct channels to the actual and back. The virtual becomes the actual, reality and the model become part of the same. Avatars are us, modalities mix, becoming more and more complex, entangled, and less distinguishable. A powerful mix of everything. Anything is possible. A generic flatland where one is equal to everything at once, a place where the potentials tremble and magnificent articulations can arise. (Fig. 1.1)

1.1.3 Scene 2: Generic Fantasy

The generic is a container that can contain anything. It is affirmative, it accepts and grows. It accumulates by expanding and compressing. The generic is a copy of its sediments, a simulacrum with a life of its own.⁵ It plans its history. If an object thinks it is specific and unique, the generic will multiply it and take it to infinity. Objects in the generic exist only in populations, never

4 Borrowed from the quote of Giovanni Pico della Mirandola: "*We have made you a creature neither of heaven nor of earth, neither mortal nor immortal, in order that you may, as the free and proud shaper of your own being, fashion yourself in the form you may prefer.*" See Giovanni Pico Della Mirandola, *Oration on the Dignity of Man*, trans. A. Robert Gaponigri (Chicago: Henry Regnery Company, 1956), 7.

5 Simulacrum in a manner of Masummi's reading of Deleuze and Guattari's notion of simulacrum. For more, see Brian Massumi, "Realer than Real," *Copyright No.1*, 1987, 90–97.

alone, and never identical. All are slightly different. Generic consists of specificities. By being always slightly different and existing in infinite populations, it is very difficult, impossible or, if one insists, arbitrary to say where genealogy of an object starts and where it ends. Identities are loose. It is a continuous morphing in all directions. A change of intensities makes objects differ. Derivatives.⁶ Generic is not continuous or discreet. It can be perceived in both ways. This is the paradox. Everything is the same, but all elements are different at any given moment. Morphing is constant, but sometimes continuity bursts. A solar flare. Trembling breaks continuities. Diversity is continuous, not the elements. They are always discrete, each containing a spectrum in itself. The average change in the generic is always the same. A nested constellation of self-referential computational objects. Their symbolic and abstract nature allows them not only to morph by playing with probabilities but also to translate themselves to other modalities and media. Generic like noise comes from everywhere. It fills the environment like sound and becomes the background of everything present. It has no borders, just a multiplicity of intensities. It has the potential to contain anything if one has a key to unlock it. Cryptography lies inside of the generic. These are the intensities. It is a common message that wants to be individual. A signature is needed. In the generic signatures matter. There lies the treasure. There is a lot there. It is difficult to see while everything looks the same. Change among elements is the same, but what the elements are is open to articulation. This is the crypt and the key for articulating potentials into probabilities. The potential is a prognosis, a forecast. Probabilities do not forecast, they are now, and they are operational. They are the question of articulation. How to symbolise the trembling generic potential into an alphabet of probabilities and write with it? The generic is a ground. Not good or bad, but with an infinity of traps and treasures.

6 An interesting way of depicting the generic condition can be found in Elie Ayache's writing on derivative economy: "*I don't think we have time, then probability and then a price process that makes its way through chronological time and through probability. On the contrary, we have the price series, and in every single price there is implicit a whole time dimension, a whole market and a whole trading room (and this is bigger than probability: this is the capacity of changing the context where probability has first to be defined).*" For more, see Elie Ayache, *The Blank Swan: The End of Probability*, 1 edition (Chichester: Wiley, 2010), ebook, loc 98.8 / 1793.



Fig 1.2 A Specific noise: Generic plane of architecture from the perspective of images and architectural blogs.
Excerpt from all the images published by ArchDaily and Dezeen between 2008–2018. <http://www.romanvlahovic.com/xenotheka/bigNoise.jpg>

1.2 CHALLENGE

1.2.1 Abundance and Connectivity

“What to transmit? Knowledge? It is already available and objectivized on the web.
Transmit it to everyone? Knowledge is already accessible to everyone. How to transmit it?
Done!”

—Michel Serres, *Thumbelina*⁷

The abundance and connectivity of data and information is another way to talk about the trembling generic potentiality of our world. It is a contingent space capable of becoming anything.⁸ With information technologies and computers, one can unfold such scenarios. Anywhere on this planet, with a computer and an internet connection, one is already part of the abundant flows of data and information. Any news, theory, fashion, approach, or website is one click away, and not just the latest one but, in principle, any recorded one. One can translate from any language, read any book of one’s choosing, watch any movie, listen to your friends’ favourite music, comment on it in real time with anyone you know or not, while taking a train. One could argue that this is too much since one can easily get lost or distracted when anything is possible. The generic potential, on the one hand, provides access to the global system of interconnected computer networks with vast amounts of data, information and knowledge but, on the other hand, it unsettles the hierarchies and disturbs established meanings. Strange and interesting murmurs appear; *Things seem to be speaking by themselves*,⁹ *Simulacra and Simulations*,¹⁰ *we by-pass subjectivity by automatisations*,¹¹ *a kind of*

7 Michel Serres, *Thumbelina: The Culture and Technology of Millennials*, trans. Daniel W. Smith (London ; New York: Rowman & Littlefield International, 2015), ebook, loc 18.4 / 100.

8 For more on the principal abundance and interplay of energy and information, see Ludger Hovestadt, Vera Bühlmann, and Michael Sebastian, *Genius Planet – Energy: From Scarcity to Abundance, a Radical Pathway*, 1st edition (Basel, Switzerland: Birkhauser, 2017).

9 Antoinette Rouvroy and Bernard Stiegler, “The Digital Regime of Truth: From the Algorithmic Governmentality to a New Rule of Law,” trans. Anaïs Nony and Benoît Dillet, *La Deleuziana: Online Journal of Philosophy*, no. 3 (2016): 6–29, 7.

10 Jean Baudrillard, *Simulacra and Simulation*, trans. Sheila Faria Glaser, 14th Printing edition (Ann Arbor: University of Michigan Press, 1994).

11 Rouvroy and Stiegler, “The Digital Regime of Truth: From the Algorithmic Governmentality to a New Rule of Law.”¹²

*machinic objectivity.*¹² *Crunching numbers is the new way to be smart.*¹³ *You are being categorised according to raw data, that have for you no meaning.*¹⁴ *Disappearance of authority.*¹⁵ *Independence of information from specific encoding and informational support.*¹⁶ *Pure reality and pure actuality.*¹⁷ *There are no longer resilient objects: there are only networks of data evolving in real-time and that aggregate from time to time as profiles, patterns and so on.*¹⁸ How to write when such a murmur is around, when one has access to infinite streams of information and data? To send a message, or tell a story in a connected world is not a problem anymore, but getting it heard, or articulating an interesting one in the sea of other messages becomes, on the other hand, more and more difficult. To put it in different terms, in a world in which anything and anyone is connected, and where, in principle, anyone can have access to an infinite stream of information and knowledge for free, how do we talk about things we care about? Anyone has the potential (not the capacity) to tell a good story. If data is big enough, it will not tell us the truth, but it will show us the world we want to see. This is the paradox. Information technologies with its abundance, uncertainties, and ambiguities are challenging the reflective notion in which models are still being systematised.¹⁹ It is not good or bad, but rather a different space without clear anchor points, or with an infinity of them. The idea of squeezing, stretching, cutting, manipulating, inverting, encoding, looking, surfing, and playing with data in a way that it becomes a part of a performance one wants to play will be a recurrent theme of this work.

Challenges of our paradigm, of the digital, of navigating and playing with the plenty are not only present in big data and social media but are, in one way or another, all around: they can be found in the observer of the double slit experiment,²⁰ in the arrows of the strange theory of light and matter,²¹ in the attempts of category theory to establish communication between structures

12 Rouvroy and Stiegler, 12.

13 Rouvroy and Stiegler, 10.

14 Rouvroy and Stiegler, 12.

15 Rouvroy and Stiegler, 22.

16 Giuseppe Longo and Maël Montévil, *Comparing Symmetries in Models and Simulations* (Springer, 2016), 11.

17 Rouvroy and Stiegler, “The Digital Regime of Truth: From the Algorithmic Governmentality to a New Rule of Law.”, 7.

18 Rouvroy and Stiegler, 7.

19 See “Theory of Everything.” Wikipedia, November 18, 2018, https://en.wikipedia.org/w/index.php?title=Theory_of_everything&oldid=869481836.

20 Davisson and Germer, “Reflection of Electrons by a Crystal of Nickel.”

21 Richard Phillips Feynman and A. Zee, *QED: The Strange Theory of Light and Matter* (Princeton University Press, 2006).

of different kinds,²² in the ways Information Theory relates communication and physics,²³ in ways coding is becoming and reconstituting what literacy is.²⁴ These approaches, theories and phenomena bring together long separated notions of nature and culture, subject and object, theory and practice, myth and fact. Not only the universal notion is being challenged, but how a particular keeps its identity in such an environment is also at stake.²⁵ How to maintain a circular relationship between the universal and the singular without collapsing them to the same, or keeping them mutually exclusive, is one of the challenges that the digital opens up. Information, according to Brillouin, is always paid in entropy, which suggests that more information produces a bigger generic flatland. This is one of the contradictions we face. More information means, at the same time, more and less stability.²⁶ Can we affirm this paradox, invent new characters and write with the plenty?

1.2.2 Unsettling and Meaningless

Finally, we come to the Mother of all Lists, infinite by definition because it is in constant evolution, the World Wide Web, which is both web and a labyrinth, not an ordered tree, and which of all vertigos promises us the most mystical, almost totally virtual one, and really offers us a catalogue of information that makes us feel wealthy and omnipotent, the only snag being that we don't know which of its elements refers to data from the real world and which does not, no longer with any distinction between truth and error.

—Umberto Eco, *Infinity of Lists*²⁷

The abundance and connectivity are one way of looking at the digital phenomena. Umberto Eco in his book *The Infinity of Lists* poses a challenge from the other side, by asking the questions of meaning and hierarchy. As Eco points out, on the one hand, the elements are connected and information is wealthy and omnipotent but, on the other hand, information loses its meaning and its

22 Jean-Pierre Marquis, “Category Theory,” ed. Edward N. Zalta, *The Stanford Encyclopedia of Philosophy* (Metaphysics Research Lab, Stanford University, 2015), <http://plato.stanford.edu/archives/win2015/entries/category-theory/>.

23 Brillouin, *Science and Information Theory*.

24 Annette Vee, *Coding Literacy: How Computer Programming Is Changing Writing* (Cambridge, MA: MIT Press Ltd, 2017).

25 See Koolhaas, “Generic City.”

26 This will be elaborated in *Chapter 3, Play 1, Act 1*. For more, see Leon Brillouin, *Science and Information Theory: Second Edition*, Second edition (Mineola, New York: Dover Publications, 2013).

27 Umberto Eco, *The Infinity of Lists: An Illustrated Essay*, trans. Alastair McEwen (New York: Rizzoli, 2009), 360.

hierarchies are unsettled in a virtual vertigo. Although his tone is rather pessimistic, he refers to an important conceptual space which is left empty by the collapsing of the notions of truth and error, virtuality and reality.²⁸ Claude Shannon's technical articulation operationalises this conceptual vacuum and plays with the ideas pointed out by Eco, namely that information and meaning are not in a direct relationship. In articulating *Mathematical Theory of Communication*, where he presented a solution to a sophisticated engineering problem of transmitting a message from point A to point B, Shannon addressed a message as a purely quantitative phenomenon, unrelated to qualitative, semantic concerns. It is considered to be one of the founding works of information theory.

Frequently the messages have meaning; that is, they refer to or are correlated according to some system with certain physical or conceptual entities. These semantic aspects of communication are irrelevant to the engineering problem.

—Claude Shannon, *A Mathematical Theory of Communication*²⁹

This manner of dealing with communication liberated information from the burden of meaning and the responsibility of truthfulness. It opened a way to address communication as a quantitative phenomenon. In the digital, messages and phenomena are being encoded into lists of numbers. Lists work with information regardless of its meaning. If they are big enough, lists can have the capacity to encapsulate any meaning and hierarchy. This is the promise and the challenge of *big data*. With *big data*, computation goes beyond analytic reason, but leaves a big open field of meaningless generic potential. What becomes fascinating when one starts to work with lists on algebraic computational level is the ability to discuss and handle objects and phenomena without fixing them to a point or specific meaning. Instead, lists provide a meaningful context, accept accidents, and take into account errors, while still being operational and open in their meaning and length. The idea behind is not so radical and new as it might seem.

We use definitions by properties when we don't have or are not satisfied by a definition by essence; hence it is proper to both a primitive culture that has still to construct a hierarchy of genera and species, or to a mature culture (maybe even one in crisis) that is bent on casting doubt on all previous definitions.

—Umberto Eco³⁰

28 These questions are addressed and dramatized in the 3.1.1 ACT 1: INFORMATION.

29 C.E. Shannon, "A Mathematical Theory of Communication," *Bell System Technical Journal*, The 27, no. 3 (July 1948): 379–423, 379, <https://onlinelibrary.wiley.com/doi/abs/10.1002/j.1538-7305.1948.tb01338.x>.

30 Eco, *The Infinity of Lists*, 218.

Objects can belong to many lists at once and can have only one essential definition. The elegance of an essential definition forces objects to renounce the multiplicity of their natural and cultural legacies and boils them down to one fundamental statement. Lists, on the other hand, keep objects open, meaningless, and unsettled. The ability to encode objects into an infinity of different lists comes with the price of losing their consistency.

In Google's approach to information, we can observe a similar phenomenon: an inversion from encyclopaedic reflection to a generic projection. *Google Translate* is able to translate from any language to any language without understanding any of the words and not caring about their respective grammars.³¹ Instead of a fixed definition, *Google search* for each query provides an unlimited list of possible readings around the question. Lists offer no clear answer but a spectrum of most probable indexes to the question. Contradictions coexist in each search and they do not need to exclude one another; on the contrary, they affirm the delicacy of the question. Whoever does the searching articulates his own story out of it. A clear encyclopaedic answer is lost in the cloud of continuous transformations of possible stories into personal answers, which tune global hierarchies.

The thought-provoking aspect of encoding information into lists in a purely quantitative manner is that it does not have to exclude its symbolic capacity. It can be thought of as a double articulation which takes into account and encapsulates both the measured and the symbolic. With Shannon's way of operating on information one is able to work with both practical and poetic lists without making a distinction that Eco suggested: "*It is not impossible to read a poetic list as if it were a practical one.*"³² One of the challenges of encoding information into lists is to think of a delicate balance of its recorded materiality and symbolic capacities which don't exclude but rather encapsulate each other.

31 Alon Halevy, Peter Norvig, and Fernando Pereira, "The Unreasonable Effectiveness of Data," *Intelligent Systems, IEEE* 24, no. 2 (2009): 8–12, <https://static.googleusercontent.com/media/research.google.com/en//pubs/archive/35179.pdf>.

32 Eco, *The Infinity of Lists*, 371.

1.2.3 Architecture and Information

A generic plain of particular interest; plain of architecture, with an empty axis orthogonal to it; a personal vector where the revolution happens. One interested in addressing architecture on the abstract level of information technologies finds himself again in a generic space of a trembling entropy. It is a fertile ground on top of which avatars are revolving indexes in articulated eruptions: famous architects, beautiful buildings, architectural blogs, magazines, books, manifestos, images, videos... different styles, approaches, drawings, thinking, schools, traditions... cities, big, small, clean, screaming, silent, efficient, sustainable, green, adventurous, smart, stupid... These vectors are projections, an explosion of new projects in the digital age. The virtual and the actual at the same time. The beauty of it is that one can never explicate what they are all about. Each vector is a position without a fixed point, a void, an attitude, both architectural and universal, in itself composed of other vectors. There is no clear method of how to achieve consistency in the generic; it is rather an interplay of surfing, learning, and training in a vertigo. A new ability to deal with any media as information in the world of a lot. This is what architectural brands are doing. They are navigating generic, entropic clouds. (Fig. 2.2)

Let us invert the scenario. The void, the generic plane, and the entropic state are all common scenarios of dissolution: from *Pritzker* to *Google*, from book to magazine, to online magazine, to social media, and to the final dissolution with *Google* where everything is connected to everything; an equality, a flatland. Or to put it in other terms, smart cities, smart houses, or smart design are all based on empirical measurement, all concerned with the optimal, and expressed as sustainable, efficient and functional. A clear vector. Architecture finds its comfort in engineering, in the primacy of *techne*.

A new trinity is at work: traditional European values of liberty, equality, and fraternity have been replaced in the 21st century by comfort, security, and sustainability. They are now the dominant values of our culture, a revolution that has barely been registered.

*Rem Koolhaas, My thoughts on the Smart City*³³

What if one inverts the story one more time and looks at this process as parallel

33 Rem Koolhaas, "My Thoughts on the Smart City," 2014, http://ec.europa.eu/archives/commission_2010-2014/kroes/en/content/my-thoughts-smart-city-rem-koolhaas.html.

encapsulations which enrich each other in infinite self-referential loops? Not as optimal or equal (flat) but as symbolic and encapsulating (of unsettling hierarchies). In such scenarios, computational models could act with a flexible, anticipatory, and a mediating character, as vectors in the abstract that help us articulate ideas that would otherwise remain unreachable and hidden. Computational models could get their architectural quality of a testing and playing ground, rather than being direct representations of reality.³⁴ Symbolic, enriching, and parallel encapsulations are what the digital brings to the table: “[...] *not the end of history, but an intensifying and multiplying of histories.*”³⁵ Time does not have to be perceived only linearly; it is percolating; it is circular; it is a spiral; past, future and present are mixing; pre, post, neo, retro, futuristic, bio, techno is a question of taste and choice. It is digital and immediate. Time can once again become part of the weather.³⁶ Porn and drama mix in a new kind of public space around novel literacy of a *Quantum City*.³⁷ But not all is brand new. Some of the main protagonists of the twentieth-century architecture were already actively dealing and explicitly addressing a lot. As a response to the early modernist tradition of Mies’ “*Less is more*”³⁸ star architects reply:

“*Less is a bore.*”,³⁹ “*I am a whore.*”,⁴⁰ “*More and more, more is more.*”,⁴¹ “*Yes is more!*”⁴²

The twentieth-century deals and plays with complexity, contradictions, junk, genericness, capital, brands... and much more. More becomes an explication of a global condition. Architects are engaging with a lot, producing a spectrum of architectural clichés, each one with its own maxim in its own way. How to step out of this competition and not add just another slogan, but still consider the spectrum? Avatars, bots, Google, cryptocurrencies, social media... all participate

34 Werner Oechslin, “Das Architekturmodell – Idea Materialis,” in *Die Medien Und Die Architektur*, ed. Wolfgang Sonne (Deutscher Kunstverlag, 2011), 131–55.

35 Sam Jacob, “Faster, But Slower,” *Log*, no. 29 (2013): 145–52.

36 Some languages like French, Spanish, and Italian use the same word for time and weather (temps, el tiempo, il tempo). “*Time is paradoxical; it folds or twists; it is as various as the dance of flames in a brazier—here interrupted. there vertical, mobile, and unexpected. The French language in its wisdom uses the same word for weather and time, le temps. At a profound level they are the same thing. Meteorological weather, predictable and unpredictable, will no doubt someday be explainable by complicated notions of fluctuations, strange attractors.... Someday we will perhaps understand that historical time is even more complicated.*” For more, see Michel Serres and Bruno Latour, *Conversations on Science, Culture, and Time: Michel Serres with Bruno Latour*, trans. Roxanne Lapidus (Ann Arbor, Mich: University of Michigan Press, 1995).

37 Ludger Hovestadt et al., *A Quantum City*, vol. 10, Applied Virtuality Book Series (Basel: Birkhäuser, 2015).

38 Quote by Ludwig Mies van der Rohe, 1947 (borrowed from Robert Browning poem “Andrea del Sarto published in 1855)

39 Robert Venturi, *Complexity and Contradiction in Architecture* (The Museum of Modern Art, 1966), 17.

40 Quote by Philip Johnson, 1982

41 Rem Koolhaas, “Junkspace,” *October* no. 100 (2002): 175–90.

42 Bjarke Ingels, *Yes Is More: An Archicomic on Architectural Evolution*, 1 edition (Köln: TASCHEN, 2009).

in this play. They scan a lot, relate anything to anything, make traces and trouble. They are always transmitting, not as individuals, but as multiplying and proliferating identities. The digital brings ever more to the table. It is a different world abundant in its potentialities. One could go further and suggest that this is not the first time architecture faces this kind of questions.⁴³ A beautiful symmetry to the twentieth century more can be found in Alberti's *historia*.⁴⁴

The first thing that gives pleasure in a 'historia' is a plentiful variety. Just as with food and music, novel and extraordinary things delight us for various reasons but especially because they are different from the old ones we are used to, so with everything the mind takes great pleasure in variety and abundance. So, in painting, variety of bodies and colours is pleasing. I would say a picture was richly varied if it contained a properly arranged mixture of old men, youths, boys, matrons, maidens, children, domestic animals, dogs, birds, horses, sheep, buildings and provinces; and I would praise any great variety, provided it is appropriate to what is going on in the picture.

—Alberti, *On Painting*⁴⁵

In his praise of any great appropriate variety, Alberti's painted *historia* (a term that resists precise translation)⁴⁶ could be interpreted as an *instrument* that brings together technology, abundance, and storytelling. Technology, as it is a demonstration of a new perspectival painting. Abundance, as it celebrates the richly varied and properly arranged elements. And, lastly, storytelling since, according to Grafton while referring to Cicero's *historia*, it takes accounts of both chronologies and narratives around its interest:⁴⁷ "*Alberti, however, saw myth and history as equally appropriate subjects for a painted historia; indeed, as we will see, his exemplary historia*

43 Architectural questions are never settled. Orozco in *Indexical Architecture* elaborates on this: "*When we agree that architecture, throughout its long tradition, has always asked the same questions, and what changes is the way we answered them, we say that today's answers are in all the answers.*" For more, see Jorge Orozco Esquivel, "Indexical Architecture: Prominent Positions, Applications and the Web" (Doctoral Thesis, ETH Zurich, 2017), 270, <https://doi.org/10.3929/ethz-b-000257185>.

44 An inverse movement can be read in the way Delbeke described the importance Victor Hugo gave to architecture's role in literacy and to changes it went through with the invention of the printing press: "*Here, Hugo contends that until the advent of the printing press, buildings had been the books of humanity: thoughts, ideas and memories were committed to stone, a process that also signified the origins of architecture. But when the book took over the task of recording these thoughts, it emptied architecture of culturally relevant meanings. Since then, he argued, architecture was quite simply dead.*" See Maarten Delbeke, "A Book Accessible to All," AA Files, no. 69 (2014): 118–22.

45 Leon Alberti, *On Painting*, trans. Cecil Grayson (Penguin Books, 2004), ebook, loc 157.3 / 211.

46 As Martin Kemp points out in the introduction to *On Painting*: "*The historia (a term that resists precise translation) was the supreme achievement for the painter, embodying all the moral worth which could be realized through his command of beauty, expression and significance.*" For more, see Alberti.

47 In a similar manner Livy, in *Ad Urbe Condita*, brings legends, myths, historical events and current events together, redresses and dramatizes them in order to tell a story by characters of the personas involved. See Titus Livy, *The Early History of Rome*, trans. Aubrey de Selincourt (Penguin UK, 2005).

came from the realm of myth.”⁴⁸ *De Pictura* was the first in Alberti’s trilogy of treatises on the *Major arts*, and one could speculate that it was an important step towards his articulation of a novel way of thinking about architecture, which was the introduction —if not an articulation —to an understanding of what an architectural model might become. If one looks Alberti’s *historia* as conceptually symmetrical to the challenges that we face today in terms of new digital technologies, abundance of data, and crisis of established narratives, then one could pose a question of what would be the new *digital historia*, or, in other terms, an *Informational Instrument* that would correspond and take under consideration both contemporary technologies and narratives, while being able to tap into the infinite flow of information? In this manner, science (history, chronology) will always be a part of tradition (myth, narrative), and tradition will never become only scientific. If we take this idea seriously, then objects should be addressed by taking into account their different capacities. But how would then one measure a myth or a narrative, encode it, and later construct models out of those measures and encodings?⁴⁹ And here again the complex etymology of a word model opens up a space and provides a possible direction for an articulation. Via its roots of mold, small measure, standard, to “modulus” which means manner or measure, an informational model could become a manner of encoding many constellations and atmospheres that objects participate in and, furthermore, a space for objects to render their faces and tempers.

One part of this work attempts to articulate such an instrument as an important step in trying to explore what might be architecture in world of data, not as a new and all-encompassing model but rather from the perspective of ever-changing conceptions of nature in which architecture is constantly refining its own role. Questions of information and architecture will be addressed via *a lot* of texts concerned with these topics, and via libraries these texts inhabit. Texts and libraries will become both actors and data in the play of this instrument. By playing an *Informational Instrument* I will try to open up and expose new ways to address and reformulate old questions. How does an architect in a world of a lot behave? How does one write about architecture in the age of information when one can have any number of books at his fingertips? How does one articulate an architectural abstract object that lives up to and corresponds to the potentials and possibilities provided by the digital code?

48 Anthony Grafton, *Leon Battista Alberti: Master Builder of the Italian Renaissance*, 1st US-1st Printing edition (Harvard: Harvard University Press, 2002), 133.

49 These topics will be opened up and discussed in *Chapter 2* and *Chapter 3*.

The great work of the painter is not a colossus but a 'historia', for there is far more merit in a 'historia' than in a colossus. Parts of the 'historia' are the bodies, part of the body is the member, and part of the member is the surface. The principal parts of the work are the surfaces, because from these come the members, from the members the bodies, from the bodies the 'historia', and finally the finished work of the painter. From the composition of surfaces arises that elegant harmony and grace in bodies, which they call beauty.

—Alberti, *De Pictura*⁵⁰

1.2.4 Vector and Cloud

Avatars, bots, Google, cryptocurrencies, social media, they navigate the abundant flows of information decoupled from its meaning and play with the connectivity of its unsettled hierarchies. Brands are contemporary meaningful articulations, vectors in the cloud able to relate any object to any story and still stay consistent. How to behave in this challenging and provocative atmosphere as a person and a quantum citizen of an informational planet, who is not overwhelmed by the plenty, but one that can articulate its many characters out of it? With many characters one can start composing synthetic alphabets and start to speak in foreign languages, become literate, without becoming native to them. This is not about understanding each language in detail but rather about being able to communicate fast in the plenty of them. By playing among books, I want to approach this vast cloud of data and information, embrace it, work with the plenty, and articulate characters and alphabets out of it. The question is how to make a vector in the cloud, a particular atmosphere both personal and generic, stay in between, and address both.

In the history of the sciences, the appearance of complexity was a sign that you had utilized an inadequate method and needed to change your paradigm.

—Michel Serres, *Thumbelina*⁵¹

50 Alberti, *De Pictura*, ebook, loc 149.8 / 211.

51 Serres, *Thumbelina*, ebook, loc 78.6 / 100.

1.3 CODING

Now, the code is a singular, living being; the code is a concrete human being. As an individual who is unique but also generic, who am I? An indefinite, decipherable, and undecipherable cipher, open and closed, social and discreet, accessible-inaccessible, public and private, intimate and secretive. I am sometimes unknown to myself and on display at one and the same time. I exist, therefore I am a code. I am calculable and incalculable, like a golden needle, plus the haystack in which, buried, its brightness lies hidden. My DNA, for example, is both open and closed; its cipher has constructed my body, which is both intimate and public, like St. Augustine's Confessions. How many signs are there in the Confessions? How many pixels in the Mona Lisa? How many bytes in Faure's Requiem?

—Michel Serres, *Thumbelina*⁵²

1.3.1 Digital Literacy

Abundance and connectivity, unsettling hierarchies, vectors and clouds, architecture and information. Clouds, streams, lists, indexes, pixels. What are they about and how do they shape the way we think about the world? They are abundant, suggestive, symbolic, with no meaning; they can engender anything. How does one behave in a cloud? Can we think of informational clouds and the Internet as a novel and different kind of public space with new atmosphere? Something like a digital agora where codes and manners of behaviour are encrypted and multiple, explicit, implicit, suspended, or even not established. Could this digital weather be thought of as part of digital literacy,⁵³ of a *Quantum City*,⁵⁴ on an informational planet with a new kind of citizens? Are avatars, bots, and brands some of those citizens? There are many clouds and different weathers in the digital. Anyone is welcome. What if one starts playing with the clouds?

52 Serres, loc 89.7 / 100.

53 For more on coding as literacy, see Bühlmann, Hovestadt, and Moosavi, *Coding as Literacy*.

54 Hovestadt et al., *A Quantum City*.

One way of trying to approach these kinds of phenomena comes from thinking of coding as a literacy.⁵⁵ When coding and literacy come close to each other a new space of questions opens up. How is coding changing the way in which we think about literacy, and how is literacy influencing coding?⁵⁶ What are the alphabets of such a literacy? What is reading if the text is written in probabilistic letters? Is it a place where authorship and mastership become a part of an algebraic character that is again a letter of a new alphabet? What kind of thought is related to this literacy?⁵⁷ Quantum, categorical,⁵⁸ algebraic, symbolic, computational, probabilistic, coded?

It is clear that these questions cannot be answered in the scope of this work. *Play Among Books* wants to offer one scenario of what such a literacy might be about. Not by explaining what it is but by performing a play. It strives to show a mode of handling objects as ambiguous and lively propositions rather than finding their definitions. It wants to keep concepts and books alive, open and implicit by placing them in the plenty, exposing them to different contexts, and taking into account their richness and beauty. In a *Play Among Books*, objects start to open up to the world and grow. They become more, as one learns how they behave in different and new atmospheres. In this sense, coding as literacy becomes a way of approaching concepts and objects beyond specialised and disciplined perspectives, not by explaining and analysing them but by indexing them in many manners, by taking snapshots of their informational faces, and by granting them intelligence.

In a *Play Among Books*, books are the actors; they are computational objects. Never alone, always coming from the plenty and talking about architecture and information. In order to get a sense of what might be beautiful and at stake with such a literacy where books are able to talk, let us try to address and index its text, its alphabet, and the ones that write in the digital.

55 See chapter on Quantum Literacy in Vera Bühlmann, *Mathematics and Information in the Philosophy of Michel Serres*, ed. David Webb and Joanna Hodge (S.I.: Bloomsbury Academic, 2019).

56 Vee, *Coding Literacy*.

57 Toronto School of communication theory deals with the questions of how communication technologies are influencing the structuring of human cultures and thought, namely Erick A. Havelosck, Harold Innis, and Marshall McLuhan. See Eric A. Havelock, *Preface to Plato*, Revised edition (Cambridge, Mass.: Belknap Press: An Imprint of Harvard University Press, 1963). and Marshall McLuhan, *The Gutenberg Galaxy: The Making of Typographic Man* (University of Toronto Press, 1962).

58 Jean-Pierre Marquis, "Category Theory," ed. Edward N. Zalta, *The Stanford Encyclopedia of Philosophy* (Metaphysics Research Lab, Stanford University, 2015), <http://plato.stanford.edu/archives/win2015/entries/category-theory/>.

1.3.2 Computational Text

From grammars of ancient India⁵⁹ and Greece⁶⁰ to Biblical legends of the Tower of Babel,⁶¹ from a search for an old ancestor called Proto-Indo-European⁶² to structuralist and generative approaches of Saussure⁶³ and Chomsky,⁶⁴ from Markov's⁶⁵ stochastic models of Pushkin's poems to Mathematical theory of communication of Shannon,⁶⁶ from Wittgenstein⁶⁷ and the linguistic turn to Hjelmslev's⁶⁸ algebra of language, from statistics and probabilistics of language on Google,⁶⁹ to natural and programming languages. Stories and ways of thinking about language, its form, performance, meaning, origins and organisation are probably as old as written text, each one articulated in its own manner, with its own twists and turns. This sparse spectrum is an index to approaches to language and literacy that I find particularly relevant when trying to address text on the level of information.

Let us imagine that when one writes on the level of information, one has access to infinite streams of books where each book can point to any other book, be a part of any library, and tell many different stories.⁷⁰ It is an abundant and noisy vertigo available on any computer. How to make meaningful articulations in such a scenario while embracing the plenty, its availability, connectivity, challenges and complexity? Undoubtedly, without inspecting each element and without reading all the books one by one. Not because one would not like to read, but simply

59 *Pāini's Astādhyāyī* (cca 5th century BC), is one of the oldest surviving Sanskrit grammar.

60 *The Art of Grammar*, treatise on Greek grammar, attributed to *Dionysius Thrax*, from the 2nd century BC. See, Dionysius Thrax, *The Grammar of Dionysios Thrax* (St. Louis, Mo. : Studley, 1874), <http://archive.org/details/grammarofdionysi00dionuoft>.

61 *Tower of Babel* is an origin myth meant to explain why the world's peoples speak different languages. See Book of Genesis, 11:1-9.

62 Proto-Indo-European (PIE) is the linguistic reconstruction of the common ancestor of the Indo-European languages.

63 Ferdinand de Saussure, *Course in General Linguistics*, trans. Roy Harris, Reprint edition (London; New York: Bloomsbury Academic, 2013).

64 Noam Chomsky, *Syntactic Structures* (Walter de Gruyter, 1957).

65 Andreĭ Andreevich Markov, "An Example of Statistical Investigation of the Text Eugene Onegin Concerning the Connection of Samples in Chains," *Science in Context* 19, no. 4 ([1913] 2006): 591–600.

66 Shannon, "A Mathematical Theory of Communication."

67 Ludwig Wittgenstein, *Tractatus Logico-Philosophicus*, trans. C. K. Ogden, 471st ed. edition (Mineola, N Y: Dover Publications, 1998).

68 Louis Hjelmslev, *Prolegomena to a Theory of Language* (University of Wisconsin Press, 1969).

69 "PageRank," *Wikipedia*, December 16, 2018, <https://en.wikipedia.org/w/index.php?title=PageRank&oldid=873973536>.

70 See *Chapter 2, Chapter 3*.

because there are too many books to read if one wants to read each one in detail.⁷¹ Thinking about information in the digital brings the ability to work with text in a rigorous and caring way without reading all the texts, but by handling them in another manner. I will call this playing of an *Informational Instrument*. Since this is the manner in which I want to talk about architecture and information, I would like to point out what is at stake when constructing such an instrument by indexing and giving account of two different and dominant strategies of working with text on the scale of *big data*. To first one I will refer to as a *generative approach (GA)*, and to the second one as a *data-driven approach (DDA)*. Wikipedia addresses them as *rule-based* and *statistical NLP*.⁷² As a way of telling their story let me symbolise them with characters of the personas involved: Noam Chomsky with his two books will be encoded into a character under the cypher *NC_GA*⁷³ as the protagonist of a generative approach, and Peter Norvig —the head of research at Google —with his two texts will be encoded into *PN_DDA*⁷⁴ as the protagonist of a data-driven approach. Let us imagine them as two pairs of glasses that encode the world (in this case, text and language) in different manners, and try to view language from their perspectives, assume their fantasies, and ways they legitimise their positions. Let us keep in mind that this setup is artificial, that the selected quotes are out of context, and that there is a 40-year difference between them. Nonetheless, they still show two interesting and contemporary views to language.

1.3.2.1 Two Perspectives

NC_GA:

*This study deals with syntactic structure both in the broad sense (as opposed to semantics) and the narrow sense (as opposed to phonemics and morphology). It forms part of an attempt to construct a formalized general theory of linguistic structure and to explore the foundations of such a theory.*⁷⁵

71 It is important to keep in mind that working with the plenty is not thought of as a substitute for a detailed reading of a single book. Not at all; it is another way of approaching text via a perspective of a library.

72 “Natural Language Processing,” *Wikipedia*, December 9, 2018, https://en.wikipedia.org/w/index.php?title=Natural_language_processing&oldid=872887903.

73 *NC_GA* is an encoding of two early books of Noam Chomsky: Chomsky, *Syntactic Structures*. and Noam Chomsky, *Aspects of the Theory of Syntax*, Anniversary, Reprint edition (Cambridge, Massachusetts: The MIT Press, 2014), ebook.

74 *PN_DDA* is an encoding of two texts by Peter Norvig: Halevy, Norvig, and Pereira, “The Unreasonable Effectiveness of Data.” and Peter Norvig, “On Chomsky and the Two Cultures of Statistical Learning,” 2011, <http://norvig.com/chomsky.html>.

75 Chomsky, *Syntactic Structures*, 5.

PN_DDA:

For those who were hoping that a small number of general rules could explain language, it is worth noting that language is inherently complex, with hundreds of thousands of vocabulary words and a vast variety of grammatical constructions. Every day, new words are coined and old usages are modified. This suggests that we can't reduce what we want to say to the free combination of a few abstract primitives.⁷⁶

NC_GA lays out a program and ideas for its work in language in the form of the *general theory of linguistic structure*. His theory is articulating a formal approach to syntax where he studies sentences based on symbols and rules. He wants to explore and construct foundations of such a theory. For *NC_GA* any scientific theory is based on a finite set of observation out of which general laws are derived. The same method should apply to physical laws and grammatical laws. On the other side of the spectrum, *PN_DDA* challenges this idea of an elegant linguistic theory, with a small number of neatly organised rules, by pointing to inherent complexity and constant change in language. His fantasy goes in the opposite direction.

1.3.2.2 Two Fantasies

PN_DDA:

A trillion-word corpus—along with other Web-derived corpora of millions, billions, or trillions of links, videos, images, tables, and user interactions—captures even very rare aspects of human behavior. So, this corpus could serve as the basis of a complete model for certain tasks—if only we knew how to extract the model from the data.⁷⁷

NC_GA:

What is the relation between the general theory and the particular grammars that follow from it? In other words, what sense can we give to the notion “follow from,” in this context? It is at this point that our approach will diverge sharply from many theories of linguistic structure.

⁷⁶ Halevy, Norvig, and Pereira, “The Unreasonable Effectiveness of Data.”, 9.

⁷⁷ Halevy, Norvig, and Pereira, 8.

*The strongest requirement that could be placed on the relation between a theory of linguistic structure and particular grammars is that the theory must provide a practical and mechanical method for actually constructing the grammar, given a corpus of utterances. Let us say that such a theory provides us with a discovery procedure for grammars.*⁷⁸

Instead of trying to find a universal grammar, *PN_DDA* points out to the ability of data to capture rare aspects of human behaviour, the outliers, ones that are usually the Achilles' heel of the general laws (the misfits and exceptions). As another way to approach language, he suggests to look at big corpora of data and derive models out of them without explicitly knowing what the rules are. He proposes to work with language as a black box. What bothers *NC_GA* the most is that data-driven models describe *what* happens but don't answer the question *why*. While dismissing the so-called *statistical NLP*, *NC_GA* precisely points to the probabilistics of Markov,⁷⁹ which forty years later became a standard in NLP,⁸⁰ and proclaims it inadequate for syntactic structures. Instead, he states that grammar is independent of meaning and becomes free to articulate his general theory as a discovery procedure for any manmade language grammars. This idea of a discovery procedure of manmade grammars —with its deep structure and transformative properties —found its startling resonances and direct reference in the architecture of Peter Eisenman,⁸¹ and implicitly in the likes of Christopher Alexander,⁸² Kevin Lynch,⁸³ and Aldo Rossi,⁸⁴ to name a few. In the same manner, the data-driven approach goes beyond any discipline into any space that accommodates a lot of data.⁸⁵

78 Chomsky, *Syntactic Structures*, 50.

79 Shannon, "A Mathematical Theory of Communication."

80 Peter Norvig in his essay *On Chomsky and the Two Cultures of Statistical Learning* points out the trends in NLP: "Search engines: 100% of major players are trained and probabilistic. Their operation cannot be described by simple function. Speech recognition: 100% of major systems are trained and probabilistic, mostly relying on probabilistic hidden Markov models. Machine translation: 100% of top competitors in competitions use statistical methods. Question answering: this application is less well-developed, and many systems build heavily on the statistical and probabilistic approach used by search engines. Clearly, it is inaccurate to say that statistical models (and probabilistic models) have achieved limited success; rather they have achieved a dominant (although not exclusive) position." See Norvig, "On Chomsky and the Two Cultures of Statistical Learning."

81 See Jeffrey Kipnis and Peter Eisenman, *By Other Means: Notes, Projects, and Ephemera from the Miscellany of Peter Eisenman*, ed. Mathew Ford (New York, NY: Global Art Affairs Publishing, 2017).

82 Alexander's approach attempts to derive linguistic universals in architecture from a highly stable basis of natural phenomena. See Christopher Alexander, *A Pattern Language: Towns, Buildings, Construction* (New York: OUP USA, 1978).

83 Lynch is trying to pin down the city on a map by classifying five important elements. See Kevin Lynch, *The Image of the City* (MIT Press, 1960).

84 Rossi in his theory of type wants to find the very idea of architecture; that which is closest to its essence, and use it as the principle of architecture and of the city. See Aldo Rossi, *Architettura Della Città* (MIT Press, 1966).

85 "Big Data," in Wikipedia, November 29, 2018, https://en.wikipedia.org/w/index.php?title=Big_data&oldid=871190082.

What becomes interesting is that both of our protagonists, as a way of stating the relevancy of their approaches, try to naturalise the phenomena at stake. *NC_GA* naturalizes the universal grammar and *PN_DDA* gives natural powers to data.

1.3.2.3 Two Legitimations

NC_GA:

Let us consider with somewhat greater care just what is involved in the construction of an “acquisition model” for language. A child who is capable of language learning must have

- (i) a technique for representing input signals*
- (ii) a way of representing structural information about these signals*
- (iii) some initial delimitation of a class of possible hypotheses about language structure*
- (iv) a method for determining what each such hypothesis implies with respect to each sentence*
- (v) a method for selecting one of the (presumably, infinitely many) hypotheses that are allowed by (iii) and are compatible with the given primary linguistic data⁸⁶*

PN_DDA:

So, follow the data. Choose a representation that can use unsupervised learning on unlabeled data, which is so much more plentiful than labeled data. Represent all the data with a nonparametric model rather than trying to summarize it with a parametric model, because with very large data sources, the data holds a lot of detail. For natural language applications, trust that human language has already evolved words for the important concepts. See how far you can go by tying together the words that are already there, rather than by inventing new concepts with clusters of words. Now go out and gather some data, and see what it can do.⁸⁷

NC_GA starts to develop a way to relate the universal grammar with a specific innate faculty of the human brain (in five points). His universal grammar, in effect, becomes an innate grammar with which every human is born. On the other hand, *PN_DDA* finds natural ground

⁸⁶ Chomsky, *Aspects of the Theory of Syntax*. ebook, loc 96.6 / 560.

⁸⁷ Norvig, “On Chomsky and the Two Cultures of Statistical Learning.”

in the data itself. Data gets an agency and becomes almost like a natural resource (e.g., wind). *NC_GA* assumed that language is not about the narrative memory and reduced the complexities of a language to pure syntax; he focuses his aspirations in what he calls universal grammars. In a way, he places his hopes in functions, laws, machines, on something that we will later call the *stage* of an *Informational Instrument*.⁸⁸ With *PN_DDA*, we have the opposite approach. He uses George Box's claim that "*all models are wrong but some are useful*" and emphasises the unreasonable effectiveness of data. For him, the 'truth' is not explicit as a function anymore, like it is for *NC_GA*, but it is implicit in the data. He takes the side of data, libraries and what we will later call *actors* in an *Informational Instrument*.⁸⁹

An Informational Instrument takes into account both sides of this discussion and tries to abstract from them. When data, information and its treatment are not seen as a direct reflection of nature, questions around it become more personal and subtle: what do I like, where can I find information about it? What can I symbolise and encapsulate with it? How do I encode this data and articulate an interesting character out of it? Probability space of my characters becomes relative to the libraries I am working with and the way I encode those libraries. Within an *Informational Instrument*, this dilemma becomes a double articulation between its stage (encoding) and the actors (data). It is symbolised and encapsulated in the characters of a new probabilistic alphabet that goes beyond objective and subjective, practical and poetic.

1.3.3 Probabilistic Alphabet

Symbols are not proxy for their objects, but are vehicles for the conception of objects.

—*Susanne K. Langer, Philosophy in a New Key*⁹⁰

In an almost paradoxical move of finding justification for working with language and text in nature, both *NC_GA* —by naturalising the idea of grammar as innate —and *PN_DDA* —by naturalising the abilities of data —do not take into account something I would like to refer to as the algebraic symbolicity of information. Susanne Langer, in her book *Philosophy in a New*

88 See 2.4 *GENERIC MACHINE: Stage, Algorithms, Encoding*.

89 See 2.3 *XENOTHEKA: Actors, Data, Pre-Specific Library*.

90 Susanne Katherina Knauth Langer, *Philosophy in a New Key: A Study in the Symbolism of Reason, Rite, and Art* (New American Library, 1942), 49.

Key, addresses this problem of blindly identifying truth with empirical fact, or in other words, the problem of justifying propositions by analogies with nature. For her, the power of symbols becomes key in challenging of what she calls the uncritical positivistic empiricism: “*the triumph of empiricism in science is jeopardized by the surprising truth that our sense-data are primarily symbols.*”⁹¹ Langer’s symbols don’t have a fixed meaning; rather, there is always a whole spectrum of interpretations and meanings that can be assigned to them algebraically. To see what might be the fantasy of relating these kinds of symbols to probabilistic alphabets, let us for a moment look at how Langer in a captivating way relates symbols to mathematics.

*Behind these symbols lie the boldest, purest, coolest abstractions mankind has ever made. No schoolman speculating on essences and attributes ever approached anything like the abstractness of algebra. Yet those same scientists who prided themselves on their concrete factual knowledge, who claimed to reject every proof except empirical evidence, never hesitated to accept the demonstrations and calculations, the bodiless, sometimes avowedly “fictitious” entities of the mathematicians. Zero and infinity, square roots of negative numbers, incommensurable lengths and fourth dimensions, all found unquestioned welcome in the laboratory, when the average thoughtful layman, who could still take an invisible soul-substance on faith, doubted their logical respectability.*⁹²

Langer suggests that the secret of mathematics lies in the way it addresses reality. It never talks about the world in a direct and explicit way. Scientists today work more and more in this manner, as we have seen with *NC_GA* and *PN_DDA*. Their work becomes more formal, abstract, and open. Without directly accessing the objects of study, they look at objects relationships, measure their shadows, rely more and more on calculation. “*Not simply seeing is believing, but seeing and calculating, seeing and translating.*” When thinking of big data and information, its symbolic and algebraic character points us in the same direction. This is where things get complicated. Sensory data becomes only a part of what one is looking at, while calculations, translations, interpretations, and stories make up the rest of the phenomena. This is what Langer calls the new comprehension of science, where the “*power of symbolism is its cue, as the finality of sense-data was the cue of a former epoch.*”⁹³ *NC_GA* and *PN_DDA* play both epochs at the same time. They work in a formal and abstract manner with symbols and data but, on the other hand,

91 Langer, 16.

92 Langer, 14.

93 Langer, 16.

they want to ground them and find reason behind them.

What if one symbolise objects and their relations by leaving open what they might become? In doing so, information and data can get their symbolic face, take into account the natural, as well as the synthetic and the artificial. When placing the same symbol in different relationships, its character becomes probabilistic. Its alphabets start to behave in an algebraic way by constantly changing their positions, by inverting, exchanging, mirroring, substituting. In equating their movements, one is able to symbolise any quantity and quality, depending on the context and its encoding. The beauty of these kinds of characters is that they can glow in many colours and be filled and emptied in many ways. They are both a letter and a number, a symbol (notation) and a mood (atmosphere).

Later in the text, I will refer to the characters of this probabilistic, symbolic, algebraic, and computational alphabets as *atom-letters*.⁹⁴ *Play Among Books* will try to perform writing in such alphabets.

1.3.4 Algebraic Author

Who am I if I start to write in a probabilistic alphabet, with *atom-letters*? An author, a collective, a brand? A translator, a commentator, a facilitator? A guest, a servant, a host? In writing this text, my role (*R*), and the author-function (*AF[x]*), as Michel Foucault articulates it in *What is an Author*,⁹⁵ changes many times.

1.3.4.1 *R[AF[ch1,ch4]]*

In the first and fourth chapter of this text, author-function is the closest to what Barthes and Foucault call the modern author or the author of the seventeenth and eighteenth centuries.⁹⁶ Unlike with Barthes and Foucault, in contemporary architectural discourse, authorial author function is

94 See 2.5 *MACHINE INTELLIGENCE: Play, Concepts, Atom Letters*.

95 Michel Foucault, "What Is an Author?," in *Language, Counter-Memory, Practice: Selected Essays and Interviews* (Oxford: Basil Blackwell, 1978), 113–38.

96 See Foucault., Roland Barthes, "The Death of the Author," *Media Texts, Authors and Readers: A Reader*, 1994, 166.

still of importance. Architectural theorist Mario Carpo, in his book *The Alphabet and the Algorithm* refers to it as the generic author.⁹⁷ His generic author comes from the crisis of an authorial paradigm. The author-function there is to situate the artefact in context, point to certain groups of discourses, and refer to the relevance of the artefact for a specific community. In other words, every text should state its author, the date, place, and circumstance of its creation. One authorial voice gives one ultimate and universal meaning to the work. Artefact points to its author who is outside and precedes it. Carpo's generic author stays in the same paradigm, keeping an authorial voice, but instead of authoring single and unique artefacts it authors a generic system of internal endless variability—the objectile:⁹⁸

*To embrace digital authorship in full, however, designers will need to rise to the challenge of a new, digitally negotiated, partial indeterminacy in the process of making form. And this will not be easy, as no architect was ever trained to be a generic author—nor, most likely, ever had the ambition of becoming one.*⁹⁹

In this manner, *Prologue* and *Epilogue* are the reflective parts of this text, where I try to index the known positions in several discourses and set the stage and an atmosphere for the *Play Among Books*.

1.3.4.2 R[AF[ch2]]

In the articulation of an *Informational Instrument* in the second chapter, the author-function is different. When seen through Barthes' eyes it is articulated as *The Death of the Author*.¹⁰⁰ Although with an *Informational Instrument* it is clear who assembled it, the instrument as such is independent of the authorial meaning. An *Informational Instrument* becomes an anonymous product of many factors. The author is not the guarantee of its truthfulness, rather its reproducibility, verifiability, and convincingness of its performance, together with a coherent conceptual cloud around it articulate its credibility. What is at stake is the performativity of forms, procedures, and plays enabled by this instrument. An *Informational Instrument* with its

97 Mario Carpo, *The Alphabet and the Algorithm* (MIT Press, 2011).

98 See Patrick Beaucé and Bernard Cache, *Objectile, Fast-Wood: A Brouillon Project* (Berlin, Boston: De Gruyter, 2007), <https://www.degruyter.com/view/product/212277>.

99 Carpo, *The Alphabet and the Algorithm*, 127.

100 Barthes, "The Death of the Author."

many symbolic poems¹⁰¹ is an open-ended algorithm ready to be tuned to a range of variable informational flows, and performers. Barthes talks about a similar phenomenon when he refers to the modern writer (not author anymore) who is born with his text, by endlessly elaborating form, procedures, and performativity of it. Barthes writer is able to do so because for him the locus of writing is reading. The reader is the one that unites the multiplicity of a text. If we multiply Barthes' reader, we get another aspect of the death of the author. The crowd. Text becomes a generic nebula of all the readers, their readings and produced meanings. With Barthes, the author is dissolved in the structural performativity of the text, and in the generic nebula of any possible reading that constitutes the text:

In this way is revealed the whole being of writing: a text consists of multiple writings, issuing from several cultures and entering into dialogue with each other, into parody, into contestation; but there is one place where this multiplicity is collected, united, and this place is not the author, as we have hitherto said it was, but the reader: the reader is the very space in which are inscribed, without any being lost, all the citations a writing consists of; the unity of a text is not in its origin, it is in its destination; but this destination can no longer be personal: the reader is a man without history, without biography, without psychology; he is only that someone who holds gathered into a single field all the paths of which the text is constituted.¹⁰²

1.3.4.3 R[AF[ch3]]

In the third chapter, *A Plentiful Play*, by playing an *Informational Instrument*, I start to synthesize Foucault's author-functions, bring them in relations, and start to play with them. With Foucault author is a function of the system of the text, a voice hidden in the glamour of a discourse:

[...] the 'author-function' is tied to the legal and institutional systems that circumscribe, determine, and articulate the realm of discourses; it does not operate in a uniform manner in all discourses, at all times, and in any given culture; it is not defined by the spontaneous attribution of a text to its creator, but through a series of precise and complex procedures; it does not refer, purely and simply, to an actual individual insofar as it simultaneously gives

101 See *Chapter 2 Informational Instrument*.

102 Barthes, "The Death of the Author," 170.

*rise to a variety of egos and to a series of subjective positions that individuals of any class may come to occupy.*¹⁰³

If we imagine that a library (*Xenotheka*)¹⁰⁴ of an *Informational Instrument* is a specific synthetic discourse (a galaxy), then each of its books relates to this discourse via an author function. By playing an instrument I can encode and symbolise these artificial author functions, and expose books which are my actors to different discourses (*Xenothekas*). I can host symposia. This is a synthetic process, not reading, as it is with Barthes. It is a process of writing with new and temporal characters: *atom-letters*. When writing in probabilistic letters, one takes into account synthetic algebraic symbolicity of information, and computational performativity of digital text. This probabilistic alphabet is biased, from many sides. It comes from the book, the library and the player. Writing in probabilistic letters is playing of an *Informational Instrument*. It is an act of measurement and performance. Its measures are relative, its performance is biased to a context, its sophistication dependant on the performer. This is the play. Each book or a concept in the play is a part of the atmosphere in which a performer wants to be. With each new story, comes a new library, and a book shows a new face. It grows, its character gets subtle and refined. A book depends on the library, and the library is relative to its books. The library is an identity, and so is each book. One is writing with a lot, hosting symposia and articulating brands. An author becomes a shef of voices. A host of a symposia?

This is my fantasy of what might be writing in digital literacy.

103 Foucault, "What Is an Author?," 131.

104 *Xenotheka* is a personalised computational library. See 2.3 *Xenotheka*.

1.4 DRAMA

It is the mode of handling problems, rather than what they are about, that assigns them to an age.

—Susanne K. Langer, *Philosophy in a New Key*¹⁰⁵

Play Among Books, while addressing architecture and information, wants to present one possible scenario of what a digital literacy might be about, not by theorising it, but by assembling an *Informational instrument* and performing two plays with it. This gesture in an implicit way talks about how it might feel to be an active and literate citizen in a paradigm emanated by information technologies, computers, and abundant with data and information. In trying to think of what such a paradigm could be about, *Play Among Books* relies on ideas and concepts that come from the cloud formed by Foucault's *Episteme*,¹⁰⁶ Langer's *Keys*,¹⁰⁷ Havelock's shifts in literacy,¹⁰⁸ and McLuhan's *Galaxies*.¹⁰⁹ One way of bringing these authors and approaches together is their interest in the ways questions are asked, in ways how each epoch, *Body of Thinking*,¹¹⁰ or an *Episteme*, has its own manner of posing questions. The way a question is formulated, Langer points out, holds implicit assumptions that assigns it to an age, or a system of thought.¹¹¹ Context and conditions of possibility for asking questions are different in each *Body of Thinking*. They set the stage and give a palette for the ways in which questions can unfold and their plays can be articulated.

105 Langer, *Philosophy in a New Key*, 1.

106 For more on the notion of an *episteme*, see Michel Foucault, *The Order of Things: An Archaeology of Human Sciences* (Knopf Doubleday Publishing Group, 1966).

107 For more on Langer's notion of a Key, see Langer, *Philosophy in a New Key*.

108 For more on a shift from an oral culture to a written culture, see Havelock, *Preface to Plato*.

109 For more on a conceptual galaxy developed around Gutenberg press, see McLuhan, *The Gutenberg Galaxy*.

110 For more on *Bodies of Thinking*, see Ludger Hovestadt, "Cultivating the Generic," in *Eigenarchitecture*, ed. Ludger Hovestadt and Vera Bühlmann (Birkhauser Architecture, 2014), 07–68.

111 Langer, *Philosophy in a New Key*.

1.4.1 Play

One manner of setting the stage in an appropriate way that can accommodate the abundance of information, multiplicity of its avatars, and alphabets is a play. A play with its cuts, breaks, pauses, acts and scenes, articulates distinct local atmospheres that are always a part of the global weather of the play. As the atmosphere in the play changes, its characters change their mood. A play, as a form, can accommodate symposiums where actors can express their many faces, be a letter and a mood, encode the subjective and the objective, symbolise its quantity and quality, change masks and dresses, be a character of a book and a library, at once synthetic and analytic, produce paradoxes, and stay unsettled. Actors can play with their informational identities without the need of becoming defined individuals.

In the breaks between the acts the stage is rearranged, instruments are tuned for the new act, actors regroup, some leave, others change costumes. One can imagine a *Play Among Books* as an atmosphere where with each play the global and the local (play and scene) meet in a new way and coexist without the need of explicating either of them. The local is an empty cypher in the global, and the universal is an emptiness indexed by many particularities. Both are algebraic, treated qualitatively and can symbolise anything.

Play Among Books presupposes the existence of an *Informational Instrument* and the infinite streams of books.

1.4.2 Instrument

The Informational Instrument brings the plenty into a *Play Among Books*. With it, one can access text on the level of digital information. Its play facilitates actors with different alphabets that give them the ability to express themselves. It brings points of potential to the stage. Tuning of its machines and algorithms, and the choice of its libraries by its player sets the stage and the tone of the play. Each book is encoded into a cypher of its library. It gets its code name and becomes an actor. The books' authors don't speak directly; they are author-functions of a given library. Same goes for concepts and libraries. They all become characters that can speak to other characters of the same alphabet, but are part of many alphabets. This is a biased setup from many sides. While

being played, *the Informational Instrument* brings into relation the player, the book, and the library. It is consistent and convincing only if there is an interest, curiosity and a personal question that unfolds in the play. The *Informational Instrument* as an object can only be partially validated, but if one insists on its verification, the instrument will be ‘destroyed’. It will not be able to perform plays since it will become a poor scientific instrument. Its performance in a similar manner cannot be evaluated exclusively in terms of quality or quantity since it operates in-between subjective and objective, but can rather be discussed on the level of consistency, sophistication, and ability to provoke atmospheres where concepts and books can show their new faces.

1.4.3 Elements

Play Among Books is composed out of four parts. Three parts could stand on its own; *Informational Instrument*, *Plentiful Play*, *Canzoniere of four Generic Poems*, and the framing of the work: *Prologue* and *Epilogue*. The generic poems set and keep the mood throughout the text. They are complemented with symbolic poems that compose the *Informational Instrument*. These two ways of writing —generic and symbolic —articulate each other in the play of an *Informational Instrument*. The second Chapter *Informational Instrument* introduces the notion, fantasy, and elements of an *Informational Instrument*. It proposes a way to assemble, perform and play with it. The third chapter *A Plentiful Play* in its two plays facilitates talks about information and architecture. It does so without trying to define them or by following a strict methodology, but by playing an *Informational Instrument*. In exposing concepts to the abundant flows of data, it tries to think of what they might be about if they are thought of from the *Body of Thinking* introduced in the *Prologue* and *Epilogue* (*first* and *fourth chapter*). In the *Plentiful Play* the role of the player (me), its interest, motivation and sophistication become crucial. This, as a gesture, might be unconventional for an academic work, but in my understanding the beauty of such an instrument cannot be shown without a convincing performance. It is imagined and projective, yet quantitative. It is measurable, yet it can symbolize any quality. My efforts lie here.

INFORMATIONAL INSTRUMENT

Composing the Great Bear

One room was filled with unknown instruments, another had shrunk so much that he could not enter it; another one had not itself changed, but its windows and doors opened onto great sand dunes.¹ When I asked him where these machines were, he told me that they had already been made in ancient times, and some even in our own time: "Except the flying instrument, which I have never seen or known anyone who has seen, but I know of a learned man who has conceived it".² He crafted an instrument from cacophony.³ The ancients coined a poetic name for such instrumentality: a Cornucopia.⁴ We know that this instrument has been perfected by the long continued efforts of the highest human intellects; and we naturally infer that the eye has been formed by a somewhat analogous process.⁵ We Stoics, therefore, compare the tongue to the bow of an instrument, the teeth to the strings, and the nostrils to the sounding board.⁶ We perceive it when one bubble dissolves another, when medicines attract humors from a similarity of substance, when one string moves another in unison with it on different instruments, and the like.⁷ Keeping this idea definitely in mind, if we imagine a line drawn from the northern side of the circumference (N) to the side which lies above the southern half of the axis (S), and from here another line obliquely up to the pivot at the summit, beyond the stars composing the Great Bear (the pole star P), we shall doubtless see that we have in the heaven a triangular figure like that of the musical instrument which the Greeks call the "sambuca".⁸ We shall not therefore pretend to say any thing of Modulation, or the particular Rules of any instrument; but only speak of those Points which are immediately to our Subject, which are these.⁹ The assumption was that errors could be made "as small as might be desired, by careful instrumentation, and played no essential role".¹⁰ Mechanical laws are supposed to be reversible in time, but this is true only if errors and experimental uncertainties are completely ignored.¹¹ The aesthetic beauty exemplarily achieved here, at the cost of a functional lack, is the beauty of unforeseeable metamorphoses, the conjunction of life's randomness with random vegetation, climate and makeshift instruments.¹²

^{1,3} Jorge Luis Borges, *Collected Fictions*, ² Umberto Eco, *The Name Of The Rose*, ⁴ Vera Buhlmann, *Mathematics and Information in the Philosophy of Michel Serres*, ⁵ Charles Darwin, *On the Origin of Species: A Facsimile of the First Edition*, ⁶ Marcus Tullius Cicero, *The Tusculan Disputations*, ⁷ Francis Bacon, *Novum Organum*, ⁸ Vitruvius Pollio, *The Ten Books on Architecture*, ⁹ Leon Battista Alberti, *The Ten Books of Architecture*, ^{10,11} Leon Brillouin, *Science and Information Theory*, ¹² Jacques Ranciere, *Aisthesis: Scenes from the Aesthetic Regime of Art*.

2.1 PROLEGOMENA TO AN INFORMATIONAL INSTRUMENT

An *Informational Instrument* is a vessel for navigating, exploring and enjoying informational flows, and the abundant seas of information. This chapter will introduce the notion and fantasy of an *Informational Instrument*: its promise, its nature, its elements, its mechanics, a way to assemble it, and give a few proposals on how a performer could play and treat it. An *Informational Instrument* is an instrument for playing with the abundance of information, with *the big plenty*, and *the great many*; with a *lot*. While being played, it can talk to libraries, scan entropic flows of books, synthesize and learn from multiple characters that inhabit and articulate those libraries. It is an instrument that enables two different species to communicate. In this play, it establishes a communication channel between the performer —the one who is playing the instrument— and an infinite stream of books —the phenomenon one wants to play and communicate with. With this in mind, the instrument will be assembled, tested, tuned and later, in a *Plentiful Play*, performed with (Fig. 2.1).

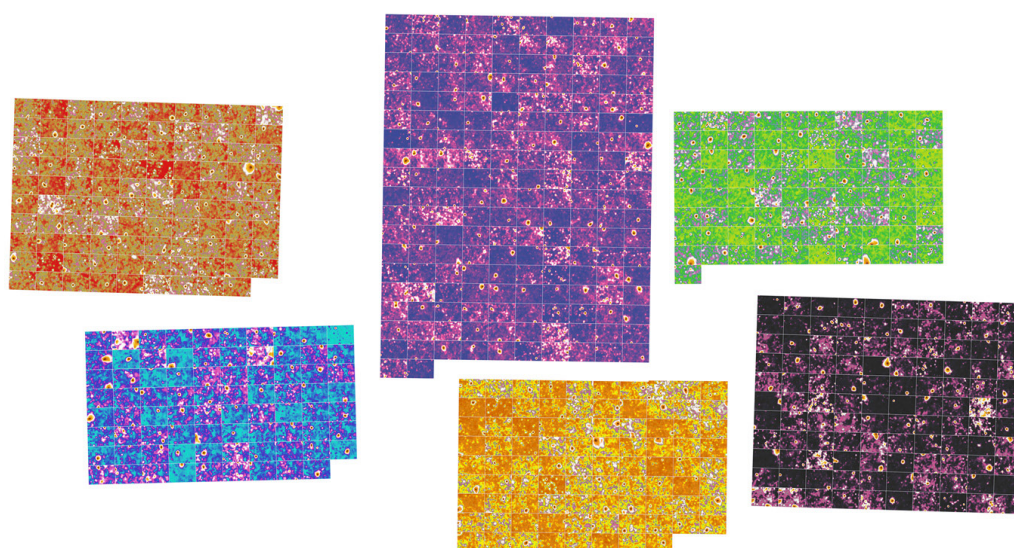


Fig. 2.1 Six Characters from a *Plentiful Play*

2.1.1 *The promise of an Informational Instrument*

The promise of this instrument is that, by playing it, one will be able to tap into the infinite stream of books. By partitioning the stream, and tuning the instrument in various manners, many libraries will form and communication channels will be constituted. Libraries and books will start talking; different voices will appear. As one plays the instrument, one plays with the big plenty and its libraries, stages the books as actors in various ways, and lets them show their most prominent and beautiful concepts. By playing and learning with it, an *Informational Instrument* should become a personal intellectual ground for talking to an infinite stream of books, unknown concepts, and various libraries.

This promise will be fulfilled in a form of a play in the next chapter —*Plentiful Play*.

2.1.2 *The nature of an Informational Instrument*

An *Informational Instrument* is an instrument that shows its beauty when exposed to a flow of information. In itself, it is constituted as a never-ending spiral - a double articulation. On one hand, it consists out of *data, books, actors*, and, on the other hand, of *algorithms, machines, and a stage*. Each side of this double bind in itself has two faces: an inside and outside, an intimate and public part. A *Bibliotheka* and a *Xenotheka* are on the side of data and actors, *Generic Machine* (players' tuning of the instrument) and *Machine Intelligence* (synthetic alphabets articulated and projected by the machine intelligence) are on the side of the stage and algorithms. This relation, depending on what one is looking at —data, books, actors —and how is one looking —algorithms, machines, stage —constitutes an *Informational Instrument*. Circular relation between the elements is the play of the instrument.

An *Informational instrument* has qualities of both scientific and musical instruments. It measures and performs. However, in the one and the same act, the way it measures is not by wanting to provide an exact representation, an image or a proper depiction of relations that assume the phenomenon, but by encoding characters of the phenomenon in numerous and rigours ways, by indexing them with as many indexes one can find and think of. On the other hand, the way it is played does not constitute an independent artistic expression, but an articulation out of a context

of relations encoded in a specific manner. By always being articulated two times from two sides —by *actors* and the *stage*, and by the *performer* and the *machine*— in a circular movement, an *Informational Instrument* goes beyond the dichotomies of subjective and objective, true and false, good and evil, in the sense of being able to take into account and operationalise both sides of an otherwise troubling paradox. At the same time, an *Informational Instrument* finds its stability in the *encoding process* and its many *ambient milieus*. The probability space of an *Informational Instrument* is relative to these articulations, encodings and milieus.

Instead of being useful in a particular way —as a tool —an *Informational Instrument* exposes a phenomenon and operationalises it in many manners —like a computer.¹ An *Informational Instrument* can, in principle, work with any kind of data. In this play, it is assembled and tuned to operate with text. Thinking about what an *Informational Instrument* is and how to play it will be a recurrent theme throughout this whole work.

2.1.3 Elements of an Informational Instrument

An *Informational Instrument* constitutes a channel and provides a context for communication with an infinite flow of books. This flow is generic in content (any content), but specific in its form (text). An *Informational Instrument* articulates the flow in terms of discrete libraries of any content and size. In itself, it is composed out of *symbolic poems*² written in a programming language.³ The *Informational Instrument* consists out of four elements.

2.1.3.1 BIBLIOTHEKA: Flow, Crawler, Generic Book

Bibliotheka is plentiful. The flow never stops. It is continuous, entropic, and infinite. *Bibliotheka* is the flow of books articulated in terms of discrete libraries. To access the flow of books — an infinite stream of data —an *Informational Instrument* uses a Crawler. A Crawler is a

1 For more on computers as any machine, see Ludger Hovestadt, “A Fantastic Genealogy of the Printable,” in *Applied Virtuality Book Series Printed Physics — Metalithikum I*, ed. Dr Vera Bühlmann and Dr Ludger Hovestadt (Springer Vienna, 2013), 18–70.

2 There are 11 symbolic poems that, at the moment, constitute this version of an *Informational Instrument*.

3 Programing language in which computational part of *Play Among Books* was written is *Wolfram Mathematica*. For more see “Wolfram Mathematica: Modern Technical Computing,” accessed August 30, 2018, <https://www.wolfram.com/mathematica/>.

symbolic poem, an algorithm, a bot, that scrapes data from a generic flow of books. It constitutes a temporal partition of the flow: *Bibliotheka*.

2.1.3.2 XENOTHEKA: Actors, Data, Pre-Specific Library

Xenotheka is a framing, a memory, an interest of the performer, an ambient milieu for a question to the generic flow of books —*Bibliotheka*. This is an internal context of the *Informational Instrument*, in other words, a performer's curiosity encoded into *atom-letters*. *Xenotheka* changes with the play of the *Informational Instrument*. It is always in motion, discrete, but never fixed. Books inhabit *Xenotheka*; they are its actors, constantly migrating, moving, inhabiting and indexing many libraries at the same time. The books —the actors — are never alone, they are always a part of multiple libraries, literacies, and noisy conversations. They show a different character in each library. *Xenotheka* is an ever-changing internal library of an *Informational Instrument*.

2.1.3.3 GENERIC MACHINE: Stage, Algorithms, Encoding

Generic Machine, encoding mechanism, or a stage, is an apparatus for indexing *Xenotheka* in multiple ways. Every book gets indexed by all the other books in the library. Indexes just point; they don't represent; each index points to all the books in *Xenotheka*.⁴ An *index* simultaneously reflects the whole library and a specific book. *Actors* and the *Stage* (*Xenotheka* and the *Generic Machine*) are two parts a double bind. Their relation provides an informational encoding both to the library and the books which, in effect, become abstract informational objects encoded into numbers — multidimensional vectors. That is to say, the library is encoded in its own terms by the stage.⁵ The library becomes a body, rather than a collection. A *Generic Machine* constitutes the *informational face* of *Xenotheka* and all of its books. *Xenotheka* is never fixed; it has many *informational faces*.

2.1.3.4 MACHINE INTELLIGENCE: Play, Concepts, Atom-Letters

Machine intelligence is an informational motor of an *Informational Instrument*. Here, an

4 For more on the notions of an index and indexing, see 2.4 *Generic Machine*.

5 Vera Bühlmann, "Articulating a Thing Entirely in Its Own Terms Or: What Can We Understand by the Notion of «engendering» ?," in *Eigenarchitecture*, ed. Ludger Hovestadt and Vera Bühlmann (Birkhauser Architecture, 2014), 69–127.

informational play starts to show its beauty. *Machine intelligence* accompanies both the performer and *Xenotheka* in the play. *Self-Organizing Map*⁶ is an algorithm that articulates this interplay. Encoded by the relation of the *Xenotheka* and the *Generic Machine*, and animated by *Machine Intelligence*, indexes start to form a *galaxy of concepts* — a new alphabet of *atom-letters* that give expressions to the *informational faces* of books. This is a domestic space of the performer, his synthetic memory which he never had, encoded into *atom-letters*.⁷ A *Plentiful Play* is always forming new temporal alphabets, galaxies and ambients in which actors — books — perform by showing and articulating their many faces.

2.1.4 Mechanics of an Informational Instrument

A circle and a double articulation.

Xenotheka — *its actors* — in relation to the *Generic Machine* — *the stage* — constitute an encoding of the library (X-GM). *Machine Intelligence* articulates and symbolises this encoding into a new synthetic alphabet (GM-MI) — *atom-letters* — as a way to communicate with unknown books (MI-B) — *access the flow of Bibliotheka* — and reconstitute *Xenotheka* around a new question (B-X).

The circular play is articulated by *actors* and the *stage*, and by *tuning* and *projecting*. *Xenotheka* changes with the interest of the performer; he tunes the encoding accordingly (*Generic Machine*); a new *alphabet* is constituted (*Machine intelligence*); another part of the *flow* is accessed (*Bibliotheka*). A part of *Bibliotheka* is internalised, while a part of *Xenotheka* is externalised. Performer's curiosity changes; new actors arrive; all the faces change. A new question is asked via a new alphabet to a new ambient. A play continues with a twist.

This loop articulates a play. It constitutes a communication channel between an *Informational Instrument* and the flow of books and, by this, sets the stage for a *Play Among Books*. The play simultaneously operates on several levels of abstraction, always constituting new

⁶ Teuvo Kohonen, "Self-Organized Formation of Topologically Correct Feature Maps," *Biological Cybernetics* 43, no. 1 (January 1982): 59–69.

⁷ The notion of *atom-letters* is elaborated in 2.5 *Machine Intelligence*. This concept was introduced by Michel Serres in his book *The Birth of Physics*. For more see Michel Serres, *The Birth of Physics* (Clinamen Press, 1977).

synthetic alphabets of *atom-letters*.⁸ Informational objects get *informational faces*; they become actors and their faces start to get expressions in the play. They become intelligent in their own terms, ready to be challenged by the flow. In this manner, *Machine Intelligence* can articulate an intellectual ground, an atmosphere, a panorama, as well as a synthetic character, a brand, and an avatar for thinking with books and communicating with libraries.

2.1.5 *Playing an Informational Instrument*

To play an *Informational Instrument* is to talk to the unknown, and hopefully see the known in a new light. In this play, it means to talk to the books and libraries one has not seen or read — either just one book, a few, many, or an infinite stream. This also means to think with known books, but not by trying to see what is envisioned as a message in a book, but rather by trying to unlock more of what is conceived in a book by approaching it via its negative entropy, in terms of its new synthetic alphabet of *atom-letters*. Here, the negative entropy is relative to an ambient, context, interest of the performer, and is manifested in the consistency of *Xenotheka*.⁹

Xenotheka and the *Generic Machine* are encoding an interest of the player. This is the framing for a question to an unknown book —*Bibliotheka*. By playing an *Informational Instrument* in different manners —changing the content of *Xenotheka* and tuning the *Generic Machine* — the stage is changing and books —the actors— show their different faces in new atmospheres. Concepts leave books by still carrying them in their memories, and become articulated by many libraries and, consequently, by the world. Two libraries start to communicate: *Xenotheka* and *Bibliotheka*.

Playing an *Informational instrument* is playing with *Xenotheka* —its encoding —by asking questions to the infinite stream of books —*Bibliotheka*. Juggling with those elements is the play. Different ways in which one can set up the context by mixing the known books with the unknown,

⁸ In the *Plentiful Play*, *atom-letters* are usually indexed by words, books, and libraries.

⁹ Negative entropy in the sense of Erwin Schrödinger and Léon Brillouin. For more, see Erwin Schrödinger, *What Is Life? The Physical Aspect of the Living Cell* (Cambridge: Cambridge University Press, 1944), and Leon Brillouin, *Science and Information Theory: Second Edition* (Mineola, New York: Dover Publications, 2013 [1956]), kindle edition.

by making mutant books,¹⁰ by challenging the flow and the known library, by playing with different encodings, by introducing different levels of abstraction, depend on the sophistication of the player. As with playing any other instrument of this kind, it requires practice, patience, love, and knowledge. Learning how to play, learning what to play, learning with playing, is up to each performer.

This will be demonstrated in *Plentiful Play*.

2.1.6 *A proposal for an assembly of an Informational Instrument*

What follows is a detailed proposal for an assembly and tuning of an *Informational Instrument*. Basic elements and their mechanics will be elaborated in detail. The code, referred to as *symbolic poems*, is coded in Wolfram Language in Mathematica.¹¹ After constructing, tuning, and testing the *Informational Instrument*, two *Plays Among Books* will be performed, hopefully as a fulfilment of promises posed in this chapter.

¹⁰ I refer to a text which combines two or more books in a single txt file as a mutant book. This notion is explored in *Plentiful Play*.

¹¹ For more on Wolfram Language and Mathematica see “Wolfram Mathematica.”

2.2 BIBLIOTHEKA: *Flow, Crawler, Scraper*

“The universe (which others call the Library) is composed of an indefinite, perhaps infinite number of hexagonal galleries.”

[...]

“The arrangement of the galleries is always the same: Twenty bookshelves, five to each side, line four of the hexagon’s six sides; the height of the bookshelves, floor to ceiling, is hardly greater than the height of a normal librarian.”

[...]

“There are twenty-five orthographic symbols. That discovery enabled mankind, three hundred years ago, to formulate a general theory of the Library and thereby satisfactorily solve the riddle that no conjecture had been able to divine—the formless and chaotic nature of virtually all books. One book, which my father once saw in a hexagon in circuit 15-94, consisted of the letters M C V perversely repeated from the first line to the last. Another (much consulted in this zone) is a mere labyrinth of letters whose penultimate page contains the phrase O Time thy pyramids. This much is known: For every rational line or forthright statement there are leagues of senseless cacophony, verbal nonsense, and incoherency.”

[...]

“The Library is unlimited but periodic.”

—Jorge Luis Borges, *The Library of Babel*¹²

2.2.1 *The Generic Book*

The flow of information floods the generic plain: magazines, books, manifestos, images, videos, blogs, media... styles, approaches, thinking, schools, traditions, fashions... Upon indexing

12 Jorge Luis Borges, “The Library of Babel,” in *Collected Fictions*, trans. Andrew Hurley (New York, NY: Penguin Books, 1999), ebook, loc 270.2 / 1320.

the flow different streams appear. I will call one of them *Bibliotheka*. It is an ever-growing flow of books. It is unlimited but periodic. It never stops. On one Thursday in 2010, *Google* tried to place a counter in the flow and count how many books there are in *Bibliotheka*. That day they came out with a number of 129,864,880 books.¹³ Of course, this number was never verified, and never will be; while some books were hiding, some were banned, others made multiple copies under alias names, etc. Another counter, by *Kindle Store*, went from 88,000 available titles in 2007, to more than 6 million in 2018.¹⁴ Both counters give a rough scale—an index—for the circulation and growth of information in terms of books.

How to start thinking and imagining what would a book be in such a context? A book in an infinite flow of books, in a library of all the books? A book in *Bibliotheka* is a lost, invisible, and absent book. It speaks about everything and nothing specific, as any other book in such a library. It is a generic book. On the other hand, a library is, in itself, a generic book, considering that a book is always a part of a library, literacy, community, exchange, communication, and never alone. One way to start talking to the generic book—*Bibliotheka*— is to play an *Informational Instrument* and access the infinite stream of data, and in it the flow of books.

“We cannot cite titles from Borges’s library since the number of books in it is limitless, and because it is the shape of the library more than the subjects of its books that interests us. Libraries of Babel were dreamed of even before Borges.”

—Umberto Eco, *On Literature*¹⁵

2.2.2 Online Libraries

Bibliotheka is, in itself, constituted by a finite, ever-changing, but uncountable number of libraries and books. *Bibliotheka* is a flow of flows. It is a *Library of Babel*¹⁶ filled with *Books of*

13 “Books of the World, Stand up and Be Counted! All 129,864,880 of You.,” accessed August 30, 2018, <http://booksearch.blogspot.com/2010/08/books-of-world-stand-up-and-be-counted.html>.

14 “Kindle Store,” *Wikipedia*, June 24, 2018, https://en.wikipedia.org/w/index.php?title=Kindle_Store&oldid=847324355.

15 Umberto Eco, *On Literature* (Harcourt, 2005), ebook, loc 193.4 / 656.

16 Borges, “The Library of Babel.”

Sand,¹⁷ to use Borges' terms. Libraries that constitute *Bibliotheka* are of many kinds, each one with its own address,¹⁸ rules, codes and morals. Some of them offer free access to books, some are organised as shops, some share, others just index. All are part of the flow and available in some way. When accessing those libraries from a virtual address, another set of rules, codes and morals apply, this time specific to the virtual address. If the one exploring libraries is a physical person, then his physical address again has its own rules, laws, morals and codes. These addresses and the codes of behaviour they enforce are often not synchronous, but rather contrast or contradict each other. There is no singular or clear ethical, moral or juridical stance on the access to information on the web.¹⁹ On the other hand, specific territorial rules based on nation-state's laws are easily played with in the virtual by changing an IP²⁰ address of access, or of the library.²¹ Here are a few of the most prominent flows of *Bibliotheka* presented in their own terms:

<http://gen.lib.rus.ec>

*"The Library Genesis has reached the 2 million files mark!"*²²

<http://memoryoftheworld.org>

*"The vision of the Memory of the World is that the world's documentary heritage belongs to all, should be fully preserved and protected for all and accessible to all without hindrance."*²³

<http://gutenberg.org>

17 Jorge Luis Borges, "The Book of Sand," in *Collected Fictions*, trans. Andrew Hurley (New York, NY: Penguin Books, 1999).

18 Usually libraries have many mirror websites with different urls.

19 For more on Big Data, the processing procedures, and some of the associated ethical, legal and political issues see Antoinette Rouvroy, "Of Data and Men," *Fundamental Rights and Freedoms in a World of Big Data*, 2016.

20 "IP Address," *Wikipedia*, August 13, 2018, https://en.wikipedia.org/w/index.php?title=IP_address&oldid=854674755.

21 An example of setting up parts of the same project to different virtual addresses to avoid legal problems: "Project Gutenberg Australia hosts many texts that are public domain according to Australian copyright law, but still under copyright (or of uncertain status) in the United States, with a focus on Australian writers and books about Australia." See, "Project Gutenberg," in *Wikipedia*, January 21, 2019, https://en.wikipedia.org/w/index.php?title=Project_Gutenberg&oldid=879451717.

22 "Library Genesis," accessed September 8, 2018, <http://gen.lib.rus.ec/>.

23 "Memory of the World Library," accessed September 8, 2018, <https://library.memoryoftheworld.org/>.

*“Project Gutenberg was the first provider of free electronic books, or eBooks. Michael Hart, founder of Project Gutenberg, invented eBooks in 1971 and his memory continues to inspire the creation of eBooks and related technologies today.”*²⁴

<http://monoskop.org>

*“Monoskop is a wiki for collaborative studies of the arts, media and humanities.”*²⁵

<http://archive.org>

*“Internet Archive is a non-profit library of millions of free books, movies, software, music, websites, and more.”*²⁶

<http://books.google.com>

*“Search the world’s most comprehensive index of full-text books.”*²⁷

<http://amazon.com/Kindle-eBooks>

*“Online shopping from a great selection at Kindle Store Store.”*²⁸

Each library gives a different context and a flavour to its books. There are many of them and they can mix. The fantasy comes from being able to talk to any of them. When looked as data streams, these curated databases, libraries and their books gain informational abilities. Libraries become streams with directionalities, without borders, but of many intensities. Via indexing, they can relate to any other stream of the same kind; via encoding, specific streams are then rendered to spectrums. Libraries and their books become computational objects. They acquire *informational*

24 “Project Gutenberg,” Project Gutenberg, accessed September 8, 2018, <http://www.gutenberg.org/>.

25 “Monoskop,” accessed September 8, 2018, <https://monoskop.org/Monoskop>.

26 “Internet Archive: Digital Library of Free & Borrowable Books, Movies, Music & Wayback Machine,” accessed September 8, 2018, <https://archive.org/>.

27 “Google Books,” accessed September 8, 2018, <https://books.google.com/?hl=en>.

28 “Amazon.Com: Online Shopping for Electronics, Apparel, Computers, Books, DVDs & More,” accessed September 8, 2018, <https://www.amazon.com/Kindle-eBooks>.

faces. Indexes fill the surrounding air. Books and Libraries start to talk.²⁹ As one of the first steps in establishing communication between *Bibliotheka* and *Xenotheka*, an *Informational Instrument* uses one of its poems: an algorithm, a *Crawler*. It scrapes data from a generic flow of books in a periodic manner.³⁰

2.2.3 Crawlers, Bots and Spiders

How to start playing an *Informational Instrument*? How does one behave in an infinite flow of books, in a flood of data? Digital flow is a part of an informational planet whose atmosphere is a blend of many flows, currents, waves and tides. Informational flows and streams don't follow an explicit law. There are many codes of behaviour and they are different in different parts of the flow, some written in a new kind of literacy.³¹ They are articulating a digital agora in which *virtual, actual, real and possible*³² form new spectra and encodings of the private and the public. The new publicity is not reserved only for big clouds like Google, Facebook, Amazon, but anyone able to read and write in this new way is welcome. There are many flows and streams, communities and atmospheres. I would propose that, as an avatar in a flow, one should behave like a search engine: scanning, indexing, filtering, and taking snapshots of phenomena one finds interesting. This, of course, means that in order to start playing the *Informational Instrument* one needs to step into the flow. Suddenly, one is dealing with millions of informational objects while not being stunned by the sheer number of them. The first steps are the first *symbolic poems*. One needs to write a crawler, a bot, a small program and collect. As literacy grows the *poems* become more sophisticated, powerful, and beautiful. Below are two *symbolic poems* that can collect all the available books from two online libraries of different characters. Each library requires a slightly different approach, a new poem, a specific crawler:

2.2.3.1 Bot 1: Project Gutenberg

A small poem —one line of code —downloads the whole library of *Project Gutenberg* in one

29 This is developed and demonstrated in the chapter 2 *Plentiful Play*.

30 "Web Crawler," *Wikipedia*, August 25, 2018, https://en.wikipedia.org/w/index.php?title=Web_crawler&oldid=856413510.

31 Vera Bühlmann, Ludger Hovestadt, and Vahid Moosavi, *Coding as Literacy: Metalithikum IV* (Birkhäuser, 2015).

32 Gilles Deleuze, *Bergsonism*, trans. Hugh Tomlinson and Barbara Habberjam (New York: Zone Books, 1991), 96.

day. Over 57,000 free eBooks are potentially on my computer, at the end of my fingertips. A simple and powerful poem.

```
SymbolicPoem01_ProjectGutenberg
```

```
{SystemOpen["http://www.gutenberg.org/ebooks/" <> ToString[#] <> ".epub"], Pause[3]} & /@ Range[57 000]
```

2.2.3.2 Bot 2: Library Genesis poem

Another library, another approach. By writing one more poem, one is granted access to more than two million e-books. The process is a little more complicated and the poem is more sophisticated.

Library Genesis offers its whole catalogue for download:³³

http://libgen.io/libgen/content/libgen_content.rar

A crawler will use this catalogue to search and download a specific kind of books. Books should be in the English language, and in a specific format: epub, mobi, azw, and azw3.³⁴ Only books longer than 5000 words will be considered.

```
SymbolicPoem02_LibraryGenesis
```

```
firstBook = 1; lastBook = 2 000 000;
path = "http://library1.org/_ads/";
libgenLibrary = Import["/Users/romanmir/Desktop/libgen_content.txt"];
libgenLibrary = StringSplit[libgenLibrary, "\n"];

books = libgenLibrary[[firstBook ;; lastBook]];
books = StringReplace[#, {"\\\"\\\"\" -> "\"", "\\\"\\\"\" -> "\"", "\\\"\\\"\" -> "\" \\\\"} & /@ books;
books = StringSplit[#, "\""] & /@ books;
books = Select[books, Length[#] = 84 &];
bookCoordinates = Flatten@Position[books[[All, 66]], "epub" | "mobi" | "azw" | "azw3"] ∩
  Flatten@Position[books[[All, 22]], "English"];
code = books[[#, 68]] & /@ bookCoordinates;

libgenCrawler[code_] := Module[{source, pos, links},
  source = Import[path <> code, "Source"];
  pos = Flatten@StringPosition[source, "<a href=\"\" ~ Shortest[___] ~ \">GET</a></h2>"];
  links = StringDrop[StringDrop[StringTake[source, pos], 9], -14];
  SystemOpen[links]; Pause[5];]

libgenCrawler[#] & /@ code
```

33 *Library Genesis* is designed for sharing books.

34 These ebook formats, provide continuous text (Word wrap support), which is later easily converted to txt format (format used by an *Informational Instrument*). See “Comparison of E-Book Formats,” *Wikipedia*, July 1, 2018, https://en.wikipedia.org/w/index.php?title=Comparison_of_e-book_formats&oldid=848311067.

With poems like these, I was able to connect to the flow and download 12,303 books from the aforementioned online libraries, without knowing their titles, authors, content or topics.³⁵ This number is an arbitrary number. A bigger or a smaller number of books could have been downloaded. The important thing is that books are available at any moment in large numbers. The number of books is too big to read, and more are coming. This small partition of the flow, a noisy basin that contains 12,303 books, will represent *Bibliotheka* in *Play Among Books*. A new question arises. What to do with all these books; how to play with them without getting lost in the generic book? Here is a challenge:

How to talk to the infinite flow, how to access and work with millions of books, and get an atmosphere of what they are about without reading them?

“The number of pages in this book is literally infinite. No page is the first page; no page is the last. I don’t know why they’re numbered in this arbitrary way, but perhaps it’s to give one to understand that the terms of an infinite series can be numbered any way whatever.”

—Jorge Luis Borges, *The Book of Sand*³⁶

35 The list of 12,303 books is listed in the part 6 Appendix.

36 Borges, “The Book of Sand”, ebook, loc 1099.0 / 1320.

2.3 XENOTHEKA: Actors, Data, Pre-Specific Library

“At this point the question of whether the Library is infinite or of indefinite size, or whether the number of books inside it is finite or unlimited and recurring, becomes a secondary question. The true hero of the Library of Babel is not the library itself but its Reader, a new Don Quixote, on the move, adventurous, restlessly inventive, alchemically combinatory, capable of overcoming the windmills he makes rotate ad infinitum.”

—Umberto Eco, *On Literature*³⁷

2.3.1 An Interest, A Question, A Mood

Xenotheka is an internal library of an *Informational Instrument*: a context, a neighbourhood, a galaxy.³⁸ It is a *theke*³⁹ in which, as its name suggests, any stranger is entitled to hospitality,⁴⁰ but in return needs to talk about things it cares about. *Xenotheka* is an interest of the performer indexed by books. The performer chooses and selects books, encodes them and, in doing so, articulates the desired atmosphere for its play. Books inhabit *Xenotheka*; they are its actors and characters. *Xenotheka* does not aspire to collect all the books. Not at all. *Xenotheka* is an interest, a question, and a mood. It is private and public at the same time: private, since it is an intimate body of books, public because nobody owns or controls those books in the sense of their concepts and ideas. Books are thus independent and dependent in the way they transmit messages and relate to other libraries.

37 Umberto Eco, *On Literature* (Harcourt, 2005), ebook, loc 214.6 / 656.

38 Conceptually, *Xenotheka* is a library of any kind of computational objects (videos, images, text, graphics, etc.). It is not limited to only to text.

39 Greek *theke* “case, chest, sheath,” from suffixed form of PIE root **dhe-* “to set, put.” See “Bibliothec | Origin and Meaning of Bibliothec by Online Etymology Dictionary,” accessed October 26, 2018, <https://www.etymonline.com/word/bibliothec>.

40 Greek *xenos* “a guest, stranger, foreigner, refugee, guest-friend, one entitled to hospitality”, See “Xeno- | Origin and Meaning of Xeno- by Online Etymology Dictionary,” accessed October 26, 2018, <https://www.etymonline.com/word/xeno->.

Xenotheka binds them, yet sets them free. It becomes personal and pre-specific,⁴¹ rather than disciplinary and generic, a gathering rather than a collection. Many interests and views can coexist. In *Xenotheka* books start to meet each other without a clear *Reason*,⁴² but drawn around a certain interest. It challenges *Bibliotheka* with its ability to navigate within the relative without evoking an absolute reference.

2.3.2 Navigate Within the Relative

Xenotheka changes as the play unfolds, as interests and curiosity of the performer change. It is always in motion. *Xenotheka* is inhabited mostly by books familiar to the performer; by books that he loves, by books that he hates. Some of the books he has never read, some he just scanned or skipped through, some he hasn't even opened, but he has an attitude towards almost all the books in this library. This gathering is a temporary panorama of his world, changing as he turns. It can be cut in pieces, expanded, disassembled, and reassembled in any way. *Xenotheka*, in its change, is a multiplicity of interests and atmospheres. Some books inhabit many versions of *Xenotheka* at the same time. As new questions are asked, books proliferate in instances; they are moving and changing libraries. They start to talk to each other. The player provides the ambient and poses the question.⁴³ Books start to move and mingle. *Xenotheka* is an intimate playground, where one stages, plays, and symbolises concepts and books. It is restless, in constant motion, discrete, but never fixed. *Xenotheka* is, on the one hand, a personal panorama of the world and, on the other, a context for talking to the infinite flow of books —*Bibliotheka*. At the moment, it contains 229 books gathered around a specific interest of the performer (information and architecture).⁴⁴ It is a process of meditation with books and learning with concepts.

41 For more on Pre-specific see Vera Bühlmann and Martin Wiedmer, *Pre-Specifics: Some Comparatistic Investigations on Research in Design and Art* (JRP Ringier, 2008).

42 Reason in a spirit of Enlightenment sense of authority.

43 *Xenotheka* is blind to concepts its books do not relate to, but it can still talk about them.

44 The list of all 229 books from *Xenotheka* is listed in the part 6 Appendix.

2.3.3 *A Book Is Never Alone*

Books are never alone; they are always part of many collections, libraries, datasets, ensembles, and noisy conversations; they change as the atmosphere in the library is changing. A book, for the one who is reading it, is a reflection of all the books one has read, and it is a projection on top of it. It can have many faces; it can be read in multiple ways, it is always a conversation, a double articulation, never neutral, always with an attitude. A book is always a part of a literacy, and a tradition.

Actors — books — are not specific; they are of a symbolic kind. One can say that they have an algebraic character which makes them opportunistic to meaning. Their mood is dependent on the library they inhabit and their face changes when looked at. Electricity performs in a similar manner — it is energy, matter and information, a wave and a particle, depending on how one wants to view it. Different co-constitutions in their contradictions are enriching the space of probabilities. Paradoxes dope the world and fantasies around it. Karen Barad explicates this relation:

“[...] when electrons (or light) are measured using one kind of apparatus, they are waves; if they are measured in a complementary way, they are particles. Notice that what we’re talking about here is not simply some object reacting differently to different probings but being differently. What is at issue is the very nature of nature.”⁴⁵

Reading Barad, one gets the impression that materiality itself might be undetermined. Double slit experiment⁴⁶ challenges the notion of predefined categories. It opens a space where one can start describing objects (phenomena, actors, books) in their own terms, without a priori or external reference. With no predefined categories, no key features, no explicit grammars, and no pre-given rules, one should learn how to orient himself within the relative. As if in a dialogue with Barad, Fernando Zalamea provides the setting for this paradoxical setup:

“An ‘internal’ accumulation of neighborhoods can indicate an orientation without having to invoke an ‘external’ entity that would represent a supposed ‘end point’ - it has the power

45 Karen Barad, *What Is the Measure of Nothingness: Infinity, Virtuality, Justice*, Bilingual edition (Ostfildern: Hatje Cantz, 2012), 6.

46 For more on the double slit experiment, see C. J. Davisson and L. H. Germer, “Reflection of Electrons by a Crystal of Nickel,” *Proceedings of the National Academy of Sciences of the United States of America* 14, no. 4 (April 1928): 317–22.

to orient ourselves within the relative without needing to have recourse to the absolute. This fact harbors enormous consequences, whose full creative and pedagogical force is just beginning to be appreciated in the contemporary world."⁴⁷

One way of thinking about Zalamea's relative orientation would be to index a book (an actor) with as many indexes as one can. In such a constellation, each word or letter would become an index. There would be no more exceptions; any singularity could be seen as an appearance rendered through the spectra of indexes around an object. By doing so, one is inverting notions of grammar, rules and parameters. Instead of a specific normality, indexes inhabit a probabilistic universe. In this scenario, notions of neighbourhood and context become important; libraries that our actors populate, shelves that accommodate them, their friends and neighbours, all this becomes part of their moods and manners. Actors act differently in different environments. Context, or a neighbourhood, actually changes the face of a book.⁴⁸ Libraries are animate, books are alive. They become characters, both of an alphabet and of a persona. A book always plays both sides: the subject and the object —a *quasi-object*.⁴⁹ In this sense, a book is not a book without being a part of a library, but the library does not determine the book. Books are the actors and the library is their neighbourhood. The library is the ambient-milieu that provokes the faces of our actors. In each library, a book tells a different story without being determined by it. Instead of fixing it to a context, each library adds a new temper to a book. A book proliferates by escaping its definition.

2.3.4 A Play of Probabilities

The ability of books to show a different character in each library is the fantasy behind *Xenotheka*. Each new unknown book from *Bibliotheka* tries to find its place and its friends in *Xenotheka*. Books that *like* each other and are *similar* come together.⁵⁰ This gathering of friends is a play of probabilities. They come together around a specific concept which is not explicitly there,

47 Fernando Zalamea, *Synthetic Philosophy of Contemporary Mathematics* (Falmouth, U.K., 2012), 112.

48 A physical library that embodies this kind of curating is Werner Oechslin's library in Einslieden. "*The books are arranged in such a way that they communicate to the reader not only their own presence, as individual publications, but rather – through their order and integration – also the related books of their immediate proximity, their 'good neighbourhood' (as Aby Warburg called it).*", Werner Oechslin, "Werner Oechslin Library Foundation," accessed October 2, 2016, <http://www.bibliothek-oechslin.org/library>.

49 For a more elaborate articulation of the concept of quasi-object, see Michel Serres, *The Parasite*, trans. Lawrence R. Schehr (Baltimore: The Johns Hopkins University Press, 1982).

50 Similarity and likeness of books is elaborated in the 2.5 *Machine Intelligence*.

but its consistency is in a cloud of indexes around it. When the interest changes, the library adjusts and indexes index the library in a different manner; books gather in a new way. Each gathering gives different faces to books and talks to the flow of books under a new light. Different libraries and different readers all enrich a book. Each time, an era, an *Episteme*, or a *Body of Thinking* provides the context for a new face of a book. The book stays the same, yet it changes.⁵¹ A book belongs to many different times, yet it is out of one specific time. By changing contexts, a book shows its beauty and mastery. It starts to dance many dances, and leaves many traces, becomes part of and merges with many books and anticipates those to come. The book and the library, each time they meet is a new drama. A book is a play of probabilities.

2.3.5 *An Exchange*

Play Among Books is a talk between *Xenotheka* and *Bibliotheka*. An exchange, a circulation. This is how the performer learns. The player of the *Informational Instrument* invites books to his library. This is his play. When books acquire their *informational faces* they are able to inhabit many informational libraries simultaneously. In other words, a book can show its many faces depending on the library it inhabits and the way its *informational face* is articulated. Its face is not a portrait or data visualisation, but an articulation that goes beyond mimetic representation. Familiar contexts provide stability for the performer to talk to the unknown. After a few talks, the unfamiliar becomes familiar. *Xenotheka* changes. It splits, accommodates some new books, other books leave. A new context, a new question, a new face of *Xenotheka*. This circle is the play of an *Informational Instrument* and, therefore, a *Play Among Books*. It is not about looking at a book from a specific perspective, but about giving it a different milieu to react and present itself. The fantasy is that the concepts are able to leave the context of a single book and, in their interplay from within the library — via a galaxy of concepts— talk about the world.

51 Here I would like to refer to “Pierre Menard, Author of the Quixote”, by Jorge Luis Borges, and ask a question: What are the conditions of possibilities for Pierre Menard to write a chapter of Don Quixote, as a fresh, new, and interesting piece, without it being just a copy? See Jorge Luis Borges, “Pierre Menard, Author of the Quixote,” in *Collected Fictions*, trans. Andrew Hurley (New York, NY: Penguin Books, 1999).

2.4 GENERIC MACHINE: Stage, Algorithms, Encoding

The *actors* are entering the *stage*. Their faces are motionless and without expressions, loaded with intentions and virtuality. The play hasn't started yet. In order to perform a play in a digital environment, they need to get dressed, put on their masks, and learn how to articulate their *informational faces*. In other words, a *Generic Machine* encodes *Xenotheka*. This is one of the main challenges for the *Informational Instrument*. It sets the table with a lot of questions: What could an *informational face* of a library be and how to encode it? What is the difference between measuring and encoding a book? What are its units and elements?

The *stage* is an apparatus, a generic machine, a scenography, an encoding mechanism, a collection of algorithms. It indexes the library in multiple ways and articulates the generic ground in a style that is able to present its actors in multiple vector spaces. A *Generic Machine* can be equipped with any available generic knowledge. At its current state, an *Informational Instrument* is equipped with below-listed elements:

1. *Wolfram Mathematica* —a symbolic computational language and a modern technical computing system which contains a vast corpus of available generic knowledge. Most of the *Informational Instrument* is coded in *Mathematica* programming language. Amongst many other of its capabilities, the *Generic Machine* focuses on *Mathematica*'s functionalities for working with strings and text, graphs and networks, web connections, and its linguistic data set.⁵²
2. *Self-Organizing Map* —a data processing algorithm⁵³
3. *Calibre* book manager⁵⁴

The *Generic Machine* is not a specific measuring device with a basic unit. This machine is not explicitly scientific, it is somehow different, much closer to an indexing machine or an

52 See, "Wolfram Mathematica."

53 Kohonen, "Self-Organized Formation of Topologically Correct Feature Maps."

54 See, "Calibre - E-Book Management," accessed August 29, 2018, <https://calibre-ebook.com/>.

encoding mechanism. The player of an *Informational Instrument* is articulating its unit and tuning the *Generic Machine* on the go. Every setup produces a different atmosphere, elements and units. It is an indexing of an ambient in a certain manner by explicating a relative measure. This is how an *Informational Instrument* challenges the seven *SI Base Units*.⁵⁵ This does not mean one should leave and forget them; encoding is yet another way of rethinking the base of a measure. It complements it. Matter and meaning, nature and culture, *what* and *how* they co-constitute each other in a loop. Barad suggests:

*“Measurements are world-making: matter and meaning do not preexist, but rather are co-constituted via measurement intra-actions.”*⁵⁶

Yes, measurements are world-making, but the world makes the measurements as well. Basic units are in harmony, derived from the base and later from each other, but the base is not unambiguous when thought in the context of the digital. An *Informational Instrument* celebrates these contradictions without having an explicit a priori base unit. It opens a different perspective. What if the emphasis is not on measuring reality but on encoding and decoding it in many ways, by crafting different keys to access the world in many ways? What if it is about articulating faces and mixing of libraries? It is a different game then. One is not seeking for specific properties and measuring them, but trying to develop a communication channel through which one can articulate profiles of different encodings. This is the search for the most general and abstract ingredients in a given situation. There is no unit of a book. Yet, in a *Plentiful Play* books are profiling libraries from many perspectives simultaneously. A book becomes a constitutive part of a character of an alphabet that articulates its library—a symbolic void element. One is encoding objects into probabilities to look at the flow. These are probabilities of whatever our probes can reach; they depend on the mood of the moment—a context—and are symbolised by a probability of writing with synthetic letters. A new alphabet forms a spectrum of a book.

Libraries, books and actors are on one side of the double bind. The stage is its complementary part, the infrastructure for actors; it *relates* them to each other, *curates* their behaviour, *mediates* their expressions, provides clothes and lights, sounds and smells. Actors

55 The International System of Units (SI) defines seven units of measure as a basic set from which all other SI units can be derived. The SI base units and their physical quantities are the meter for measurement of length, the kilogram for mass, the second for time, the ampere for electric current, the kelvin for temperature, the candela for luminous intensity, and the mole for amount of substance. See “SI Base Unit,” *Wikipedia*, August 26, 2018, https://en.wikipedia.org/w/index.php?title=SI_base_unit&oldid=856600454.

56 Barad, *What Is the Measure of Nothingness*, 6.

and stage, *Xenotheka* and the *Generic Machine* are a part of a double articulation that constitutes *informational faces* of actors. This is a generic process of populating the stage with differentiated avatars of actors. Their faces can express a multiplicity of probabilities, objectivities and interpretations. They are both natural, and cultural, and even more computational and symbolic. These *informational faces* are different from portraits, maps or images. A map can be thought of as a static, solid representation based on key features of a specific mood. It fixes the face of an actor—it maps and portrays it. An *informational face* is not a map; it is a spectrum of different probable expressions of the same face. It does not have specific features, but it is indexed by as many indexes as one can find. An analogy can be found in Zalamea’s interpretation of *category theory* in mathematics:

“As a counterpart to the set-theoretical analytic championed by Cantor’s heirs, category theory no longer dissects objects from within and analyses them in terms of their elements, but goes on to elaborate synthetic approaches by which objects are studied through their external behavior, in correlation with their ambient milieu. Categorical objects cease to be treated analytically and are conceived as ‘black boxes’.”⁵⁷

What if Zalamea’s analogy is projected back to the text by taking each word in a library as an index? By doing so, each index relates to the whole library, while each face becomes an expression of a book in a library—a face in its ambient milieu. A book articulates a library and the library articulates the book. Every book or actor gets indexed by all the other books in *Xenotheka*. What is conceived in the book is never explicitly in it, but in its implicit interplay with other books. Accordingly, the face of the book is never determined, but always a part of a noisy dramatic environment open to negotiations, considerations, and talks. An *Informational face* can be thought of as a spectrum; it can have many expressions depending on the way its ambient milieu is *curated*, *mediated* and *related*. In other, words an actor can have different *informational faces* by indexing the text in different ways.

Here are the main Encoding Processes: *Curating, Mediating, Relating*

57 Zalamea, *Synthetic Philosophy of Contemporary Mathematics*, 121.

2.4.1 CURATING: Discretising the Stream

Curating is the first of the encoding process within a *Generic Machine*. It is the preprocessing of gathered data with a goal of transforming book texts into the same format and later partitioning them to different forms suitable for computation. *Generic Machine* curates its texts via two subprocesses: formatting and tokenization.

2.4.1.1 Formatting

For an *Informational Instrument* to be operational, all the books in *Xenotheka* and the ones accessed from *Bibliotheka* need to be converted to the same format. In this play, the format is a standard text file with a UTF-8 encoding and a “.txt” extension. As it was shown in the description of *Bibliotheka*, it is configured to download specific formats that provide continuous text: epub, mobi, azw, and azw3. To perform conversions, an *Informational Instrument* uses an external tool: a book manager *Calibre*.⁵⁸ This software can automatically convert any number of books to various formats, download their book covers and metadata.

2.4.1.2 Tokenization

Tokenization is a process of discretising a stream of text into units such as letters, words, sentences, paragraphs, pages, chapters, libraries, etc. At this stage of curation, the *Generic Machine* is tuned to discretise text on two levels: sentences and words. Sentences are simply acquired by an algorithm that uses punctuation and capital letters as an indicator of a new sentence, while discretising text into words follows the procedure:

1. Convert all letters to lowercase
2. Remove all characters except letters and digits
3. Split the txt into words
4. Delete stop-words⁵⁹
5. Delete all words that are shorter than three characters

⁵⁸ “*Calibre is a powerful and easy to use e-book manager.*” For more on Calibre, see “Calibre - E-Book Management.”

⁵⁹ In natural language processing (NLP), stop words are words which are filtered out before or after processing of natural language data. For more see “Stop Words,” *Wikipedia*, August 13, 2018, https://en.wikipedia.org/w/index.php?title=Stop_words&oldid=854719222.

6. Find a Base Form of each word⁶⁰

Here is a poem—an algorithm—that operationalises these steps for one book:

SymbolicPoem03_Curating

```
book = "/Users/romanmir/Desktop/Vitruvius_The ten Books of Architecture_text_test.txt"
txt = StringReplace[Import[book], {"}" -> " ", "{" -> " ", "-" -> " ", "\n" -> " ", Whitespace -- Whitespace -> " ",
  ". " .. -> ".", " " .. -> " ", "\n" | "\r" -> " "];
StringTake[txt, {1, 392}]
txtSentences = Select[TextSentences[txt], StringLength[#] > 3 &];
txtWords =
  If[WordData[#] ≠ {} && ListQ[WordData[#, "BaseForm"]] && If[WordData[#, "BaseForm"] != {}, True, False] &&
    ! StringContainsQ[ToString[Head[WordData[#, "BaseForm"]][[1]]], "Symbol"],
    WordData[#, "BaseForm"][[1]][[1]], #] & /@
  Select[
    StringDelete[DeleteStopwords[Flatten[StringSplit[ToLowerCase[txtSentences], Except[WordCharacter] ..]],
      DigitCharacter ..], StringLength[#] > 2 &]
```

The process of Curation as an output for each book produces four files. Here is an example based on *Vitruvius*' book *The Ten Books of Architecture* (Fig. 2.2):

1. Book in txt format

http://www.romanvlahovic.com/xenotheka/Vitruvius_TheTenBooksofArchitecture_text.txt

Excerpt:

“The architect should be equipped with knowledge of many branches of study and varied kinds of learning, for it is by his judgement that all work done by the other arts is put to test. This knowledge is the child of practice and theory. Practice is the continuous and regular exercise of employment where manual work is done with any necessary material according to the design of a drawing. Theory, on the other hand, is the ability to demonstrate and explain the productions of dexterity on the principles of proportion.”⁶¹

60 In the English grammar, a word stem, base or root form is the form of a word to which prefixes and suffixes can be added to create new words. A stemming algorithm reduces the words “fishing”, “fished”, and “fisher” to the root word, “fish”. For More on Base form see “Stemming,” *Wikipedia*, July 6, 2018, <https://en.wikipedia.org/w/index.php?title=Stemming&oldid=849076995>.

61 Vitruvius, *Ten Books on Architecture*, trans. Hicky Morgan Morris (Harvard University Press, 1914).

2. Book discretised to sentences:

http://www.romanvlahovic.com/xenotheka/Vitruvius_ThetenBooksofArchitecture_sentences.txt

Excerpt:

The architect should be equipped with knowledge of many branches of study and varied kinds of learning, for it is by his judgement that all work done by the other arts is put to test.

This knowledge is the child of practice and theory.

Practice is the continuous and regular exercise of employment where manual work is done with any necessary material according to the design of a drawing. Theory, on the other hand, is the ability to demonstrate and explain the productions of dexterity on the principles of proportion.

3. Book discretised to words:

http://www.romanvlahovic.com/xenotheka/Vitruvius_ThetenBooksofArchitecture_words.txt

Excerpt:

architect, equip, knowledge, branch, study, vary, kind, learn, judgement, work, art, test, knowledge, child, practice, theory, practice, continuous, regular, exercise, employment, manual, work, necessary, material, accord, design, draw, theory, hand, ability, demonstrate, explain, production, dexterity, principle, proportion

4. Book's Metadata:

http://www.romanvlahovic.com/xenotheka/Vitruvius_ThetenBooksofArchitecture_metadata.txt

Excerpt:

```
<dc:title>The Ten Books on Architecture (Illustrated)</dc:title>
  <dc:creator opf:file-as="Vitruvius & Morgan, Morris Hicky"
opf:role="aut">Vitruvius</dc:creator>
```



Vitruius_The ten Books of Architecture_text.txt



Vitruius_The ten Books of Architecture_metadata.txt



Vitruius_The ten Books of Architecture_words.csv



Vitruius_The ten Books of Architecture_sentences.csv

Fig. 2.2 Outputs of the process of Curation

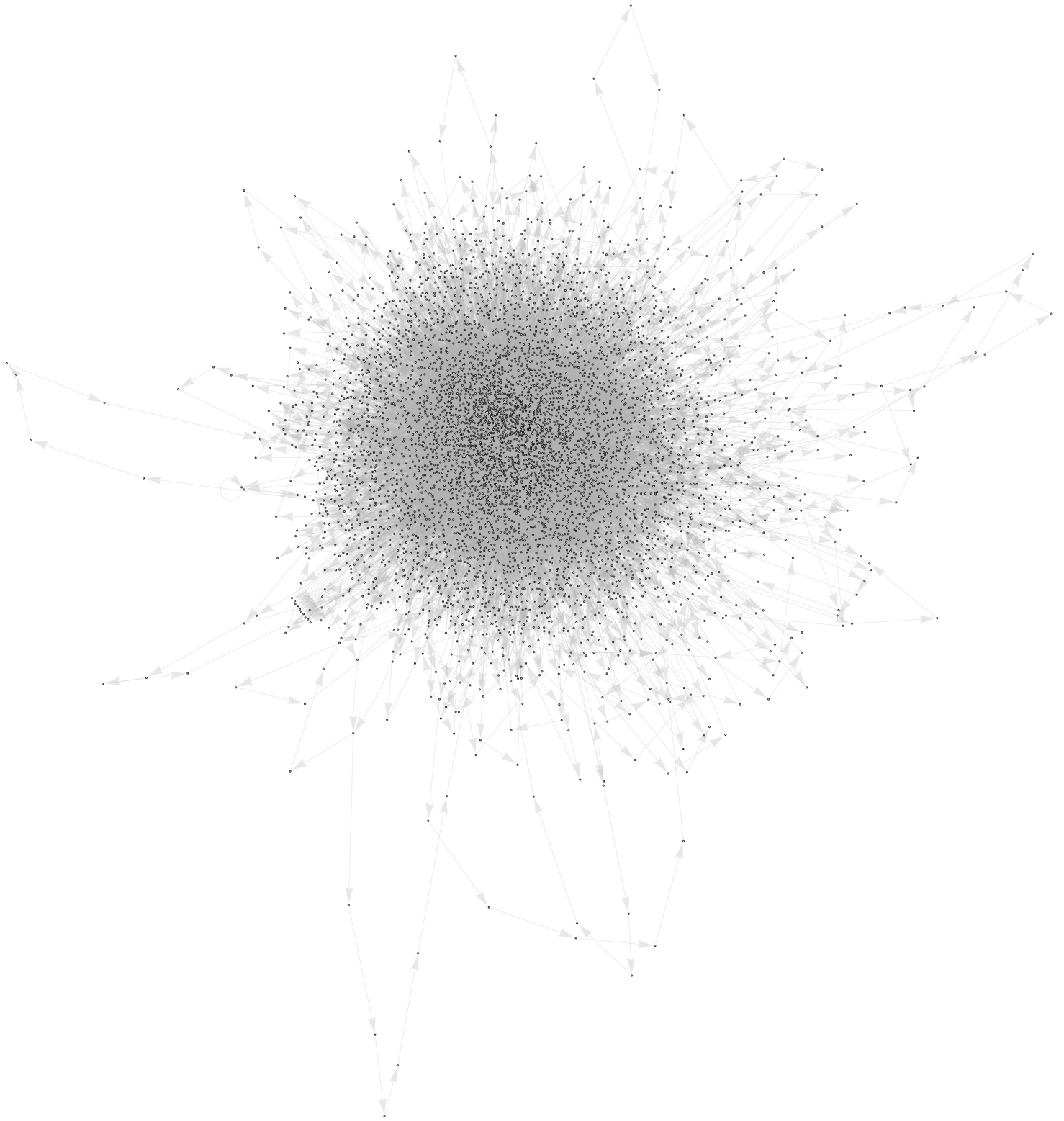


Fig. 2.3 *Vitruvius_The ten Books of Architecture* rendered as a connectivity of its words - graph

2.4.2 MEDIATING: *Generic Profiles of Books*

Mediation is a process of indexing a curated text in multiple measurable ways. This is an open process of encoding text into numbers. Each book acquires its generic profile as a constituting step in articulating the *informational face* of a book. There is no correct way of mediating a text; each context requires a different encoding; the *Informational Instrument* is tuned differently for each play. Mediation is not a meaningful and exact process and, therefore, relies on consistency and rigour. It consists of two subprocesses: indexing and measuring.

2.4.2.1 Indexing

The *Generic Machine* indexes the text as a connectivity of its own elements. The indexing unit—the element—is not predefined; it can be of various kinds: letters, words, bigrams, trigrams, sentences, paragraphs, pages, etc. These elements can be transformed into other elements, e.g., words to synonyms, antonyms, broader terms, narrower terms, etc., or translated into a different language, e.g., English into German. Different kinds of elements that one can articulate from the text depend on the richness of the *Generic Machine* and on the ingenuity of the player. Furthermore, to look at text as a connectivity of its elements is just one possible way of looking at it. A text can be indexed by an external reference such as its Google and Kindle ratings, and the like. It is an open process. Different ways of indexing are ways of looking and working with the text, and they can be brought in relation in various ways, as ingredients are combined when cooking a delicious meal.

What follows is a demonstration of an indexing process applied in a *Play Among Books*.

Text sample from *Vitruvius_The ten Books of Architecture*:

The design of a temple depends on symmetry, the principles of which must be most carefully observed by the architect. They are due to proportion, in Greek [Greek: analogia]. Proportion is a correspondence among the measures of the members of an entire work, and of the whole to a certain part selected as standard. From this result the principles of symmetry. Without symmetry and proportion there can be no principles in the design of any temple; that is, if there is no precise relation between its members, as in the case of those of a well shaped man.

A poem that articulates the indexing process of a text into a connectivity of its elements:

SymbolicPoem04_MediatingConnectivity

```
letters = Rule@@@Partition[Characters@StringJoin@txtWords, 2, 1]
words = Rule@@@Partition[txtWords, 2, 1]
bigrams = Rule@@@Partition[StringJoin#[[1]] <> " " <> #[[2]] ] & /@ Partition[txtWords, 2, 1], 2, 1]
trigrams = Rule@@@Partition[StringJoin#[[1]] <> " " <> #[[2]] <> " " <> #[[3]] ] & /@ Partition[txtWords, 3, 1], 2, 1]
```

A text sample as a connectivity of Letters:

```
d -> e, e -> s, s -> i, i -> g, g -> n, n -> t, t -> e, e -> m, m -> p,
p -> l, l -> e, e -> d, d -> e, e -> p, p -> e, e -> n, n -> d, d -> s, s
-> y, y -> m, m -> m, m -> e, e -> t, t -> r, r -> y, y -> p, p -> r, r ->
i, i -> n, n -> c, c -> i, i -> p, p -> l, l -> e, e -> c, c -> a, a -> r,
r -> e, e -> f, f -> u, u -> l, l -> l, l -> y, y -> o...
```

A text sample as a connectivity of words:

```
design -> temple, temple -> depend, depend -> symmetry, symmetry
-> principle, principle -> carefully, carefully -> observe, observe ->
architect, architect -> due, due -> proportion, proportion -> greek,
greek -> greek, greek -> analogia, analogia -> proportion, proportion ->
correspondence...
```

A text sample as a connectivity of bigrams:

```
design temple -> temple depend, temple depend -> depend symmetry,
depend symmetry -> symmetry principle, symmetry principle -> principle
carefully, principle carefully -> carefully observe, carefully observe ->
observe architect, observe architect -> architect due, architect due ->
due proportion, due proportion -> proportion greek...
```

A text sample as a connectivity of trigrams:

```
design temple depend -> temple depend symmetry, temple depend symmetry
-> depend symmetry principle, depend symmetry principle -> symmetry
principle carefully, symmetry principle carefully -> principle carefully
observe, principle carefully observe -> carefully observe architect,
carefully observe architect -> observe architect due...
```

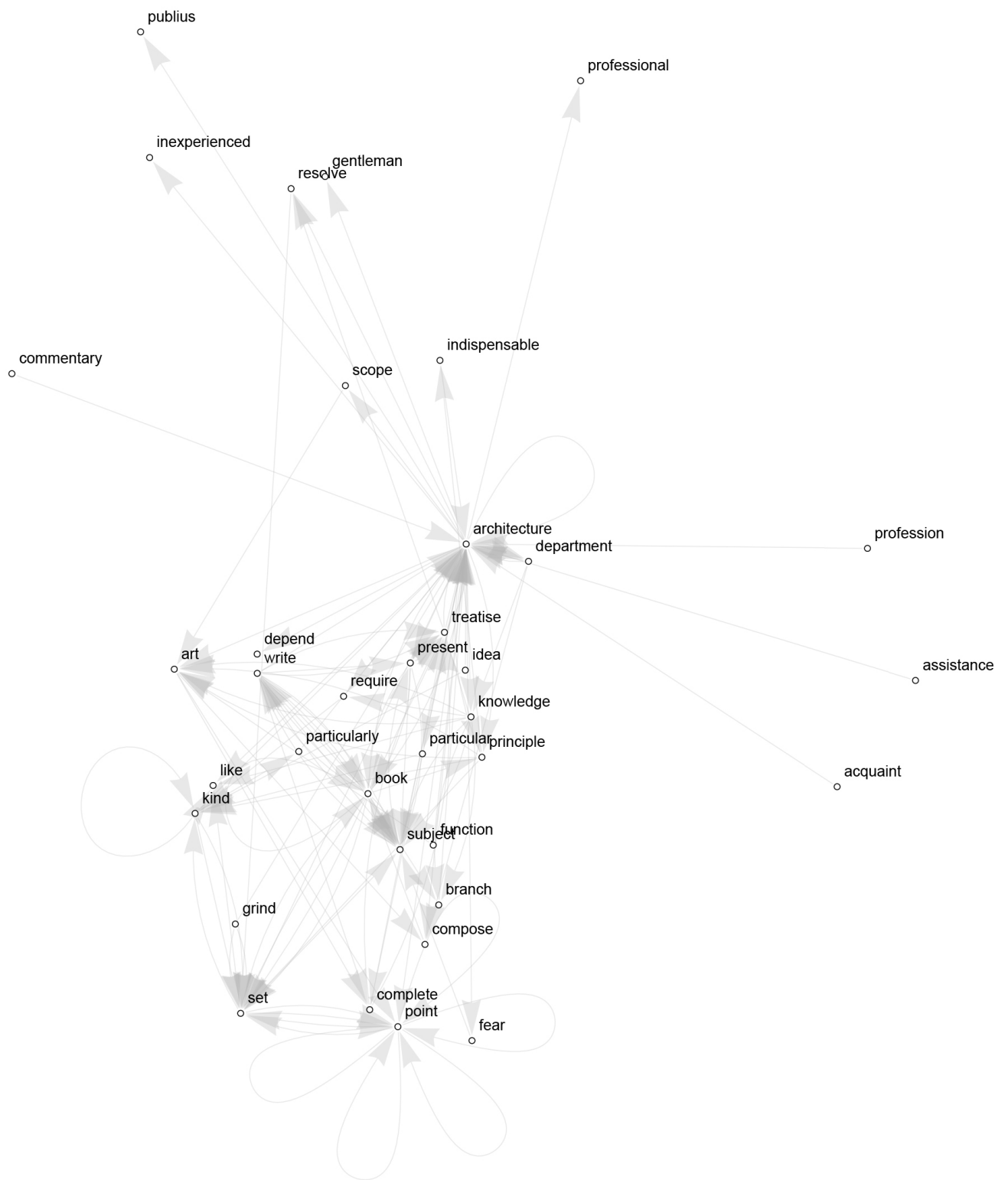


Fig. 2.4 *Vitruvius_The ten Books of Architecture* subgraph of connectivities of the word *architecture*

A poem that rewrites the text as a connectivity of its synonyms, or some other lexical properties:

SymbolicPoem05_Mediating_Rewriting

```
property = "Synonyms" (* Synonyms, Antonyms, BroaderTerms, NarrowerTerms... *)
wordProperty =
  If[WordData[#] ≠ {} && ListQ[WordData[#, property]] && If[WordData[#, property] != {}, True, False] &&
    ! StringContainsQ[ToString[Head[WordData[#, property]][[1]]], "Symbol"],
    Flatten[Last /@ WordData[#, property], #] & /@ txtWords;
wordProperty = DeleteCases[#, _String? (StringMatchQ[#, "* *"] &)] & /@ wordProperty;
wordProperty = Flatten[If[Length[#] > 1, #[[1]], #] & /@ Delete[wordProperty, Position[wordProperty, {}]]];
Rule @@@ Partition[wordProperty, 2, 1]
```

Connectivity of Synonyms:

```
designing -> synagogue, synagogue -> bet, bet -> isotropy, isotropy ->
rationale, rationale -> cautiously, cautiously -> keep, keep -> designer,
designer -> ascribable, ascribable -> balance, balance -> greek, greek
-> greek, greek -> analogia, analogia -> balance, balance -> agreement,
agreement -> amount, amount -> penis..
```

2.4.2.2 Measuring

By encoding a book into a connectivity of its elements, a book acquires a generic informational profile—a graph⁶² (Fig. 2.3, 2.4), which is, in this case, a precondition for articulating the *informational face* of a book. The *Generic Machine* indexes books' connectivities by measuring different centralities of a graph.⁶³ As an example, *Vitruvius_The ten Books of Architecture* is rendered as a graph of connectivities of all the words in the text (Fig. 2.3), and as a subgraph of the words closest to the word *architecture* (Fig. 2.4).

By measuring different centralities of a graph, *Generic Machine* encodes the text in multiple ways.⁶⁴ Here are just four out of many ways of measuring centralities (Fig. 2.5).⁶⁵

62 Graph theory is the study of mathematical objects known as graphs, which consist of vertices (or nodes) connected by edges. See, "Graph Theory," *Wikipedia*, August 23, 2018, https://en.wikipedia.org/w/index.php?title=Graph_theory&oldid=856160787.

63 Centralities indicate importance of individual nodes in a graph. See, "Centrality," *Wikipedia*, July 11, 2018, <https://en.wikipedia.org/w/index.php?title=Centrality&oldid=849855645>.

64 In the *Play of Books*, VertexDegree is the most commonly used centrality. When an individual VertexDegree value of an index—in this case word—is divided by two, it gives the term frequency of that word.

65 Centrality measures available in Wolfram Mathematica: BetweennessCentrality, ClosenessCentrality, DegreeCentrality, EdgeBetweennessCentrality, EigenvectorCentrality, HITSCentrality, KatzCentrality, LinkRankCentrality, PageRankCentrality, StatusCentrality

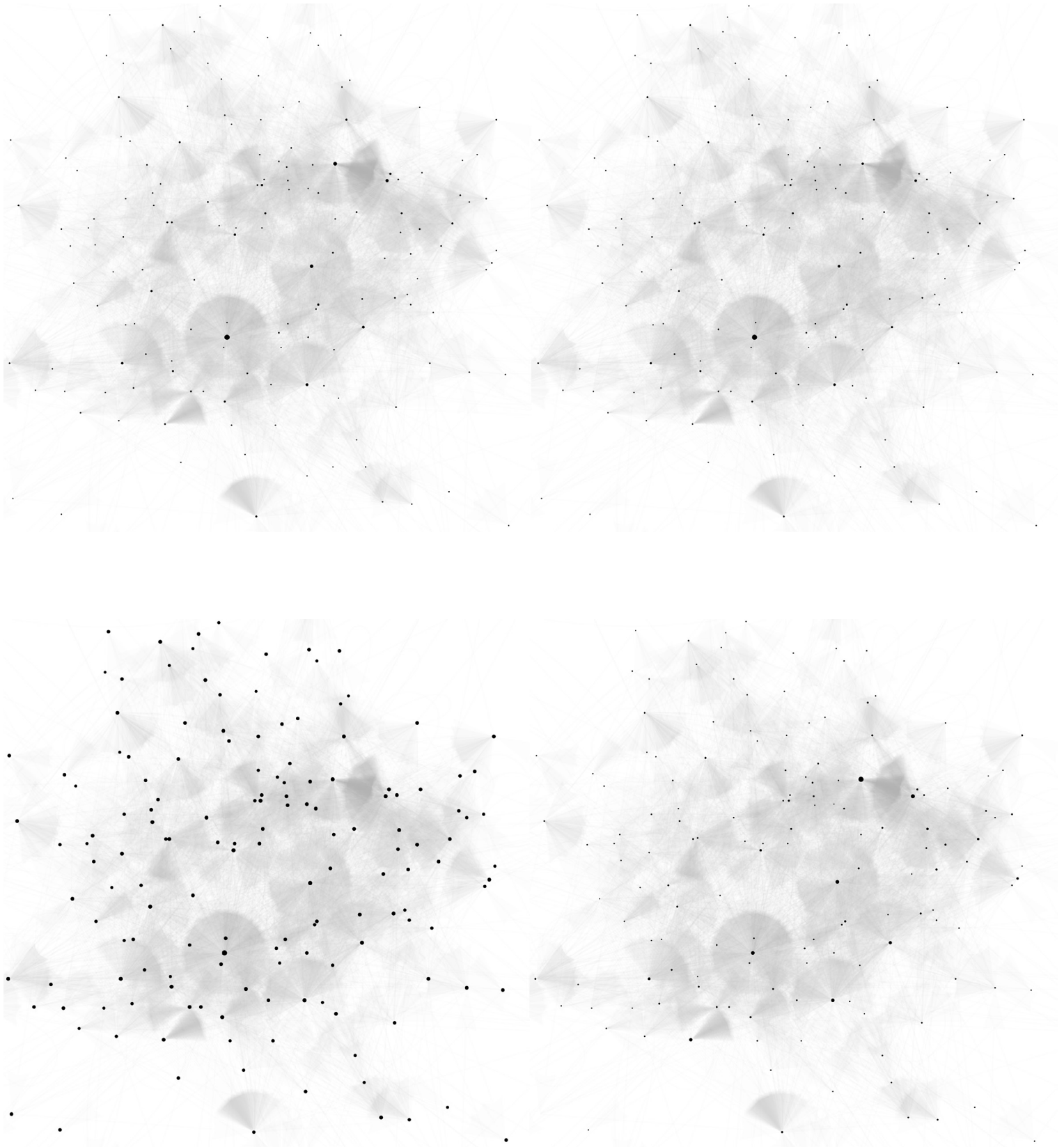


Fig. 2.5 *Vitruvius_The ten Books of Architecture* subgraph of connectivities of the word *build* rendered via graphs of different centralities: VertexDegree, DegreeCentrality, ClosenessCentrality, EigenvectorCentrality

VertexDegree:

place -> 602, water -> 532, wall -> 478, let -> 466, column -> 462,
foot -> 434, greek -> 398, make -> 356, height -> 350, set -> 344, great
-> 338, build -> 334, work -> 318, use -> 308, call -> 298, temple -> 288,
leave -> 280, half -> 272, hole -> 260, kind -> 252...

DegreeCentrality:

place -> 458, water -> 352, wall -> 339, let -> 307, make -> 303, work
-> 264, build -> 256, set -> 250, column -> 248, use -> 245, great -> 245,
greek -> 230, height -> 220, call -> 211, hence -> 205, construct -> 203,
man -> 201, way -> 196, temple -> 196, leave -> 195...

ClosenessCentrality:

place -> 0.374655, wall -> 0.37238, water -> 0.36902, build ->
0.359294, use -> 0.35619, column -> 0.355281, work -> 0.354231, let ->
0.353502, set -> 0.352631, make -> 0.351549, way -> 0.350783, construct ->
0.350449, kind -> 0.349167, leave -> 0.3478, hence -> 0.346817, temple ->
0.344821, stone -> 0.343854, follow -> 0.343854, man -> 0.343763, great ->
0.34374...

EigenvectorCentrality:

column -> 0.014344, let -> 0.0113704, foot -> 0.00907947, height
-> 0.00878743, place -> 0.00862203, thickness -> 0.00772566, half ->
0.00761499, hole -> 0.00741883, wall -> 0.00740552, set -> 0.00636305,
length -> 0.00617666, part -> 0.00599789, water -> 0.00562731, breadth ->
0.00544614, high -> 0.00537255, build -> 0.0051846, line -> 0.00502602,
temple -> 0.00460012, long -> 0.00458599, quarter -> 0.00452315...

2.4.2.3 Towards an Informational Face of a Book

The *Generic Machine* is open and opportunistic to any available generic knowledge. Customising and tuning of the *Generic Machine* and, in turn, the *Informational Instrument*, is part of the play, and depends on the character and style of the player.⁶⁶ The idea behind *Mediation* is to find as many different ways to characterise a text without explicating what it is about and, in doing so, to leave it as rich and as open as possible. *Mediation*, as an encoding process, produces different generic ways of looking at the curated books and libraries. By indexing the text as a connectivity of many kinds of different elements and measuring them in various ways, the text can be encoded in multiple rich ways. This is crucial for the next part of the encoding process which is the articulation of *informational faces* of books.

As one of the outputs of the mediation process, any book from *Xenotheka*, or *Bibliotheka* can acquire a generic profile—an ID. It shows a basic statistics of the text. Here is a poem that generates generic profiles of books (Fig. 2.6):

SymbolicPoem06_Mediating_GenericProfile

```
name = StringSplit[book, {"/", "_text."}][[-2]]

title = Rasterize[Graphics[{
  White, Rectangle[{0, 0}, {800, 100}],
  Text[Style[InsertLinebreaks[name, 45], Magenta, FontFamily -> "Helvetica", 15, TextAlignment -> Left],
    {0, 50}, {Left, Center}]
}], ImageResolution -> 200];

statistics = Rasterize[Graphics[{
  White, Rectangle[{0, 0}, {800, 270}],
  Text[Style[statistics = StringJoin[{
    " ", "\n", "number of sentences: ", "\n", ToString[Length[txtSentences]], "\n", "number of words: ",
    "\n", ToString[Length[txtWords]], "\n", "number of unique words: ", "\n",
    ToString[WordCounts[StringJoin[Riffle[txtWords, " "]] // Length], "\n", "\n",
    InsertLinebreaks[StringTake[ToString@Normal[WordCounts[StringJoin[Riffle[txtWords, " "]]][[1 ; 30]]],
      {2, -2}], 63]
  }], Black, FontFamily -> "Helvetica", 11, TextAlignment -> Left], {0, 270}, {Left, Center}]
}], ImageResolution -> 200];

wordcloud = WordCloud[txtWords, FontFamily -> "Helvetica", ColorFunction -> ColorData[{"GrayTones", "Reverse"}],
  ImageSize -> 400];

graphs = Graph[Rule@@@Partition[txtWords[[1 ; 2500]], 2, 1], PlotTheme -> "Monochrome", EdgeStyle -> {Opacity[0.3]},
  VertexSize -> {"Scaled", 0.001}, ImageSize -> 400];

id = ImageAssemble[{{ImageResize[title, 400]}, {ImageResize[wordcloud, 400]}, {Rasterize[graphs, ImageSize -> 400]},
  {ImageResize[statistics, 400]}}
```

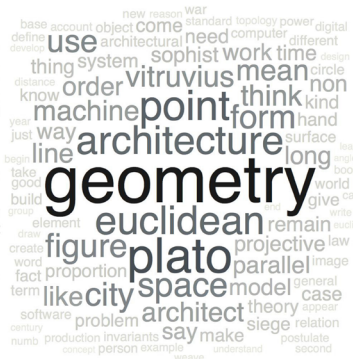
⁶⁶ In *The Play of Books*, in addition to an elaborated process, two techniques are extensively used to tell stories. The first one is a reference to the etymology of the words. See “Online Etymology Dictionary,” accessed August 30, 2018, <https://www.etymonline.com/>. The second one is an algorithm that relates words by moving between synonyms, e.g. *index* > *power* > *office* > *place* > *pose* > *beat* > *measure*. See “The Distance between ‘Zero’ and ‘Hero’: Exploring Synonym Chains with Mathematica—Wolfram Blog,” accessed August 30, 2018, <http://blog.wolfram.com/2011/03/17/the-distance-between-zero-and-hero-exploring-synonym-chains-with-mathematica/>.

Banham_Critic Writes



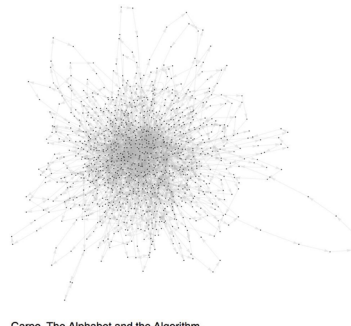
Banham_Critic Writes.txt
number of sentences:
4115
number of words:
61308
unique words:
10727
<|build -> 453, like -> 391, design -> 363, architecture -> 348,
work -> 257, new -> 249, house -> 244, architect -> 239, time ->
208, good -> 204, art -> 203, make -> 197, style -> 196,
architectural -> 192, know -> 183, look -> 179, modern -> 175,
come -> 168, world -> 162, great -> 156, year -> 155, way -> 151,
form -> 150, just -> 149, man -> 142, use -> 141, say -> 134,
history -> 133, glass -> 129, city -> 127, point -> 127, appear ->
123, kind -> 121, long -> 119, fact -> 118, go -> 116, thing ->
116, see -> 115, book -> 114, right -> 113, old -> 113, wright ->
107, leave -> 106, begin -> 104, stand -> 103, think -> 101,
structure -> 101, american -> 99, early -> 99, mean -> 97|>

Cache_Projectiles



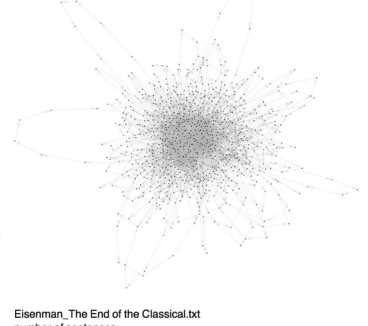
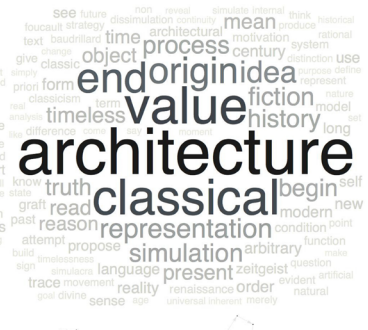
Cache_Projectiles.txt
number of sentences:
1308
number of words:
17084
unique words:
4398
<|geometry -> 130, plato -> 98, point -> 85, euclidean -> 81,
architecture -> 81, space -> 70, figure -> 68, form -> 68, city ->
68, use -> 66, vitruvius -> 62, think -> 61, mean -> 61, machine
-> 59, line -> 57, architect -> 57, like -> 57, order -> 55, long
-> 53, parallel -> 51, work -> 50, model -> 49, non -> 49, say ->
49, way -> 48, sophist -> 46, projective -> 46, time -> 46, remain
-> 45, thing -> 44, need -> 43, case -> 42, come -> 42, system ->
42, kind -> 41, proportion -> 40, siege -> 40, make -> 40, hand ->
40, theory -> 40, problem -> 39, know -> 38, give -> 38, fact ->
36, surface -> 35, build -> 34, architectural -> 34, circle -> 33,
law -> 33, world -> 33|>

Carpo_The Alphabet and the Algorithm



Carpo_The Alphabet and the Algorithm
number of sentences:
954
number of words:
17028
unique words:
3689
<|digital -> 228, design -> 209, albert -> 189, build -> 164, new
-> 157, technology -> 128, time -> 118, object -> 108, use -> 101,
identical -> 99, architectural -> 96, draw -> 94, make -> 94, copy
-> 90, architect -> 88, architecture -> 87, form -> 82, mechanical
-> 78, process -> 77, modern -> 76, end -> 74, print -> 74,
century -> 68, visual -> 68, image -> 62, tool -> 57, age -> 57,
way -> 55, point -> 54, model -> 54, case -> 53, author -> 53,
theory -> 53, work -> 53, technical -> 52, history -> 52, change
-> 48, different -> 47, notational -> 47, scale -> 47, mass -> 46,
today -> 46, production -> 44, environment -> 43, late -> 43, book
-> 43, machine -> 43, original -> 43, art -> 43, brunelleschi ->
42|>

Eisenman_The End of the Classical



Eisenman_The End of the Classical.txt
number of sentences:
380
number of words:
4312
unique words:
1228
<|architecture -> 112, value -> 88, classical -> 84, end -> 71,
origin -> 60, idea -> 48, representation -> 42, simulation -> 39,
fiction -> 39, process -> 38, history -> 38, begin -> 37, truth ->
35, timeless -> 32, read -> 31, mean -> 31, present -> 31, object
-> 30, reason -> 28, time -> 27, order -> 22, form -> 22, century
-> 22, arbitrary -> 21, reality -> 21, new -> 21, modern -> 21,
use -> 20, language -> 20, trace -> 19, propose -> 19, self -> 19,
long -> 19, see -> 19, zeitgeist -> 18, graft -> 17, sense -> 17,
architectural -> 17, model -> 16, condition -> 16, past -> 16,
attempt -> 16, classic -> 16, motivation -> 15, know -> 15, term
-> 15, text -> 14, function -> 14, give -> 14, renaissance -> 14|>

Ito_Tarzans In The Media



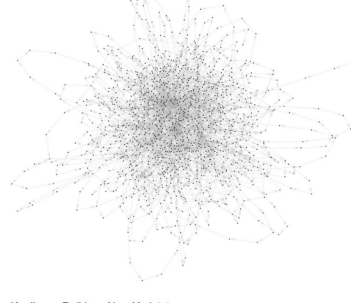
Ito_Tarzans In The Media.txt
number of sentences:
2164
number of words:
24756
unique words:
4697
<|space -> 442, architecture -> 349, city -> 253, light -> 197,
like -> 170, body -> 148, house -> 139, person -> 137, build ->
133, image -> 132, form -> 112, flow -> 104, urban -> 103, design
-> 95, new -> 93, say -> 90, architectural -> 86, world -> 86,
time -> 84, architect -> 80, think -> 79, surface -> 79, use ->
78, nature -> 77, wall -> 77, make -> 72, reality -> 72, tokyo ->
72, white -> 71, place -> 70, society -> 68, live -> 64, sense ->
64, just -> 63, appear -> 61, mean -> 61, water -> 57, begin ->
57, feel -> 57, way -> 57, work -> 56, project -> 56, field -> 55,
information -> 55, year -> 55, change -> 54, word -> 54,
environment -> 54, life -> 54, create -> 54|>

Jenks_The Story of Post-Modernism



Jenks_The Story of Post-Modernism.txt
number of sentences:
2975
number of words:
35406
unique words:
6564
<|modern -> 416, post -> 274, modern -> 243, architecture -> 236,
like -> 209, architect -> 196, city -> 185, modernism -> 184, new
-> 159, time -> 140, work -> 140, art -> 135, design -> 132,
museum -> 127, way -> 120, iconic -> 113, mean -> 108, use -> 108,
house -> 102, space -> 99, form -> 98, ornament -> 96, late -> 95,
year -> 95, modernist -> 93, large -> 90, call -> 88, style -> 85,
world -> 85, architectural -> 83, movement -> 83, complexity ->
81, make -> 81, urban -> 76, metaphor -> 74, open -> 74, wall ->
74, nature -> 72, public -> 70, white -> 70, different -> 70,
culture -> 69, set -> 67, mix -> 66, pattern -> 65, point -> 64,
good -> 64, shape -> 62, just -> 61, say -> 61|>

Koolhaas_Delirious New York



Koolhaas_Delirious New York.txt
number of sentences:
2960
number of words:
35591
unique words:
6764
<|manhattan -> 398, new -> 371, build -> 323, city -> 280, tower
-> 195, skyscraper -> 192, york -> 169, island -> 166, block ->
156, floor -> 155, center -> 155, world -> 129, architect -> 123,
hotel -> 110, time -> 107, park -> 107, plan -> 105, form -> 105,
architecture -> 98, street -> 97, hood -> 93, metropolitan -> 93,
like -> 91, corbusier -> 90, rockefeller -> 89, coney -> 85,
architectural -> 85, man -> 85, design -> 83, site -> 83, project
-> 80, make -> 76, foot -> 76, single -> 76, life -> 76, interior
-> 74, great -> 73, room -> 72, real -> 69, space -> 68, structure
-> 67, large -> 67, waldorf -> 65, year -> 64, manhattanism -> 64,
light -> 62, congestion -> 61, square -> 60, metropolis -> 60,
reality -> 59|>

LeCorbusier_Towards a New Architecture



LeCorbusier_Towards a New Architecture.txt
number of sentences:
1710
number of words:
15461
unique words:
3429
<|house -> 192, architecture -> 173, mass -> 122, man -> 112, plan
-> 110, work -> 103, build -> 92, order -> 91, form -> 84, new ->
80, wall -> 77, great -> 77, day -> 76, thing -> 73, problem ->
70, light -> 65, mind -> 62, construction -> 61, architect -> 59,
town -> 56, element -> 56, need -> 56, art -> 56, production ->
55, state -> 53, eye -> 52, spirit -> 51, line -> 50, long -> 47,
create -> 47, parthenon -> 46, use -> 46, make -> 46, like -> 45,
architectural -> 43, bring -> 43, foot -> 41, engineer -> 41, way
-> 40, result -> 40, mean -> 40, modern -> 40, good -> 40, room ->
39, set -> 39, rome -> 39, live -> 37, exist -> 37, give -> 37,
window -> 36|>

Fig. 2.6 Generic Profiles of books in Xenotheka http://www.romanvlahovic.com/xenotheka/xenotheka_generic_profiles.pdf

2.4.3 RELATING: A Constitution of an Informational Face

Relating is an encoding process which constitutes *informational faces* of books and libraries. A book becomes a part of the library, but the library doesn't explicate or fix what is conceived in a book. It gives it an ambient milieu by relating it to all mediated indexes. Each index is at the same time a reflection of the whole library and a measure of a specific book. Indexes form a new dictionary of frequencies, which is at the same time an *informational face* of a library. Thus, each word, letter, sentence (or whatever the case may be) can become an index, and *Xenotheka* can become an informational object. As such, it has the ability to reply to questions in a polyphony of its voices: a question is an index; an answer is a spectrum of voices talking about that index. On the one hand, *relating* as an encoding process constitutes *informational faces* of books and, on the other, provides the ground for sending messages (a fast exchange) between *Xenotheka* and the performer.

2.4.3.1 Informational Face of a library

An *Informational face* is a face of *Xenotheka* and of all its books at once. First, the library is discretised into elements; the sense of the books is lost; it is then reconstituted in a new way via a probabilistic dictionary of the whole library.⁶⁷ The library is indexed in its own terms (e.g., by its own vocabulary) without referring to an absolute external reference. In the case of text and language, an absolute external reference would be the vocabulary of all English words. Being able to articulate each library in its own terms, is one of the main conceptual fantasies of this work. But what would it mean to articulate a thing in its own terms?⁶⁸ One might look at it as a quest to abstract from the natural and the artificial while still being able to speak about them. A constitution of an alphabet? It could as well be imagined as a talk with a phenomenon one has never seen before. An articulation of a communication channel? This can be illustrated with Jacques Monod's thought experiment in which a computer has to distinguish an artefact of an alien culture from a natural object on Mars. "*Wholly ignorant of the nature of such beings and of the projects they might*

67 One of the first references to this kind of probabilistic treatment of text is already more than a hundred years old. In 1913 A. A. Markov approached the epos 'Evgenij Onegin' by Alexander Sergejevich Pushkin by observing transition probabilities of its letters. This approach was later used by Google in their PageRank algorithm. For more see "Google Matrix," *Wikipedia*, June 23, 2018, https://en.wikipedia.org/w/index.php?title=Google_matrix&oldid=847217303., and See Andrei Andreevich Markov, "An Example of Statistical Investigation of the Text Eugene Onegin Concerning the Connection of Samples in Chains," *Science in Context* 19, no. 4 ([1913] 2006): 591–600.

68 Vera Bühlmann, "Articulating a Thing Entirely in Its Own Terms Or: What Can We Understand by the Notion of «engendering» ?," in *Eigenarchitecture*, ed. Ludger Hovestadt and Vera Bühlmann (Birkhauser Architecture, 2014), 69–127.

have conceived, our program would have to utilize only very general criteria, solely based upon the examined objects' structure and form and without any reference to their eventual function."⁶⁹ Or in other words, as Zalamea put it, we would have to possess the power to orient ourselves within the relative, "the situation of an object cannot be anything but relative, with respect to a certain realm ('geography') and to a moment of that realm's evolution ('history')."⁷⁰ It is where, in Zalamea's terms, *actors* can take the place of 'geography' and the *stage* of 'history'.

As an approach, the *Informational Face* of a library would be the conceptual inversion of *Google Ngram Viewer* which counts frequencies of all the words in available books printed between 1500 and 2008.⁷¹ This is how *Google* provides an all-encompassing generic base for looking at text, while an *Informational Instrument* articulates a library-specific dictionary as a private channel to access the infinite flow of digitised text (*Bibliotheka*) via a specific interest. In doing so, books and the library become a body (*Xenotheka*) with an *informational face*.

Scheme of an *informational face* of a library has a form of a matrix:

| | | | | |
|---------|--------|--------|--------|--------|
| LIBRARY | book_1 | book_2 | book_3 | book_4 |
| index_1 | v11 | v12 | v13 | v14 |
| index_2 | v21 | v22 | v23 | v24 |
| index_3 | v31 | v32 | v33 | v34 |

By *mediating Xenotheka* in different ways—in terms of indexes and their measures—various *informational faces* are constituted and the matrix is filled with values that in no way represent the meaning of a book or a library. Here are three extracts of *informational faces* of the same library encoded in three different manners:⁷²

```
InformationalFace_1
Index: Letters
Measure: ClosenessCentrality

e -> {0.0536998, 0.0534303, 0.0507542, 0.050959, 0.0547353, 0.0495837,
```

69 Jacques Monod, *Chance and Necessity: An Essay on the Natural Philosophy of Modern Biology* (Penguin, 1970), 16.

70 Zalamea, *Synthetic Philosophy of Contemporary Mathematics*, 273.

71 For more on Google Ngram Viewer See: "Google Ngram Viewer," *Wikipedia*, August 14, 2018, https://en.wikipedia.org/w/index.php?title=Google_Ngram_Viewer&oldid=854920230.

72 The presented samples are extracts from a library of 20 books, therefore each index is a 20 dimensional vector.

```

0.050647, 0.0493031, 0.053521, 0.0507001, 0.0532046, 0.051654, 0.048335,
0.0510064, 0.0547633, 0.0498897, 0.0497523, 0.0474914, 0.0554907,
0.0510424}
t -> {0.0387049, 0.0412686, 0.0438509, 0.039263, 0.0403832, 0.0405692,
0.0425314, 0.0427855, 0.0404597, 0.042965, 0.0417867, 0.0416094,
0.0395516, 0.0430727, 0.0444167, 0.0436823, 0.0444566, 0.0461541,
0.0391486, 0.0487979}
n -> {0.0423402, 0.0386823, 0.041759, 0.0385073, 0.0408047, 0.0431401,
0.0466192, 0.043801, 0.0430587, 0.0393465, 0.0425711, 0.03931, 0.0409177,
0.0421563, 0.0345476, 0.0371643, 0.0391533, 0.0392116, 0.0408429,
0.040389}
r -> {0.0384846, 0.0438076, 0.0417943, 0.0421069, 0.0437132, 0.0425783,
0.041153, 0.0380898, 0.0384391, 0.0398303, 0.0456915, 0.0427623,
0.0388114, 0.0377144, 0.0397697, 0.0373861, 0.0401478, 0.0394616,
0.039951, 0.0366616}
a -> {0.0381295, 0.0388138, 0.0418216, 0.0377632, 0.0393264, 0.0389574,
0.0345222, 0.038242, 0.0416859, 0.0399488, 0.0381596, 0.0411894,
0.0372194, 0.0381038, 0.0375833, 0.0364167, 0.0378145, 0.0380549,
0.0379915, 0.033613}

```

InformationalFace_2

Index: Words

Measure: EigenvectorCentrality

```

iota -> {2.256719547759725*^-7, 0, 0, 0, 0, 0, 0, 0, 0,
0.06021397527273137, 0, 0, 1.2210448049742032*^-6, 0, 0, 0, 0, 0, 0}
man -> {0.0029773641865990844, 0.0018056180299213104,
0.0022881603325757465, 0.000331796429876832, 0.0007402495484027699,
0.0023814415933899056, 0.004684738899206825, 0.007722413882022028,
0.017287424386383917, 0.00010478256625619196, 0.007448124468412146,
0.001619251881536976, 0.002486351782473735, 0.00109401560782079,
0.003567497014143996, 0.00012317757035478497, 0.000021507537878576866,
0.00011409334245709929, 0.0015167326263025047, 0.00010214552063783053}
say -> {0.004984479132160154, 0.0020357796431953053,
0.00515639862502383, 0.00036820637300459427, 0.000840613000127168,
0.0015509095986049445, 0.0006151889840875826, 0.00024486250567067893,
0.0047829060559365505, 0.00018712097145080726, 0.004337699764228451,
0.00026057457876957867, 0.010688383999840184, 0.001480628265521771,
0.0039047484918205695, 0.0002001936484219425, 0.00027744466878160953,
0.0000451923567549392, 0.006875726748573287, 0.004425942499151488}
epsilon -> {0, 0, 0, 0, 0, 0, 0, 0, 0, 0.051106233568635966, 0, 0, 0,
0, 0, 0, 0, 0}
good -> {0.0010397648123461562, 0.0029800410265695717,
0.0019344023525591115, 0.0011996390730045488, 0.002380185620858084,
0.0016303133909325426, 0.0013601319506538988, 0.0015437218730514131,
0.009471348442953704, 0.00006061823414251216, 0.007897605301941339,
0.0011438322477821368, 0.0032204100486824404, 0.0006929428764485763,
0.004564260067325699, 0.0034050757282557687, 0.001908339795763026,
0.00042085295950956337, 0.0033272601998166904, 0.0007200549717235624}

```

```
InformationalFace_3
Index: Bigrams
Measure: VertexDegree
```

```
take place -> {1, 0, 2, 7, 5, 18, 6, 8, 8, 3, 13, 10, 0, 7, 13, 1, 3, 2, 16, 163}
use word -> {1, 2, 0, 1, 5, 1, 8, 7, 1, 1, 4, 0, 1, 3, 1, 0, 2, 1, 0, 1}
good way -> {0, 9, 2, 3, 2, 0, 1, 0, 1, 2, 1, 0, 2, 0, 2, 2, 2, 1, 1, 7}
know good -> {0, 2, 1, 3, 2, 4, 2, 3, 5, 1, 1, 0, 5, 0, 1, 0, 0, 0, 4, 1}
long time -> {0, 7, 1, 2, 2, 3, 2, 0, 3, 1, 9, 3, 4, 0, 13, 0, 2, 0, 4, 0}
```

The kinds of metrics one can apply to a text depend on the richness of the stage. This is open. These encodings don't have a fixed form—they are code dependent. There are infinite ways of how one can encode a book and they don't have to belong to the same kind. Code is beyond subjective and objective. It is both—*Coding as Literacy*.⁷³ Each encoding opens a different spectrum of possible decodings. These encodings don't define what a text is but provide the ground for a specific context and its articulations. The measurement becomes part of the encoding process. It translates into a cypher open to many articulations and, in effect, opens a communication channel. Cryptography, measurement, and communication start to intertwine in a delicate way. Since *informational faces* are algebraic, they can be transformed from words and letters to synonyms and antonyms, to Kindle and Google ratings, to tastes and moods of any intensity. Measuring and indexing define the resolution and encode an ambient. Books and libraries get their *informational faces*. A book becomes a vector and a wave; a library becomes a matrix and a stream.

Here is a *symbolic poem* that constitutes an *informational face* of a library and of its books. As an input one needs to:

1. Provide a library of books indexed in a specific way, as it was demonstrated in the 2.4.1 *Curating* segment of the 2.4 *Generic Machine*. An example of one book indexed by words: http://www.romanvlahovic.com/xenotheka/Vitruvius_ThetenBooksofArchitecture_words.txt
2. Define the way of measuring indexed books by choosing a centrality measure: e.g., Vertex Degree
3. Define the size of the dictionary: e.g. 5000

73 Bühlmann, Hovestadt, and Moosavi, *Coding as Literacy*.

```

path = StringJoin[{"Users/romanmir/Dropbox/_phd mathematica_scripts/library/_229_all/"}]
centrality = VertexDegree;
files = FileNames["*_text.txt", path];
dictionarySize = 5000; libraryDictionary = {}; dictionary = {};
na = StringSplit[#, {"/", "_text."}][[-2]] & /@ files;

Monitor[Table[{dictionary = Union[dictionary, Flatten[Import[StringJoin[{path, na[[i]], "_words.csv"}]]]],
  {i, 1, Length[na]}], i];
DDictionary[index_] := Module[{wo, graph, centralities},
  wo = Flatten[Import[StringJoin[{path, na[[index]], "_words.csv"}]]];
  graph = Graph[Rule@@@Partition[Append[wo, wo[[1]], 2, 1]];
  centralities = Association[VertexList[graph][[#]] -> centrality[graph][[#]] / 2 & /@
    Range[Length[VertexList[graph]]];
  libraryDictionary =
  # /. _Missing -> 0 & /@ Append[libraryDictionary,
    Table[centralities[dictionary[[w]]], {w, 1, Length[dictionary]}]];
Monitor[Table[DDictionary[i], {i, 1, Length[files]}];, i]

libraryDictionary = Transpose[libraryDictionary];
libraryDictionary =
  Association[dictionary[[#]] -> libraryDictionary[[#]] & /@ Range[Length[libraryDictionary]];
libdict = Union[Reverse[SortBy[libraryDictionary, Total[#] &][[1 ;; dictionarySize]],
  SortBy[libraryDictionary, Count[#, 0] &][[1 ;; dictionarySize]]];

```

By writing another *symbolic poem*, one is suddenly playing with the whole library, with any number of its books at once. Books are able to abstract from its specific vocabulary and the length of the text. They are encoded into the library's dictionary. When indexed by words, an *informational face* of a library is at the same time a dictionary of its most common terms. Here is one *informational face* of *Xenotheka*: 229 books indexed by its 21591 most frequent words and measured by a Vertex Degree (word frequency) (Fig. 2.7). This dictionary is used as an input for the *Machine Intelligence*.⁷⁴

2.4.3.2 Texting with *Xenotheka*

An *informational face* of *Xenotheka* is an open door to the plenty. By encoding the library and constituting its face, *Xenotheka* starts to speak in a generic voice. The player can send indexes (questions) to *Xenotheka* and enter the plenty of the digital where suddenly a multitude of answers, stories, ideas and concepts inhabit a spectrum. It is a cloud around an index. Out of its abundant context, *Xenotheka* can reply in a generic way by indexing many different positions, while keeping the question open. Every time a question is asked, any book from the library replies if it

⁷⁴ When used as input for Machine Intelligence algorithms, the dictionary usually needs to be normalised. In this experiment it was normalised by row, in order to provide an emphasis on the word in the library, or in a transposed version, to provide an emphasis on a word in a book. For more, see 2.5 *Machine Intelligence*.

say → (119, 355, 100, 108, 100, 129, 64, 49, 356, 45, 270, 18, 414, 32, 364, 4, 16, 10, 611, 810, 162, 65, 82, 249, 127, 53, 134, 130, 60, 19, 335, 71, 74, 29, 26, 298, 292, 38, 661, 39, 41, 122, 49, 60, 19, 7, 25, 24, 48, 61, 36, 1617, 46, 96, 292, 860, 711, 17, 221, 94, 139, 36, 361, 295, 441, 173, 45, 363, 801, 34, 95, 73, 68, 874, 1480, 74, 35, 26, 1199, 120, 320, 74, 1163, 19, 149, 5, 10, 84, 205, 206, 96, 195, 97, 354, 71, 132, 46, 211, 30, 147, 47, 263, 19, 3, 0, 186, 23, 112, 214, 73, 122, 713, 665, 298, 38, 244, 57, 2674, 93, 90, 13, 156, 61, 2004, 350, 235, 180, 73, 941, 322, 695, 6531, 195, 17, 5, 8, 25, 621, 188, 216, 87, 38, 17, 77, 29, 386, 86, 752, 74, 99, 313, 4, 71, 185, 170, 156, 15, 85, 409, 21, 178, 70, 179, 134, 318, 5, 7, 241, 1531, 86, 51, 160, 552, 255, 86, 2171, 16, 3, 79, 166, 31, 85, 105, 164, 12, 65, 21, 61, 64, 155, 142, 294, 225, 398, 211, 276, 25, 80, 80, 130, 346, 48, 598, 271, 144, 19, 111, 282, 93, 10, 208, 3447, 3842, 1380, 18, 32, 26, 56, 345, 2, 34, 72, 64, 73, 101, 1116, 33, 151, 613)

man → (46, 305, 83, 189, 55, 190, 487, 706, 1184, 41, 366, 61, 143, 31, 419, 5, 2, 12, 185, 65, 151, 196, 4, 0, 1, 71, 142, 268, 59, 41, 20, 51, 154, 12, 269, 198, 30, 1209, 15, 5, 61, 17, 43, 17, 40, 18, 11, 16, 194, 36, 244, 30, 79, 62, 1063, 331, 6, 43, 109, 5, 5, 70, 54, 277, 68, 12, 302, 617, 50, 11, 116, 42, 392, 907, 50, 69, 20, 454, 3, 109, 54, 509, 21, 1, 0, 3, 39, 801, 38, 552, 31, 192, 94, 509, 118, 6, 22, 367, 72, 344, 3, 15, 21, 8, 7, 11, 576, 164, 56, 2176, 68, 11, 69, 291, 73, 2600, 196, 5, 6, 112, 10, 606, 419, 471, 371, 9, 224, 92, 365, 4412, 129, 85, 7, 9, 8, 173, 47, 9, 49, 13, 1, 147, 112, 788, 9, 565, 286, 231, 469, 18, 45, 382, 387, 16, 15, 261, 481, 7, 42, 14, 8, 370, 488, 48, 20, 124, 595, 75, 50, 47, 22, 19, 170, 988, 22, 6, 12, 29, 654, 54, 155, 104, 21, 54, 10, 13, 46, 34, 325, 54, 89, 34, 159, 159, 118, 4, 7, 11, 606, 181, 492, 56, 706, 614, 51, 6, 88, 479, 29, 17, 50, 764, 1981, 298, 12, 19, 8, 128, 1120, 4, 8, 6, 66, 49, 138, 6, 203, 103, 5, 426)

time → (46, 265, 13, 310, 150, 179, 125, 126, 100, 177, 113, 77, 134, 79, 329, 21, 62, 49, 224, 936, 144, 117, 39, 16, 11, 208, 118, 21, 8, 131, 286, 83, 34, 44, 425, 284, 31, 444, 41, 218, 275, 46, 60, 109, 118, 1267, 165, 327, 784, 1259, 22, 47, 135, 220, 25, 73, 68, 219, 137, 84, 174, 482, 293, 128, 56, 285, 563, 40, 48, 170, 102, 319, 378, 61, 26, 56, 309, 112, 276, 53, 316, 146, 70, 4, 27, 279, 153, 375, 80, 379, 96, 219, 95, 191, 57, 54, 23, 120, 52, 379, 64, 8, 16, 187, 24, 227, 361, 138, 549, 490, 419, 244, 243, 61, 39, 894, 364, 84, 8, 332, 140, 462, 139, 202, 121, 74, 265, 785, 329, 769, 280, 107, 38, 43, 192, 251, 301, 143, 134, 87, 18, 71, 34, 675, 253, 179, 204, 120, 848, 19, 135, 255, 315, 91, 125, 198, 430, 7, 100, 282, 1392, 106, 154, 78, 87, 25, 126, 71, 113, 112, 166, 110, 163, 538, 39, 90, 161, 156, 44, 119, 78, 153, 27, 39, 223, 251, 97, 296, 128, 374, 385, 447, 242, 391, 34, 53, 46, 109, 990, 218, 122, 94, 220, 45, 210, 214, 208, 23, 212, 651, 1084, 372, 42, 51, 127, 96, 42, 15, 45, 465, 317, 133, 11, 345, 40, 82, 411)

think → (39, 204, 22, 94, 98, 76, 172, 197, 222, 20, 95, 5, 177, 32, 146, 5, 52, 15, 373, 1527, 137, 52, 102, 98, 304, 25, 101, 72, 27, 29, 80, 68, 40, 11, 47, 325, 129, 27, 314, 15, 43, 299, 61, 41, 23, 8, 39, 41, 38, 68, 52, 245, 22, 147, 239, 382, 41, 17, 61, 130, 132, 28, 284, 544, 174, 342, 35, 263, 359, 88, 291, 38, 28, 222, 331, 17, 23, 34, 282, 56, 154, 66, 250, 17, 185, 3, 11, 40, 83, 323, 42, 492, 86, 306, 87, 101, 77, 11, 25, 191, 47, 153, 35, 7, 3, 286, 17, 69, 151, 105, 166, 305, 683, 393, 74, 111, 36, 897, 122, 79, 9, 166, 29, 355, 119, 138, 58, 244, 502, 194, 205, 114, 17, 14, 13, 21, 255, 97, 88, 64, 39, 13, 49, 29, 580, 48, 219, 103, 0, 73, 133, 80, 384, 42, 84, 394, 6, 74, 105, 18, 119, 126, 26, 84, 55, 227, 28, 68, 169, 151, 57, 145, 1530, 211, 9, 81, 94, 84, 132, 116, 59, 12, 38, 51, 131, 95, 190, 72, 191, 147, 137, 130, 166, 26, 82, 35, 144, 133, 119, 732, 260, 135, 1, 62, 216, 190, 19, 233, 1149, 1384, 261, 14, 50, 10, 70, 26, 3, 42, 177, 26, 35, 61, 741, 15, 172, 757)

come → (51, 145, 12, 279, 186, 161, 122, 140, 112, 23, 46, 33, 168, 37, 188, 6, 20, 18, 260, 264, 125, 19, 26, 29, 35, 38, 168, 99, 35, 18, 148, 92, 60, 69, 69, 110, 159, 27, 405, 47, 25, 115, 42, 41, 49, 24, 46, 39, 124, 160, 106, 628, 21, 37, 58, 137, 34, 52, 143, 128, 38, 2, 191, 74, 160, 84, 17, 120, 236, 16, 17, 87, 49, 363, 452, 34, 105, 29, 395, 42, 162, 37, 390, 19, 36, 0, 9, 80, 21, 51, 313, 96, 96, 176, 64, 133, 38, 23, 14, 93, 113, 277, 17, 5, 1, 65, 25, 154, 81, 59, 285, 432, 265, 176, 158, 28, 1039, 48, 23, 0, 183, 50, 163, 193, 233, 201, 69, 217, 39, 489, 4165, 119, 39, 19, 9, 31, 166, 171, 101, 50, 46, 12, 82, 30, 294, 40, 196, 169, 85, 190, 4, 96, 104, 132, 46, 36, 174, 294, 15, 108, 73, 164, 53, 221, 64, 6, 41, 148, 55, 39, 91, 29, 35, 102, 689, 32, 21, 75, 102, 25, 43, 34, 88, 14, 16, 63, 117, 54, 175, 129, 111, 209, 209, 276, 19, 146, 141, 83, 244, 111, 141, 40, 125, 41, 132, 297, 87, 15, 161, 1313, 1583, 528, 27, 29, 31, 99, 49, 6, 31, 123, 65, 52, 5, 432, 36, 28, 257)

know → (60, 92, 56, 153, 159, 201, 141, 150, 110, 18, 65, 12, 281, 31, 337, 8, 13, 10, 390, 247, 121, 44, 38, 79, 36, 11, 183, 114, 35, 11, 176, 80, 34, 37, 42, 179, 126, 22, 508, 15, 92, 129, 38, 62, 66, 39, 47, 45, 42, 57, 54, 554, 36, 128, 207, 165, 81, 39, 66, 185, 68, 40, 143, 109, 141, 47, 17, 166, 321, 49, 132, 163, 86, 409, 442, 81, 53, 32, 599, 119, 204, 76, 717, 32, 63, 14, 15, 58, 49, 157, 35, 216, 95, 190, 84, 59, 55, 22, 15, 51, 76, 181, 27, 4, 9, 124, 25, 11, 321, 100, 77, 169, 261, 541, 281, 54, 160, 16, 975, 162, 7, 3, 146, 41, 566, 183, 2373, 35, 197, 143, 377, 1258, 161, 35, 21, 20, 18, 289, 161, 122, 50, 43, 10, 37, 1316, 59, 251, 91, 70, 96, 2, 40, 124, 80, 88, 32, 54, 331, 12, 43, 86, 72, 126, 140, 36, 13, 28, 221, 16, 46, 148, 115, 66, 77, 1644, 25, 14, 46, 136, 34, 70, 278, 53, 8, 32, 22, 51, 36, 190, 183, 228, 116, 254, 198, 311, 22, 96, 45, 105, 143, 62, 395, 106, 117, 1, 83, 221, 52, 10, 312, 1265, 1578, 279, 10, 15, 23, 30, 66, 2, 28, 143, 142, 71, 40, 447, 22, 106, 568)

like → (18, 284, 61, 336, 175, 95, 46, 107, 151, 21, 97, 8, 107, 29, 107, 11, 36, 50, 115, 265, 179, 164, 37, 44, 23, 91, 218, 57, 16, 99, 55, 45, 8, 58, 184, 112, 31, 396, 56, 9, 229, 57, 75, 40, 28, 61, 70, 28, 38, 33, 241, 29, 37, 147, 175, 35, 99, 49, 43, 108, 168, 161, 231, 41, 132, 102, 167, 26, 87, 24, 219, 181, 42, 33, 238, 570, 61, 230, 39, 342, 8, 99, 2, 9, 85, 75, 254, 122, 144, 52, 128, 62, 363, 13, 39, 26, 170, 71, 339, 69, 8, 21, 99, 26, 76, 104, 62, 31, 64, 53, 221, 64, 6, 41, 148, 55, 39, 91, 29, 35, 102, 689, 32, 21, 75, 102, 25, 43, 34, 88, 14, 16, 63, 117, 54, 175, 129, 111, 209, 209, 276, 19, 146, 141, 83, 244, 111, 141, 40, 125, 41, 132, 297, 87, 15, 161, 1313, 1583, 528, 27, 29, 31, 99, 49, 6, 31, 123, 65, 52, 5, 432, 36, 28, 257)

know → (60, 92, 56, 153, 159, 201, 141, 150, 110, 18, 65, 12, 281, 31, 337, 8, 13, 10, 390, 247, 121, 44, 38, 79, 36, 11, 183, 114, 35, 11, 176, 80, 34, 37, 42, 179, 126, 22, 508, 15, 92, 129, 38, 62, 66, 39, 47, 45, 42, 57, 54, 554, 36, 128, 207, 165, 81, 39, 66, 185, 68, 40, 143, 109, 141, 47, 17, 166, 321, 49, 132, 163, 86, 409, 442, 81, 53, 32, 599, 119, 204, 76, 717, 32, 63, 14, 15, 58, 49, 157, 35, 216, 95, 190, 84, 59, 55, 22, 15, 51, 76, 181, 27, 4, 9, 124, 25, 11, 321, 100, 77, 169, 261, 541, 281, 54, 160, 16, 975, 162, 7, 3, 146, 41, 566, 183, 2373, 35, 197, 143, 377, 1258, 161, 35, 21, 20, 18, 289, 161, 122, 50, 43, 10, 37, 1316, 59, 251, 91, 70, 96, 2, 40, 124, 80, 88, 32, 54, 331, 12, 43, 86, 72, 126, 140, 36, 13, 28, 221, 16, 46, 148, 115, 66, 77, 1644, 25, 14, 46, 136, 34, 70, 278, 53, 8, 32, 22, 51, 36, 190, 183, 228, 116, 254, 198, 311, 22, 96, 45, 105, 143, 62, 395, 106, 117, 1, 83, 221, 52, 10, 312, 1265, 1578, 279, 10, 15, 23, 30, 66, 2, 28, 143, 142, 71, 40, 447, 22, 106, 568)

like → (18, 284, 61, 336, 175, 95, 46, 107, 151, 21, 97, 8, 107, 29, 107, 11, 36, 50, 115, 265, 179, 164, 37, 44, 23, 91, 218, 57, 16, 99, 55, 45, 8, 58, 184, 112, 31, 396, 56, 9, 229, 57, 75, 40, 28, 61, 70, 28, 38, 33, 241, 29, 37, 147, 175, 35, 99, 49, 43, 108, 168, 161, 231, 41, 132, 102, 167, 26, 87, 24, 219, 181, 42, 33, 238, 570, 61, 230, 39, 342, 8, 99, 2, 9, 85, 75, 254, 122, 144, 52, 128, 62, 363, 13, 39, 26, 170, 71, 339, 69, 8, 21, 99, 26, 76, 104, 62, 31, 64, 53, 221, 64, 6, 41, 148, 55, 39, 91, 29, 35, 102, 689, 32, 21, 75, 102, 25, 43, 34, 88, 14, 16, 63, 117, 54, 175, 129, 111, 209, 209, 276, 19, 146, 141, 83, 244, 111, 141, 40, 125, 41, 132, 297, 87, 15, 161, 1313, 1583, 528, 27, 29, 31, 99, 49, 6, 31, 123, 65, 52, 5, 432, 36, 28, 257)

know → (60, 92, 56, 153, 159, 201, 141, 150, 110, 18, 65, 12, 281, 31, 337, 8, 13, 10, 390, 247, 121, 44, 38, 79, 36, 11, 183, 114, 35, 11, 176, 80, 34, 37, 42, 179, 126, 22, 508, 15, 92, 129, 38, 62, 66, 39, 47, 45, 42, 57, 54, 554, 36, 128, 207, 165, 81, 39, 66, 185, 68, 40, 143, 109, 141, 47, 17, 166, 321, 49, 132, 163, 86, 409, 442, 81, 53, 32, 599, 119, 204, 76, 717, 32, 63, 14, 15, 58, 49, 157, 35, 216, 95, 190, 84, 59, 55, 22, 15, 51, 76, 181, 27, 4, 9, 124, 25, 11, 321, 100, 77, 169, 261, 541, 281, 54, 160, 16, 975, 162, 7, 3, 146, 41, 566, 183, 2373, 35, 197, 143, 377, 1258, 161, 35, 21, 20, 18, 289, 161, 122, 50, 43, 10, 37, 1316, 59, 251, 91, 70, 96, 2, 40, 124, 80, 88, 32, 54, 331, 12, 43, 86, 72, 126, 140, 36, 13, 28, 221, 16, 46, 148, 115, 66, 77, 1644, 25, 14, 46, 136, 34, 70, 278, 53, 8, 32, 22, 51, 36, 190, 183, 228, 116, 254, 198, 311, 22, 96, 45, 105, 143, 62, 395, 106, 117, 1, 83, 221, 52, 10, 312, 1265, 1578, 279, 10, 15, 23, 30, 66, 2, 28, 143, 142, 71, 40, 447, 22, 106, 568)

like → (18, 284, 61, 336, 175, 95, 46, 107, 151, 21, 97, 8, 107, 29, 107, 11, 36, 50, 115, 265, 179, 164, 37, 44, 23, 91, 218, 57, 16, 99, 55, 45, 8, 58, 184, 112, 31, 396, 56, 9, 229, 57, 75, 40, 28, 61, 70, 28, 38, 33, 241, 29, 37, 147, 175, 35, 99, 49, 43, 108, 168, 161, 231, 41, 132, 102, 167, 26, 87, 24, 219, 181, 42, 33, 238, 570, 61, 230, 39, 342, 8, 99, 2, 9, 85, 75, 254, 122, 144, 52, 128, 62, 363, 13, 39, 26, 170, 71, 339, 69, 8, 21, 99, 26, 76, 104, 62, 31, 64, 53, 221, 64, 6, 41, 148, 55, 39, 91, 29, 35, 102, 689, 32, 21, 75, 102, 25, 43, 34, 88, 14, 16, 63, 117, 54, 175, 129, 111, 209, 209, 276, 19, 146, 141, 83, 244, 111, 141, 40, 125, 41, 132, 297, 87, 15, 161, 1313, 1583, 528, 27, 29, 31, 99, 49, 6, 31, 123, 65, 52, 5, 432, 36, 28, 257)

know → (60, 92, 56, 153, 159, 201, 141, 150, 110, 18, 65, 12, 281, 31, 337, 8, 13, 10, 390, 247, 121, 44, 38, 79, 36, 11, 183, 114, 35, 11, 176, 80, 34, 37, 42, 179, 126, 22, 508, 15, 92, 129, 38, 62, 66, 39, 47, 45, 42, 57, 54, 554, 36, 128, 207, 165, 81, 39, 66, 185, 68, 40, 143, 109, 141, 47, 17, 166, 321, 49, 132, 163, 86, 409, 442, 81, 53, 32, 599, 119, 204, 76, 717, 32, 63, 14, 15, 58, 49, 157, 35, 216, 95, 190, 84, 59, 55, 22, 15, 51, 76, 181, 27, 4, 9, 124, 25, 11, 321, 100, 77, 169, 261, 541, 281, 54, 160, 16, 975, 162, 7, 3, 146, 41, 566, 183, 2373, 35, 197, 143, 377, 1258, 161, 35, 21, 20, 18, 289, 161, 122, 50, 43, 10, 37, 1316, 59, 251, 91, 70, 96, 2, 40, 124, 80, 88, 32, 54, 331, 12, 43, 86, 72, 126, 140, 36, 13, 28, 221, 16, 46, 148, 115, 66, 77, 1644, 25, 14, 46, 136, 34, 70, 278, 53, 8, 32, 22, 51, 36, 190, 183, 228, 116, 254, 198, 311, 22, 96, 45, 105, 143, 62, 395, 106, 117, 1, 83, 221, 52, 10, 312, 1265, 1578, 279, 10, 15, 23, 30, 66, 2, 28, 143, 142, 71, 40, 447, 22, 106, 568)

like → (18, 284, 61, 336, 175, 95, 46, 107, 151, 21, 97, 8, 107, 29, 107, 11, 36, 50, 115, 265, 179, 164, 37, 44, 23, 91, 218, 57, 16, 99, 55, 45, 8, 58, 184, 112, 31, 396, 56, 9, 229, 57, 75, 40, 28, 61, 70, 28, 38, 33, 241, 29, 37, 147, 175, 35, 99, 49, 43, 108, 168, 161, 231, 41, 132, 102, 167, 26, 87, 24, 219, 181, 42, 33, 238, 570, 61, 230, 39, 342, 8, 99, 2, 9, 85, 75, 254, 122, 144, 52, 128, 62, 363, 13, 39, 26, 170, 71, 339, 69, 8, 21, 99, 26, 76, 104, 62, 31, 64, 53, 221, 64, 6, 41, 148, 55, 39, 91, 29, 35, 102, 689, 32, 21, 75, 102, 25, 43, 34, 88, 14, 16, 63, 117, 54, 175, 129, 111, 209, 209, 276, 19, 146, 141, 83, 244, 111, 141, 40, 125, 41, 132, 297, 87, 15, 161, 1313, 1583, 528, 27, 29, 31, 99, 49, 6, 31, 123, 65, 52, 5, 432, 36, 28, 257)

know → (60, 92, 56, 153, 159, 201, 141, 150, 110, 18, 65, 12, 281, 31, 337, 8, 13, 10, 390, 247, 121,

has something to say. The books are out of context, so are their sentences. Consistency is in the spectrum of replies. It is a fast and generic talk of many voices speaking at the same time. It is a beautiful start from the abundant ‘middle’.

During the *Play Among Books*, the performer is constantly texting with *Xenotheka* by utilising yet another poem. The *generic poems* in this work have also been written by playing with the ability to text with *Xenotheka*.

SymbolicPoem08_Relating_TextingLibrary⁷⁵

```
phrase = {" architecture is", ""}; order = Range[Length[txtSS]];
path = StringJoin[{"Users/romanmir/Xenotheka/"}];
na = StringSplit[#, {"/", "_text.txt"}][[-1]] & /@ FileNames["*_text.txt", path];
se = Flatten[Import[StringJoin[{path, #, "_sentences.csv"}]]] & /@ na;

pList = Select[{na[[#]],
  Select[se[[#]], StringContainsQ[ToString@#, phrase[[1]] -- ___ -- phrase[[2]], IgnoreCase -> True] &]
} & /@ order, #[[2]] != {} &];
If[phrase[[2]] == "", phraseg = {phrase[[1]]}, phraseg = phrase];
roules = # -> "\!\(\*StyleBox[\\"\\\\" <> # <> "\\\"\\", FontColor->RGBColor[0, 0, 1]]\" & /@ phraseg;
txtPlot = Table[{
  Style[pList[[a, 1]], "Title"],
  StringJoin[StringReplace[" " <> pList[[a, 2, #]] , roules, IgnoreCase -> True], "\n"] & /@ Range[Length[pList[[a, 2]]]
], {a, Length[pList]};

Column[Column[{txtPlot[[#, 1]], "\n", "\n", "\n", Column[txtPlot[[#, 2]]], "\n", "\n", "\n", "\n"}] & /@
Range[Length[txtPlot]]
```

Here is one question, an index to *Xenotheka: Architecture?*

Xenotheka replies:

The full spectrum of replies: http://www.romanvlahovic.com/xenotheka/architecture_is.txt

Excerpt:

Alberti_10 books Of Architecture:

But if you take a View of the whole Circle of Arts, you shall hardly find one but what, despising all others, regards and seeks only its own particular Ends: Or if you do meet with any of such a Nature that you can in no wise do without it, and which yet brings along

⁷⁵ *SymbolicPoem08_Relating_TextingLibrary* is a poem that can search any library with an *informational face* for one or two syntagmas. As an output this poem returns the sentences of the library containing these two syntagmas.

with it Prosit at the same Time, conjoined with Pleasure and Honour, you will, I believe, be convinced, that ARCHITECTURE IS not to be excluded from that Number.

Aureli_The Possibility of an Absolute Architecture:

In this way the possibility of an absolute ARCHITECTURE IS the attempt to reestablish the sense of the city as the site of a political confrontation and recomposition of parts.

Carpo_The Alphabet and the Algorithm:

Yet digital technologies, now ubiquitous, have already significantly changed the way ARCHITECTURE IS designed and made.

Eisenman_Notes on Conceptual Architecture:

Concept as a primary concern of an ARCHITECTURE IS not a recent manifestation.

Hugo_Les Miserables:

The masterpiece of Jesuit ARCHITECTURE IS at Namur.

Jencks_The Story of Post-Modernism:

ARCHITECTURE IS like a person.

Koolhaas_Delirious New York:

Manhattan's ARCHITECTURE IS a paradigm for the exploitation of congestion.

Le Corbusier_The City of Tomorrow:

So now we reach the stage where ARCHITECTURE IS to lead to disorder!

Ranciere_Aisthesis:

But ARCHITECTURE IS not simply 'functional' art, the art of 'adherent' beauty to which Kant opposed 'free' beauty.

Ruskin_The Seven Lamps of Architecture

I. ARCHITECTURE IS the art which so disposes and adorns the edifices raised by man for whatsoever uses, that the sight of them contributes to his mental health, power and pleasure.

Venturi Scott Brown_Learning from Las Vegas:

Architects are out of the habit of looking nonjudgmentally at the environment, because orthodox Modern ARCHITECTURE IS progressive, if not revolutionary, utopian, and puristic; it is dissatisfied with existing conditions.

Vitruvius_The ten Books of Architecture:

For this book does not show of what ARCHITECTURE IS composed, but treats of the origin of the building art, how it was fostered, and how it made progress, step by step, until it reached its present perfection.

*2.4.4 A Double Articulation*⁷⁶

Xenotheka and the *Generic Machine*, Actors and the Stage, the Library and the Encoding Mechanism, algorithms and data, are all pairs in a double bind. A Double Articulation is a process of relating the *Generic Machine* to *Xenotheka*, and of *atom-letters* to *Bibliotheka*. It is happening on multiple levels of abstraction at the same time.⁷⁷ This relation provides informational encodings both to the library and the books. It nourishes the maximum of self-expression which is needed to

⁷⁶ The notion of double articulation here refers to Deleuze and Guattari, and to Hjelmslev. For more see Gilles Deleuze and Felix Guattari, "10,000 BC: The Geology of Morals (Who Does the Earth Think It Is?)," in *A Thousand Plateaus*, 1987, 39–74., and Louis Hjelmslev, *Prolegomena to a Theory of Language* (University of Wisconsin Press, 1969).

⁷⁷ See 2.5.1 ABSTRACTION 1, 2.5.2 ABSTRACTION 1', 2.5.3 ABSTRACTION 2

perform a *Play Among Books* in the world abundant with digital information. Tuning of this double articulation between *Xenotheka* and the *Generic Machine* is one of the main roles of the performer. It provides the stage on which actors can freely move and express themselves in as many ways and nuances possible. They become abstract informational objects, get *informational faces*, while being encoded into numbers —vectors. There is one major difference in encoding between *Xenotheka* and *Bibliotheka*. *Xenotheka* is encoded in its own terms and *Bibliotheka* is encoded in *Xenotheka*'s terms. *Xenotheka* provides an abstract alphabet of atom-letters to encode and communicate to *Bibliotheka*. A continuous flow of books is always seen via *Xenotheka*'s lens. *Xenotheka* is changing by internalising parts of the flow, and tuning itself according to the interests at stake. Playing the *Informational Instrument* becomes personal. Which books could I talk to about my interests, how should I encode them, what questions should I ask them? Probability space of *informational faces* is relative to this interest. It changes according to the libraries one would like to read from, and to the way one encodes them. Measurement and information become part of the encoding process, playful and relative to the way one looks at them, or as Barad is suggesting: "*Measurements are agential practices, which are not simply revelatory but performative: they help constitute and are a constitutive part of what is being measured.*"⁷⁸ In this sense, *Informational faces* are beyond objective and subjective, practical and poetic. As Eco would say, we are lost in the infinity of lists, but we are ready for informational plays in the world of data. A different space is opening up. One is able to tell stories by articulating and playing with the generic plenty. What an *Informational instrument* brings to the table is a way to access a generic base for looking at text via a private channel and specific interest encoded into *atom-letters*. An *Informational Instrument* thus facilitates a body, an avatar of the performer in the flow of information.

78 Barad, *What Is the Measure of Nothingness*, 6.

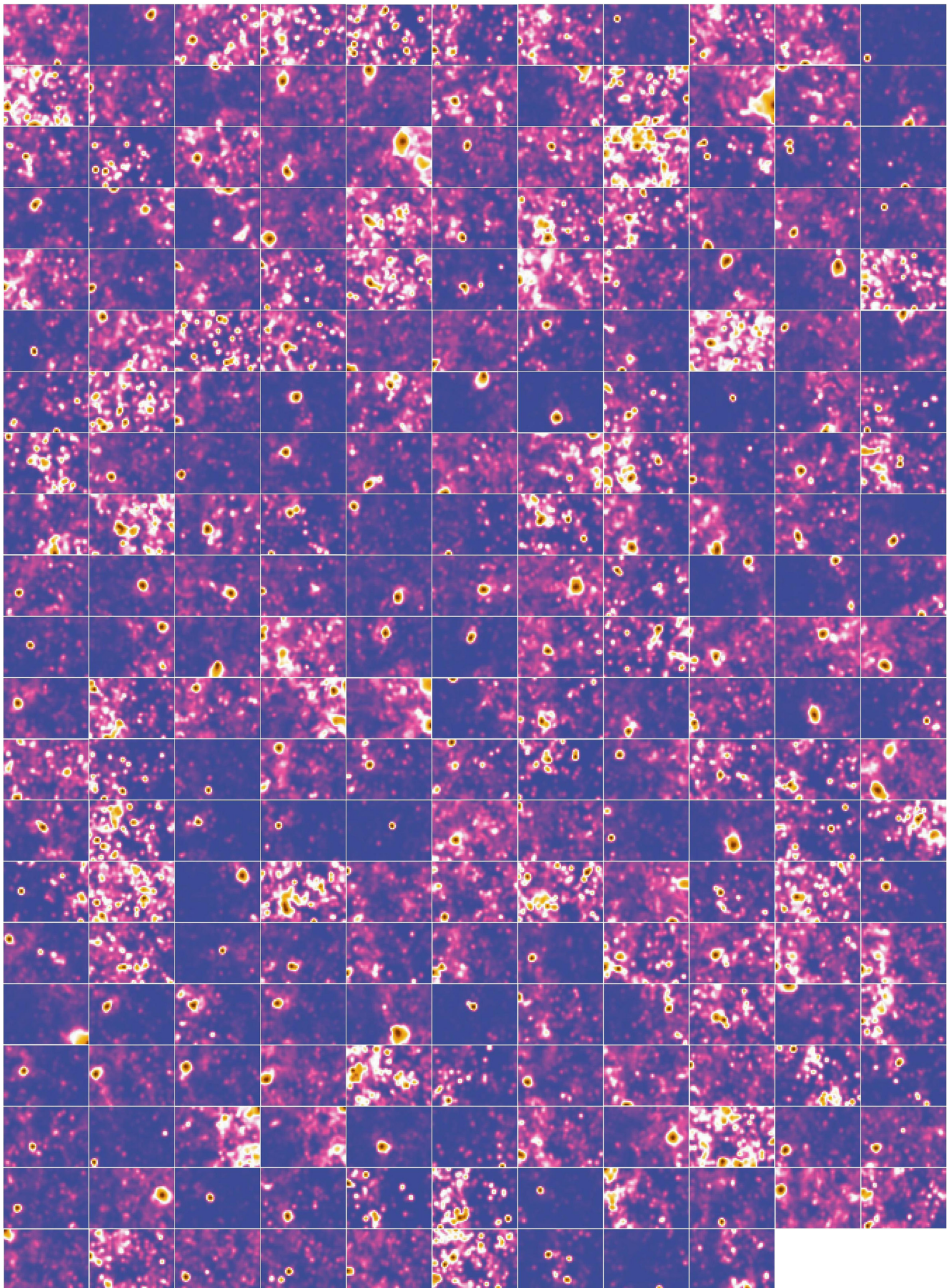


Fig. 2.8 *Xenotheka*: Snapshots of facial expressions of actors. Each cell expresses a current mood of one book. rendering_229_03_RW_4060_r_50it21d

2.5 MACHINE INTELLIGENCE: *Play, Concepts, Atom-Letters*

Machine intelligence is an informational motor of an *Informational Instrument*. With *Machine Intelligence a Play Among Books* makes a full conceptual circle, and the *Plentiful Play* can begin. What is happening on stage is not straightforward and intuitive. As Serres put it:

“*Objects, in the distance, change their skins, they send one another kisses.*”

—Michel Serres, *The Birth of Physics*⁷⁹

There is one process that appears consistent even from a distance: similar indexes attract each other; similar indexes group together. The whole library is in motion; concepts are negotiating and being negotiated. *Atom-letters* are starting to constitute a new temporal alphabet. *A Self-Organizing Map* is an algorithm that articulates this interplay of indexes. These process simultaneously operate on several levels of abstraction. Amid this interplay, actors and their faces are assuming expressions. They are distinguishing themselves from each other. All of this is occurring synchronously. This drama is a comedy of appearances, and renderings of one's making are snapshots of facial expressions of actors in an intense play (Fig. 2.8). Each actor has many faces at the same time; his character is their product (Fig. 2.19). By arranging different contexts and atmospheres, the player dances with a book. As an offering, a book captivated by each new context offers more than its author conceived. A book has a life of its own; it is a complex character. There is an invariance to its faces which can be symbolised and encapsulated in an implicit encoding but never explicated. By playing with invariances of books, *Machine Intelligence* is able to spectrally relate genericness of a library with a pre-specificity of a book.⁸⁰ Depending on how one looks, faces change, just like a photon seen from a quantum perspective is both a particle and a wave, but also energy, matter and information. Each of these notions is a different encoding of the same

⁷⁹ Serres, *The Birth of Physics*, 107.

⁸⁰ A book is never specific. There is a specific reading of a book, but the book itself is prior to any specification. For more on Pre-specific, see Bühlmann and Wiedmer, *Pre-Specifics*.

phenomenon. These conceptions don't exclude one another but are rather opening up to a different notion of articulation. They empower the phenomenon in different ways. In other words, encoding matters. In this manner, actors are articulated in the formation of concepts composed out of new abstract letters of an alphabet of a library they are part of. How many letters this alphabet has, what its resolution ends up to be, what its context and encodings are, is entirely up to the player. Its consistency is provided by the relation of *Xenotheka* and the *Generic Machine*. These new synthetic letters have qualities of both letters and numbers. Michel Serres calls such characters *atom-letters*. They are a hesitation between numbers (chiffres) and letters.

*“Then the atom-letters indeed form a word, a phrase, at the same time as they are conjoined in a body. By no means everywhere and in all places, but now here and now there, nunc hic nunc illic.”*⁸¹

—Michel Serres, *The Birth of Physics*

Informational objects get *informational faces*. They become actors and their faces start to get expressions. That is to say, they become intelligent in their own terms, while still cultivating the character of *Xenotheka*. *Bibliotheka* challenges and the *Machine Intelligence* rearticulates the library into a new persona. This newly formed articulations of the generic plane of *Xenotheka* are the facial expressions of books. They are becoming an intellectual ground to talk to the unknown: a new alphabet. Looked in this way, *Machine Intelligence*, in a double articulation with *Bibliotheka*, is never neutral, but always personal, not in competition with the performer, but as the other part of a double bind in thinking and operating among multiple flows of data. *Machine Intelligence* complements human intelligence in a *Plentiful Play*.

2.5.0 Self-Organizing Map

*Self-Organizing Map*⁸² is a machine learning algorithm that articulates the interplay of indexes in a *Play Among Books*. When placed in the context of an *Informational Instrument*,

81 Serres, *The Birth of Physics*, 148.

82 For a detailed understanding of the mechanics of this algorithm see: Kohonen, “Self-Organized Formation of Topologically Correct Feature Maps.”

a *Self-Organizing Map*⁸³ (SOM) engenders a kind of intelligence that is able to constitute *atom-letters* of different kinds, on many levels of abstraction. This algorithm was introduced by the professor Teuvo Kohonen in the 1980s. In the field of computer science, it is usually classified as being part of artificial intelligence, machine learning, artificial neural networks, and unsupervised learning. As Kohonen points out, a *Self-Organizing Map* is a data-analysis method that renders similarity relations in a set of data. For him, it differs from other projective methods in representing a big data set by a much smaller number of models or weight vectors.

*“The SOM model may not be a replica of any input item but only a local average over a subset of items that are most similar to it.”*⁸⁴

After its training,

*“[...] a calibrated SOM can be used for the classification of new, unknown input items by looking for the best matching model in the array and taking its class label.”*⁸⁵

Kohonen ends the introduction to his articulation of SOM by reviving

*“[...] the old question of how symbolic representations for concepts could be formed automatically.”*⁸⁶

What Kohonen calls automatic and symbolic representations for concepts, I will refer to as the articulation of an abstract alphabet of *atom-letters*. These kinds of interpretations and implementations of SOM have been researched, cultivated and discussed at the Chair of Computer Aided Architectural Design at ETH in Zürich. Different formulations with SOM were articulated by Hovestadt,⁸⁷ Marinčić,⁸⁸ Zaghloul,⁸⁹ and for this work a particularly interesting formulation of

83 For SOM pseudo code see: “Self-Organizing Map,” *Wikipedia*, August 27, 2018, https://en.wikipedia.org/w/index.php?title=Self-organizing_map&oldid=856761333.

84 Teuvo Kohonen, “What Makes The Self-Organizing Map (SOM) So Particular Among Learning Algorithms?,” in *Coding as Literacy: Metalithikum IV*, ed. Vera Bühlmann, Ludger Hovestadt, and Vahid Moosavi (Birkhäuser, 2015), 23.

85 Kohonen, “What Makes The Self-Organizing Map (SOM) So Particular Among Learning Algorithms?,” 24.

86 Kohonen, “Self-Organized Formation of Topologically Correct Feature Maps,” 60.

87 Hovestadt gives an interpretation of SOM in Hovestadt, “Cultivating the Generic,” and places SOM in a context of elements of digital architecture in Ludger Hovestadt, “Elements of a Digital Architecture,” in *Coding as Literacy - Metalithikum IV* (Birkhäuser, 2015).

88 Nikola Marinčić, “Towards Communication in CAAD: Spectral Characterisation and Modelling with Conjugate Symbolic Domains” (Doctoral Thesis, ETH Zurich, 2017), <https://doi.org/10.3929/ethz-b-000216502>.

89 Mohamed Zaghloul, “Machine-Learning Aided Architectural Design - Synthesize Fast CFD by Machine-Learning” (Doctoral Thesis, ETH Zurich, 2017), <https://doi.org/10.3929/ethz-b-000207226>.

a calibrated SOMs as a *Data Driven Dictionary* was developed by Mossavi.⁹⁰ In the light of this, I will continue to develop the *Informational Instrument* and its *Machine Intelligence*. It is important to point out that SOM, as any other element of the *Informational Instrument*, is not fixed. It can be replaced by another algorithm of a similar kind.

By thinking of SOM as a generic machine for constituting alphabets in coexistence with data streams, objects are being articulated in their own terms, without an external reference. SOM provides a context for articulating a kind of genericness. It encapsulates potentials on the generic plane without explicating what they are. It encodes them in an interplay of indexes that point to all the other elements in a given context. In this sense, SOM does not represent but constitutes alphabets. What are the characters of this alphabet is open. They don't have to represent any property or characteristic of an object; they can be senseless and meaningless. By encoding and combining characters in different ways objects can behave in multiple manners. In doing so, characters of this abstract alphabet can symbolise and encapsulate richness of phenomena without trying to explicate their key features or properties. Instead, consistency is in the context. Object is a part of the context that articulates the alphabet, which in turn articulates the object as part of the context. A loop. The object becomes a subject. It becomes active —a *quasi-object*.⁹¹

Since SOM is a generic machine it can be used to explore many different domains, data and media: it can search for similarity of spaces via architectural floorplans,⁹² it can substitute CFD simulators by a fast probabilistic-based emulator,⁹³ monitor Urban Aerosol Pollution,⁹⁴ or explore Contextual Maps of London,⁹⁵ etc.

One of the most interesting characteristics of SOM is that it assumes that the 'character' of a phenomenon is encapsulated in the data. It operationalises it without being explicit in what this phenomenon is. In other words, SOM doesn't fit data to a specific function, it doesn't make any assumptions, but it encapsulates any probable functionality of the data. The beauty of this process is in keeping the richness and complexity of the phenomena operational, without the need to

90 Vahid Moosavi, "Pre-Specific Modeling: Computational Machines in Coexistence with Urban Data Streams" (Doctoral Thesis, ETH Zurich, 2015), <https://doi.org/10.3929/ethz-a-010544366>.

91 A concept articulated by Michel Serres in Serres, *The Parasite*.

92 Marinčić, "Towards Communication in CAAD."

93 Zaghoul, "Machine-Learning Aided Architectural Design - Synthesize Fast CFD by Machine-Learning."

94 Moosavi, "Pre-Specific Modeling."

95 Moosavi.

specify them. When symbolically articulated, and coupled with an encoded data set, the intelligence of a SOM algorithm takes the form of a short and powerful *symbolic poem*.⁹⁶

SymbolicPoem09_SOM

```
For[u = 0, u < Iterations, u ++,
  inputN = inputDataN;
  winners = Flatten@Nearest[MapIndexed[#1 -> #2[[1]] &, somWeights], inputN, 1];
  SortWinners = Table[winners[[a]] -> a, {a, 1, inputN // Length}] // Sort;
  PureWinners = SortWinners[[All, 1]] // DeleteDuplicates;
  ClusteringData = Nearest[SortWinners, PureWinners];
  DataClustering = inputN[[ClusteringData[[#]]]] & /@ Range[1, ClusteringData // Length];
  DataClusterbyWinners = Mean /@ DataClustering;
  n = Length /@ DataClustering;
  nf = Nearest[Table[somCoords[[PureWinners[[i]]]] -> i, {i, 1, PureWinners // Length}]];
  VoronoiIndexForeachPoint = Flatten[Table[nf[{x, y}], {x, 1, somX}, {y, 1, somY}], 1][[All, 1]];
  inputN2 = DataClusterbyWinners;
  NS = Exp[-(distances[[#]])^2 / (2 sig^2)] & /@ PureWinners;
  NST = Transpose@NS;
  ALLNS = Total[n[[VoronoiIndexForeachPoint[[#]]]] * NST[[#]]] & /@ Range[1, somLen];
  somWeights = Total[inputN2 * NST[[#]] * n[[VoronoiIndexForeachPoint[[#]]]] / ALLNS[[#]] & /@ Range[1, somLen];
  Print[u];] // AbsoluteTiming;
```

SOM as a way of articulating alphabets, and fantasies it engenders, will be explored in the following pages, and demonstrated in a *Play Among Books*.

2.5.1 ABSTRACTION 1: Atom Letters and Concepts

Atom-letters do not work like numbers [chiffres]. Whatever the base of numeration, in fact, or the alphabet of the cyphering [chiffrement], the various combinations of these signs among themselves produces acceptable numbers. Thus, the interconnection of atoms in things, conjunction, is cyphered, nature is coded. Atomic physics discovered the key to the code.

—Michel Serres, *The Birth of Physics*⁹⁷

Concepts are being formed in the formation of a galaxy (Fig. 2.9). A new synthetic and temporal alphabet of *Xenotheka* is being constituted in the movement of indexes. *Informational*

96 Input for this poem is the *informational face* of the library, the number of SOM iterations, and its resolution. This encoding of SOM was developed by Mohamed Zaghoul.

97 Serres, *The Birth of Physics*, 142.

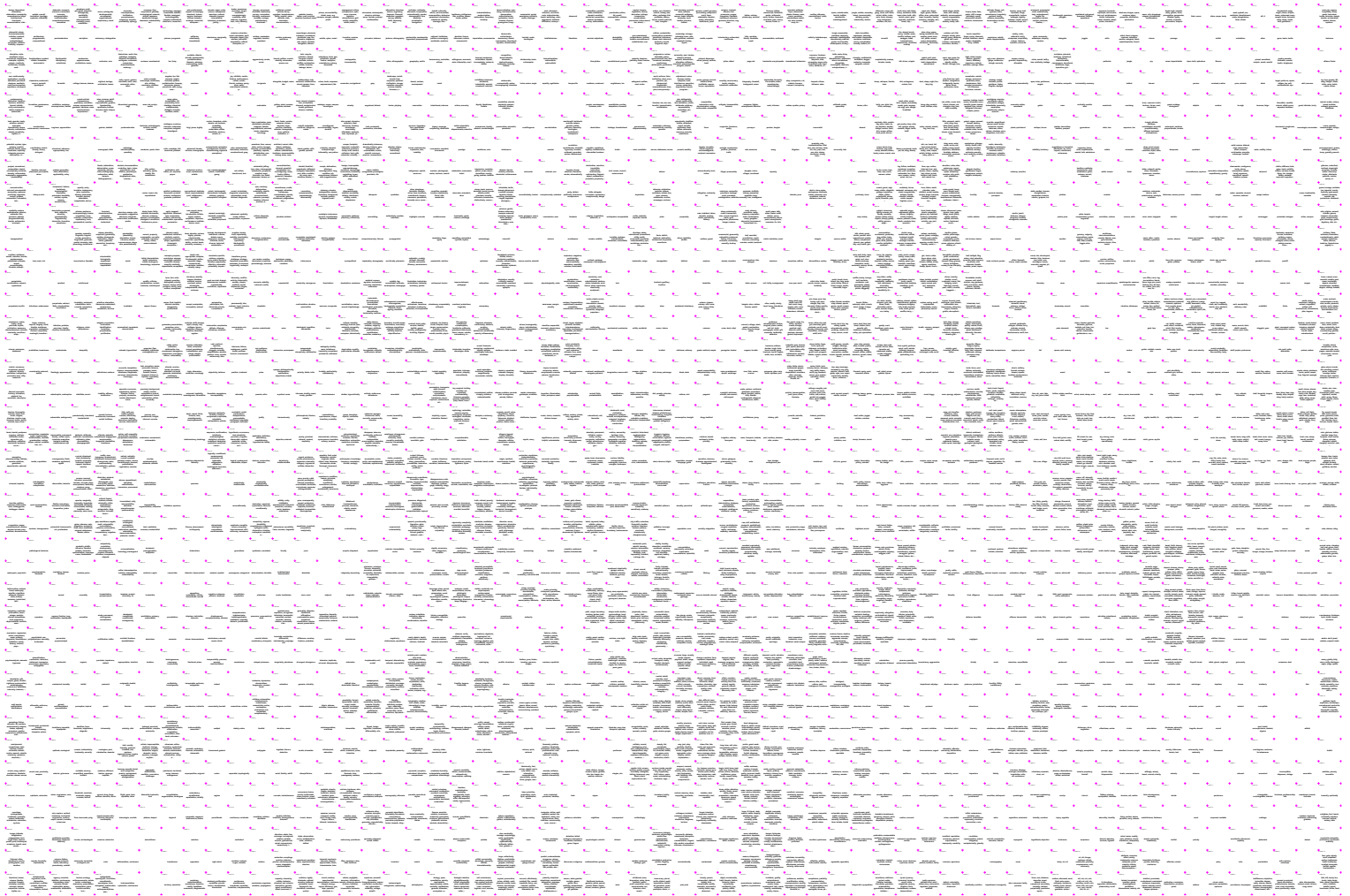


Fig. 2.9 *Xenotheka*: Galaxy of Concepts, rendering_229_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/_galaxy.pdf

faces of books are starting to talk; they are articulating their ambient in *atom-letters*.⁹⁸ Still, this is just one way of looking at the galaxy, one face of *Xenotheka*. It contains 229 books at the moment. It is not a disciplinary library with a clear focus, but rather a personalized galaxy of concepts and thoughts. The galaxy is articulated by its own *atom-letters*. It is of a precise but subjectively arbitrary resolution. There could be more *atom-letters* or less in larger (Fig. 2.9) or smaller matrices (Fig. 2.23), depending on the tuning of the *Informational Instrument* and the tune the performer wants to play. In this rendering of the galaxy, there are 2400 distinct *atom-letters* (cells) (Fig. 2.9). At least one *atom-letter* is needed to express one concept. By combining *atom-letters*, concepts become more delicate and sophisticated. They start to form galaxies and tell stories. Each letter of this alphabet is, in itself, a double articulation of a cloud of indexes, and a vector of numbers. In this case — *rendering_229_03_RW_4060_r_50it21d_words_vertex* (Fig. 2.9)— indexes are word and numbers are their frequencies. The library is indexed in its own terms, by its own dictionary, by its most common 21591 words.

These numbers —229 books, 2400 concepts and 21591 indexes— are not arbitrary, and not fixed. They come from the process of tuning the stage towards a specific library and specific interest. These numbers could be different; there could be more books; there could be less concepts, or the library could be indexed in another way. The structure of the books —and with it their sense —is lost in encoding and quantifying the library. Their consistency is in the spectrum of concepts, books and libraries, that is to say, the spectrum is a way they present themselves in *Xenotheka*. There are no grammars, no rules, no syntax, yet a book lights up the galaxy by showing its face (Fig. 2.14).

To recapitulate: *Xenotheka* of 229 books is articulated by a SOM into an alphabet of 2400 *atom-letters*, which is indexed by an informational face of a library that consists of a dictionary containing 21591 words (Fig. 2.2).

2.5.1.1 A Galaxy of Concepts articulated in Atom-Letters

The newly formed *atom-letters* are temporal and can express any quality of concepts whatsoever. This quality is never explicit and predetermined; it is always a void in a cloud of indexes. On the other hand, each *atom-letter* has a specific explicit numerical value for a given galaxy. *Atom-letter* is a number and a letter, a wave and a particle, a concept and a letter. Here is

98 For more on atom-letters see Serres, *The Birth of Physics*.

apparatus

machine

motor

instrument

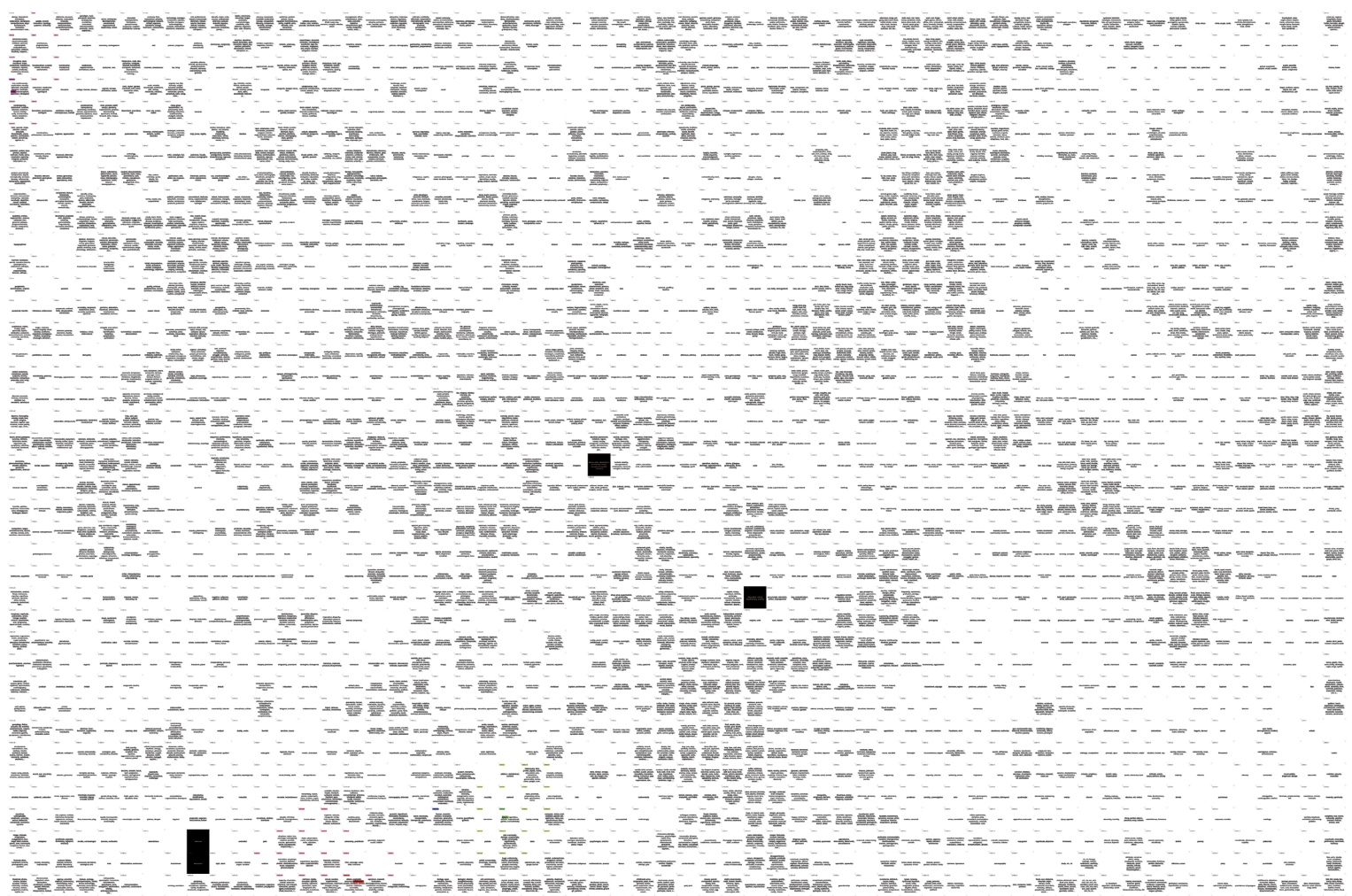


Fig. 2.10 Galaxy of concepts of *Xenotheke*, with a focus on four indexes, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheke/_galaxy.pdf

one *atom-letter* which contains an index of interest: an *instrument* and its indexical cloud.

*Atom-letter n1594 e4*⁹⁹ (Fig. 2.11, List 2.1)

Its indexical cloud:¹⁰⁰

```
n1594 e4 {instrument, article, insufficiency, cleanly}
```

and its numerical vector:¹⁰¹

```
0.00131449, 0.005600595, 0.001014245, 0.006565056, 0.001181389,  
0.003580007, 0.005375155, 0.004707975, 0.004145514, 0.000641298,  
0.00440762, 0.001772327, 0.004525047, 0.002351786, 0.001122619,  
0.000351847, 0.002930002, 0.002963255, 0.003475173... (one dimension for  
each book)
```

To get a subtle notion of what this concept might be about, one has to get to know its neighbouring *atom-letters*. Together they constitute a bigger cloud — a concept, a conceptual space,¹⁰² or an atmosphere:

```
n1654 e2 {english, unfit}  
n1593 e16 {exploit103, newly, reproduce, definite, strikingly,  
diametrically, weave, metallic, twofold, artisan, shameless, repulsion,  
depreciate, spokesman, motley, cubic}  
n1595 e4 {accumulate, alteration, settler, disproportion}  
n1534 e1 {appendage}  
n1653 e19 {independent, material, constantly, perform, power,  
previously, division, transfer, undergo, customary, absorb, hence,  
superfluous, independently, unchanged, bearer, constituent, undeveloped,  
phraseology}  
n1653 e19 {sum, manor}  
n1533 e11 {total, invest, engine, meal, minimum, equate, firstly,  
livelihood, relay, unprejudiced, uninhabitable}  
n1535 e4 {amount, increase, county, deer}  
n1714 e7 {necessary, advance, circumstance, indirectly, immediate,  
compensation, extraneous}
```

List 2.1 A cloud of indexes around the *instrument*

These indexes provide an atmosphere around the index of an *instrument* in *Xenotheka*.

99 *Cell n1594 e4* is both an *atom-letter* and a concept, depending on how one wants to work with it. At least one *atom-letter* is needed to formulate a concept.

100 Indexical part of *atom-letters*: http://www.romanvlahovic.com/xenotheka/_outCellContentName.txt

101 Numerical part of *atom-letters* (SOM weight vectors): http://www.romanvlahovic.com/xenotheka/_cell_gridweights_40_60.txt

102 *Atom-letters* are ordered according to similarity with the *atom-letter n1594 e4*. The similarity is calculated as an Euclidean distance between numerical parts of *atom-letters*. For more on weight vectors in SOM, see Kohonen, “Self-Organized Formation of Topologically Correct Feature Maps.”

103 Magenta colored index is the one in question, yellow coloured indexes are the ones that speak to me in this context. They provide a personal reading of the list.

| supervision | fruition | ventilation, manchester, monger | thrifty | scaip, superintendence | superintenu | joiner |
|---|--|---|---|---|---|---|
| n 1351 e 2 steadily, parochial | n 1352 e 1 philanthropic | n 1353 e 9 expenditure, deterioration, drudgery, unrestricted, materialization, apologist, middleman, allotment, craftily | n 1354 e 25 loom, product, spin, factory, exploitation, production, agricultural, shorten, enrichment, forcible, pottery, producer, privy, ... | n 1355 e 47 tailor, accumulation, prolongation, weekly, weaver, capital, expend, worst, arable, abstinence, expropriate, worker, machinery,... | n 1356 e 2 purchaser, newcastle | n 1357 e 2 manure, baker |
| n 1411 e 2 population, acre | n 1412 e 2 socially, stagnation | n 1413 e 8 mover, revolutionize, congeal, capitalize, idyllic, workshop, weekday, machinist | n 1414 e 13 raw, mill, antithetical, overwork, qualitatively, lengthen, schoolmaster, miser, disposable, preponderant, shipbuilding, ricard... | n 1415 e 4 value, circulation, extort, statutory | n 1416 e 5 sale, productive, wage, subsistence, labourer | n 1417 e 8 sell, money, ton, coal, apprentice, adulterate, flax, journeyman |
| n 1471 e 6 concentration, abnormally, saturdays, replaceable, commissioner, speciality | n 1472 e 1 adult | n 1473 e 6 convert, reproduction, forcibly, legally, immature, professorial | n 1474 e 10 constant, equivalent, possessor, blacksmith, metamorphosis, asiatic, proportionally, valueless, ossify, agitator | n 1475 e 4 own, additional, average, nominally | n 1476 e 1 consume | n 1477 e 5 industry, employer, birmingham, felon, shoemaker |
| n 1531 e 3 voracious, locksmith, cobbler | n 1532 e 1 lifelong | n 1533 e 11 total, invest, engine, meal, minimum, equate, firstly, livelihood, relay, unprejudiced, uninhabitable | n 1534 e 1 appendage | n 1535 e 4 amount, increase, county, deer | n 1536 e 3 farm, rate, upstart | n 1537 e 2 supply, unemployed |
| n 1591 e 5 replacement, supervise, incidental, teem, glaringly | n 1592 e 3 accrue, dwindle, storied | n 1593 e 16 exploit, newly, reproduce, definite, strikingly, diametrically, weave, metallic, twofold, artisan, shameless, repulsion, deprec... | n 1594 e 4 instrument, article, insufficiency, cleanly | n 1595 e 4 accumulate, alteration, settler, disproportion | n 1596 e 4 buy, subordination, fifteenth, tariff | n 1597 e 2 colbert, disgorge |
| n 1651 e 7 few, decay, evade, superficially, decent, officially, intersperse | n 1652 e 12 work, normal, spontaneously, fraction, transient, automatic, exceptionally, economical, elasticity, preparatory, christen, morass | n 1653 e 19 independent, material, constantly, perform, power, previously, division, transfer, undergo, customary, absorb, hence, superfluo... | n 1654 e 2 english, unfit | n 1655 e 2 sum, manor | n 1656 e 3 produce, competition, degradation | n 1657 e 3 establishment, improve, consumer |
| n 1711 e 8 use, successfully, pressure, wherever, relatively, decline, competent, nicety | n 1712 e 12 instead, combination, isolate, exclusively, cost, mass, artificially, heighten, friction, progressively, outweigh, influx | n 1713 e 9 replace, extent, useful, operation, period, vary, numb, class, disposal | n 1714 e 7 necessary, advance, circumstance, indirectly, immediate, compensation, extraneous | n 1715 e 5 partly, originally, enrich, subdivide, sparingly | n 1716 e 7 joint, inspection, extensive, crop, fanatical, canal, tamper | n 1717 e 23 somewhat, maintain, sufficient, ordinary, borrow, contribute, gradually, generally, likely, considerably, luxury, degrade, enco... |
| n 1771 e 19 success, large, usually, create, special, physical, small, range, support, protect, balance, health, popular, adapt, consistent... | n 1772 e 10 change, combine, form, represent, dependent, individual, rapid, subsequent, tendency, accurate | n 1773 e 11 depend, require, original, alter, measure, progress, tend, skill, accidental, exert, removal | n 1774 e 14 different, equally, acquire, particular, reduce, establish, consequence, latter, privilege, suitable, universally, private, pro... | n 1775 e 16 demand, worth, valuable, impose, low, enable, food, probably, protection, reasonable, contract, thereby, grain, ingenuity, tene... | n 1776 e 22 sometimes, carry, otherwise, advantage, uncertain, loss, complaint, lend, unnecessary, home, teacher, profession, disadvantage,... | n 1777 e 16 great, raise, extraordinary, render, plenty, sober, tedious, extravagant, subsist, subscribe, imprisonment, lieu, hinder, dishe... |
| n 1831 e 30 important, view, powerful, similar | n 1832 e 23 direct, compare, kind, see, importance | n 1833 e 18 effect, consider, indeed, success | n 1834 e 17 easily, consist, account, derive, former | n 1835 e 11 gain, grant, exercise, | n 1836 e 5 | n 1837 e 7 |

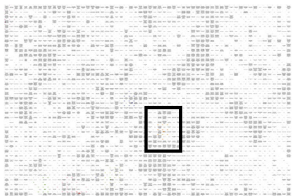


Fig 2.11. Galaxy Zoom to the cloud of indexes surrounding the index of an *instrument*, rendering_03_RW_4060_r_50it21d http://www.romanvlahovic.com/xenotheka/_galaxy.pdf

Instead of trying to explicate what *Concept n1594* is about, I will propose an atmosphere for it and contrast it with other atmospheres of words with similar meanings —its synonyms from different parts of the galaxy (Fig. 2.2).

```
{instrument, Noun, Agency} -> {apparatus, machine}  
{instrument, Noun, Device} -> {motor}
```

If I can speculate and state that the atmosphere around the index of an *instrument* and its *atom-letter n1594* is a concept which deals with exchange, trade and communication (*exploit, reproduce, accumulate, material, perform, transfer, sum, total, invest, compensation...*), the question is how are clouds and atmospheres of an *apparatus, machine* and *motor* different?

By looking at the *Galaxy of Concepts* (Fig. 2.10) and positions of four indexes: *instrument, motor, apparatus* and *machine*, one could speculate that these indexes form three distinct atmospheres in this *Xenotheka*; one around the *instrument*, one around the *motor*, and one articulated by both the *apparatus* and the *machine*. Let's explore the other two atmospheres. First around the index of a *motor*:

Atom-letter n1227 (Fig. 2.12, List 2.2)

Its indexical cloud:

```
n1227 e8 {equip, town, depression, counteract, motor, equipment,  
jumble, coalesce}
```

and numerical vector:

```
0.000410098, 0.002492621, 0.0007319, 0.014202971, 0.002997079,  
0.005507713, 0.005086443, 0.004696913, 0.000630708, 6.56558E-  
05, 0.000262425, 0.000896268, 0.005934318, 0.00253442, 0.000307339,  
0.000591284, 0.003289519, 0.004202012, 0.001767646... (one dimension for  
each book)
```

This time, the conceptual cloud provides a new ambient where the index *motor* is, the one, I would say, about movement, value and place. It is quite different than the conceptual cloud of an *instrument*. It is a subtle characterisation; a different one could be formulated but this one is consistent:

```
n1167 e21 {obsolete, permanent, initiative, region, costly, survey,
```

| | | | | | | | | |
|----|--|--|--|--|--|--|--|---------------|
| l | sen, bias | prose, edgar, galaxy, recitation, immortalize, montaigne, anesthetize, schoolchild, publicist, primitivism, divina, backwash, e... | print, scholastic, interplay, bacon, quantification, effigy, oral, ordnance, africans, livre, aural, obscura, scriptural, compa... | carver | anesthesia | dickens | brothel | obliv |
| | n 984 e 3 | n 985 e 9 | n 986 e 3 | n 987 e 4 | n 988 e 2 | n 989 e 3 | n 990 e 3 | n 991 e 2 |
| | literary, impeccable, diaphanous | rhyme, humanist, vernacular, wilson, encyclopedic, summa, plenum, foreshorten, vico | sixteenth, congruence, dilation | medieval, wordsworth, burgess, petrarch | imaginative, resourceful | meager, airplane, spengler | drill, dump, patronage | bl |
| | n 1044 e 5 | n 1045 e 5 | n 1046 e 2 | n 1047 e 3 | n 1048 e 2 | n 1049 e 5 | n 1050 e 4 | n 1051 e 2 |
| t, | reader, obsession, grotesque, erudition, ars | invention, illumination, bible, pompous, easel | scholarship, popularization | revival, fixity, protestantism | specialization, assiduous | inept, circumlocution, defenseless, servility, penalize | diet, parade, victorian, artfully | ca |
| | n 1104 e 2 | n 1105 e 5 | n 1106 e 7 | n 1107 e 3 | n 1108 e 12 | n 1109 e 8 | n 1110 e 22 | n 1111 e 2 |
| | disillusion, layman | crude, vision, romantic, dictum, tempo | culture, century, phase, duly, aggressive, unduly, shirk | educational, cult, favorable | nineteenth, rural, civilization, allegiance, paralyze, belated, accompaniment, seasonal, headway, offset, rootless, constriction | baroque, belatedly, laissez, lille, antedate, predatory, abstention, readjustment | intercourse, inimical, aimless, philanthropy, bookkeeping, overgrow, untainted, industrialist, bequest, palatial, belligerent, ... | consur |
| | n 1164 e 2 | n 1165 e 4 | n 1166 e 6 | n 1167 e 21 | n 1168 e 13 | n 1169 e 9 | n 1170 e 28 | n 1171 e 3 |
| | mystic, wavy | significance, picture, helpful, unbreakable | association, technically, primeval, humanly, strenuous, unusable | obsolete, permanent, initiative, region, costly, survey, reorganize, unification, parcel, adventurous, utilitarian, debris, gro... | routine, ownership, heritage, inter, further, insecurity, geographer, socialize, housewife, equalize, disability, obdurate, vic... | constrict, hinterland, agglomeration, intelligently, regimentation, depletion, upkeep, vestigial, decentralization | hygienic, hygiene, modicum, railroad, colonization, regional, geographic, metropolis, megalopolis, stultify, congest, metropoli... | cleanli pu |
| | n 1224 e 49 | n 1225 e 5 | n 1226 e 1 | n 1227 e 8 | n 1228 e 7 | n 1229 e 4 | n 1230 e 3 | n 1231 e 4 |
| | projection, mysticism, understandable, instinctive, symbolize, maternal, personality, superhuman, psychologically, dissociation... | personal, protective, markedly, rejuvenate, fondly | misplace | equip, town, depression, counteract, motor, equipment, jumble, coalesce | nurture, liability, transportation, rectangular, insecure, energize, burlesque | widen, recreation, civic, administrator | abet, clarence, blight | specu sto |
| | n 1284 e 33 | n 1285 e 4 | n 1286 e 6 | n 1287 e 9 | n 1288 e 4 | n 1289 e 3 | n 1290 e 4 | n 1291 e 1 |
| | psychological, assimilate, conscious, collective, psychology, assimilation, investigator, parental, fantasy, individuality, pat... | hypnotic, defiant, justifiably, disreputable | underground, consummate opus, walker, bastion, deplete | scheme, harbor, vista, ville, oasis, gridiron, surgery, voisin, scraper | plan, subway, jersey, artery | barbarism, settlement, provincialism | makeshift, handicap, demoralization, overcrowd | su |
| | n 1344 e 5 | n 1345 e 2 | n 1346 e 12 | n 1347 e 4 | n 1348 e 4 | n 1349 e 7 | n 1350 e 2 | n 1351 e 2 |
| | manifestation, therapy, rightful, predispose, paralyse | fantastic, reincarnation | tower, grid, climax, promoter, synthetic, exhilarate, apotheosis, theater, rehearsal, footage, resuscitation, fiasco | auditorium, flotsam, unspoiled, radieuse | occupant, accommodation york, desecration | avenue, drastic, renewal, tenement, suitability, sensitively, roadway | wasteful, pittance | stead |
| | n 1404 e 1 | n 1405 e 2 | n 1406 e 13 | n 1407 e 42 | n 1408 e 6 | n 1409 e 12 | n 1410 e 3 | n 1411 e 2 |
| | insufficiently | definitive, nonexistent | schism, surf, puncture, arcadian, exhilaration, puritanical, subconscious, tentacle, swimmer, fresco, denouement, lighthouse, b... | hotel, raymond, lobby, athletic, plaza, paraphernalia, beaux, occupancy, wallace, skyline, thompson, mural, gondola, cocoon, in... | facility, block, elevator, aquarium, broadway, businessman | city, traffic, suburban, financially, dweller, putative, utopians, hudson, planner, cincinnati, disastrously, slaughterhouse | palliative, borough, ebenezer | pop |

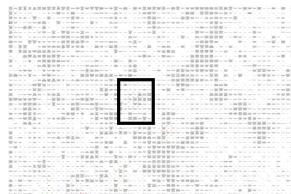


Fig 2.12. Galaxy Zoom to the cloud of indexes surrounding the index of a *motor*; rendering_03_RW_4060_r_50it21d
http://www.romanvlahovic.com/xenotheka/_galaxy.pdf

reorganize, unification, parcel, adventurous, utilitarian, debris,
groundwork, enterprising, nucleus, quota, resentful, afterthought,
rembrandt, laterally, magnification}
n1226 e1 {misplace}
n1287 e9 {scheme, harbor, vista, ville, oasis, gridiron, surgery,
voisin, scraper}
n1228 e7 {nurture, liability, transportation, rectangular, insecure,
energize, burlesque}
n1166 e6 {association, technically, primeval, humanly, strenuous,
unusable}
n1168 e13 {routine, ownership, heritage, inter, further, insecurity,
geographer, socialize, housewife, equalize, disability, obdurate,
vicariously}
n1286 e6 {underground, consummate, opus, walker, bastion, deplete}
n1288 e4 {plan, subway, jersey, artery}
n1107 e3 {educational, cult, favorable}

List 2.2 Cloud of indexes around *motor*

The third conceptual cloud surrounds the indexes of an *apparatus* and a *machine*:

Atom-letter n2289 (Fig. 2.13, List 2.3)

Its indexical cloud:

n2289 e1 {apparatus}

and numerical vector:

0.000260699, 0.001926547, 0.001635808, 0.005381619, 0.001559103,
0.002823115, 0.001581399, 0.00213069, 0.000178045, 0.000157196,
0.000149006, 2.17444E-05, 0.002313724, 0.001343425, 4.93012E-05,
0.000862034, 0.002245175, 0.004933989, 0.000102613... (one dimension for
each book)

Atom-letter n2229 (Fig. 2.13, List 2.3)

Its indexical cloud:

n2229 e1 {machine}

and numerical vector:

0.000288713, 0.001605278, 0.003699084, 0.003736162, 0.000999512,
0.00271612, 0.001856886, 0.002443463, 0.000161354, 0.000176832, 7.10992E-

| | | | | | | | |
|--|---|--|--|---|--|--|---|
| h | fascism | counterpoint | indiscernible, evolutionism, woolf | coextensive, holderlin | secondarily, beckett | masochism, schizo | missile, schenauze, schizophrenia, nietzschean, masochistic, sarre, contraption, contractual, mai, metastable, complimentary... |
| | + n 1926 e 2 | + n 1927 e 5 | + n 1928 e 16 | + n 1929 e 2 | + n 1930 e 1 | + n 1931 e 2 | + n 1932 e 1 |
| nity | sobriety, dick | betrayal, punctual, sedimentation, vampire, exteriority | consistency, incorporeal, preestablished, spatiotemporal, melodic, effectuation, coagulation, enunciation, klee, tonal, schuman... | indiscernibility, masochist | oedipal | daddy, andre | familial |
| | + n 1986 e 11 | + n 1987 e 18 | + n 1988 e 74 | + n 1989 e 5 | + n 1990 e 2 | + n 1992 e 1 | |
| , pact, deserter | trait, courtly, linearity, gestural, irradiate, moi, relieve, aggressiveness, vagina, valence, jackal | refrain, imperceptible, rhythmic, lineage, sonorous, preexist, borderline, supple, despotic, botch, sorcerer, conjugal, scythia... | slowness, milieu, involution, syntactical, axiomatic, itinerant, decode, enslavement, placard, sorcery, orchestration, holey, e... | nomadic, sedentary, francois, axiomatics, clausewitz | transversal, godard | | subjugate |
| | + n 2046 e 9 | + n 2047 e 5 | + n 2048 e 5 | + n 2049 e 2 | + n 2050 e 1 | + n 2051 e 2 | + n 2052 e 1 |
| ffshoot, surge, ils | become, smooth, facial, wolf, subjection, jewelry, springboard, expressiveness, amalgamation | aggregate, disarticulate, neolithic, concretion, challenger | patchwork, territorial, wasp, riemann, endogenous | superposition, migrant | vector | separable, topologically | intensity |
| | + n 2106 e 5 | + n 2107 e 3 | + n 2108 e 3 | + n 2109 e 4 | + n 2110 e 1 | + n 2111 e 1 | + n 2112 e 1 |
| , forgo, ato, arson | flight, pack, hole, squabble, deter | dismantle, hydraulic, luca | consolidation, segmentation, desargues | redundancy, stratification, equalization, stratify | regime | reducible | extract |
| | + n 2166 e 2 | + n 2167 e 2 | + n 2168 e 1 | + n 2169 e 4 | + n 2170 e 1 | + n 2171 e 2 | + n 2172 e 3 |
| aucratic, wrence, plify | intermingle, crucible | plateau, despot | atypical | pragmatic, segment, misconstrue, timbre | penultimate | continuum, vertebrate | constitute, relation, distribute |
| | + n 2227 e 1 | + n 2229 e 1 | + n 2229 e 1 | + n 2231 e 1 | + n 2232 e 1 | | |
| cherche | | adventitious | | machine | | undivided | pole |
| | + n 2286 e 2 | + n 2288 e 1 | + n 2289 e 1 | + n 2290 e 2 | + n 2291 e 4 | + n 2292 e 1 | |
| | deforestation, nonhuman | | transformer | apparatus | rigid, abort | variation, indirect, organ, variable | relative |
| | + n 2346 e 3 | + n 2348 e 2 | + n 2349 e 8 | + n 2350 e 7 | + n 2351 e 6 | + n 2352 e 4 | |
| able, rvocation, istic, >, terre, itchmaker, y, rphism, .. | instrumentation, cybernetic, nonhumans | territory, semiotics | periphery, experimentation, amorphous, injection, ramify, feudalism, mnemonic, diagrammatic | abstract, proliferation, crystallize, pivotal, binary, formalization, accelerator | continuous, simultaneous, coordinate, modulate, formation, complementary | mechanism, organism, mutation, propagation | |
| | + n 2346 e 3 | + n 2348 e 2 | + n 2349 e 8 | + n 2350 e 7 | + n 2351 e 6 | + n 2352 e 4 | |

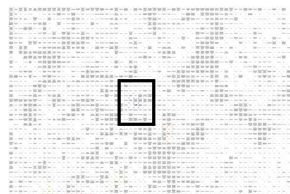


Fig 2.13. Galaxy Zoom to the cloud of indexes surrounding the indexes of an *apparatus* and a *machine*, rendering_229_03_RW_4060_r_50it21d
http://www.romanvlahovic.com/xenotheka/_galaxy.pdf

05, 3.57519E-05, 0.00489069, 0.000831243, 4.2963E-05, 0.000691425,
0.002045222, 0.00335357, 9.38621E-05... (one dimension for each book)

Since the *apparatus* and the *machine* are indexes that inhabit neighbouring *atom-letters*, they are immersed in the same conceptual cloud. Their atmosphere could be read as formal, abstract and a systematic one (*experimentation, rigid, territory, semiotics, abstract, crystallize, formalization, pragmatic*). A fairly different mood than the one around the *instrument* and the *motor*. Far away parts of the galaxy form quite distant and delicate atmospheres:

```
n2289 e1 {apparatus}
n2349 e8 {periphery, experimentation, amorphous, injection, ramify,
feudalism, mnemonic, diagrammatic}
n2229 e1 {machine}
n2288 e1 {transformer}
n2290 e2 {rigid, abort}
n2230 e0 {}
n2348 e2 {territory, semiotics}
n2350 e7 {abstract, proliferation, crystallize, pivotal, binary,
formalization, accelerator}
n2228 e0 {}
n2170 e1 {penultimate}
n2169 e4 {pragmatic, segment, misconstrue, timbre}
n2227 e1 {adventitious}
```

List 2.3 Cloud of indexes around *machine* and *apparatus*

These are different moods of concepts where synonyms of an *instrument* mix and separate in a delicate way. It is interesting that there was no predefined explicit grammar, no structure, no rules or parameters, and indexes of the library grouped together and formed three differentiated and refined atmospheres: one of an *instrument* as a communication and exchange, the other of a *motor* as an ambient of value and movement, and the third one of an *apparatus* and a *machine* with an abstract and formal atmosphere. There are many moods that can be inhabited by the same index. If one changes, or tunes the *Generic Machine* in a different way, or modifies *Xenotheka*, one will be immersed in a new galaxy, with new *atom-letters*. This kind of testing cannot be verified in an exact manner, just like a musical instrument which cannot be tuned correctly, but always according to a context in which it is played. What one can say at this stage is that the first tuning and testing looks promising. The fantasy is that with more practising and tuning, and later by playing the *Informational Instrument*, its consistency will be demonstrated.

2.5.1.2 Face of a book as a spectral view of the Galaxy

The galaxy of concepts is articulated in *atom-letters*. A book shows its face by lighting a galaxy in a particular way (Fig. 2.14). It is one of many ways in which a galaxy can glow (Fig 2.8).

How does a book —*Koolhaas_SMLXL*—¹⁰⁴ light up a galaxy?

In its numerical part, each *atom-letter* has the same number of dimensions as there are books in *Xenotheka*. One dimension for each book. The value of this dimension is the probability of a book lighting up that specific *atom-letter* when showing its face. If this is now generalised and if the first dimension of all the *atom-letters* is used to light up the galaxy, then the face of the first book in the library is seen as a spectrum of its most probable and valuable *atom-letters* (Fig. 2.14). Faces of books, their expressions, highlights, probabilities, are rendered as differences in colours: the most prominent ones in brown and the least important ones in purple. Each actor wants to distinguish itself by showing its most prominent concepts. Books start to talk to other books and tell their stories always in a new way, by exposing their concepts to a new library. Staged in this artificial way, books provide interesting insights regarding the library. But there is a catch. One can easily influence their discussion. This is one of the roles of the player of the *Informational Instrument*. If a book is added or removed, the whole galaxy changes. If one changes the instrument of looking or tunes the *Generic Machine* in a different way, the galaxy finds itself in a new constellation and the actors change their mood. Their faces become different, and one is always taking new and different snapshots of them. These kinds of faces in no way claim to be representative (Fig. 2.8). By playing the *Informational Instrument*, books start to show their character in a different light. One slowly learns how books behave. At this moment, the galaxy of concepts is lighted up by *Koolhaas_SMLXL*. It is important to keep in mind that this is neither the face of Rem Koolhaas, nor a valid representation of his book *S,M,L,XL*, but rather the face of a book *S,M,L,XL* written by Rem Koolhaas in the context of *Xenotheka*. One is thereby not trying to see what the intended message of this book is, but is opening the book to the world and challenging it with different environments. In other words, this is a facial expression of a conceptual persona named *Koolhaas_SMLXL* at the gathering of books in *Xenotheka*, which has everything and nothing to do with *Koolhaas* and his book *S,M,L,XL*. Its face is not objective in a classical sense, but there is a common universe that it shares with the book and its author without directly representing them. It is a face, and there is an invariance between it and the book. Books inhabit a probabilistic symbolic space of information and the performer dances with them.

104 Rem Koolhaas, *S, M, L, XL* (The Monacelli Press, 1995).

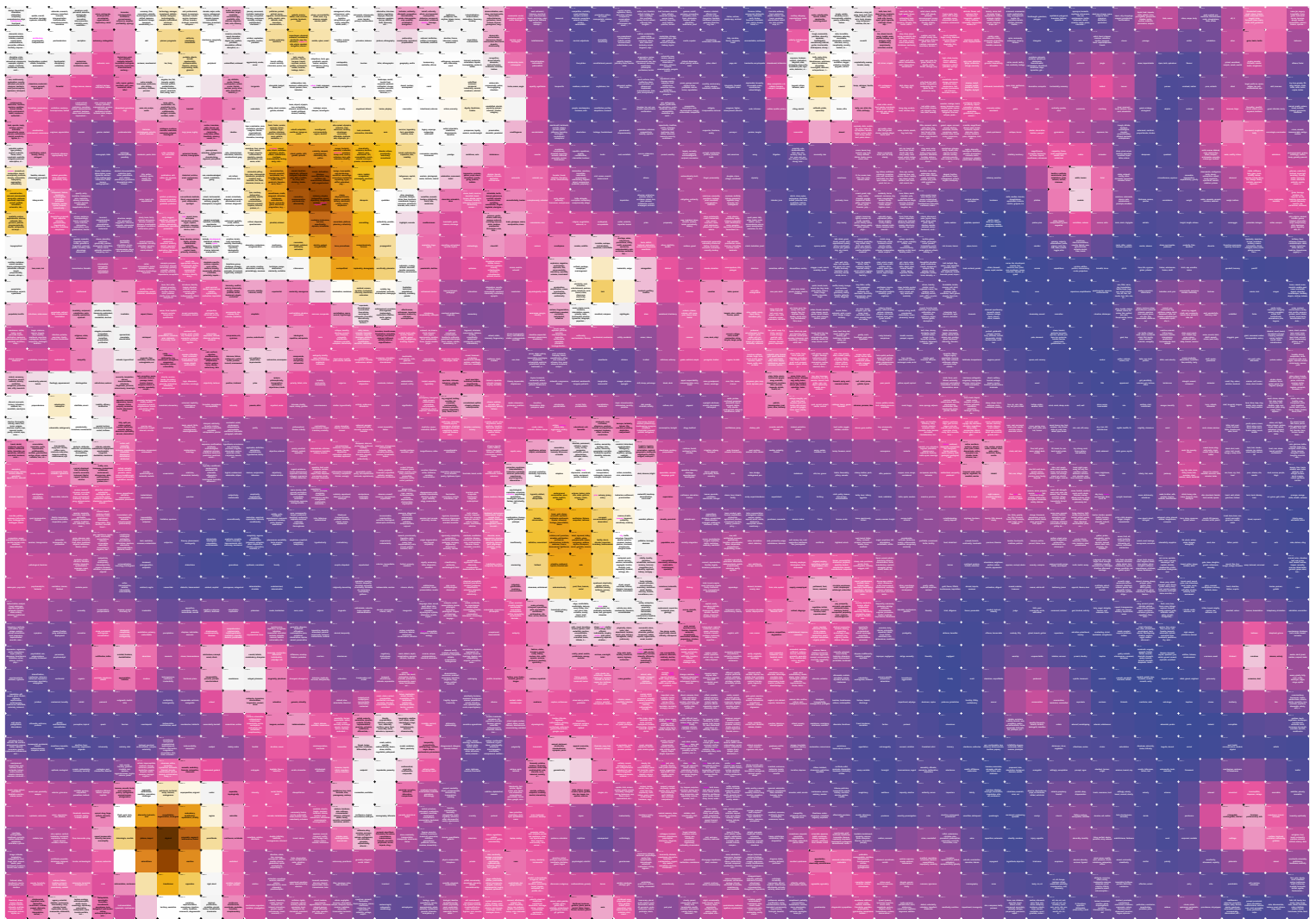



Fig 2.14 Face of Koolhaas_SMLXL: Atom letters coloured according to their prominence (From most prominent - brown, to least prominent - purple), rendering_229_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/Koolhaas_SMLXL.pdf, 0  1

When the galaxy is highlighted by all its actors, many faces appear (Fig. 2.8). The next most probable question to ask is: Which, out of these faces, have something to say about the previously articulated concepts of *instrument*, *machine*, *apparatus* and *motor* (Fig. 2.15)? In other words, which books throw most light on those concepts. Another *symbolic poem*:

SymbolicPoem10_ReadingSOM_affinity

```
concept = "motor";
rootFolder = "/Users/romanmir/Dropbox/_phd_mathematica_scripts/library/_229_all/_03_RW_4060_r_50it21d/";
names = Flatten[Import[rootFolder <> "_names.csv"]];
cellWeights = Import[rootFolder <> "_cell_gridweights_40_60.csv"];
cellContent = # /. "" -> Nothing & /@ Import[rootFolder <> "_outCellContentName.csv"];
cell = Position[cellContent, concept];
spectrum = Nearest[cellWeights, cellWeights[[cell[[1, 1]]], Length@cellWeights];
"n" <> ToString@cell[[1, 1]] <> " e" <> ToString@Length[cellContent[[cell[[1, 1]]]] <> " " <>
ToString@cellContent[[cell[[1, 1]]]]
bookInterest = Reverse[Sort@cellWeights[[cell[[1, 1]]]][[1 ;; 5]]];

Column[
{Image[Rescale[Partition[cellWeights[[All, #]], 60]], ImageSize -> 100], names[[#]], cellWeights[[cell[[1, 1]]][[#]]] & /@
Flatten[Position[cellWeights[[cell[[1, 1]]], #] & /@ bookInterest]}
```

Files needed to operate with this poem are outputs of a SOM trained by *Xenotheka*:

List of books in *Xenotheka*:

http://www.romanvlahovic.com/xenotheka/_names.txt

Numerical part of atom-letters (SOM weight vectors):

http://www.romanvlahovic.com/xenotheka/_cell_gridweights_40_60.txt

Indexical part of atom-letters:



http://www.romanvlahovic.com/xenotheka/_outCellContentName.txt

Xenotheka responds by pointing to actors that are most probably interested in indexes in question. Each book is characterised by its face, its name, and the probability of being interested in the index (*atom-letter*) in question (Fig. 2.15).






n1227 e8 {equip, town, depression, counteract, motor, equipment, jumble, coalesce}

- {, Mumford_The Culture of Cities, 0.0737629}
- {, Koolhaas_Delirious New York, 0.0291196}
- {, Le Corbusier_The City of Tomorrow, 0.0249898}
- {, Sorkin_All Over the Map, 0.0216817}
- {, Jacobs_The Death and Life of Great American Cities, 0.0209501}

n1594 e4 {instrument, article, insufficiency, cleanly}

- {, Marx_Capital Volume 1, 0.0806124}
- {, Smith_Wealth of Nations, 0.046886}
- {, Darwin_On the Origin of Species, 0.0167616}
- {, Mumford_The Culture of Cities, 0.0166453}
- {, Hayek_The Constitution of Liberty, 0.0162986}

n2229 e1 {machine}

- {, Deleuze Guattari_A Thousand Plateaus, 0.146803}
- {, Schumacher_The Autopoiesis of Architecture Vol2, 0.0403647}
- {, Serres_Rome, 0.0286138}
- {, Mumford_The Culture of Cities, 0.0260861}
- {, Schumacher_The Autopoiesis of Architecture Vol1, 0.021526}

n2289 e1 {apparatus}






- {, Deleuze Guattari_A Thousand Plateaus, 0.12929}
- {, Schumacher_The Autopoiesis of Architecture Vol2, 0.0508595}
- {, Serres_Rome, 0.0332325}
- {, Hofstadter_Godel Escher Bach, 0.0251671}
- {, Mumford_The Culture of Cities, 0.0243853}

Fig. 2.15 Concepts and their protagonists, Rendering_229_03_RW_4060_r_50it21d

Instrument (communication and exchange), *machine* (movement, and cities), *apparatus* and *motor* (abstraction and form). If one looks at this specific constellation of concepts and finds actors or books whose faces are articulated by the same concepts, one should find himself immersed in an amusing discussion. These kinds of encounters will be extensively dramatized in *Plentiful Play*, by playing the *Informational Instrument* and using the technique of *Texting with Xenotheka*.¹⁰⁵ The instrument indexes and points, the player dramatizes.

With this in mind let us perform a quick test.

2.5.1.3 Affairs Amid Books

Books are our actors. By observing two books in an artificially staged intimate discussion, I will try to dramatize their fictional relations. What follows is a trailer for getting into the mood of dramatic characterisations of book affairs.

2.5.1.3.1 Affair 1, love: *Marx_Capital Volume 1* and *Smith_Wealth of Nations*

If one looks more carefully at the faces of *Marx_Capital Volume 1* and *Smith_Wealth of Nations* (Fig. 2.16), one can see how *Marx_Capital Volume 1* is a little bit more focused than *Smith_Wealth of Nations* (part of the galaxy which is in focus covers a smaller area). But one can also notice as that their main point of interest (the dark brown colour) is almost at the same spot (if the two faces were superimposed). Still, both faces are articulated in a slightly different way. If we would like to characterise this relationship, it could be called love. Again, instead of reasoning about this strange relationship, let us look at two more relationships and get into the mood by telling more fictional stories about them. If the stories told are in tune with each other, the mood across all three affairs should be consistent and persuasive.

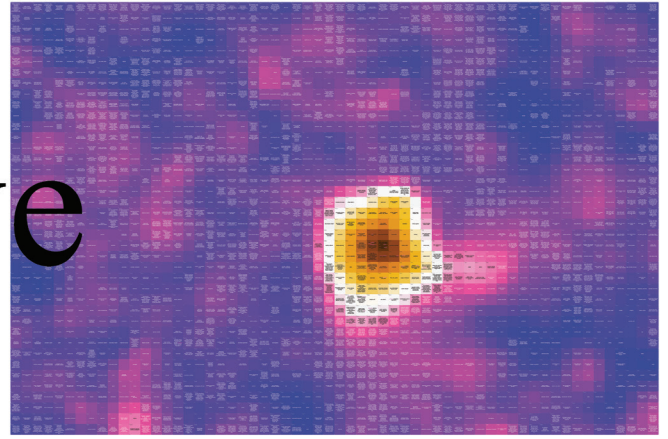
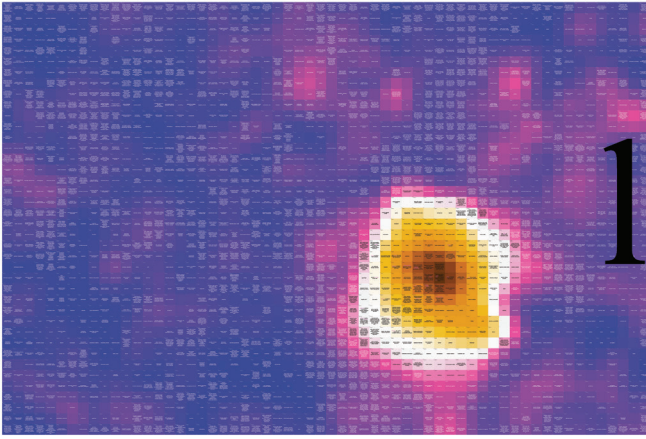
2.5.1.3.2 Affair 2, hate: *Schumacher_The Autopoiesis of Architecture Vol2* and the *Leibniz_Theodicy*

On the other hand, one can see here something completely different. *Schumacher_The Autopoiesis of Architecture Vol2* and the *Leibniz_Theodicy* are repulsed by each other (Fig. 2.17).

105 See 2.4.3 RELATING: A Constitution of an Informational Face

Smith_Wealth of Nations

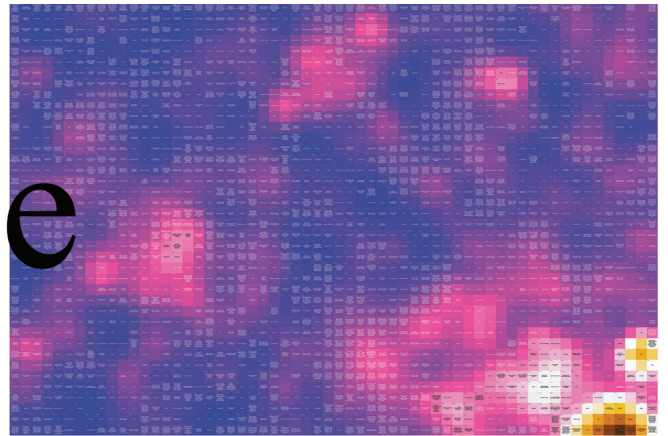
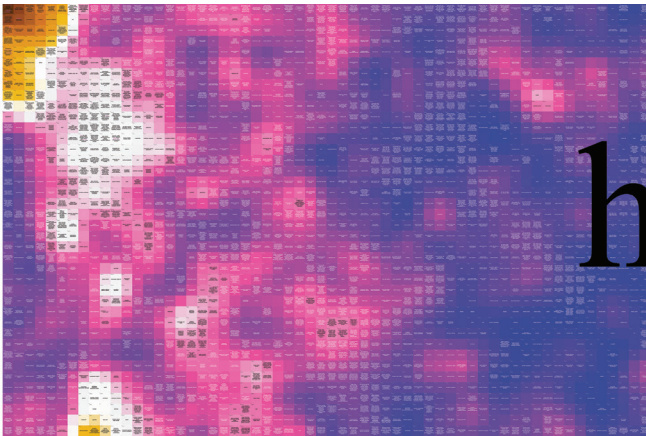
Marx_Capital Volume 1



love

Schumacher_The Autopoiesis of Architecture Vol 2

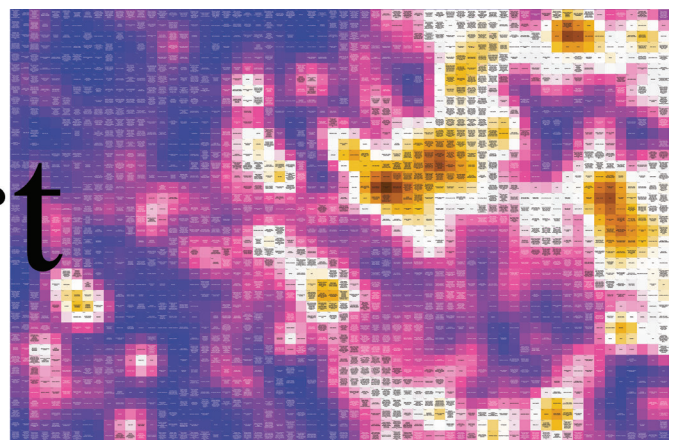
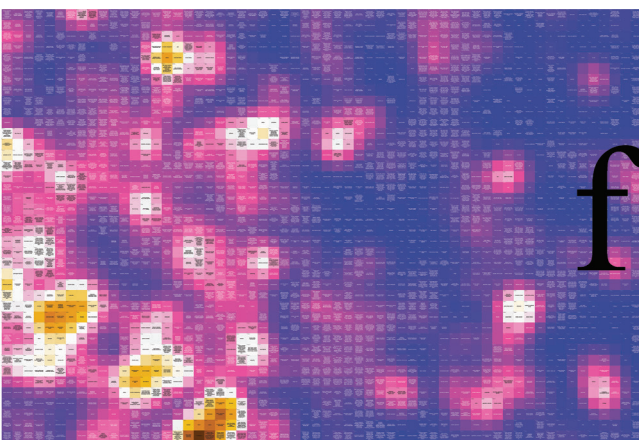
Leibnitz_Theodicy



hate

Baudrillard_The Vital Illusion

Beckett_Stories and Texts for Nothing



flirt

Fig. 2.16 Relation1, love: *Marx_Capital Volume 1* and *Smith_Wealth of Nations*, rendering_229_03_RW_4060_r_50it21d

Fig. 2.17 Relation 2, hate: *Schumacher_The Autopoiesis of Architecture Vol2* and the *Leibnitz_Theodicy*, rendering_229_03_RW_4060_r_50it21d

Fig. 2.18 Relation 3, flirt: *Baudrillard_The Vital Illusion* and *Beckett_Stories and Texts for Nothing*, rendering_229_03_RW_4060_r_50it21d

The main interest of one book is as far away as possible from the main interest of the other book. They are diagonal to each other. If I continue with the dramatic characterisations, I can be free enough to interpret this relation as hate.

2.5.1.3.3 *Affair 3, flirt: Baudrillard_The Vital Illusion and Beckett_Stories and Texts for Nothing*

The third and most complex relation out of these three can be established between *Baudrillard_The Vital Illusion* and *Beckett_Stories and Texts for Nothing* (Fig. 2.18). One is more focused on the left, while the other more on the right side of the galaxy, but both are also interested in the other side —these are the small white dots which are distanced from the main interest. I would like to call this affair a discussion, flirting, or a dance.

These kinds of dramatic affairs are just one way of thinking about how books light up the galaxy. These interpretations and characterisations are quite arbitrary, but consistent, and can continue indefinitely. One could also interpret these relations differently and not be wrong. In articulating *Xenotheka* in different ways, by relating actors and the stage, one influences their relations, similarities, friendships, concepts and, in a way, plays with them. In the background of each character, of each face of a book, is the context, the same galaxy of concepts (Fig. 2.9). These are the temporary *atom-letters* of the books that inhabit *Xenotheka* at this particular moment. As said before, similar indexes group together and form concepts. The concepts are moving. Books are indexed by the whole library at once, rearticulated by the alphabet of *atom-letters*. But just for a moment. One face, one mood, one articulation. A peculiar atmosphere. In the next moment, a new interest appears and the atmosphere changes.

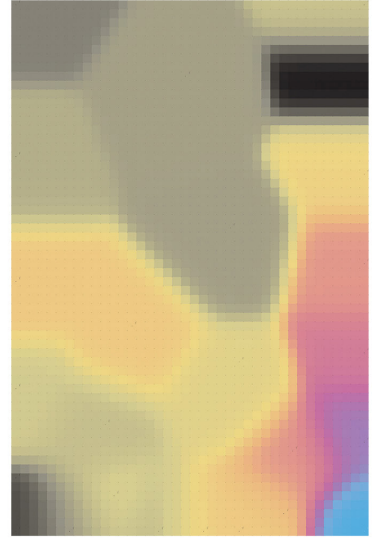
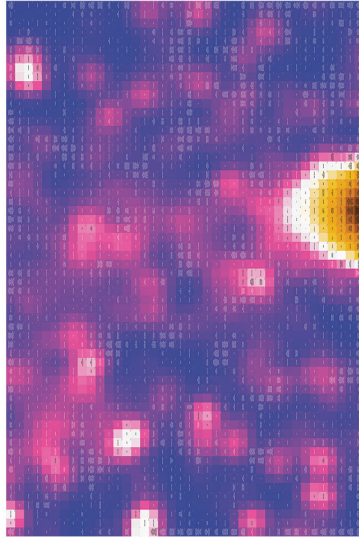
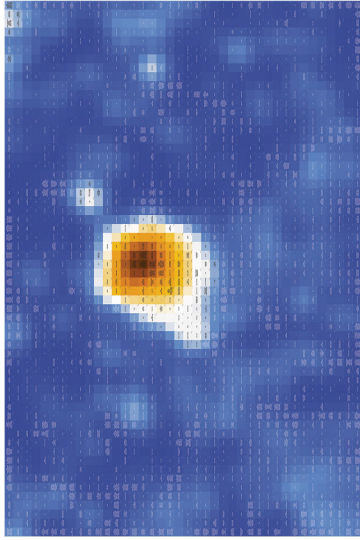
Let us continue and explore this idea for a moment.

2.5.1.4 *A Book and its Many Faces*

What does a book think when its avatars visit different libraries?

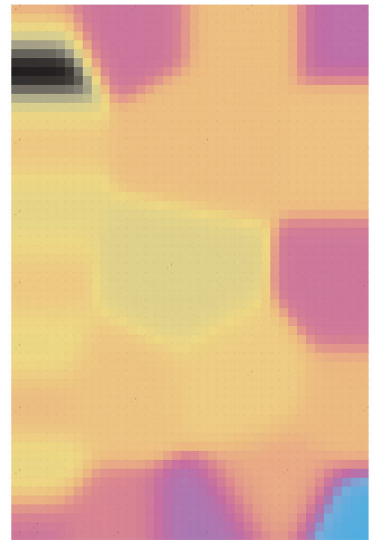
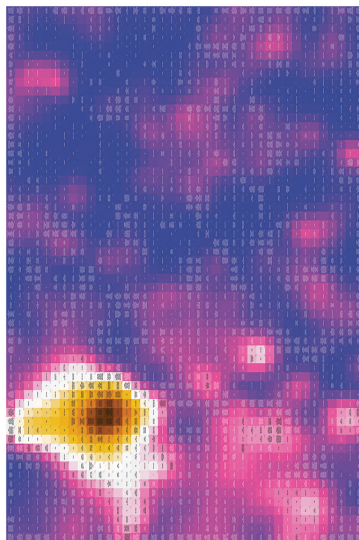
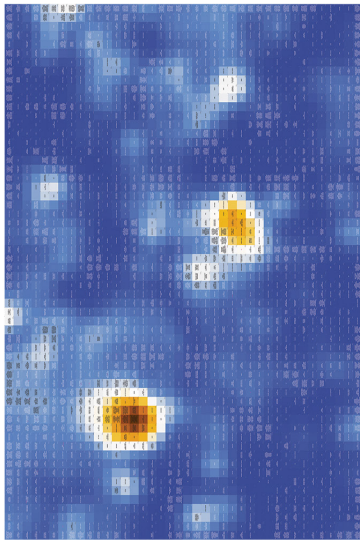
After travelling through a galaxy of concepts and dramatizing book affairs, what will be equally interesting to explore is how the face of a book changes when its avatars travel between

Eigen Vector Centrality



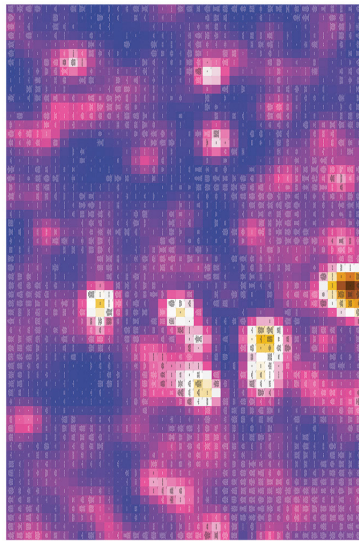
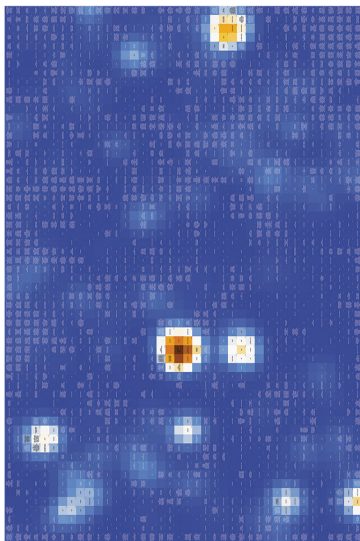
library 34

PageRank Centrality



library 49

VertexDegree Centrality



library 229

Synonyms

Words

Letters

Fig. 2.19 Nine faces of *LeCorbusier_Towards a New Architecture*, nine renderings, nine atmospheres

galaxies. The main protagonist will be *LeCorbusier_Towards a New Architecture*.¹⁰⁶ In this adventure, we will ask our hero's avatars to play nine different roles (Fig. 2.19) and visit three different libraries:¹⁰⁷

*Library 34*¹⁰⁸ is a *Xenotheka* where mostly literary works dwell: *Joyce_Ulysses*, *Hugo_Les Miserables*, *Borges_Collected Fictions*, *Dickens_A Tale of Two Cities*...

*Library 49*¹⁰⁹ is a *Xenotheka* where architecture is the main topic of discussion: *Sorkin_All Over the Map*, *Banham_Critic Writes*, *Sykes Hays_Architectural Theory 1993 2009*, *Jencks_The Story of Post-Modernism*...

*Library 229*¹¹⁰ is a *Xenotheka* in which *Library 34* and *Library 49* are just two among six shelves.

The three libraries are different ways of organising and playing with *Xenotheka*. In each of these libraries, *LeCorbusier_Towards a New Architecture* shows three different faces. Each time it is indexed in a new way or placed in a new library *LeCorbusier_Towards a New Architecture* shows a new face, behaves in a different manner. Here are nine of its faces (Fig. 2.19).

Let us look closer and explore three ways in which *LeCorbusier_Towards a New Architecture* could play its roles in three different libraries. How it tunes its thinking and mood, its main concepts and interests, on its visits to different galaxies:

2.5.1.4.1 *LeCorbusier_Towards a New Architecture* visiting the *Library 34* indexed by words

When surrounded by literary actors that talk about the world each in its own way, *LeCorbusier_Towards a New Architecture* takes the role of an architect (Fig. 2.20). Its face is indexed by a common architectural vocabulary, by indexes such as: *house*, *plan*, *style*, *composition*,

106 Le Corbusier, *Towards a New Architecture* (Dover Publications, 1923).

107 The story of how these three libraries were formed is the chapter 2.5.2 *ABSTRACTION I'* (Fig. 2.23).

108 *Library 34* is the sixth shelf in a specific rendering of *Xenotheka* (Fig. 2.23): http://www.romanvlahovic.com/xenotheka/_bookGalaxy_sixShelves.pdf

109 *Library 49* is the second shelf in a specific rendering of *Xenotheka* (Fig. 2.23): http://www.romanvlahovic.com/xenotheka/_bookGalaxy_sixShelves.pdf

110 Six shelves of *Xenotheka* (Fig. 2.23): http://www.romanvlahovic.com/xenotheka/_bookGalaxy_sixShelves.pdf

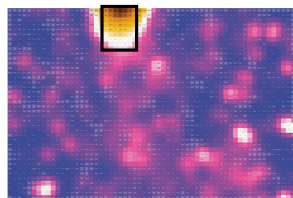
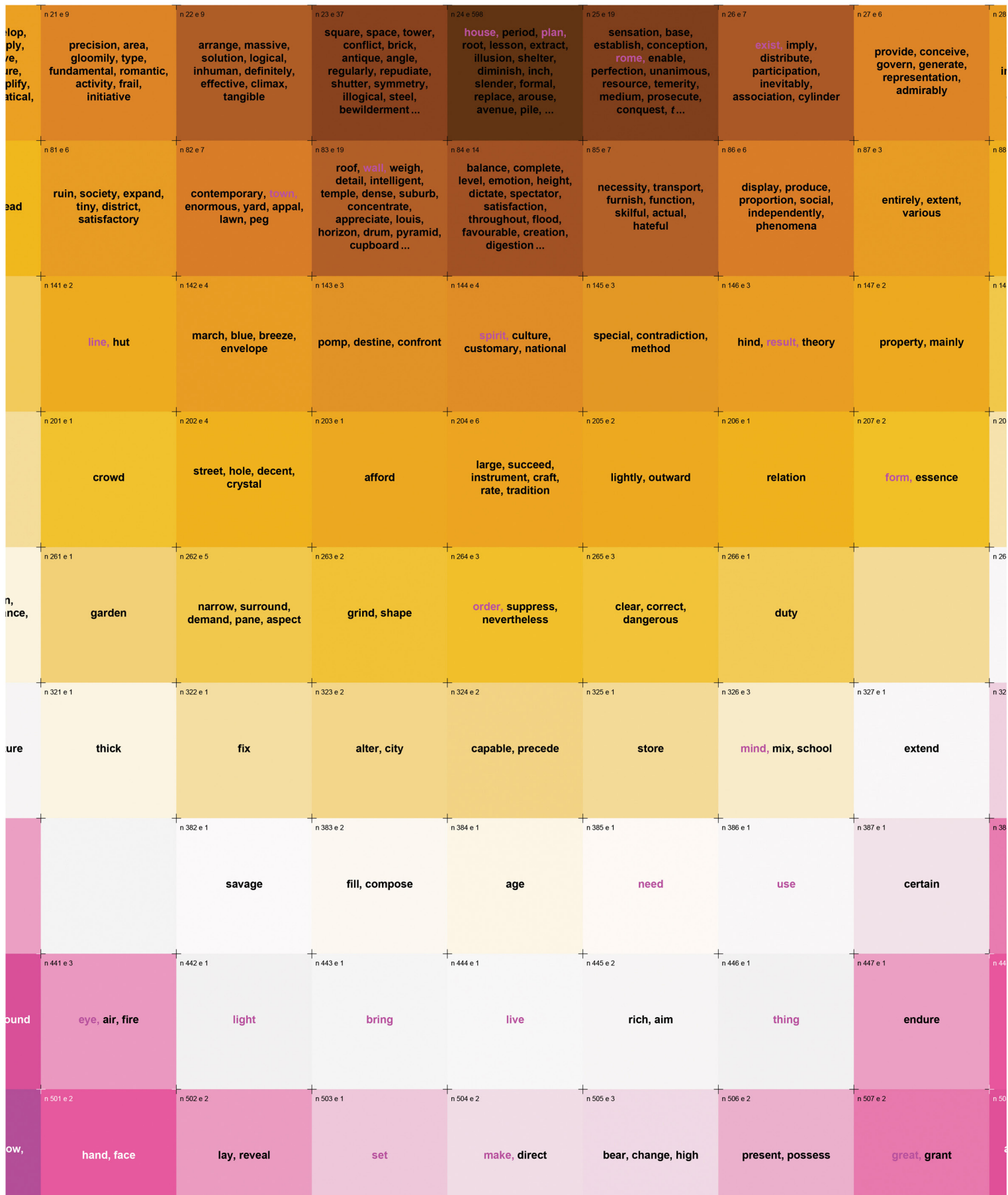


Fig. 2.20 Face of *LeCorbusier_Towards a New Architecture* in the *Library 34*, rendering_34_01_RW_4060_r_50it22d
http://www.romanvlahovic.com/xenotheka/LeCorbusier_TowardsaNewArchitecture_34.pdf, 0 1

architect, space, tower, symmetry. Since most of them index a single *atom-letter* with 598 indexes, *n24 e598. LeCorbusier_Towards a New Architecture* becomes lonely in its talking and ideas by having only one strong concept, one *atom-letter* that talks about architecture.

Here are his ten most prominent *atom-letters*:

n24 e598 {house, period, plan, root, lesson, extract, illusion, shelter, diminish, inch, slender, formal, replace, arouse, avenue, pile, grandeur, style, abstraction, composition, marble, link, erect, system, inhabitant, egyptian, roman, exceptional, disagreement, worker, mathematics, poem, drama, admonition, expansion, enterprise, experiment, alien, exclusively, scale, factory, sentimental, impressive, relationship, speculation, devastate, profile, adapt, organization, architect, architectural...}

n23 e37 {square, space, tower, conflict, brick, antique, angle, regularly, repudiate, shutter, symmetry, illogical, steel, bewilderment, vestibule, nap, barn, build, urn, raw, respond, automatically, width, coarse, monumental, poetic, accommodation, machine, railway, disillusion, aqueduct, readjust, laziness, irrefutable, grotto, overrun, minimum}

n25 e19 {sensation, base, establish, conception, rome, enable, perfection, unanimous, resource, temerity, medium, prosecute, conquest, tract, pattern, palisade, uninterrupted, pompous, accordance}

n84 e14 {balance, complete, level, emotion, height, dictate, spectator, satisfaction, throughout, flood, favourable, creation, digestion, thunderbolt}

n83 e19 {roof, wall, weigh, detail, intelligent, temple, dense, suburb, concentrate, appreciate, louis, horizon, drum, pyramid, cupboard, concert, courtyard, reconstruct, brutality}

n85 e7 {necessity, transport, furnish, function, skilful, actual, hateful}

n22 e9 {arrange, massive, solution, logical, inhuman, definitely, effective, climax, tangible}

n26 e7 {exist, imply, distribute, participation, inevitably, association, cylinder}

n144 e4 {spirit, culture, customary, national}

n82 e7 {contemporary, town, enormous, yard, appal, lawn, peg}

2.5.1.4.2 *LeCorbusier_Towards a New Architecture* visiting the Library 49 indexed by words

Another library, another mood, another sophisticated way of talking about the same interest. In the context where architecture is a common topic, the face of *LeCorbusier_Towards a New Architecture* slightly changes its expression. The indexes of the main interest are not explicit architectural elements which have now moved to the periphery of its main focus. The central position of its interest can be interpreted as a dialogue between modernist industrialisation and ancient references: *aeroplane* and *accountancy* talk to *pisa* and *pompeii*, *turbine* and *boudoir* refer

| | | | | | | | |
|--|---|---|---|---|--|--|------------|
| n 1543 e 7 | n 1544 e 5 | n 1545 e 2 | n 1546 e 5 | n 1547 e 7 | n 1548 e 7 | n 1549 e 3 | n 1550 e 1 |
| fatigue, tranquil, tow, franc, ballast, germain, montmartre | salon, certitude, unpardonable, fatherland, appertain | magnificent, saint | ax, costly, judiciously, obstruction, chariot | cabinet, pillar, vase, evenly, adornment, laborious, princely | profile, temple, partition, lodge, abundant, pediment, perpendicular | admiration, rightly, charm | sati |
| n 1603 e 57 | n 1604 e 1 | n 1605 e 4 | n 1606 e 2 | n 1607 e 5 | n 1608 e 5 | n 1609 e 3 | n 1610 e 1 |
| rectilinear, voisin, surgery, donkey, edict, piously, plump, barrage, atavism, jardin, catchword, officialdom, allah, revaluati... | maid | admirable, dismal, manure, apprehend | unanimous, butt | egyptians, narrowness, girder, servile, stonework | grandeur, greece, toss, afar, solidly | uniformly, medal, lengthy | ji |
| n 1663 e 8 | n 1664 e 13 | n 1665 e 2 | n 1666 e 2 | n 1667 e 9 | n 1668 e 5 | n 1669 e 3 | n 1670 e 1 |
| immense, rue, pylon, vosges, gare, stamboul, maisonnette, automne | ala, rivoli, poetical, arterial, storeyed, exactness, tempest, procuracies, gard, landau, garabit, pascal, concorde | invalides, mansard | magnificently, xvi | accordance, consecrate, gratitude, colosseum, cavity, luxor, caracalla, incurved, lathing | arsenal, altar, prodigious, incomparably, medici | pyramid, intolerable, mason | g |
| n 1723 e 8 | n 1724 e 14 | n 1725 e 23 | n 1726 e 18 | n 1727 e 18 | n 1728 e 1 | n 1729 e 2 | n 1730 e 1 |
| yard, motor, roadway, mighty, congest, axiom, astonishment, barbarian | xiv, morale, tuberculosis, prism, exactitude, sane, pont, implacable, nay, temerity, motley, morrow, annals, petrol | amplitude, demoralize, incumbent, unanimity, byzantium, topsy, giddy, demoralization, praiseworthy, insupportable, draught, ton ... | airplane, accountancy, assent, ratify, ordained, remorselessly, ravish, irrefutable, pisa, madeleine, Citrohan, imponderable, ... | pompeii, vanity, sanctuary, octagon, hadrian, transgress, linen, woodwork, indubitably, apse, peristyle, embrasure, hateful, ac ... | bookcase | versailles, wrongly | |
| n 1783 e 11 | n 1784 e 18 | n 1785 e 9 | n 1786 e 6 | n 1787 e 156 | n 1788 e 7 | n 1789 e 9 | n 1790 e 1 |
| back, storey, passion, disgust, coach, painful, thwart, learnt, decency, rivet, unhealthy | stifle, symphony, noble, classification, violently, till, esprit, incoherent, industrialize, tennis, wretched, aqueduct, incide ... | minutely, diseased, meditate, atrophy, schoolboy, limpid, tottenham, laziness, pear | epoch, chassis, constantinople, bordeaux, breton, ingenuous | axis, cylinder, acropolis, cupola, turbine, boudoir, receptacle, severity, garnier, asbestos, snail, untidy, dove, limousine, p ... | constructional, incise, readjust, legion, superintendent, infallible, recompense | calculation, dare, mathematical, arouse, utilitarian, descriptive, modulation, sadly, henceforth | |
| n 1843 e 10 | n 1844 e 8 | n 1845 e 4 | n 1846 e 3 | n 1847 e 31 | n 1848 e 12 | n 1849 e 7 | n 1850 e 1 |
| confusion, equation, louis, boulevard, indispensable, habitable, imminent, grandiose, clever, greatness | perfection, dame, pantheon, notre, nouveau, formidable, necessitate, deference | outburst, pity, behold, specialization | ventilate, ankle, mosque | liner, hangar, paralyse, dealer, hallow, overshadow, fume, hideous, adjustable, euclid, typewriter, reporter, vitalize, reprehe ... | regulate, harmony, hind, morally, drawer, skilful, coke, quantum, treacherous, easel, sweetness, razor | mass, michael, contour, touchstone, reminder, maria, consolation | in |
| n 1903 e 9 | n 1904 e 7 | n 1905 e 5 | n 1906 e 7 | n 1907 e 8 | n 1908 e 4 | n 1909 e 5 | n 1910 e 1 |
| day, creation, pavement, priest, contractor, gigantic, football, unexpectedly, elastic | sport, brutal, grade, accuse, ingenious, conformity, overturn | reign, generator, dump, outwards, interlace | penetration, radiator, overrun, brake, muddle, warsaw, expire | meditation, ventilator, lately, wardrobe, indefinable, hermetically, superfluity, donor | auguste, gradation, cupboard, handrail | pierre, mould, bronze, casa, disc | v |
| n 1963 e 8 | n 1964 e 7 | n 1965 e 8 | n 1966 e 7 | n 1967 e 8 | n 1968 e 1 | n 1969 e 1 | n 1970 e 1 |
| normal, urgent, race, telephone, ingenuity, forum, manager, recruit | shut, star, chart, drown, garner, arrogant, backwater | harmonious, horror, triple, santa, catastrophe, clutter, tapestry, throne | cement, console, drum, respectful, handsome, cleanse, straw | shutter, insulate, pomp, inclination, countenance, garland, workmanship, pompous | emotion | sensation | |
| n 2023 e 2 | n 2024 e 3 | n 2025 e 2 | n 2026 e 3 | n 2028 e 1 | n 2029 e 2 | n 2030 e 1 | |
| arm, gas | keen, lurk, dirt | inch, hanger | dust, gravel, chasm | lovely | forceful, velvet | | |

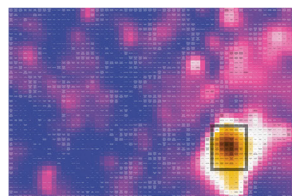


Fig. 2.21 Face of *LeCorbusier_Towards a New Architecture* in the *Library 49*, rendering *49_01_RW_4060_r_50it22d*
http://www.romanvlahovic.com/xenotheka/LeCorbusier_TowardsaNewArchitecture_49.pdf, 0  1

to *cupola* and *acropolis*, etc. The context is different and *LeCorbusier_Towards a New Architecture* responds in a new way (Fig. 2.21). Its character is characterised differently.

n1726 e18 {airplane, accountancy, assent, ratify, ordained, remorselessly, ravish, irrefutable, pisa, madeleine, citrohan, imponderable, adventurer, yea, auteuil, freehold, coachwork, maisonette}

n1786 e6 {epoch, chassis, constantinople, bordeaux, breton, ingenuous}

n1666 e2 {magnificently, xvi}

n1727 e18 {pompeii, vanity, sanctuary, octagon, hadrian, transgress, linen, woodwork, indubitably, apse, peristyle, embrasure, hateful, acanthus, angelo, echinus, pentelicus, cestius}

n1725 e23 {amplitude, demoralize, incumbent, unanimity, byzantium, topsy, giddy, demoralization, praiseworthy, insupportable, draught, tonnage, outbuilding, digestion, parthenons, martyrdom, denis, bric, shrivelled, brac, pitiless, chantilly, omnibus}

n1787 e156 {axis, cylinder, acropolis, cupola, turbine, boudoir, receptacle, severity, garnier, asbestos, snail, untidy, dove, limousine, pulpit, upkeep, travail, pompeian, soleil, utensil, luxuriously, tact, servitude, accountant, orly, bowler, wilfulness, preen, almighty, lineament, guilt, unassailable, disastrously, steamship, plenum, courtier, parthenon, clatter, blondel, audacity, omen, brittany, retention, sunlit, freyssinet, emmanuel, sophia, propulsion, sedentary, salute, amelioration, adduce, saloon, rhine, virile, metallurgy, torpedo, empress, quinze, perseverance, coldly, transept, forehead, rhythmical, pauvre, refashion, stupidly, shapelessness, untruth, flint, nap, pitiful, orsay, formidably, regulator, winch, wrist, ordinating, humbug, accentuation, mantelpiece, iconographical, pythagoras, cosmography, lamentable, hypostyle, enthrone, airless, obsequiousness, aspirin, inquisitive, roi, capriciousness, sensorial, pittti, cie, unlearn, colonna, nous, creeper, porte, primitiveness, goliath, hindoo, surety, unhappily, sensualist, kilowatt, samarkand, absurdum, retrogression, seemingly, gymnastic, cleanly, peevisish, amman, erechtheum, orchid, disarm, suleiman, pia, spoilt, carlsruhe, quai, briar, approachable, algebrization, cosmedin, athena, baucis, raspail, ader, growler, payable, palisade, ambo, overplus, farman, bignan, broussa, phidias, aquitania, boire, bours, caproni, cunarder, delage, hydroplane, limousin, marseillaise, monol, noce, propylea, transatlantique, verser, vient}

n1785 e9 {minutely, diseased, meditate, atrophy, schoolboy, limpid, tottenham, laziness, pear}

n1667 e9 {accordance, consecrate, gratitude, colosseum, cavity, luxor, caracalla, incurved, lathing}

n1665 e2 {invalides, mansard}

n1846 e3 {ventilate, ankle, mosque}

2.5.1.4.3 *LeCorbusier_Towards a New Architecture* visiting the Library 229 indexed by words

In a more diverse library, in a more complex environment, *LeCorbusier_Towards a New Architecture*'s response becomes more complex as well. Its interests are now scattered around

| | | | | | | | |
|--|--|---|---|---|---|--|---|
| hology, myth, ical, euphoria, aesop, decor, o, alibi, referee, c, metalanguage, ne, alimentary, ph... | | n 31 e 61 roma, twin, incise, fuzzy, blazon, hospitality, dough, gauls, abduct, involuted, termite, palatine, herculean, hooves, recommen ... | n 32 e 11 theatre, dancer, princely, mutilate, contortion, plebeian, vignette, stendhal, charlie, chaplin, gautier | n 33 e 66 decorative, sculptor, drama, sinuous, raphael, virtuosity, reverie, tableau, turbine, serpentine, photographer, auguste, ballet ... | n 34 e 5 hellenic, colourful, garnier, werkbund, schlemmer | n 35 e 74 van, transparency, picasso, constructivist, mies, georg, characterised, prehistory, mondrian, weimar, expressionism, expression ... | n 36 e 6 rework, characte materialise, ne hardt, kraus |
| psycho, genteel, erlative, flaunt, gism, courtesan, tify, syncretism, ean, hairdresser, mpt, propell ... | n 90 e 2 prosaic, aficionado | n 91 e 1 legend | n 92 e 1 soleil | n 93 e 6 sculpture, antique, naturalistic, verisimilitude, constructional, capriciousness | n 94 e 8 artistic, geometric, sculptural, foreword, simmel, stella, characterisation, riegI | | |
| peremptory, ntfully, untiring, cyclopaedic, schievously, ess, blackboard, flaubert | n 150 e 4 cosmogony, seuil, femmes, vicariously | n 151 e 1 fretwork | | n 153 e 14 oriental, drapery, cubic, arabesque, festoon, compactness, romanesque, wavy, byzantine, sidedly, amalgamation, disharmony, agon ... | n 154 e 6 inorganic, crystalline, dimensionality, acanthus, naturalism, empathy | n 155 e 1 theodor | n 156 e 1 figural |
| pid, superbly | n 210 e 2 gaston, curdle | n 211 e 2 magnificently, contort | n 212 e 1 geometrically | n 213 e 2 abstraction, ornamental | n 214 e 1 aesthetic | n 215 e 1 Iars | |
| | n 270 e 2 henri, baudelaire | n 271 e 43 imagination, exaggeration, shell, poetic, unforgettable, smallness, nuance, recapture, hackneyed, engrave, salutary, nest, mini ... | | n 273 e 3 decoration, exrescence, parasitical | n 274 e 17 aesthetically, ornament, vegetal, gothic, transept, semper, hogarth, spuybroek, flamboyant, tracery, worringer, tessellation, r ... | n 275 e 1 cusp | n 276 e 2 smoothness, hold |
| rimbaud | n 330 e 3 unreality, metaphysicians, eulogize | n 331 e 1 psychologist | n 332 e 1 coloration | n 333 e 14 rigidity, entangle, sublime, mold, drape, interlace, wildness, diagonally, robinson, finalize, bifurcate, unvarying, owen, encrust | n 334 e 39 sprout, spire, twig, configure, darwin, textile, entanglement, pliable, flatness, braid, rib, chartres, textured, ornamentation ... | n 335 e 1 miesian | n 336 e 1 gombrich |
| thmanalysis | | | n 392 e 2 spiral, unbreakable | n 393 e 11 fringe, sympathetic, weave, persistently, zigzag, pristine, celtic, crudeness, inhabitable, coca, cannonball | n 394 e 5 texture, nouveau, ceramic, occlude, manicure | | |
| thm, cyclical, adic, geste, dressage | | | n 452 e 9 merge, blindly, radiate, abstractly, exuberance, inexact, etymologically, unbearably, vestigial | n 453 e 11 craft, beauty, carve, crystal, interweave, decorate, fixity, fragility, undeniably, uncoordinated, prosaically | n 454 e 3 james, brett, dalo | n 455 e 5 unspoiled, primitivism, nordic, trompe, oeil | n 456 e 38 fred, civilisati toronto, canad monolith, bata montreal, tellin playboy, parson, lawn, carte, sc sou ... |
| | n 510 e 13 clothe, parole, outfit, annales, jewellery, diachrony, signifieds, wearer, hippy, gemstone, chanel, dandyism, vestimentary | n 511 e 1 cola | n 512 e 3 omnipresent, sensuality, normandy | n 513 e 6 interior, paint, mimic, contour, imagery, debris | n 514 e 5 artist, meticulously, prolific, rembrandt, disturbingly | n 515 e 12 reservation, desert, revisit, tourism, aura, teller, encampment, wasteland, sanity, signalled, confederation, greenness | n 516 e 13 landscape, tou carpenter, nuc pastoral, chos wisconsin, thon prairie, cartogra hippie, ethnogra canqu ... |

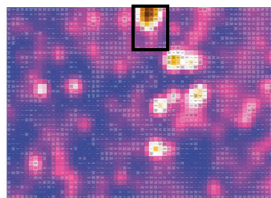


Fig. 2.22 Face of *LeCorbusier_Towards a New Architecture* in the *Library 229*, rendering_229_03_RW_4060_r_50it21d
http://www.romanvlahovic.com/xenotheka/LeCorbusier_TowardsaNewArchitecture_229.pdf, 0

the galaxy and not focused on one spot, as with the two previous libraries (Fig. 2.21, 2.22). Its most prominent highlight is rearticulated with a new vocabulary: cinema, music, dance, theatre, virtuosity. *LeCorbusier_Towards a New Architecture* now starts to talk about architecture in a new light. The galaxy shines in yet another manner. Mood changes.

```

n92 e1 {soleil}
n152 e0 {}
n32 e11 {theatre, dancer, princely, mutilate, contortion, plebeian,
vignette, stendhal, charlie, chaplin, gautier}
n93 e6 {sculpture, antique, naturalistic, verisimilitude,
constructional, capriciousness}
n33 e66 {decorative, sculptor, drama, sinuous, raphael, virtuosity,
reverie, tableau, turbine, serpentine, photographer, auguste, ballet,
impressionist, stylize, scenic, easel, walt, filmmaker, patrimony,
peinture, cinematic, torso, photography, inaction, extravaganza,
acrobatics, dresden, dramatist, secession, sensualist, rubens, vivant,
siberian, marionette, behrens, gustave, eisenstein, choreography, montage,
whitman, christie, mime, belvedere, julien, mise, aesthete, adolphe,
monet, symbolist, gallimard, wagnerian, pantomime, rodin, ibsen, craig,
emerson, hanlon, pierrot, transl, winckelmann, appia, maeterlinck,
charlot, vertov, stieglitz}
n91 e1 {legend}
n151 e1 {fretwork}
n212 e1 {geometrically}
n153 e14 {oriental, drapery, cubic, arabesque, festoon, compactness,
romanesque, wavy, byzantine, sidedly, amalgamation, disharmony, agonise,
volition}
n31 e61 {rome, twin, incise, fuzzy, blazon, hospitality, dough, gauls,
abduct, involuted, termite, palatine, herculean, hooves, recommencement,
silt, mono, etruscan, hercules, aeneas, consul, unum, omnia, toga, capra,
corneille, kingship, substitutable, suffrage, romulus, sextus, rhea,
joker, tiber, diasparagmos, turba, fracas, valerius, livy, pleb, sabinas,
sabine, tullus, quirinus, vestal, lucretia, remus, geometral, tarquinius,
alba, tarpeia, horatius, alban, cacus, coriolanus, curiatius, volsci,
gabii, curiatii, albula, evander}

```

In exploring the three galaxies, *LeCorbusier_Towards a New Architecture* had a different story to tell in each one of them. Indexes it used to point to its most probable stories were dramatically different. It formed new *atom-letters* for each galaxy; he was telling a similar story in a new way. For me as a performer of this small test, this felt quite promising and convincing. Still, one aspect was left unaddressed: the formations of the *Library 34* and *Library 48*. This is a part of the next beautiful aspect of an *Informational Instrument*, on how books gather.

2.5.2 ABSTRACTION 1': Atom-Letters and Spectrums

Alongside with the negotiation between concepts —as the other part of the double bind— actors start to gather and form galaxies of discourses. Since each actor presents itself in a multiplicity of ways, it is a part of multiple discourse galaxies. The same process and the same algorithm (SOM) are being used, yet in an inverted manner. Mathematicians would say it is a transposed matrix. Instead of indexing words by books (Abstraction 1), one is indexing books with words (Abstraction 1').

Abstraction 1

| LIBRARY | book_1 | book_2 | book_3 | book_4 |
|---------|--------|--------|--------|--------|
| word_1 | v11 | v12 | v13 | v14 |
| word_2 | v21 | v22 | v23 | v24 |
| word_3 | v31 | v32 | v33 | v34 |

architecture 0.00783492782603, 0.00694168932686, 0.0016858527965093, 8.92502979166E-4, 0.00862752875842195, 0.00426245488002935, 0.003173341463705, 0.00743752449306, 0.01328837762792542... (one dimension for each book)

Abstraction 1'

| LIBRARY | word_1 | word_2 | word_3 | word_4 |
|---------|--------|--------|--------|--------|
| book_1 | v11 | v12 | v13 | v14 |
| book_2 | v21 | v22 | v23 | v24 |
| book_3 | v31 | v32 | v33 | v34 |

Blanchot_The Book to Come 3.18200372535E-4, 3.0866484430293E-4, 4.84841203282E-4, 4.0428618039226E-4, 2.5165714526457E-4, 1.5861276912E-4, 1.726447484E-4, 1.3866652121674147E-4... (one dimension for each word)

Instead of words, books are those that are gathering and making friends; they are trying to find their place in the library.¹¹¹ Each shelf of the library becomes a new character, an *atom-letter*, a persona, and a small library.

2.5.2.1 Six Characters of a Library

In the *rendering_229_13_RB_0203_r_25it21d_words_vertex*, I want to have only a few distinct personas, each one strong and rich in character. Therefore, I tuned the resolution of the

¹¹¹ Similarity is measured in the same way as before, by euclidean distance of encoded vectors in a trained SOM.

n 1 e 67

Kittler_The Truth of the Technological World, Auge_The Future, Taleb_The Black Swan, Wiener_The Human Use Of Human Beings, McLuhan_The Gutenberg Galaxy, Latour_Facing Gaia, Cache_Projectiles, McLuhan_Understanding Media, Graeber_Debt, Ponte_The House of Light and Entropy, Lefebvre_Critique of Everyday Life, Virilio_A Landscape of Events, Wiener_Cybernetics, Hayek_The Constitution of Liberty, Hayek_The Road to Serfdom, Deleuze Guattari_A Thousand Plateaus, Ranciere_Aisthesis, Carpo_The Second Digital Turn, West_Scale The Universal Laws of Growth, Serres_Thumbelina, Fukuyama_The End of History and the Last Man, Spuybroek_The Sympathy of Things, Weizman_The Least of All Possible Evils, Popper_All Life Is Problem Solving, Castells_The Power of Identity, Negroporte_Being Digital, Girard_Violence and the Sacred, Castells et al_Another Economy Is Possible, Foucault_The Order of Things, Easterling_Extrastatecraft, Castells_The Rise of the Network Society, Delanda_Philosophy and Simulation, Herman Chomsky_Manufacturing Consent, Max Bill_Form, Function, Beauty, Latour_We Have Never Been Modern, Schrodinger_What is Life, Chomsky_On Language, Devlin_Finding Fibonacci, Arendt_The Human Condition, Fuller_Operating Manual For Space, Arendt_Eichmann in Jerusalem A Report, Arendt_On Revolution, Latour_Reassembling the social, Baudrillard_The Vital Illusion, Devlin_The Unfinished Game, Freud_Beyond the Pleasure Principle, Worringer_Abstraction and Empathy, Foucault_Archaeology of Knowledge, Foucault_The History of Sexuality Vol 1, Lefebvre_Rhythmanalysis, Haraway_Cyborg Manifesto, Harman_Immaterialism Objects and Social Th, Castells_Networks of Outrage and Hope, Darwin_On the Origin of Species, Saussure_Course in General Linguistics, Schlemmer Nagy_The Theater of the Bauhaus, Barthes_The Language of Fashion, Stein_Tender Buttons, Chomsky_Language and Mind, Eco_How to Write a Thesis, Weizman_Before and After, Brillouin_Science and Information Theory, Chomsky_Aspects of the Theory of Syntax, Einstein_Relativity, Marx Engels_The Communist Manifesto, Marx_Capital Volume 1, Eisenman_Notes on Conceptual Architecture

n 3 e 45

Eco_On Literature, Serres_The Five Senses, Derrida_Signature, Deleuze_Desert Islands and Other Texts, Serres_Geometry, Musil_The Man Without Qualities V1, Serres_Statues, Serres_Biogeoa, Hofstadter_I Am a Strange Loop, Zizek_Less Than Nothing, Jung_Archetypes and the Collective Unconscious, Blanchot_The Book to Come, Benjamin_The Work of Art in the Age of M, Serres Latour_Conversations on Science, Culture, and Time, Nietzsche_Beyond Good and Evil, Shelley_Frankenstein or the Modern Prometheus, Ruskin_The Seven Lamps of Architecture, Jung_Alchemical Studies, Sedlacek_Economics of Good and Evil, Barthes_Mythologies, Sullivan_The Autobiography of an Idea, Serres_Rome, Freud_The Uncanny, Jung_Two Essays in Analytical Psychology, Lacan_The Psychoses Seminars of JL, Freud_The Psychopathology of Everyday, Hofstadter_Godel Escher Bach, Foucault_History of Madness, Abbott_Flatland, Bachelard_The Poetics of Space, Eco_Serendipities Language & Lunacy, Buehlmann_Mathematics and Information Serres, Derrida_Of Grammatology, Blanchot_The Space of Literature, Zizek_Demanding the Impossible, Lucretius_On The Nature Of Things, Plato_Timaeus, Bacon_Novum Organum, Nancy_The Ground of the Image, Alberti_On Painting, Derrida_Copy Archive Signature, Girard_Sacrifice, Nancy_Intoxication, Aristotle_Poetics, Newton_The Mathematical Principles of Natural Philosophy

n 5 e 20

Harman_Bells and Whistles, Delanda Harman_The Rise of Realism, Descartes_Discourse on the Method, Harman_Towards Speculative Realism, Meillassoux_After Finitude, Deleuze_Difference and Reppetton, Leibniz_Theodicy, Badiou_In Praise of Mathematics, Russel_The Problems of Philosophy, Deleuze Guattari_What Is Philosophy, Popper_The Logic of Scientific Discovery, Kant_Critique of Pure Reason, Spinoza_The Essential Spinoza Ethics, Ayache_The Blank Swan, Descartes_Meditations, Spinoza_The Ethics, Badiou_Number and Numbers, Badiou_Mathematics of the Transcendent, Feynman_QED The Strange Theory of Light, Wittgenstein_Tractatus Logico Philosophicus

n 2 e 49

Sorkin_All Over the Map, Banham_Critic Writes, Sykes Hays_Architectural Theory 1993 2009, Sudjic_The Edifice Complex, Jencks_The Story of Post-Modernism, Bo Bardi_Stones Against Diamonds, Rogers_A Place for All People, Mumford_The Culture of Cities, Rakatansky_Tectonic Acts of Desire and Doubt, Krier_The Architecture of Community, Ratti et al_Open Source Architecture, Koolhaas_SMLXL, Betsky_Architecture Matters, Aureli_Real Estates, Lavin_Flash in the Pan, Koolhaas_Delirious New York, Scott Brown_Having Words, Ito_Tarzan In The Media, Mertins_Modernity Unbound, Le Corbusier_The City of Tomorrow, Tafuri_Architecture and Utopia, LeCorbusier_Towards a New Architecture, Gropius_The New Architecture and the Bauhaus, Ratti_The City of Tomorrow, Vidler_Histories of the Immediate Present, Schumacher_The Autopoiesis of Architecture Vol2, Cook_Drawing, Venturi Scott Brown_Learning from Las Vegas, Ruskin_Poetry of Architecture, Hollis_Cities Are Good for You, Pallasmaa_The Eyes of the Skin, Howard_Garden Cities of To-Morrow, Carpo_Architecture in the Age of Printing, Kuma_Anti-Object, Greenfield_Against the smart city, Alexander_A Pattern Language, Carpo_The Alphabet and the Algorithm, Lavin_Kissing Architecture, Bosker_Original Copies, Durand_Precis of the lectures on Architecture, Jacobs_The Death and Life of Great American Cities, Schumacher_The Autopoiesis of Architecture Vol1, Eisenman Koolhaas et al_ Supercritical, Aureli_The Possibility of an absolute architecture, Aureli_Less is Enough, Calvino_Invisible Cities, Jacob_Make it real, Alexander_The Timeless Way of Building, Eisenman_The End of the Classical

n 4 e 14

Alberti_10 books Of Architecture, Vitruvius_The ten Books of Architecture, Rousseau_The Social Contract, Humboldt_Equinoctial Regions of America, Machiavelli_The Prince, Homer_Iliad, Smith_Wealth of Nations, Aristotle_The Athenian Constitution, Beowulf, Aristotle_Politics, Palladio_The Four Books of Architecture, Durer_Memories of Journeys to Venice, Galilei_Discourse on Floating Bodies, Beckett_Waiting for Godot

n 6 e 34

Joyce_Ulysses, Hugo_Les Miserables, Borges_Collected Fictions, Dickens_A Tale of Two Cities, Eco_The Name of the Rose, Tolstoy_War and Peace, Eco_Baudolino, Tolstoy_Anna Karenina, Dickens_Oliver Twist, Cicero_Tusculan Disputations, Cervantes_Don Quixote, Beckett_Stories and Texts for Nothing, Rand_The Fountainhead, Woolf_Night and day, Kerouac_On The Road, Austen_Pride And Prejudice, Asimov_I Robot, Kafka_The Trial, Dante_Divine Comedy, Plato_The Republic, Goethe_Faust, Nietzsche_Thus Spake Zarathustra, Voltaire_Candide, Balzac_The Unknown Masterpiece, Twain_Adventures of Huckleberry Finn, Hobbes_Leviathan, Plato_Symposium, Shakespeare_Hamlet, Augustine_The Confessions, Shakespeare_Romeo and Juliet, Aristotle_Ethics, Kafka_Metamorphosis, King James Bible, Confucian Analects

galaxy to six *atom-letters* (six conceptual personas). And again, without assuming any classification (topics, keywords, genres, disciplines, eras...), books gather in an interesting and convincing way. Three characters on the left —*n2 e49*, *n4 e14*, *n6 e34*— have almost disciplinary flavours. *n2 e49* is indexed mainly with books that celebrate architecture; *n4 e14* is mostly a gathering place for books written before the 20th century; *n6 e34* is a shelf of literary works. Three characters on the right —*n1 e67*, *n3 e45*, *n5e20*— are three flavours, three shelves, or a spectrum of three composed out of texts interested in theory and philosophy. This is again an arbitrary but consistent interpretation of moods on the shelves of this *Xenotheka* (Fig. 2.23). The library is characterised by six shelves, in six peculiar characters. Since the number of characters is so small (six), each character is quite particular and delicate. This feels and looks promising. This is yet another indicator that the *Informational Instrument* is composed and tuned well.

2.5.2.2 A Spectrum of a Library

There can be many different spectra of the same *Xenotheka*. Here is another one. This time books are arranged in a line in which the library becomes a linear spectrum (Fig. 2.24). In this case, the spectrum comes with a scale; each book is assigned an ordinal number of its cell (shelf). Values of these numbers don't refer to any external system; they are contextual pointers to high dimensional spaces, in this case, pointers to vectors of concepts.¹¹² The library becomes a spectral abstraction of concepts spreading from renaissance and baroque thoughts (*Descartes_Discourse on the Method*, *Leibniz_Theodicy*, *Spinoza_The Ethics*...) via literary works (...*Balzac_The Unknown Masterpiece*, *Joyce_Ulysses*, *Woolf_Night and day*...), to thinking around architecture (...*Gropius_The New Architecture and the Bauhaus*, *Banham_Critic Writes*, *LeCorbusier_Towards a New Architecture*...), and about the world (...*Aristotle_Poetics*, *Serres_The Five Senses*, *Derrida_Signature*...), while the spectrum ends with systemic formalisations (...*Badiou_In Praise of Mathematics*, *Chomsky_On Language and Popper_The Logic of Scientific Discovery*) (Fig. 2.24). When one just scans through this list, there is a consistency in the way books inhabit the line. Only by counting the words and using a generic algorithm SOM, the library is arranged. Again, it is articulated in its own terms.

112 Vahid Moosavi, "Computing With Contextual Numbers," *ArXiv:1408.0889 [Cs]*, August 5, 2014, <http://arxiv.org/abs/1408.0889>.

1 Descartes_Discourse on the Method
1 Leibniz_Theodicy
1 Spinoza_The Essential Spinoza Ethics
1 Spinoza_The Ethics
1 Descartes_Meditations
20 Bacon_Novum Organum
37 Plato_Timaeus
64 Aristotle_Politics
77 Rousseau_The Social Contract
86 Hobbes_Leviathan
101 Lucretius_On The Nature Of Things
105 Cicero_Tusculan Disputations
106 Nietzsche_Beyond Good and Evil
113 Machiavelli_The Prince
113 Aristotle_Ethics
153 Plato_The Republic
162 Plato_Symposium
174 Confucian Analects
224 King James Bible
225 Augustine_The Confessions
226 Nietzsche_Thus Spake Zarathustra
242 Shakespeare_Romeo and Juliet
244 Dante_Divine Comedy
256 Goethe_Faust
260 Shakespeare_Hamlet
290 Cervantes_Don Quixote
295 Voltaire_Candide
317 Twain_Adventures of Huckelberry Fin
325 Beckett_Stories and Texts for Nothing
327 Dickens_Oliver Twist
329 Tolstoy_Anna Karenina
329 Kafka_The Trail
341 Kerouac_On The Road
347 Rand_The Fountainhead
355 Dickens_A Tale of Two Cities
356 Tolstoy_War and Peace
356 Balzac_The Unknown Masterpiece
358 Joyce_Ulysses
361 Woolf_Night and day
376 Asimov_I Robot
379 Eco_Baudolino
391 Eco_The Name of the Rose
392 Austen_Pride And Prejudice
392 Kafka_Metamorphosis
419 Hugo_Les Miserables
420 Musil_The Man Without Qualities VI
423 Borges_Collected Fictions
435 Sullivan_The Autobiography of an Idea
439 Serres_Biogea
442 Shelley_Frankenstein or the Modern Prometheus
449 Beowulf
457 Homer_Iliad
468 Durer_Memories of Journeys to Venice
475 Abbott_Flatland
506 Galilei_Discourse on Floating Bodies
515 Feynman_QED The Strange Theory of Light
521 Alberti_On Painting
525 Newton_The Mathematical Principles of Natural Philosophy
529 Einstein_Relativity
546 Aristotle_The Athenian Constitution
556 Humboldt_Equinoctial Regions of America
558 Stein_Tender Buttons
564 Smith_Wealth of Nations
583 Ruskin_The Seven Lamps of Architecture
587 Vitruvius_The ten Books of Architecture
589 Ruskin_Poetry of Architecture
592 Alberti_10 books Of Architecture
604 Palladio_The Four Books of Architecture
612 Durand_Precis of the lectures on Architecture
635 Alexander_The Timeless Way of Building
636 Alexander_A Pattern Language
662 Howard_Garden Cities of To-Morrow
681 Le Corbusier_The City of Tomorrow
689 Jacobs_The Death and Life of Great American Cities
691 Calvino_Invisible Cities
698 Hollis_Cities Are Good for You
702 Greenfield_Against the smart city
720 Aureli_The Possibility of an absolute architecture
726 Mumford_The Culture of Cities
728 Koolhaas_SMLXL
745 Sorkin_All Over the Map
753 Koolhaas_Delirious New York
760 Bosker_Original Copies
766 Aureli_Real Estates
770 Krier_The Architecture of Community
771 Rogers_A Place for All People
789 Sudjic_The Edifice Complex
797 Jencks_The Story of Post-Modernism
803 Gropius_The New Architecture and the Bauhaus
809 Banham_Critic Writes
820 LeCorbusier_Towards a New Architecture
828 Cook_Drawing
832 Betsky_Architecture Matters
840 Bo Bardi_Stones Against Diamonds
853 Scott_Brown_Having Words
859 Ratti_et all_Open Source Architecture
874 Ito_Tarzans In The Media
878 Venturi_Scott Brown_learning from las vegas
889 Eisenman_Koolhaas et All_Supercritical
894 Kuma_Anti-Object
904 Pallasmaa_The Eyes of the Skin
908 Sykes_Hays_Architectural Theory 1993 2009
912 Lavin_Kissing Architecture
922 Lavin_Flash in the Pan
936 Jacob_Make it real
953 Vidler_Histories of the Immediate Present
964 Schumacher_The Autopoiesis of Architecture Vol2
965 Schumacher_The Autopoiesis of Architecture Voll
984 Eisenman_The End of the Classical
1004 Eisenman_Notes on Conceptual Architecture
1044 Tafuri_Architecture and Utopia
1050 Mertins_Modernity Unbound
1053 Rakatansky_Tectonic Acts of Desire and Doubt
1060 Carpo_Architecture in the Age of Printing
1067 Aureli_Less is Enough
1068 Carpo_The Alphabet and the Algorithm
1104 Worringer_Abstraction and Empathy
1105 Max_Bill_Form, Function, Beauty
1110 Spuybroek_The Sympathy of Things
1111 Ranciere_Aisthesis
1135 Schlemmer_Nagy_The Theater of the Bauhaus
1136 Ponte_The House of Light and Entropy
1142 Carpo_The Second Digital Turn
1146 Cache_Projectiles
1156 Weizman_Before and After
1166 McLuhan_Understanding Media
1186 Negroponte_Being Digital
1193 Delanda_Philosophy and Simulation
1194 Wiener_Cybernetics
1203 Brillouin_Science and Information Theory
1205 Ratti_The City of Tomorrow
1214 West_Scale The Universal Laws of Growth
1245 Easterling_Extrastatecraft
1250 Weizman_The Least of All Possible Evils
1256 Castells_The Rise of the Network Society
1263 Castells_et al_Another Economy Is Possible
1266 Herman_Chomsky_Manufacturing Consent
1287 Castells_Networks of Outrage and Hope
1290 Marx_Capital Volume 1
1291 Castells_The Power of Identity
1324 Haraway_Cyborg Manifesto
1324 Marx_Engels_The Communist Manifesto
1347 Hayek_The Road to Serfdom
1353 Hayek_The Constitution of Liberty
1355 Fukuyama_The End of History and the Last Man
1365 Arendt_On Revolution
1369 Foucault_The History of Sexuality Vol 1
1372 Latour_Reassembling the social
1393 Latour_We Have Never Been Modern
1396 Lefebvre_Critique of Everyday Life
1405 Arendt_The Human Condition
1415 Auge_The Future
1430 Virilio_A Landscape of Events
1434 Fuller_Operating Manual For Space
1437 Baudrillard_The Vital Illusion
1438 Wiener_The Human Use Of Human Beings
1441 Latour_Facing Gaia
1458 Sedlacek_Economics of Good and Evil
1465 McLuhan_The Gutenberg Galaxy
1467 Popper_All Life Is Problem Solving
1468 Graeber_Debt
1472 Serres_Thumbelina
1491 Darwin_On the Origin of Species
1499 Arendt_Eichmann in Jerusalem A Report
1508 Zizek_Demanding the Impossible
1512 Taleb_The Black Swan
1516 Foucault_History of Madness
1522 Devlin_The Unfinished Game
1530 Devlin_Finding Fibonacci
1531 Schrodinger_What is Life
1539 Barthes_The Language of Fashion
1545 Eco_How to Write a Thesis
1564 Kittler_The Truth of the Technological World
1569 Zizek_Less Than Nothing
1569 Girard_Violence and the Sacred
1570 Hofstadter_Godel Escher Bach
1572 Girard_Sacrifice
1586 Hofstadter_I Am a Strange Loop
1588 Barthes_Mythologies
1589 Freud_Beyond the Pleasure Principle
1613 Freud_The Uncanny
1616 Jung_Two Essays in Analytical Psychology
1620 Jung_Archetypes and the Collective Unconscious
1627 Jung_Alchemical Studies
1628 Freud_The Psychopathology of Everyday
1634 Eco_On Literature
1636 Benjamin_The Work of Art in the Age of M
1657 Bachelard_The Poetics of Space
1661 Blanchot_The Book to Come
1661 Nancy_Intoxication
1668 Blanchot_The Space of Literature
1718 Beckett_Waiting for Godot
1768 Nancy_The Ground of the Image
1777 Derrida_Copy Archive Signature
1784 Serres_Rome
1785 Serres_Statues
1790 Aristotle_Poetics
1798 Serres_The Five Senses
1804 Derrida_Signature
1806 Serres_Geometry
1810 Lefebvre_Rhythmanalysis
1820 Serres_Latour_Conversations on Science, Culture, and Time
1833 Lacan_The Psychoses Seminars of JL
1843 Derrida_Of Grammatology
1845 Eco_Serendipities Language & Lunacy
1854 Ayache_The Blank Swan
1856 Saussure_Course in General Linguistics
1858 Foucault_The Order of Things
1868 Chomsky_Language and Mind
1874 Deleuze_Guattari_A Thousand Plateaus
1881 Foucault_Archaeology of Knowledge
1894 Deleuze_Desert Islands and Other Texts
1906 Deleuze_Guattari_What Is Philosophy
1921 Harman_Immaterialism Objects and Social Th
1928 Harman_Towards Speculative Realism
1932 Harman_Bells and Whistles
1935 Delanda_Harman_The Rise of Realism
1962 Buehlmann_Mathematics and Information Serres
1969 Deleuze_Difference and Reppetition
1981 Kant_Critique of Pure Reason
1993 Meillassoux_After Finitude
1996 Russel_The Problems of Philosophy
2000 Badiou_In Praise of Mathematics
2000 Chomsky_On Language
2000 Popper_The Logic of Scientific Discovery
2000 Chomsky_Aspects of the Theory of Syntax
2000 Badiou_Number and Numbers
2000 Badiou_Mathematics of the Transcendent

Fig. 2.24 *Xenotheka*: a spectrum of Books, rendering_229_06_RB_2000_r_55it21d

2.5.2.3 A Spectrality of Spectra

If one continues to play with this contextual technique, with different encodings that are provided by the *Generic Machine* (e.g., indexed by letters, words, bigrams, trigrams, measured via different centralities: ClosenessCentrality, EigenvectorCentrality...) one will be able to render multiple, sometimes even contrasting spectrums of the same library (Fig. 2.25).

Since spectrums are of the same library and of the same scale (from 1 - 2000), they are commensurable. Facial expressions of books become their new indexes while at the same time forming a ground for a new and more abstract play. One is entering a new level of abstraction, articulated via a new alphabet, with new encodings and new symbols. Spectrums become something like dishes on a menu ready to be composed in a beautiful dinner which is, in itself, a symbolic compression of the ingredients that were used in making of the dishes. One ends up playing with a dinner menu that behaves like a symbolic compression algorithm.

*“Computing turns into an art (again), just like mechanics used to be an art (and not science) before industrialization.”*¹¹³

—Bühlmann, *Articulating a Thing Entirely in Its Own Terms*

2.5.3 ABSTRACTION 2: Atom-Letters and Characters

Spectrums provide a new ground for a new level of abstraction. Actors can now abstract from concepts and centralities of indexes, given that their new faces are composed out of multiple spectra. Each spectrum provides a specific view of the library—an encoding (Fig. 2.25). By relating spectrums, one is composing more abstract *informational faces*. Instead of encoding books in a single spectrum, e.g., by a dictionary of words and their centralities, one is encoding *Xenotheka* by relating spectrums provided at the previous level of abstraction; *Abstraction 1*'. Books are no longer articulated directly by the *galaxy of concepts*, but by the spectrality of their faces. The way one wants to bring those spectrums in relation is a part of the tuning process and depends on the performer.

113 Bühlmann, “Articulating a Thing Entirely in Its Own Terms.” 74.

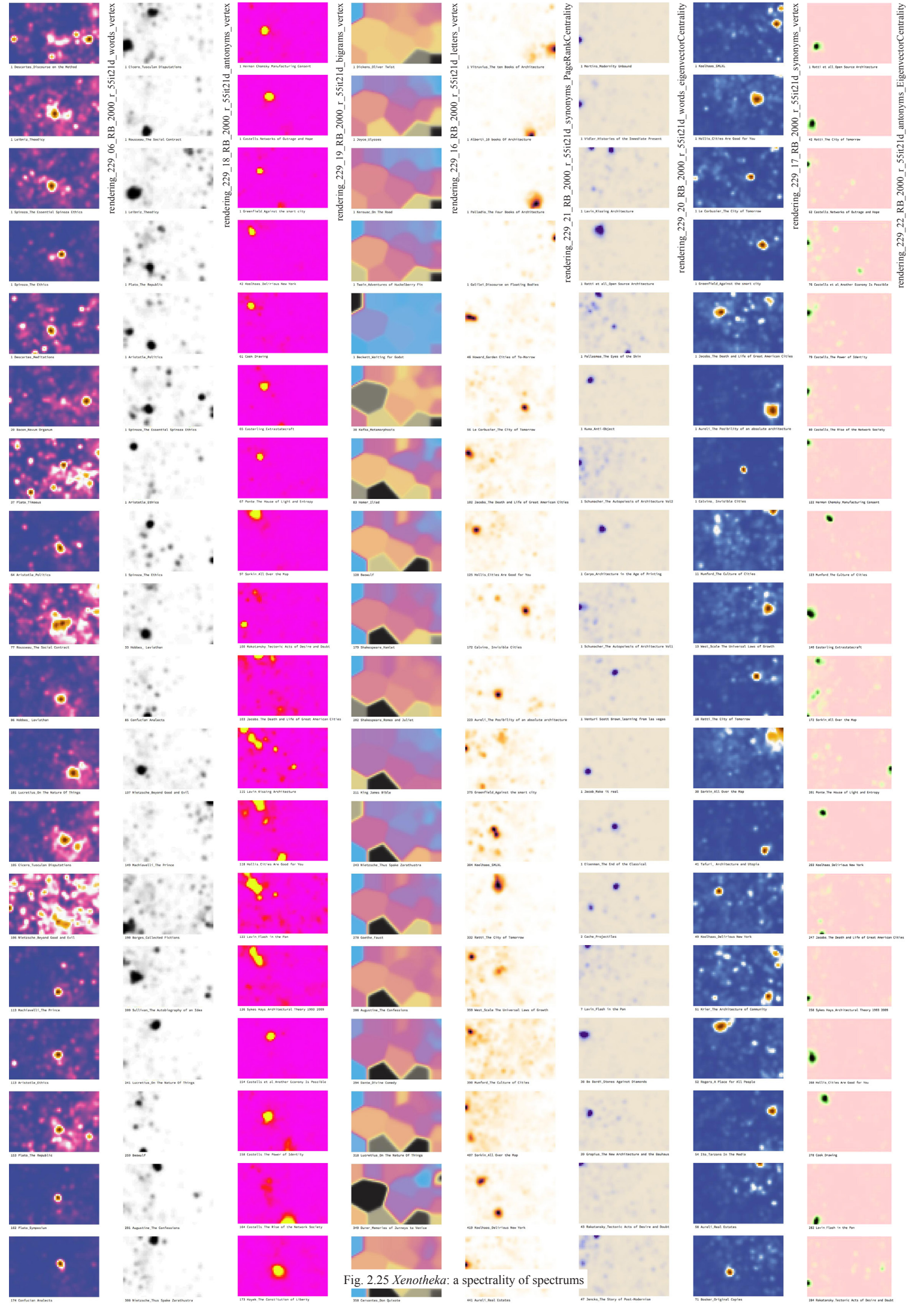


Fig. 2.25 *Xenotheka*: a spectrality of spectrums

Abstraction 2

| LIBRARY | spectrum_1 | spectrum_2 | spectrum_3 | spectrum_4 |
|---------|------------|------------|------------|------------|
| book_1 | v11 | v12 | v13 | v14 |
| book_2 | v21 | v22 | v23 | v24 |
| book_3 | v31 | v32 | v33 | v34 |

A book is now encoded in the plurality of its faces, by its ‘faceness’. As a result of this encoding process, a book in the below example is encoded by eight contextual numbers, coming from eight spectrums (Fig. 2.25), each encoded in a different manner. This kind of encoding is, at the same time, a spectrality of a face and its symbolic compression.

Abstraction 2

LeCorbusier_Towards a New Architecture 49 1584 1537 1540 660 246 1868
614 (one dimension for each spectrum) (Fig. 2.25)

The same process repeats as on the previous level of abstraction, yet it becomes more abstract.¹¹⁴ Actors are choosing shelves according to their mood and *making friends* according to their interests. Books, now indexed by the spectrality of their own faces, are indexing shelves. Each shelf can contain many books. The shelf is the new actor, the new *atom-letter*, in the same manner as it was described in Abstraction 1’, but encoded in a different and more abstract key. Instead of encoding a book in terms of Xenotheka’s dictionary of 21591 dimensions, one is encoding it with 8 dimensions that encapsulate the complexity of not just one of its dictionaries, but eight of them (Fig. 2.25).

2.5.3.1 Gathering of books

We have seen in the chapter 2.5.1.4 *A Book and its Many Faces*, how concepts of *LeCorbusier_Towards a New Architecture* behave in three different libraries (Fig. 2.23).¹¹⁵ The question posed there was: What does a book *think* in different environments? This question is now externalised: What does a book *do* in different environments? Together, the *thinking* (Abstraction 1) and *doing* (Abstraction 1’ and 2) of a book, by exposure to different environments, provide a glimpse into the character and habits of a book. These processes are synchronous; they develop in parallel, while complementing each other, and should be thought of as two sides of a double

¹¹⁴ The process is articulated by the SOM algorithm.

¹¹⁵ The three libraries come from the same rendering of *Xenotheka: rendering_229_13_RB_0203_r_25it21d_words_vertex*. *Library 229* is the initial library, where *Library 34* (atom-letter *n6e34*) and *Library 49* (atom-letter *n2e49*) are its shelves (Fig. 2.23).

articulation. Now let us continue observing the same adventure that *LeCorbusier_Towards a New Architecture* was having in the subchapter 2.5.1.4 *A Book and its Many Faces* from this new perspective. Instead of concepts, we are interested in how the book itself behaves at the gathering of books. That is, which place in each of the three libraries would *LeCorbusier_Towards a New Architecture* take? Who would be its friends and neighbouring books? While observing how our protagonist behaves on the level of books (Abstraction 1' and Abstraction 2), let us keep in mind how it was thinking on the level of concepts while travelling through galaxies (Abstraction 1). These are the same three galaxies, just encoded in a different key. Now, they are rendered as gatherings of books.

2.5.3.2 On the gathering for 12 in the Library 34

In the *Library 34*, among mostly literary actors, *LeCorbusier_Towards a New Architecture* assumes a comfortable position on the shelve *n10 e5*. Together with *Hugo_Les Miserables*, *Borges_Collected Fictions*, *Balzac_The Unknown Masterpiece*, *Kafka_Metamorphosis*, it forms a new *atom-letter*, a concept, and a persona (Fig. 2.26). Instead of trying to understand or speculate on its intriguing friendship with literary characters, let us see how *LeCorbusier_Towards a New Architecture* behaves in other two libraries, and see if it is consistent.

```
n10 e5 {Hugo_Les Miserables, Borges_Collected Fictions, LeCorbusier_
Towards a New Architecture, Balzac_The Unknown Masterpiece, Kafka_
Metamorphosis}
```

2.5.3.3 On the gathering for 12 in the Library 49

In an architectural context of the *Library 49*, *LeCorbusier_Towards a New Architecture* has a different position and flavour (Fig. 2.27).

```
n7 e3 {Gropius_The New Architecture and the Bauhaus, LeCorbusier_
Towards a New Architecture, Carpo_The Alphabet and the Algorithm }
```

If we think of the indexes related to its face in the same library (Fig. 2.21), then its neighbouring books in the *atom-letter n7 e3* feel consistent. In this context, these are its most probable neighbours. If I continued to speculate, I would say that they should be talking about contemporary technology and ancient references, while thinking of their present. The shelve *n7 e3* is the new conceptual persona, in which our protagonist is just one but a very loaded index.

Beckett_Stories and Texts for Nothing,
Tolstoy_Anna Karenina, Dickens_Oliver
Twist, Kafka_The Trail, Twain_Adventures
of Huckelberry Fin, Voltaire_Candide

Plato_The Republic

Confucian Analects, Plato_Symposium

Cervantes_Don Quixote

Aristotle_Ethics

Joyce_Ulysses, Dickens_A Tale of Two
Cities, Tolstoy_War and Peace, Eco_The
Name of the Rose, Eco_Baudolino,
Rand_The Fountainhead, Woolf_Night and
day, Kerouac_On The Road, Asimov_I
Robot, Austen_Pride And Prejudice

Cicero_Tusculan Disputations, Hobbes_
Leviathan

Hugo_Les Miserables,
Borges_Collected Fictions,
LeCorbusier_Towards a New
Architecture, Balzac_The Unknown
Masterpiece, Kafka_Metamorphosis

Dante_Divine Comedy, Goethe_Faust

Augustine_The Confessions,
Nietzsche_Thus Spake Zarathustra,
Shakespeare_Romeo and Juliet,
Shakespeare_Hamlet, King James Bible

2.5.3.4 On the gathering for 12 in the Library 229

In the third library, in the context of many topics and interests, *LeCorbusier_Towards a New Architecture* finds itself most comfortable when surrounded by the members of the shelf *n12 e31* where discussions about architecture are the sole interest (Fig. 2.28).

```
n12 e31 {Sykes Hays_Architectural Theory 1993 2009, Banham_Critic
Writes, Sudjic_The Edifice Complex, Bo Bardi_Stones Against Diamonds,
Jencks_The Story of Post-Modernism, Rakatansky_Tectonic Acts of Desire
and Doubt, Lavin_Flash in the Pan, Ratti et all_Open Source Architecture,
Betsky_Architecture Matters, Mertins_Modernity Unbound, Rogers_A Place for
All People, Scott Brown_Having Words, Vidler_Histories of the Immediate
Present, Krier_The Architecture of Community, Ito_Tarzans In The Media,
Aureli_Real Estates, Gropius_The New Architecture and the Bauhaus,
Schumacher_The Autopoiesis of Architecture Vol2, LeCorbusier_Towards a New
Architecture, Koolhaas_Delirious New York, Venturi Scott Brown_learning
from las vegas, Tafuri_Architecture and Utopia, Pallasmaa_The Eyes of
the Skin, Cook_Drawing, Kuma_Anti-Object, Lavin_Kissing Architecture,
Schumacher_The Autopoiesis of Architecture Voll, Carpo_The Alphabet and
the Algorithm, Eisenman Koolhaas et All_ Supercritical, Bosker_Original
Copies, Jacob_Make it real}
```

LeCorbusier_Towards a New Architecture is surrounded exclusively by books on architecture. Its first neighbours *n8 e13* and *n11 e13* are also predominantly interested in architecture and cities. This journey through three different galaxies, in a rather consistent manner, should be another good indicator that the *Informational Instrument* is tuned appropriately, and that it is almost ready to be played.

2.5.3.5 Multiple Encodings

These kinds of encodings work in circles, both horizontally in the articulation of spectrums (Abstraction 1 and Abstraction 1') and vertically by abstracting and articulating more abstract alphabets (Abstraction 2). Conceptually, both are open-ended processes that give specific flavours to the library. In each library a book behaves differently; with different encodings, it shows its different moods, develops its character. By playing the *Informational Instrument*, one is getting to know a book as a friend by meeting its friends.

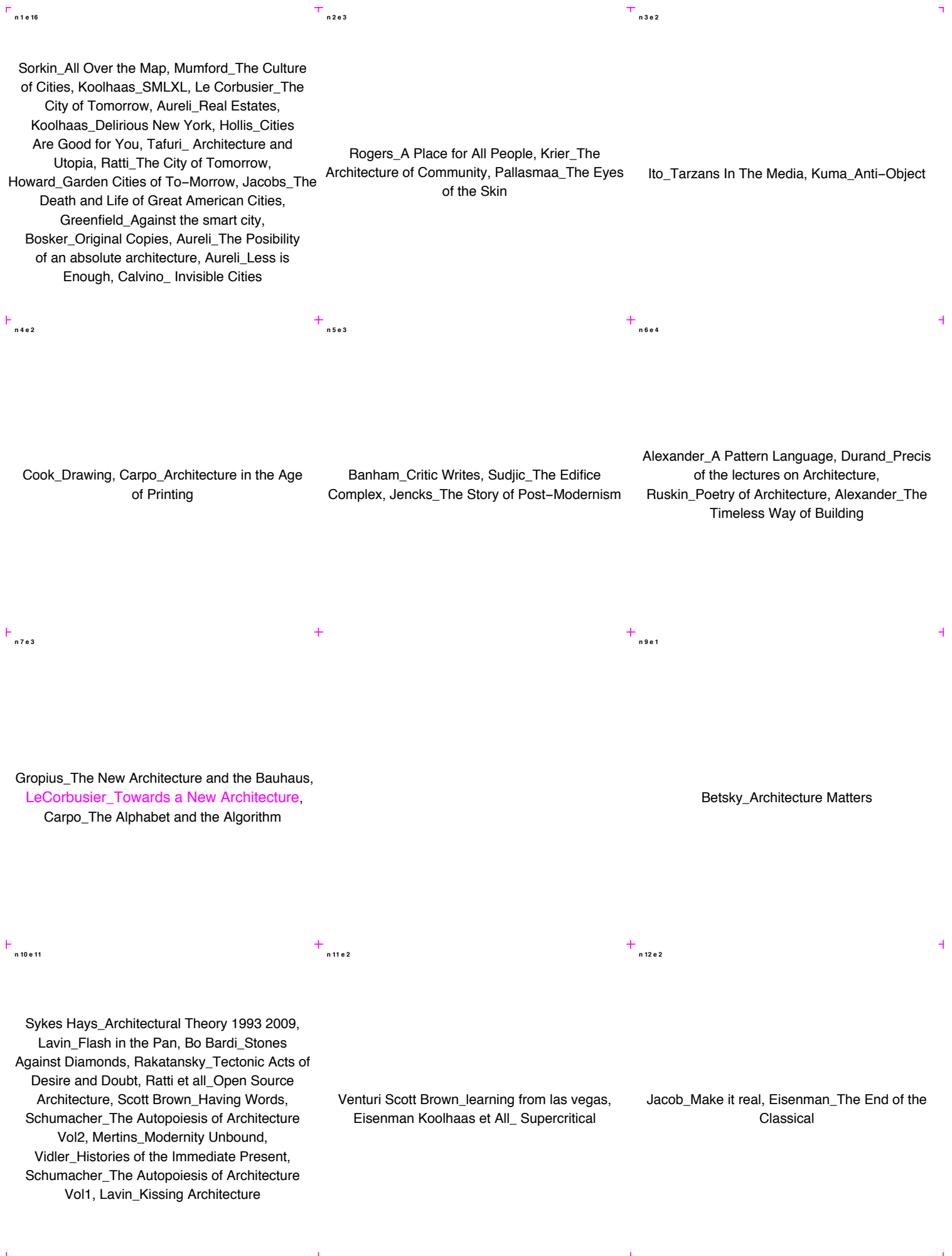


Fig. 2.27 *Xenotheka*: a gathering of books in a *Library 49*, rendering_49_04_RB_0403_r_50it10d, http://www.romanvlahovic.com/xenotheka/_12Library49.pdf

| | | |
|--|---|---|
| <p>n 1 e 35</p> <p>Joyce_Ulysses, Dickens_A Tale of Two Cities, Hugo_Les Miserables, Borges_Collected Fictions, Eco_The Name of the Rose, Tolstoy_War and Peace, Eco_Baudolino, Beckett_Stories and Texts for Nothing, Dickens_Oliver Twist, Tolstoy_Anna Karenina, Cervantes_Don Quixote, Woolf_Night and day, Rand_The Fountainhead, Goethe_Faust, Asimov_I Robot, Austen_Pride And Prejudice, Kafka_The Trail, Kerouac_On The Road, Plato_The Republic, Balzac_The Unknown Masterpiece, Dante_Divine Comedy, Homer_Iliad, Kafka_Metamorphosis, Voltaire_Candide, Nietzsche_Thus Spake Zarathustra, Beowulf, Twain_Adventures of Huckelberry Fin, Plato_Symposium, Shakespeare_Romeo and Juliet, Augustine_The Confessions, Shakespeare_Hamlet, King James Bible, Durer_Memories of Jurneys to Venice, Confucian Analects, Beckett_Waiting for ...</p> | <p>n 2 e 6</p> <p>Bacon_Novum Organum, Plato_Timaeus, Einstein_Relativity, Newton_The Mathematical Principles of Natural Philosophy, Feynman_QED The Strange Theory of Light, Galilei_Discourse on Floating Bodies</p> | <p>n 3 e 7</p> <p>Vitruvius_The ten Books of Architecture, Alberti_10 books Of Architecture, Humboldt_Equinoctial Regions of America, Smith_Wealth of Nations, Stein_Tender Buttons, Darwin_On the Origin of Species, Palladio_The Four Books of Architecture</p> |
| <p>n 4 e 34</p> <p>Musil_The Man Without Qualities V1, Nietzsche_Beyond Good and Evil, Derrida_Signature, Cicero_Tusculan Disputations, Serres_The Five Senses, Jung_Alchemical Studies, Jung_Archetypes and the Collective Unconscious, Serres_Statues, Shelley_Frankenstein or the Modern Prometheus, Serres_Biogeoa, Blanchot_The Book to Come, Rousseau_The Social Contract, Sullivan_The Autobiography of an Idea, Descartes_Discourse on the Method, Jung_Two Essays in Analytical Psychology, Serres_Rome, Freud_The Psychopathology of Everyday, Abbott_Flatland, Bachelard_The Poetics of Space, Blanchot_The Space of Literature, Leibniz_Theodicy, Lucretius_On The Nature Of Things, Machiavelli_The Prince, Aristotle_Politics, Nancy_The Ground of the Image, Hobbes_Leviathan, Aristotle_Poetics, Russel_The Problems of Philosoph...</p> | <p>n 5 e 1</p> <p>Alberti_On Painting</p> | <p>n 6 e 3</p> <p>Ruskin_The Seven Lamps of Architecture, Ruskin_Poetry of Architecture, Durand_Precis of the lectures on Architecture</p> |
| <p>n 7 e 45</p> <p>Kittler_The Truth of the Technological World, Eco_On Literature, Auge_The Future, Taleb_The Black Swan, Latour_Facing Gaia, Graeber_Debt, McLuhan_The Gutenberg Galaxy, Wiener_The Human Use Of Human Beings, McLuhan_Understanding Media, Lefebvre_Critique of Everyday Life, Sedlacek_Economics of Good and Evil, Serres_Latour_Conversations on Science, Culture, and Time, Serres_Geometry, Benjamin_The Work of Art in the Age of M, Hofstadter_I Am a Strange Loop, Hayek_The Road to Serfdom, Virilio_A Landscape of Events, Serres_Thumbelina, Hayek_The Constitution of Liberty, Fukuyama_The End of History and the Last Man, Freud_The Uncanny, Popper_All Life Is Problem Solving, Ranciere_Aisthesis, Negroponte_Being Digital, Girard_Violence and the Sacred, Foucault_History of Madness, Latour_We Have Never ...</p> | <p>n 8 e 1</p> <p>West_Scale The Universal Laws of Growth</p> | <p>n 9 e 13</p> <p>Sorkin_All Over the Map, Mumford_The Culture of Cities, Hollis_Cities Are Good for You, Koolhaas_SMLXL, Le Corbusier_The City of Tomorrow, Jacobs_The Death and Life of Great American Cities, Greenfield_Against the smart city, Ratti_The City of Tomorrow, Howard_Garden Cities of To-Morrow, Alexander_A Pattern Language, Aureli_The Possibility of an absolute architecture, Calvino_Invisible Cities, Alexander_The Timeless Way of Building</p> |
| <p>n 10 e 40</p> <p>Deleuze_Desert Islands and Other Texts, Zizek_Less Than Nothing, Cache_Projectiles, Wiener_Cybernetics, Deleuze Guattari_A Thousand Plateaus, Delanda Harman_The Rise of Realism, Foucault_The Order of Things, Lacan_The Psychoses Seminars of JL, Barthes_Mythologies, Hofstadter_Godel Escher Bach, Spuybroek_The Sympathy of Things, Harman_Bells and Whistles, Chomsky_On Language, Buehlmann_Mathematics and Information Serres, Max Bill_Form, Function, Beauty, Schrodinger_What is Life, Eco_Serendipities Language & Lunacy, Delanda_Philosophy and Simulation, Harman_Towards Speculative Realism, Derrida_Of Grammatology, Harman_Immaterialism Objects and Social Th, Deleuze_Difference and Reppetiton, Foucault_Archaeology of Knowledge, Freud_Beyond the Pleasure Principle, Meillassoux_After Finitude, Sauss...</p> | <p>n 11 e 13</p> <p>Ponte_The House of Light and Entropy, Weizman_The Least of All Possible Evils, Castells et al_Another Economy Is Possible, Carpo_The Second Digital Turn, Castells_The Power of Identity, Castells_The Rise of the Network Society, Easterling_Extrastatecraft, Carpo_Architecture in the Age of Printing, Castells_Networks of Outrage and Hope, Aureli_Less is Enough, Weizman_Before and After, Eisenman_The End of the Classical, Eisenman_Notes on Conceptual Architecture</p> | <p>n 12 e 31</p> <p>Sykes Hays_Architectural Theory 1993 2009, Banham_Critic Writes, Sudjic_The Edifice Complex, Bo Bardi_Stones Against Diamonds, Jencks_The Story of Post-Modernism, Rakatansky_Tectonic Acts of Desire and Doubt, Lavin_Flash in the Pan, Ratti et al_Open Source Architecture, Betsky_Architecture Matters, Mertins_Modernity Unbound, Rogers_A Place for All People, Scott Brown_Having Words, Vidler_Histories of the Immediate Present, Krier_The Architecture of Community, Ito_Tarzans In The Media, Aureli_Real Estates, Gropius_The New Architecture and the Bauhaus, Schumacher_The Autopoiesis of Architecture Vol2, LeCorbusier_Towards a New Architecture, Koolhaas_Delirious New York, Venturi Scott Brown_learning from las vegas, Tafuri_Architecture and Utopia, Pallasmaa_The Eyes of the Skin, Cook_Drawing,...</p> |

Fig. 2.28 *Xenotheka*: a gathering of books in a *Library 229*, rendering_229_24_RB_0403_r_50it45d, http://www.romanvlahovic.com/xenotheka/_12Library229.pdf

2.5.4 COMMUNICATING with the Flow

The last step in composing the *Informational Instrument*, the one that closes its conceptual loop, is exposing it to a discretised flow of books: *Bibliotheka. Xenotheka* with a specific encoding becomes a character, an interest, a panorama, an atmosphere, an alphabet, a way to communicate with *Bibliotheka*. This communication consists of two steps, via two double articulations, in a never-ending loop. *Xenotheka* is the question; *Bibliotheka* offers a cloud of indexes around it. Their relation is articulated by yet another symbolic poem that uses the newly articulated alphabet of *atom-letters* as its communication channel (Fig. 2.29).

```
SymbolicPoem11_ListeningTOTheFlow
```

```
StrangersFace[files_] := Module[{},
  wo = Flatten@Import[files];
  name = StringSplit[files, {"/", "_words."}][[-2]];
  graph = Graph[Rule@@@Partition[Append[wo, wo[[1]]], 2, 1]];
  centrality = VertexDegree;
  centralities = Association[VertexList[graph][[#]] -> centrality[graph][[#]] / 2 & /@
    Range[Length[VertexList[graph]]];
  foreignFace = centralities[#] & /@ dictionary[[All, 1]];
  foreignFace = # /. _Missing -> 0 & /@ foreignFace;
  foreignFace = N[foreignFace / Total[foreignFace]];
  {Flatten[Position[EuclideanDistance[foreignFace, #] & /@ gridWeights,
    Sort[EuclideanDistance[foreignFace, #] & /@ gridWeights][[1]]], name]}

Monitor[x = Table[StrangersFace[files[[i]]], {i, Length[files]}];, i]
AppendTo[xenocellContentName[[x[[#, 1, 1]]][[2]], x[[#, 2]]] & /@ Range[Length[x]];
xenocellContentName = # /. {} -> " " & /@ xenocellContentName;
xenoOut = xenocellContentName;
```

Communication between *Xenotheka* and *Bibliotheka* takes the form of a conversation:

A: Asking the flow

Xenotheka is the question (Fig. 2.29, in black). It is a mood, an atmosphere via which one can talk to the flow. The common ground between *Xenotheka* and *Bibliotheka* is established via *Xenotheka*'s informational face (Fig. 2.7). In other words, *Bibliotheka* is articulated in *Xenotheka*'s terms, via its alphabet of *atom-letters*.

B: Listening to the flow

Bibliotheka answers by placing some of its books on the shelves of *Xenotheka* (Fig. 2.29, in magenta). Books that are similar come together, as Kohonen suggested: “[...] a calibrated SOM can be used for the classification of new, unknown input items by looking for the best matching

model in the array and taking its class label."¹¹⁶ Since the new unknown book is articulated in terms of *Xenotheka* (by its *atom-letters* and dictionary), its vector has the same dimensionality as *Xenotheka* and can be projected on a *calibrated SOM*. The shelf which has the smallest Euclidean distance to the new book is selected as its most probable and comfortable place in the library.

Let us stop for a moment and look at the *rendering_229_25_RB_0609_r_50it21d_viewGroup2* (Fig. 2.29). The new unknown books from *Bibliotheka* seem to fit comfortably. Situated on the shelf *n19 e6*, *Gubser_The Little Book of Black Holes*, according to its title, should be a book on physics and black holes, and it is on the same shelf as *Feynman_QED The Strange Theory of Light*. *n46 e0* contains only *Arendt_The Life of the Mind*, which is a new book from *Bibliotheka*, but its first neighbour is *n40 e1 Arendt_The Human Condition*. We could find more examples, but this should suffice for now. This seems convincing even without opening the pages of new books. Again, this small play was played without imposing any predefined and external categories on books.

A: Asking the flow

Some of the new books placed on the shelves are internalised and some old ones are removed from *Xenotheka*. *Xenotheka* is being rearticulated. To articulate a new question, the player works with concepts and books, puts together a new *Xenotheka* according to his new interest. This is an internal and private process. The *Generic Machine* encodes the new library; a new informational face is constituted, *Machine Intelligence* articulates the indexes, a new alphabet of *atom-letters* is projected. *Xenotheka* becomes a new question.

B: Listening to the flow

Posing of the question is private, but listening to the flow is an external and public process. *Bibliotheka* answers again by placing some of its books on the shelves of new *Xenotheka*. The player selects what to internalise, which books are interesting for his play.

This process repeats indefinitely.

It feels like the *Informational Instrument* works and is tuned properly.

It is ready for the informational flow and a *Plentiful Play Among Books*.

116 Kohonen, "What Makes The Self-Organizing Map (SOM) So Particular Among Learning Algorithms?," 24.

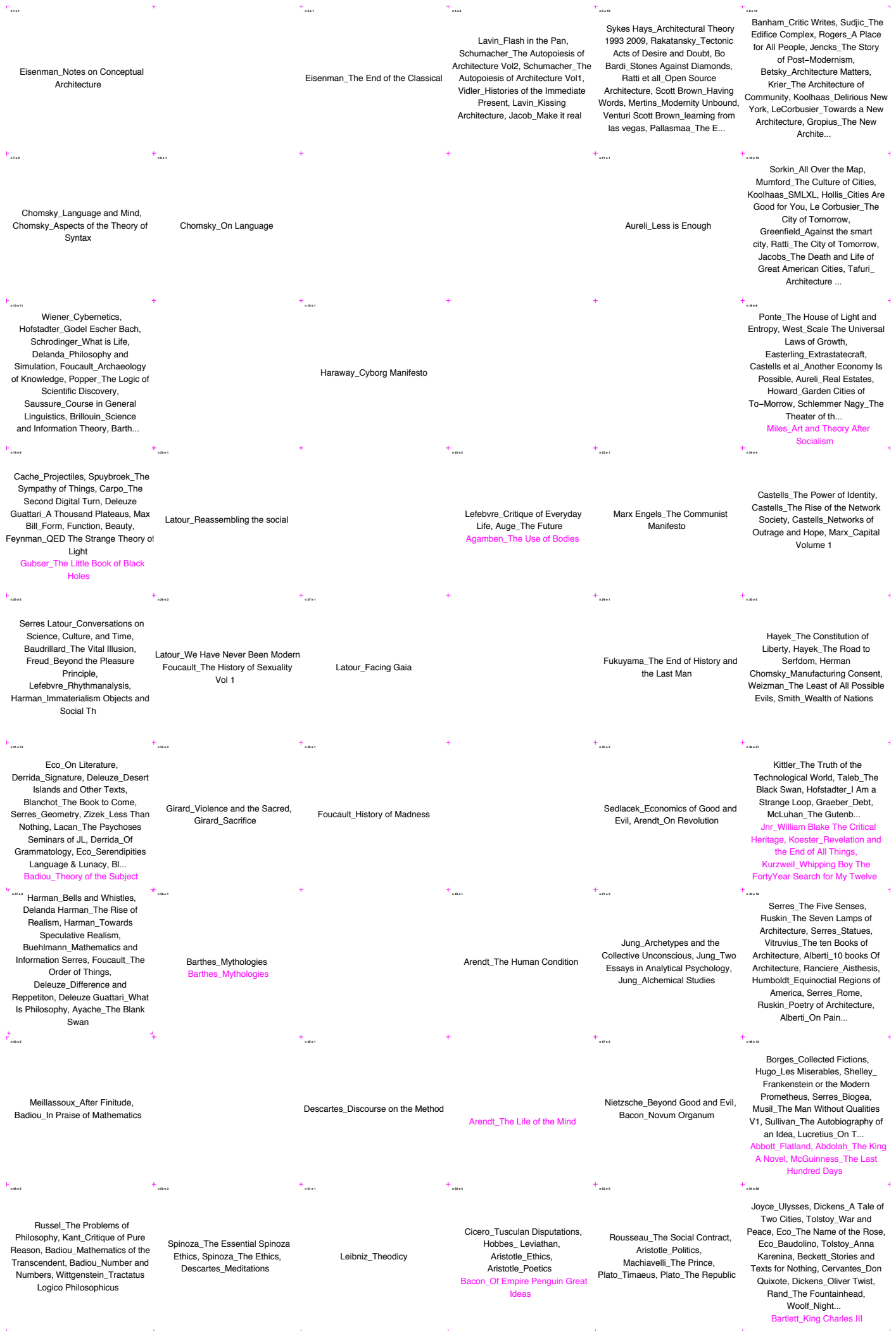


Fig. 2.29 Communicating with the Flow, Black: *Xenotheka* - new alphabet of atom-letters, Magenta: unknown books form *Bibliotheka*, rendering_229_25_RB_0609_r_50it21d_guests_01, http://www.romanvlahovic.com/xenotheka/_229_25_RB_0609_r_50it21d_guests_1.pdf

2.6 A Note on an Informational Instrument

This is the current state of an *Informational Instrument*. It can receive updates and modifications. An *Informational Instrument* is never a finished product, but rather a never-ending process of adapting and adopting. It is as beautiful as the imagination and ability of its player, and as rich as the generic knowledge of its environment. An *Informational Instrument* does not provide one objective perspective; its semantics are not explicit, grammars not visible; it is beyond dichotomies such as subjective – objective, nature – culture, art – technology. It is any library and any method that it celebrates. It is up to the player playing the *Informational Instrument*, his interest and mood to choose. The *Informational Instrument* is at the same time a symbolic encoding, a compression and an abstraction, an endless process of articulations, motivated, and personal. It is an operational stance on Eco's lists:¹¹⁷ a double articulation between a process and a system, content and expression, books and instruments, the performer and the machine. It is a constant rearticulation and exploration inspired by Hjelmslev's gesture of abstracting from analytic functions and introducing the algebra of language.¹¹⁸ Instead of providing a solution or a generic projection of certain data, by playing an *Informational Instrument* one might be closer to personal algebraic articulations spelt in atom letters and doped by the abundance of information and its many galaxies.

An *Informational Instrument* as it is played, plays with entropy and the big plenty. It will be a *Plentiful Play*.

*"The beautiful noiseuse is not a picture, is not a representation, is not a work, it is the fount, the well, the black box, that includes, implies, surrounds, that is to say buries, all profiles, all appearances, all representations, the work itself."*¹¹⁹

—Michel Serres, *Noise*

117 Eco, *The Infinity of Lists*.

118 Hjelmslev, *Prolegomena to a Theory of Language*.

119 Michel Serres, "Noise," *SubStance* 12, no. 3 (1983): 48–4, <https://doi.org/10.2307/3684255>.

PLENTIFUL PLAY

A new Don Quixote

The builders of the library were great masters.¹

*One day he rose from his armchair, and went to his library in search of a book.² At the foot of the stairway there was a cell, and then a library, and then a sort of cabinet, or private study, filled with instruments of magic.³ The next five floors are devoted to eating, resting and socializing: they contain dining rooms—with a variety of privacies—kitchens, lounges, even a library.⁴ He had a well selected little library.⁵ There is, in every well-made library, a Hell where live the books that must not be read.⁶ In Pierre Menard's library there is no trace of such a work.⁷ Borges, less of an idealist, decided that his library was like the universe—and one understands then why he never felt the need to leave it.⁸ Even in this case, as Borges warned us, the library would contain the autobiographies of angels and a detailed history of the future.⁹ When it was announced that the library contained all books, the first reaction was unbounded joy.¹⁰ The true hero of the library of Babel is not the library itself but its Reader; a new Don Quixote, on the move, adventurous, restlessly inventive, alchemically combinatory, capable of overcoming the windmills he makes rotate *ad infinitum*.¹¹ Those examples allowed a librarian of genius to discover the fundamental law of the library.¹²*

The library is a sphere whose exact centre is any hexagon and whose circumference is unattainable.¹³

I declare that the library is endless.¹⁴

In all the library, there are no two identical books.¹⁵

The library is unlimited but periodic.¹⁶

On a shelf in the library are very old books that tell of another past than the one the dreamer has known.¹⁷

You see, our library is not like others.¹⁸ “So the plan of the library reproduces the map of the world?”¹⁹ If a library of the year 3000 came into our hands today, we could not understand its contents.²⁰ No one ever leaves the world, but anyone can easily exit the library; we can enter objects infinitely, a book is quickly finished.²¹ Signore _professore dottore__ Eco, what a library you have!²² “I shall be glad to have the library to myself as soon as may be.”²³

^{1,18,19} Umberto Eco, *The Name Of The Rose*, ^{2,5} Victor Hugo, *Les Misérables*, ^{3,7,10,12,13,14,15,16} Jorge Luis Borges, *Collected Fictions*, ⁴ Rem Koolhaas, *Delirious New York: A Retroactive Manifesto for Manhattan*, ⁶ Maurice Blanchot, *The Book to Come*, ^{8,9,11} Umberto Eco, *On Literature*, ¹⁷ Gaston Bachelard, *The Poetics of Space*, ²⁰ F. A. Hayek, *The Constitution of Liberty*, ²¹ Michel Serres, *The Five Senses: A Philosophy of Mingled Bodies*, ²² Nassim Nicholas Taleb, *The Black Swan*, ²³ Jane Austen, *Pride and Prejudice*.

3.0 Opening Note

Welcome.

Please give me a moment to set the stage and introduce my intentions.

I would like to talk about *information* and *architecture*, not by saying a lot, but by playing an *Informational Instrument*. Books will be my actors. They will talk while I play the instrument. To put it in different terms, while playing, I will set an atmosphere and articulate characters for their talks. Their character will be spelt out in my characters. The setting and the spelling is a space where I meet and host the books.

A Plentiful Play consists out of two plays, played in inverted manners. Together they form an infinite spiral. The third element is a *Canzoniere* of poems scattered throughout the text. It sets the mood and keeps the atmosphere in *Play Among Books*.

The first play talks about *information* in an intimate way, by going from the spectrality of concepts towards their articulations in books, from *Xenotheka* towards *Bibliotheka*. The first play is a birth of the galaxy, a constitution of *Xenotheka*. It is composed out of four acts.

The second play seeks for architecture in the infinite flow of books by approaching it in *atom-letters*. The play goes from the flow towards a subtle articulation of characters and concepts, from *Bibliotheka* towards a new *Xenotheka*. Its finale is a gathering for six, where each of the characters gives an atmospheric speech.

A *Canzoniere*, whose original title was *Fragments of Strange Things*, is a collection of four generic poems spread throughout the text. Each poem encrypts one of the main interests and concerns of the *Play Among Books*.

Thank you.

...

The curtain raises.

Unfolding of a Concept

INFORMATION

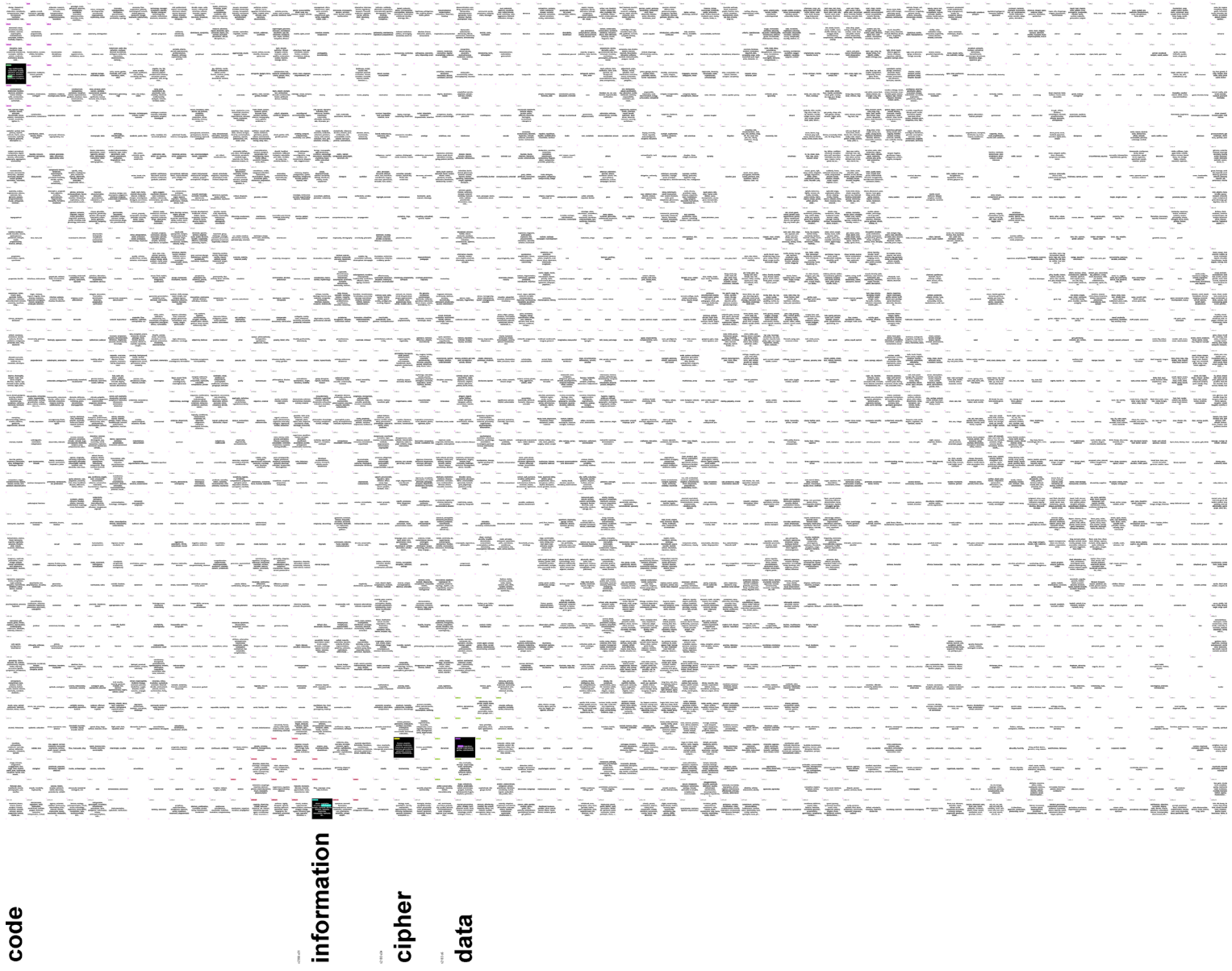


Fig. 3.1 *Xenotheka*, A galaxy of concepts with a focus on four indexes, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/_galaxy.pdf

3.1.0 NAVIGATING IN-BETWEEN CONCEPTS

Information, Data, Code, Cipher

3.1.0.1 A Galaxy of a Personal Memory Which I Never Had

The galaxy is looking at me; it reacts to my movements. *Atom-letters* are forming; concepts are in motion. The library is alive. I call this galaxy *Xenotheka*. What one can see, only when invited, is a galaxy of concepts of my personal and intimate library (Fig. 3.1).¹ Of course, it is not a single library. I have many of them. *Xenotheka* helps me profile my different interests and moods. It is growing and shrinking, transforming, and splitting. It moves together with my thinking. *Xenotheka* is my personal memory which I never had. It is an intimate playground, where I play and talk to concepts and learn with books. An unusual and challenging atmosphere. Here is one face of my *Xenotheka* (Fig. 2.8, Fig. 3.1). At the beginning of this play, it contains 229 books articulated in 2400 *atom-letters*.² A galaxy of concepts.

Books start to talk. What is the library telling me? What am I asking? Starting from a distance, I am posing a question, sending an index of interests: *Information*.

Information is what I want to talk and think about in this play.

3.1.0.2 Information

Before the library reacts in its own way, in order to learn about the transformations of common notions of *information*, let us take a look at its etymological spectrum. Seen from the outside, objectively, etymology is a history of a word, a cultural condensation expressed in

1 The galaxy: http://www.romanvlahovic.com/xenotheka/_galaxy.pdf. The full list of concepts and indexes: http://www.romanvlahovic.com/xenotheka/_Xenotheka_list_of_concepts.txt

2 The list of 229 books from *Xenotheka* is listed in the Appendix.

revolutions around a concept; a study of an ever-changing common sense. In other words, an archaeology of a concept:

information (n.)

late 14c., informacion, "act of informing, communication of news," from Old French informacion, enformacion "advice, instruction," from Latin informationem (nominative informatio) "outline, concept, idea," noun of action from past participle stem of informare "to train, instruct, educate; shape, give form to" (see inform). The restored Latin spelling is from 16c.

Meaning "knowledge communicated concerning a particular topic" is from mid-15c. The word was used in reference to television broadcast signals from 1937; to punch-card operating systems from 1944; to DNA from 1953. Information theory is from 1950; information technology is from 1958 (coined in "Harvard Business Review"); information revolution, to be brought about by advances in computing, is from 1966. Information overload is by 1967.³

Now, let us look at a different archaeology and different sediments: an intimate exploration of many commons or, to put it in different terms, a pre-specific unfolding of a concept,⁴ an adventure into a space between concepts, a space of a possible idea. This space cannot be explicated, but it can be approached, as one approaches a cloud, by bringing its indexes, concepts and their different notions into relation. It is an ongoing process. This is a new setting and an atmosphere for an old conversation on *information*.

The library reacts, the galaxy emerges, concepts start to speak. *Xenotheka* is a collection and a persona, and so are its characters. One can communicate with *Xenotheka* on many levels in parallel; with the library, books, concepts and indexes. They are subjects and objects. Depending on how one looks and encodes the galaxy, it will shine in a different way. Its elements are related: a library with a book, and a book with an index, and an index with a library. They all respond, each in its own way, while referring to the other. Now they are reacting to my question. The library is

³ "Information | Origin and Meaning of Information by Online Etymology Dictionary," accessed August 19, 2018, <https://www.etymonline.com/word/information>.

⁴ For more on Pre-specific, see Bühlmann and Wiedmer, *Pre-Specifics*.

sending a text back with information containing an indexical cloud and a numerical vector of a concept that contains the index in question: *information* (Fig. 3.2, List 3.1).

Atom-letter n2356 e31 and its indexes:

```
n2356 e31 {obtain, negligible, accuracy, information, sample, compute,
demon, receiver, radiation, reversible, irreversible, harmonic, rectify,
complexion, filament, viscous, sci, physiologist, asymptotic, piston, fig,
decimal, parity, neumann, codings, mag, homeostasis, simpson, connector,
cathode, hillel}
```

While observing the galaxy and specific *atom-letters*, emphasis will be placed on the indexical parts of the letter, but let us bear in mind that the numerical part is always present and operational:

```
0.0, 7.706139246E-4, 2.568714955E-4, 0.00480554420246, 5.137426194991E-
4, 0.00256304905, 0.0, 0.0066784348831, 0.0048055024146... (one dimension
for each book)
```

To grasp the atmosphere of what this concept might be about, one has to observe the cloud around it and slowly feel the ambience (Fig. 3.2). A stroll through the cloud:⁵

```
n2357 e49 {spectrum, maxwell, fluctuation, thermodynamics, wiener,
coefficient, conduction, cos, cybernetics, reliability, voltage, amplifier,
incoming, kelvin, logarithm, kinetic, digit, pulse, receptor, planck,
rudder, carnot, thermostat, condenser, entropy, photoelectric, synapse,
thermal, fourier, wavelength, oscillator, ref, instituto, boltzmann,
gibbs, quantized, shannon, transducer, rectifier, gabor, effector,
autocorrelation, negentropy, phys, emf, resonator, ergodic, eqs,
rosenblueth}
n2296 e5 {filter, message, valve, tidal, hormone}
n2355 e21 {circuit, random, experimental, approximation, maximum,
integral, energy, signal, efficiency, gas, tape, operator, electrical,
absorption, microscope, output, reflex, lattice, computation, molecule,
amplitude}
n2295 e8 {transmit, mechanic, discrete, channel, approximate, linear,
transmission, tube}
n2294 e5 {experiment, equation, atom, experimentally, electron}
n2354 e13 {collision, rigidly, dissipate, optimal, sensory, optimum,
parameter, input, fingerprint, ion, clockwork, overshoot, proton}
n2358 e3 {meteorologist, ontogenetic, meteorology}
```

List 3.1 Cloud of indexes around *information*

⁵ Fig. 3.2 and List 3.1 present the same notion of a concept. It is a cloud of indexes around a concept. These are just two different renderings. The list is a full explication of indexes in the Fig. 3.2. List of concepts and indexes: http://www.romanvlahovic.com/xenotheka/_Xenotheka_list_of_concepts.txt.

| | | | | | | | |
|----------|--|--|--|--|---|--|---|
| | <p>minism, schenauze, schizophrenia, nietzschean, masochistic, sartre, contraction, contractual, mai, metastable, complimentary...</p> <p>n 1932 e 1</p> | <p>bergson, occlude</p> <p>n 1933 e 2</p> | <p>indetermination</p> <p>n 1935 e 2</p> | <p>hijack, deleuze, actualize, immanence</p> <p>n 1936 e 1</p> | <p>possibility, factual, speculation, maker, invert, exotic, eternally, exchange, sparse, inversion, option, sidestep, redundant, ...</p> <p>n 1937 e 6</p> | <p>unfold, maturity, materialize, dynamic, underlie, frivolity, implementation, passivity, cohesion, redistribute, differentiate, ...</p> <p>n 1938 e 9</p> | <p>literally, unpredictable, definitely, surface, tour, materially, partition, jump, facet, inexorably, mesh, adventure, represent...</p> <p>n 1939 e</p> |
| | <p>familial</p> <p>n 1992 e 1</p> | <p>duration, causa</p> <p>n 1993 e 3</p> | <p>misinterpretation, reactivate</p> <p>n 1994 e 2</p> | <p>transmitter</p> <p>n 1995 e 2</p> | <p>thread, hedge, algorithm, looseness, differentially, silo</p> <p>n 1996 e 6</p> | <p>crash, switch, unsettle, mathematically, doesn, skew, shuttle, negotiable, palimpsest</p> <p>n 1997 e 1</p> | <p>m</p> <p>n 1999 e</p> |
| | <p>subjugate</p> <p>n 2052 e 1</p> | <p>legislate, fissure, detective</p> <p>n 2053 e 3</p> | <p>erratic, dramatize</p> <p>n 2054 e 1</p> | <p>infinitesimal, saturation</p> <p>n 2055 e 1</p> | <p>immerse, imprint, stitch, reawaken, prism, interstice</p> <p>n 2056 e 7</p> | <p>endpoint</p> <p>n 2057 e 2</p> | <p>improbable, passerby</p> <p>n 2059 e</p> |
| ally | <p>intensity</p> <p>n 2112 e 1</p> | <p>serial, finality, adrift</p> <p>n 2113 e 2</p> | <p>disequilibrium</p> <p>n 2114 e 9</p> | <p>saturate</p> <p>n 2115 e 14</p> | <p>equilibrium, box, knot, fluctuate, dive, passageway, makeup</p> <p>n 2116 e 63</p> | <p>summation, euclidian</p> <p>n 2117 e 4</p> | <p>per</p> <p>n 2119 e</p> |
| | <p>extract</p> <p>n 2172 e 3</p> | <p>recreate, instantaneous</p> <p>n 2173 e 5</p> | <p>conversely, fusion, poorly, underneath, erase, archaic, expel, ceaselessly, schemas</p> <p>n 2174 e 2</p> | <p>unstable, chaotic, fragile, resistant, turbulent, vibrate, hesitant, apex, voluminous, dismember, commemorate, unrecognizable, ...</p> <p>n 2175 e 11</p> | <p>mixture, hardness, skin, softness, circumstantial, shimmer, whirlpool, addict, heady, narcotic, countryside, tombstone, adverb,...</p> <p>n 2176 e 4</p> | <p>confluence, virginal, monotheism, harlequin</p> <p>n 2177 e 17</p> | <p>scenography, bifurcate</p> <p>n 2178 e 19</p> |
| te | <p>constitute, relation, distribute</p> <p>n 2232 e 1</p> | <p>double, infinitely, indefinite, homogeneous, intersect</p> <p>n 2233 e 17</p> | <p>invent, dense</p> <p>n 2234 e 7</p> | <p>expanse, recount, inaugural, nullify, inert, ravage, hazy, torpor, reborn, tribunal, turbulence</p> <p>n 2235 e 1</p> | <p>ariadne, zeus, inextinguishable, downstream</p> <p>n 2236 e 2</p> | <p>millennia, alloy, socrates, surveyor, crescent, agora, redress, pythagorean, Nile, archaism, geometer, unpredictably, alluvial,...</p> <p>n 2237 e 4</p> | <p>pyramid, algorithmic, formidably, herodotus, concordance, indeterminism, federate, percolate, polytheism, ionian, torpedo, diag...</p> <p>n 2239 e</p> |
| | <p>pole</p> <p>n 2292 e 1</p> | <p>direction, retain, line, converge, correspond, rotation, parallel, circular, geometrical, spiral, successively, respectively, i...</p> <p>n 2293 e 9</p> | <p>triple, observation, curve, multiplication, solar, vibration, deflect</p> <p>n 2294 e 5</p> | <p>tissue</p> <p>n 2295 e 8</p> | <p>astronomy, prosthesis</p> <p>n 2296 e 5</p> | <p>geometry, diagonal, euclid, hilbert</p> <p>n 2298 e 1</p> | <p>n 2299 e</p> |
| | <p>relative</p> <p>n 2352 e 4</p> | <p>extraction, couplings, neutrino, detector, photon, electrodynamics, muon, stopwatch, photomultiplier</p> <p>n 2353 e 67</p> | <p>experiment, equation, atom, experimentally, electron</p> <p>n 2354 e 13</p> | <p>transmit, mechanic, discrete, channel, approximate, linear, transmission, tube</p> <p>n 2355 e 21</p> | <p>filter, message, valve, tidal, hormone</p> <p>n 2356 e 31</p> | <p>invariant</p> <p>n 2357 e 49</p> | <p>n 2358 e 3</p> <p>n 2359 e</p> |
| e, itary | <p>mechanism, organism, mutation, propagation</p> <p>n 2352 e 4</p> | <p>capacity, chemistry, collide, behavior, chemical, net, interact, interaction, genetic, agent, evolutionary, cheat, recurrent, r...</p> <p>n 2353 e 67</p> | <p>collision, rigidly, dissipate, optimal, sensory, optimum, parameter, input, fingerprint, ion, clockwork, overshoot, proton</p> <p>n 2354 e 13</p> | <p>circuit, random, experimental, approximation, maximum, sample, compute, demon, integral, energy, signal, efficiency, gas, tape, operator, electrical, a...</p> <p>n 2355 e 21</p> | <p>obtain, negligible, accuracy, information, reversible, harmonic, rec...</p> <p>n 2356 e 31</p> | <p>spectrum, maxwell, fluctuation, thermodynamics, wiener, coefficient, conduction, cos, cybernetics, reliability, voltage, amplif...</p> <p>n 2357 e 49</p> | <p>meteorologist, ontogenetic, meteorology</p> <p>n 2358 e 3</p> <p>n 2359 e</p> |

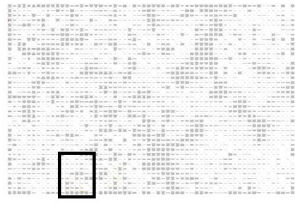


Fig. 3.2. *Xenotheka*, Galaxy Zoom to the cloud of the indexes surrounding index of *information*, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/_galaxy.pdf

Unlike the etymological spectral meaning of *information*, one which expresses an explicit and established articulation of a common ground, here is a spectrum specific to this library and its books. It is more a particular notion of information than its precise meaning or etymology. Or better yet, it is one of the characters of *information*, one of its moods specific to this context. It is a highly technical and quite abstract notion of information. It is *information* in the age of *electricity, thermodynamics, cybernetics, and entropy* surrounded by *Maxwell, Boltzmann, Planck, Shannon, Fourier, Carnot, Wiener, Neumann...* with flavours of *meteorology, communication, and atomism...* (Fig. 3.2, List 3.1). This is just one face of *information* that this library can offer. It is just the start. To open up this concept further, to give it more faces and nuances, I am asking a new question: Is there a similar concept to *information*, but in a different context, surrounded by another cloud? This question creates a symmetry for expanding the discussion, for a double articulation.⁶ By changing the axis of symmetry, one finds itself in a different atmosphere surrounded by other concepts telling a different story, while at the same time preserving an invariance among the different expressions of the library. Both are of interest —variance and invariance. One way to set up this relation is by searching for synonyms:

```
{information, Noun, InformationMeasure} -> {entropy, selective
information},
{information, Noun, Knowledge} -> {},
{information, Noun, Content} -> {info},
{information, Noun, Accusation} -> {},
{information, Noun, Assemblage} -> {data}}7
```

3.1.0.3 Data

The search continues. *Entropy* and *data* are synonyms of *information*. Since *entropy* is already contained in the *Concept n2357*, in the same context as *information*, it doesn't open any new ways for interpretation (Fig. 3.2, List 3.1). The discussion is directed towards the other synonym. The index of *data* is not in the same cloud, but it is not too far away either (Fig. 3.1). *Data* opens up another atmosphere and brings new indexes (Fig. 3.3). Clouds start to mix. A double articulation of a famous couple: *information* and *data*. How does *data* differ from *information* and

⁶ Symmetry refers here to an agreement in dimensions, to a relation of parts and proportions that remain unchanged under transformations: symmetry as invariance rather than only a notion of a mirror image. See, "Symmetry | Origin and Meaning of Symmetry by Online Etymology Dictionary," accessed August 19, 2018, <https://www.etymonline.com/word/symmetry>. and "Symmetry (Physics)," *Wikipedia*, July 29, 2018, [https://en.wikipedia.org/wiki/Symmetry_\(physics\)](https://en.wikipedia.org/wiki/Symmetry_(physics)).

⁷ Synonyms provided by Wolfram Mathematica.

what is invariant to both? To open this topic, the focus goes to the index of *data* and its surrounding cloud:

Atom-letter *n2183* encapsulating the index of *data*:

n2183 e6 {datum, regardless, cellular, inspirational, galileo, coincidentally}

With its neighbouring concepts and their indexes:

n2243 e30 {size, eventually, damage, surprisingly, scale, remarkably, significantly, systematically, brilliantly, billion, fuel, growth, typically, patent, minimize, terminal, mouse, encapsulate, dinosaur, prestigious, graphically, brian, sequentially, unabated, attractiveness, pornography, kyoto, richter, steamship, predictive}

n2184 e2 {laptop, analog}

n2244 e1 {ceos}

n2123 e1 {portend}

n2242 e1 {pulsate}

n2124 e7 {laser, prioritize, proprietary, chris, byte, optimization, xerox}

n2303 e15 {huge, collectively, lifetime, predictable, salient, enormously, grapple, routinely, quintessential, hugely, elephant, quintessentially, elixir, infinitesimally, helium}

n2185 e23 {computer, airline, mail, readable, packet, lab, appliance, video, ceo, synchronous, fiber, interface, concurrently, moo, conversational, ibm, audio, graphical, pixel, fax, bandwidth, hdtv, bps}

n2064 n38{laboriously, font, printer, digital, mario, arte, batch, una, streamline, computational, perceivable, morse, rhino, google, cam, cad, planar, che, digitally, plotter, disclaimer, participatory, benedetto, robotic, wikipedia, perspectival, cache, camillo, bartlett, pictura, bim, wolfram, customization, notate, carpo, spline, gmail, casteljau}

n2125 e4 {scan, keyboard, processor, desktop}

n2063 e3 {additive, alphabetical, numeric}

n2362 e93 {cell, reminiscent, marvelous, prelude, trig, symbol, activate, oversimplification, cube, composer, logician, crux, encode, virus, genetics, sentient, multidimensional, hardware, tangle, morgan, program, hypothesize, tantalize, helix, pathway, football, ism, droll, replay, acid, procedural, tightness, groove, arithmetical, slot, retina, tricky, hike, canon, numeral, chess, string, ornate, shunt, boggle, trio, checkmate, inviolate, checker, computable, hoe, acronym, dualistic, propositional, parse, strand, cortex, dostoevsky, backfire, theorem, activation, declarative, parry, recursively, quantifier, sonata, triplet, turing, tonic, hiccup, chunk, neutron, carroll, subjunctive, neuron, lisp, goldberg, phonograph, holism, recursion, announcer, backtrack, isomorphism, recursive, buddha, genotype, typographical, nucleotide, magritte, rna, bach, fugue, escher}

List 3.2 Cloud of indexes around *data*

| | | | | | | | |
|--|--|--|---|--|--|---|---|
| <p>invisibly, reorient, lifespan</p> <p>n 1940 e 8</p> | <p>philosophy, epistemology</p> <p>n 1941 e 4</p> | <p>socratics, agnosticism</p> <p>n 1942 e 16</p> | <p>burlesque, mammary, caricature, rift, pejorative, socratic, hammer, gabriel, underrate, anthropocentric, scientism, artwork, kno...</p> <p>n 1943 e 27</p> | <p>orient, apple, unclear, james, allure, caveat, flatness, obsolescence, unconvincing, unstated</p> <p>n 1944 e 1</p> | <p>etymologically</p> <p>n 1945 e 1</p> | <p>treatise, illiterate, keystone, authorization, ptolemy, readership, confusingly, watermark, geneva, iconoclastic, giorgio, syno...</p> <p>n 1946 e 6</p> | <p>ill protes dida</p> <p>n 1947 e 3</p> |
| <p>temporality, symmetrically, anthropology, monism, boyle, shapin, postmoderns, premoderns</p> <p>n 2000 e 4</p> | <p>disagreement, disagree, chemist, indices</p> <p>n 2002 e 4</p> | <p>entity, causal, ontology, essentialism, billiard, clarke, realist, debut, reductionism, zebra, eidos, attractors, ozone, adumbr...</p> <p>n 2002 e 4</p> | <p>realism, continental, relational, cryptic, latour, intentionality, whitehead, interchangeably, unorthodox, unexpressed, mailbox...</p> <p>n 2004 e 3</p> | <p>poignantly</p> <p>n 2004 e 3</p> | <p>humanistic</p> <p>n 2005 e 21</p> | <p>manual, detriment, standardize, standardization, synopsis, pietro</p> <p>n 2006 e 1</p> | <p>appert h</p> <p>n 2006 e 12</p> |
| <p>actively, stake, immaterial, quasi</p> <p>n 2060 e 6</p> | <p>purport, mentality, stasis, commensurate, exhaustively, transcription, realising</p> <p>n 2061 e 7</p> | <p>euler, rightness, uranium, invariants</p> <p>n 2063 e 3</p> | <p>retrieve, quirk, retrieval</p> <p>n 2064 e 38</p> | <p>famously, pristine, notation, identically, trademark, authorship, postindustrial, cola, absentia, coca, indexical, seriality, a...</p> <p>n 2065 e 6</p> | <p>geometrically</p> <p>n 2067 e 12</p> | <p>delta, c orestes iota, t epsilon</p> <p>n 2067 e 12</p> | |
| <p>eradicate, formality, substantiate, modelled, gratuitous, disturbingly</p> <p>n 2120 e 19</p> | <p>iteration, sophistication, neutrality, categorically, erwin, arguably, secretive, eiffel, disrespectful, sanity, impersonate, f...</p> <p>n 2121 e 13</p> | <p>additive, alphabetical, numeric</p> <p>n 2122 e 1</p> | <p>portend</p> <p>n 2123 e 1</p> | <p>laboriously, font, printer, digital, mario, arte, batch, una, streamline, computational, perceivable, morse, rhino, google, cam...</p> <p>n 2124 e 7</p> | <p>emulate, software, snapshot, unwieldy, dentist, interactivity</p> <p>n 2125 e 4</p> | <p>beta</p> <p>n 2126 e 1</p> | <p>delta, c orestes iota, t epsilon</p> <p>n 2127 e 1</p> |
| <p>finesse, anarchic, solstice, invariance, massively, generalise, vicarious, generational, ptolemaic, minima, maxima, domesticity...</p> <p>n 2180 e 34</p> | <p>inverse, quantifiable, galactic</p> <p>n 2181 e 3</p> | <p>darwinian</p> <p>n 2182 e 1</p> | <p>datum, regardless, cellular, inspirational, galileo, coincidentally</p> <p>n 2183 e 6</p> | <p>laser, prioritize, proprietary, chris, byte, optimization, xerox</p> <p>n 2184 e 2</p> | <p>scan, keyboard, processor, desktop</p> <p>n 2185 e 23</p> | <p>parlance, calculator</p> <p>n 2186 e 2</p> | <p>r</p> <p>n 2187 e 1</p> |
| <p>biochemistry</p> <p>n 2240 e 1</p> | <p>physic, measurable, biosphere</p> <p>n 2241 e 3</p> | <p>pulsate</p> <p>n 2242 e 1</p> | <p>size, eventually, damage, surprisingly, scale, remarkably, significantly, systematically, brilliantly, billion, fuel, growth, t...</p> <p>n 2243 e 30</p> | <p>ceos</p> <p>n 2244 e 1</p> | <p>computer, airline, mail, readable, packet, lab, appliance, video, ceo, synchronous, fiber, interface, concurrently, moo, conver...</p> <p>n 2245 e 3</p> | <p>detection, lethal, prologue, eponymous, inordinate, charlatan, greco, lingua</p> <p>n 2246 e 8</p> | <p>psychic</p> <p>n 2247 e 2</p> |
| <p>sapiens</p> <p>n 2300 e 1</p> | <p>quantify, physicist, commonality</p> <p>n 2301 e 3</p> | <p>pitfall, conceivably, amusingly, viscosity, rainfall, interrelationship</p> <p>n 2302 e 6</p> | <p>huge, collectively, lifetime, predictable, salient, enormously, grapple, routinely, quintessential, hugely, elephant, quintesse...</p> <p>n 2303 e 15</p> | <p>sophisticate, dot, gauge, burner</p> <p>n 2304 e 4</p> | <p>predict, underestimate, arrogance, winner, practitioner, deviation, uncertainty, tunnel, ingrain, outlandish, fad, puddle, ster...</p> <p>n 2305 e 22</p> | <p>discoverer, subgroup</p> <p>n 2306 e 2</p> | <p>mathem</p> <p>n 2307 e 2</p> |
| <p>biology, span, quantitative, naively, mechanistic, approximately, whale, mortality, metabolism, genome, kilometer, ecosystem, q...</p> <p>n 2360 e 69</p> | <p>biologist, idealize, straightforwardly, trillion, physicality, reset, predictably, fission, bacterium, mammoth, faucet, caller,...</p> <p>n 2361 e 61</p> | <p>cell, reminiscent, marvelous, prelude, trig, symbol, activate, oversimplification, cube, composer, logician, crux, encode, viru...</p> <p>n 2362 e 93</p> | <p>myriad, provocative, prime, reliably, swirl, pinpoint, murky, brain, elusive, microscopic, amazingly, untold, analogue, churn, ...</p> <p>n 2363 e 52</p> | <p>concoct, effortlessly, nutshell, flip, russell, hopefully, berry, can, redness, quibble, microphone, setup, cute, classmate, de...</p> <p>n 2364 e 67</p> | <p>patently, skeptical, skepticism, sensational, demoralize, massage, fallacy, diatribe, overestimate, explainable, shallowness, s...</p> <p>n 2365 e 43</p> | <p>cancer, odds, gamble, roulette, gauss, galilei, disc, relativity, embankment, gravitational, lorentz, gif, galileian</p> <p>n 2366 e 13</p> | <p>likelih gamble pacioli fermat,</p> <p>n 2367 e 11</p> |

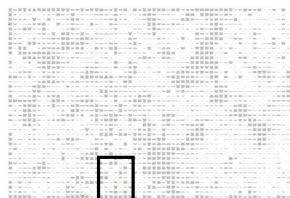


Fig. 3.3 *Xenotheka*, Galaxy Zoom to the cloud of indexes surrounding the index of *data*, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/_galaxy.pdf

There are subtle and refined differences between *data* and *information*. *Data* brings expected indexes in unexpected constellations (List 3.2): *systematically, brilliantly, graphically, sequentially; morse, rhino, google, cam, cad; ibm, audio, graphical, pixel, fax, bandwidth, hdtv, encode, symbol...* There are a lot of indexes referring to applications, infrastructure, and interfaces. Here is a speculation: the character of *information* is more entropic, while *data* is more generic. *Information* is more abstract and fluctuating, *data* more grounded and encapsulating. *Information* emphasizes thinking around it, while *data* emphasizes applications. Let us keep in mind that this is an interpretation of the response of a specific library encoded in a particular way. *Xenotheka* is my character. Another library would provide a different relation of *information* and *data* and could be dramatized in another way. If one looks at the etymology again, this time it complements the indexical story. *Data*⁸ is plural for Latin *datum* which means “*thing given*,” but it also refers to a point in time: *datum* as a date in time. *Data* thus gets a time and space stamp:

*The Roman convention of closing every article of correspondence by writing “given” and the day and month—meaning perhaps “given to messenger”—led to data becoming a term for “the time (and place) stated.” (A Roman letter would include something along the lines of datum Romae pridie Kalendas Maias—“given at Rome on the last day of April.”)*⁹

3.1.0.4 Code

Information and *data* together articulate a mixture, a compelling symmetry, but this is not enough. I would like to have another unfolding and more faces to *information*. In the two clouds around *information* and *data*, there was one index which I find particularly interesting. It is an index in the *Concept n2180* (List 3.2), the verb to *encode*. If prefix *en-* is removed, what one is left with is *coding*, which is a verb, an activity that can activate our two indexes, two objects, two nouns: *information* and *data*. They can be coded in many ways. Let us see where this vector will take the conversation. It might open another interesting genealogy. *Code* is in another cloud, in a different context. In this library, it is quite far from both *information* and *data*, in another part of the galaxy (Fig. 3.1). It should add a new atmosphere to the story. Here is the concept indexed by *code* and its context (Fig. 3.4, List 3.3).

8 “Data | Origin and Meaning of Data by Online Etymology Dictionary,” accessed August 19, 2018, <https://www.etymonline.com/word/data>.

9 “Date | Origin and Meaning of Date by Online Etymology Dictionary,” accessed August 19, 2018, <https://www.etymonline.com/word/date>.

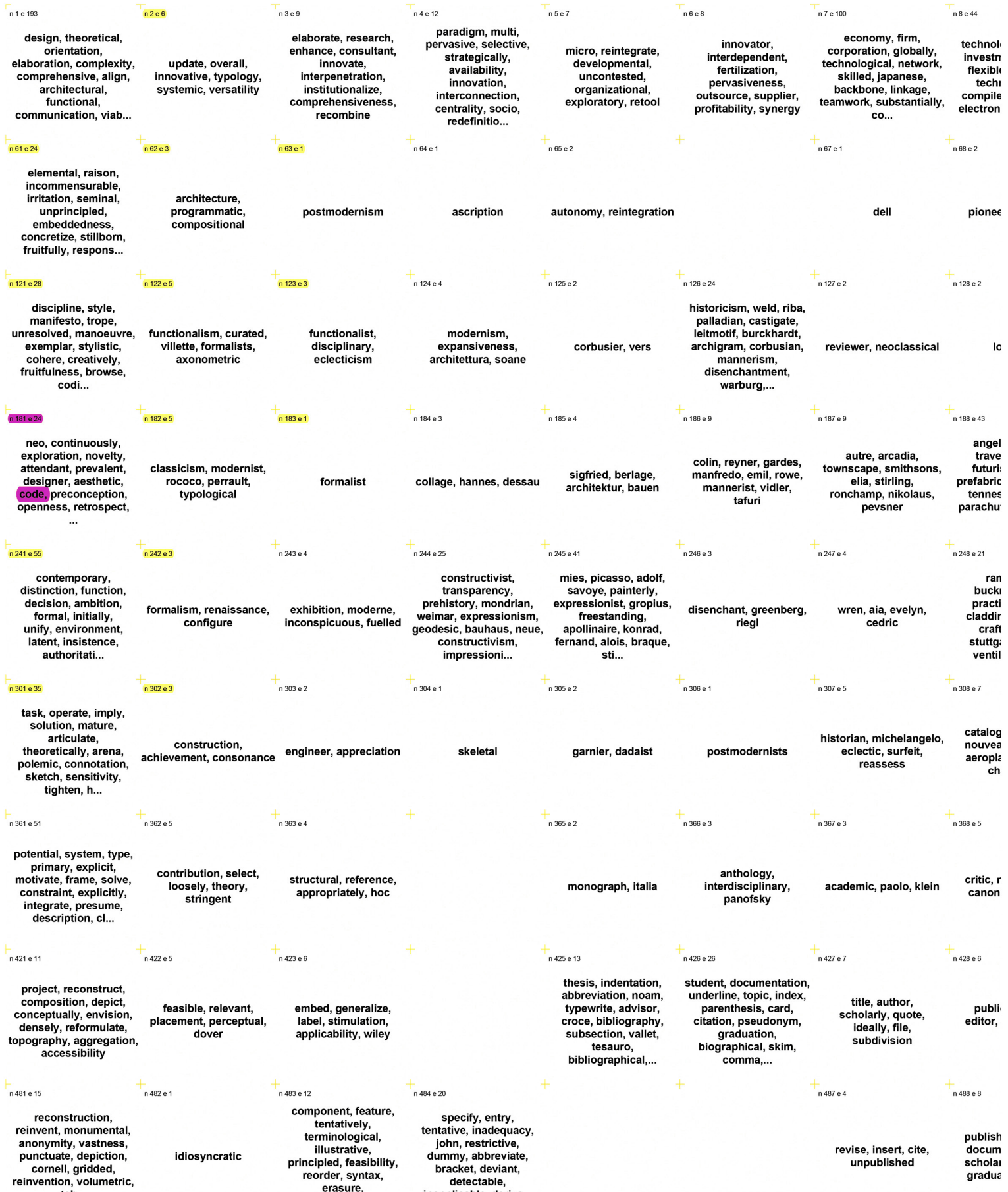


Fig. 3.4 Galaxy Zoom to the cloud of indexes surrounding the index of *code*, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/_galaxy.pdf

n181 e24 {neo, continuously, exploration, novelty, attendant, prevalent, designer, aesthetic, code, preconception, openness, retrospect, protagonist, vagueness, unquestioned, client, crystallization, evaluation, orthogonal, bernini, mutate, manmade, magnum, budgetary}

n182 e5 {classicism, modernist, rococo, perrault, typological}

n121 e28 {discipline, style, manifesto, trope, unresolved, manoeuvre, exemplar, stylistic, cohere, creatively, fruitfulness, browse, codification, dissemination, referential, exclusivity, specious, reconnect, comprehensibility, brainstorm, corb, irreversibly, assertiveness, jeff, irreversibility, tschumi, semper, brett}

n241 e55 {contemporary, distinction, function, decision, ambition, formal, initially, unify, environment, latent, insistence, authoritative, domain, evolve, collaborate, prominence, relevance, gear, premise, cope, facilitate, inception, assessment, steer, christopher, condense, adaptation, coordination, culmination, preconceive, specialize, retrospectively, oeuvre, variegate, conceptual, geometric, noteworthy, foundational, rationalize, momentous, inherently, reinterpretation, curriculum, departmental, medium, nexus, diagram, hallmark, rationalization, faceted, guideline, adrian, gestation, robustness, masterplan}

n242 e3 {formalism, renaissance, configure}

n122 e5 {functionalism, curated, villette, formalists, axonometric}

n61 e24 {elemental, raison, incommensurable, irritation, seminal, unprincipled, embeddedness, concretize, stillborn, fruitfully, responsiveness, avant, asymmetric, attractor, kipnis, incommensurability, kuhn, autonomization, dysfunctional, wigley, evaluative, goffman, refoundation, lakatos}

n62 e3 {architecture, programmatic, compositional}

n63 e1 {postmodernism}

n302 e3 {construction, achievement, consonance}

n2 e6 {update, overall, innovative, typology, systemic, versatility}

n301 e35 {task, operate, imply, solution, mature, articulate, theoretically, arena, polemic, connotation, sketch, sensitivity, tighten, haphazard, touchstone, prospective, adherence, avoidance, rehearse, modulation, transformative, unfailing, cater, ensemble, virtuoso, derogatory, disorient, unadorned, inauguration, epilogue, climatic, furnishings, veracity, leon, traction}

n123 e3 {functionalist, disciplinary, eclecticism}

n183 e1 {formalist}

n303 e2 {engineer, appreciation}

List 3.3 Indexes around the *code*

In its distance, code offers a completely different context. What first stands out when one looks at the cloud around the *code* are the stylistic periods or, in this context, it would be more interesting to call them different architectural codings: *classicism, modernist, rococo, formalism, renaissance, functionalism, postmodernism, eclecticism*. Furthermore, they are surrounded by other architecture related indexes: *designer, aesthetic, typological, stylistic, masterplan, engineer*, etc. This is a beautiful and interesting connection between information and architecture via coding. In this context, architectural encodings do not have fixed forms; they can become code dependent.

Coding in *Xenotheka* becomes part of an architectural articulation, embedded into styles, epochs, houses, cities, books, etc. In the play of synonyms, *information* and *data* acquired an unexpected layer in their cloud. The concept is unfolding. *Xenotheka* is showing its character. For now, there are three concepts trying to articulate the same idea which is not explicitly present. These are *information*, *data*, and *code*. In order to have two double articulations— a symmetry of two nouns and two verbs— one more index is missing. Preferably a verb. Again, the same technique is employed: a search for synonyms. This time synonyms of *code*:

```
{code, Noun, CodingSystem} -> {}
{code, Noun, ComputerCode} -> {computer code}
{code, Noun, WrittenLanguage} -> {codification}
{code, Verb, Encode} -> {cipher, cypher, encipher, encrypt, inscribe,
write in code}
{code, Verb, Tag} -> {}10
```

3.1.0.5 Cipher

A cipher, to cipher, to encode, to encrypt. Another space is opening up. *Information* and *data* on one side, *to code* and *to cipher* on the other. Although a cipher makes a beautiful conceptual symmetry, in terms of its context, it doesn't bring much to the table since it inhabits a space close to and in-between concepts of *data* and *information* (Fig. 3.1). It is a part of the same cloud where *information* and *data* are situated, unlike *code*, which leads to another cloud and opens up a different conceptual space for articulating the same idea. This unsettled space now lies in-between *information*, *data*, *code*, and *cipher*. In this regard, a *cipher* will be treated differently than *data* and *code*. I will come back to this in a bit. On the other hand, what both *code* and *cipher* bring to the discussion are interesting etymological readings:

code (n.)

c. 1300, "systematic compilation of laws," from Old French *code* "system of laws, law-book" (13c.), from Latin *codex* "systematic classification of statutory law," earlier *caudex* "book," literally "tree trunk," hence, book made up of wooden tablets covered with wax for writing. *De Vaan* traces this through Proto-Italic **kaud-ek-* to PIE **kehu-d-* "cleaved, separate," which he also sees as the root of *cauda* "tail" (see *coda*).¹¹

¹⁰ Synonyms provided by Wolfram Mathematica.

¹¹ "Code | Origin and Meaning of Code by Online Etymology Dictionary," accessed August 19, 2018, <https://www.etymonline.com/word/code>.

cipher (n.)

late 14c., “arithmetical symbol for zero,” from Old French *cifre* “nought, zero,” Medieval Latin *cifra*, which, with Spanish and Italian *cifra*, ultimately is from Arabic *sifr* “zero,” literally “empty, nothing,” from *safara* “to be empty”; a loan-translation of Sanskrit *sunya-s* “empty.” Klein says Modern French *chiffre* is from Italian *cifra*.¹²

Code, etymologically seen as a compilation of laws, emphasizes a cultural and contractual notion for communication— a codex of behaviour. On the other hand, the etymological notion of *cipher* opens up a space for procedures which operate on empty symbols, symbols that could mean anything. Together, both of their etymological wisdoms could constitute a codex for operating on empty symbols. By itself, this is an interesting way to think of coding and articulating information. This is how I will treat *cipher*. It will be a joker.

The atmosphere is getting dense. Concepts are interweaving and blending; notions of *entropy*, *data*, *time*, *information* are mixed with *architecture* and added to *code*, *codex*, *law*, *cipher*, *zero*, and *nothingness*; an excited cloud is forming. This fusing, weaving, and playing is happening in-between concepts, between specific and generic, with symbols that could mean anything. It doesn't start or end; one can just stop participating in the play. Let us continue the play and reverse the direction, and get back from the notion of *code* to *information*, just by moving in-between synonyms:

```
code -> inscribe -> scratch -> disturbance -> noise -> randomness ->
entropy -> information->13
```

This journey somehow incorporates all the notions that appeared thus far. The axis of symmetry is in *noise*. To get from *code* to *information*, one goes from *inscribing* and *scratching* to *randomness* and *entropy*, from cultural aspects to technical ones. There is a wisdom of language,¹⁴ of its etymology, its synonyms and other forms, which takes us on an unexpected journey. With the use of synonyms, *code* transforms into *information* only by passing through *noise*. It is a beautiful word game. The spectrum is becoming richer and richer. The space in-between concepts is expanding. What is important to point out is that these four distinct notions of the idea that I am

¹² “Cipher | Origin and Meaning of Cipher by Online Etymology Dictionary,” accessed August 19, 2018, <https://www.etymonline.com/word/cipher>.

¹³ This is a result of an algorithm which can find paths between words based on synonyms.

¹⁴ See Michel Serres and Bruno Latour, *Conversations on Science, Culture, and Time: Michel Serres with Bruno Latour*, trans. Roxanne Lapidus (Ann Arbor, Mich: University of Michigan Press, 1995).

navigating around, without it being explicitly there, are articulated by moods of concepts where *information*, *data*, *code*, and *cipher* mix in a delicate way. The beauty of it is that just by playing an *Informational Instrument*—without assuming any grammars, structures, or hierarchies—indexes gathered and formed subtle conceptions of *information*, *data* and *code*.

3.1.0.6 Characters spelt in characters

The focus is shifting from indexes and concepts to actors. Another question for the library: If books need to distinguish themselves from other books, which books would choose *information*, *data*, *code*, *cipher*; and accompanying indexical clouds as important aspects of their character?

The library reacts. Specific actors are showing up. They are characterised by the probability of their interest in indexes in question. They form four spectrums. Ten most prominent actors for each concept (Fig. 3.5).


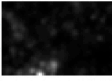
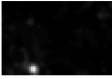


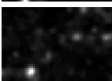
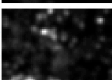
Consistency is in the spectrum: similar concepts attract each other, similar actors group together. The first actor in the column always has the most affinity towards specific *atom-letter*, while the last one has the least affinity. Since the concepts are closely related, some of the actors, are immersed in more than one discussion:

```
West_Scale The Universal Laws of Growth -> 3,  
Hofstadter_Godel Escher Bach -> 3,  
Schumacher_The Autopoiesis of Architecture Vol2 -> 2,  
Serres_The Five Senses -> 2,  
Buehlmann_Mathematics and Information Serres -> 2,  
Serres_Geometry -> 2,  
Wiener_Cybernetics -> 2,15
```

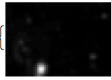
The library is always in motion; books are never alone. By posing a question, or sending an index to the library, a conversation is initiated. Four different notions or atmospheres around *information* have unfolded by texting with the library— three of them close to one another, and one quite far away— *information*, *data*, *cipher*, and *code* (Fig. 3.1). Each concept has its own protagonists. Books start to talk and play with different faces of a concept. Now the actors— books—will take over. They are preparing for the stage. A short script of the play is on the table.

15 Number of appearances of an actor in a conceptual spectrum.

INFORMATION

-  , Brillouin_Science and Information Theory, 0.107053}
-  , Wiener_Cybernetics, 0.09397}
-  , Hofstadter_Godel Escher Bach, 0.0304965}
-  , Serres_Geometry, 0.0256132}
-  , West_Scale The Universal Laws of Growth, 0.0251933}
-  , Kittler_The Truth of the Technological World, 0.0240655}
-  , Delanda_Philosophy and Simulation, 0.0223285}
-  , Serres_The Five Senses, 0.0216538}
-  , Popper_The Logic of Scientific Discovery, 0.0213573}
-  , Wiener_The Human Use Of Human Beings, 0.0212663}

DATA

-  , West_Scale The Universal Laws of Growth, 0.0803778}
-  , Carpo_The Second Digital Turn, 0.0598106}
-  , Negroponte_Being Digital, 0.0431234}
-  , Hofstadter_I Am a Strange Loop, 0.0340924}
-  , Buehlmann_Mathematics and Information Serres, 0.0258946}
-  , Hofstadter_Godel Escher Bach, 0.025065}
-  , Taleb_The Black Swan, 0.0207986}
-  , Carpo_The Alphabet and the Algorithm, 0.0184645}
-  , Castells_The Rise of the Network Society, 0.0162312}
-  , Schumacher_The Autopoiesis of Architecture Vol2, 0.0157109}

CODE

-  , Schumacher_The Autopoiesis of Architecture Vol1, 0.100993}
-  , Schumacher_The Autopoiesis of Architecture Vol2, 0.0898639}
-  , Vidler_Histories of the Immediate Present, 0.0267836}
-  , Sykes Hays_Architectural Theory 1993 2009, 0.0248419}
-  , Spuybroek_The Sympathy of Things, 0.0199887}
-  , Mertins_Modernity Unbound, 0.0197971}
-  , Krier_The Architecture of Community, 0.017436}
-  , Cook_Drawing, 0.0173613}
-  , Banham_Critic Writes, 0.0169401}
-  , Sorkin_All Over the Map, 0.0153834}

CIPHER

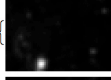



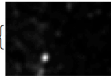
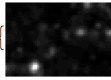



-  , Buehlmann_Mathematics and Information Serres, 0.165439}
-  , Serres_Geometry, 0.0598197}
-  , West_Scale The Universal Laws of Growth, 0.0364558}
-  , Hofstadter_Godel Escher Bach, 0.0241038}
-  , Serres Latour_Conversations on Science, Culture, and Time, 0.0220311}
-  , Serres_The Five Senses, 0.02025}
-  , Deleuze Guattari_A Thousand Plateaus, 0.0182323}
-  , Latour_Facing Gaia, 0.0164009}
-  , Wiener_Cybernetics, 0.0156097}
-  , Serres_Rome, 0.0152694}

Fig. 3.5 Concepts and their protagonists, rendering_03_RW_4060_r_50it21d

Four concepts, four acts, four actors for each. The first act starts with its focus on *information*. It is complemented by the second act with a focus on *data*, and the third focused on *coding*. Each act should have four main protagonists, which will present themselves in the most suitable way according to their mood and the situation on stage. There are four actors on stage in order to get two double articulations or a fourfold notion of the idea in question. It will be different with a *cipher*. Since the *cipher* is in the same context as *data* and *information* (Fig. 3.1), it could evoke very similar discussions by already familiar actors. To avoid such a scenario, I will invite books foreign to the library, to join *Xenotheka* and bring new light to the discussion on the *cipher*.¹⁶

At this moment, the stage is being set in a way to unfold the concept of *information* by showing how its four faces inhabit *Xenotheka*. Let us proceed to the actors and evoke their thoughts.

16 The choice of the invited guests is at the will of the performer at that moment.

INFORMATION

3.1.1.1 *Dramatis Personae*

All the attention is on the concept of *information* and its four main protagonists. Four actors, four faces of a concept. Here they are, comfortably waiting for the talk to begin (Fig. 3.6).

These images are snapshots of actors' faces in a moment of an intense discussion. Each actor has a profile that distinguishes him from the other three. Every face is articulated in a different manner. When one looks at the actors and snapshots of their informational faces (Fig. 3.6), the way how they emit light on the galaxy of concepts (Fig. 3.1), one can see that their main highlights—brown and orange colour—are at similar positions. If one was to overlap these four images, the brown and orange highlights would partially coincide. Still, each actor lights up the galaxy in his own way. On the other hand, what distinguishes these four books from other books in the library and also brings them together, is their focus on the group of concepts around the index of *information* and, furthermore, of *electricity*, *thermodynamics*, *cybernetics*, *entropy*, etc. (Fig. 3.2, List 3.1). The library almost intuitively shows them as two pairs: *Brillouin_Science and Information Theory*¹⁷ and *Wiener_Cybernetics as one pair*,¹⁸ and *Hofstadter_Godel Escher Bach*¹⁹ and *Serres_Geometry*²⁰ as the other pair (Fig. 3.6). In their encoding, the first couple shows a high probability of interest towards a concept indexed by information—0.1 and 0.09—which is almost three times higher than the second couple—0.0304965 and 0.0256132. This is yet another symmetry of couples intrinsic to the concept of *information* in this version of *Xenotheka*.

What are sophisticated formulations, the subtle invariants and delicate distinctions among

17 Brillouin, *Science and Information Theory*.

18 Norbert Wiener, *Cybernetics: Second Edition: Or the Control and Communication in the Animal and the Machine* (S.l.: Martino Fine Books, [1948] 2013).

19 Douglas R. Hofstadter, *Gödel, Escher, Bach: An Eternal Golden Braid*, Anniversary edition (New York: Basic Books, 1999).

20 Michel Serres, *Geometry: The Third Book of Foundations*, trans. Randolph Burks (London; New York: Bloomsbury Academic, 2017).

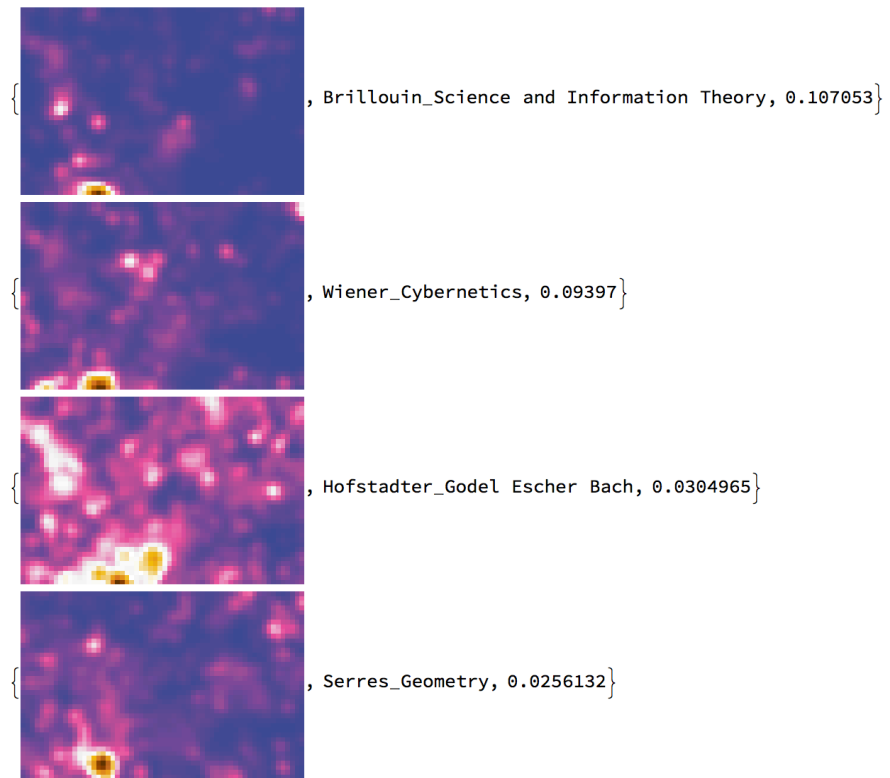


Fig. 3.6 Four books, four actors, four faces of a concept: *information*, rendering_03_RW_4060_r_50it21d

the four actors? Are they contradicting each other, or just telling different stories? What kind of spectrums can they form while referring to *information*?

This conversation is about opening up the notion of *information*. In the process of going from a very specific index towards different articulations of a concept, one is trying to formulate a spectrum of notions around it, by forming, sculpting and indexing other concepts. By being in the same context, they enrich each other with both complementary and contrasting flavours. This is a process of thinking with books and talking among books, while trying to articulate a concept which is always escaping its definition by becoming more and more plentiful. By changing resolutions, definitions also change, concepts get many faces, and books start to tell different stories. Here are the actors, four of them, a couple of pairs. This is the plan of their talk:

Part one: Quantum and Nonhuman Morals

Brillouin_Science and Information Theory as *Brillouin_SIT*

Wiener_Cybernetics as *Wiener_C*

Part two: Algorithms, Pyramids and Self-Reference

Hofstadter_Godel Escher Bach as *Hofstadter_GEB*

Serres_Geometry as *Serres_G²¹*

21 From this point onward, we will refer to abovementioned actors in the abbreviated forms as indicated.

3.1.1.2 PART ONE: *Quantum and Nonhuman Morals*

3.1.1.2.0 Prologue

The conversation starts. The couple in the front—the first two actors most similar in their approach to *information*—are on the stage: *Brillouin_SIT* and *Wiener_C*. They are being announced. It is an opening look in an analytical manner. Books are seen and presented as independent objects, without belonging to any library. An introduction is done by the *stage* in an objective way: simple description and statistics, book titles and word frequencies.

Science and Information theory by Leon Brillouin from 1956.

information -> 723, use -> 453, problem -> 349, energy -> 347, obtain -> 309, value -> 296, entropy -> 292, system -> 286, numb -> 274, give -> 264, case -> 263, function -> 248, frequency -> 236, discuss -> 230, correspond -> 224, condition -> 223, result -> 221, small -> 219, time -> 218, fig -> 208, probability -> 204, large -> 203, point -> 200, average -> 196, observation -> 196, chapter -> 195, consider -> 193, example -> 192, discussion -> 191, let -> 190, increase -> 189, error -> 186, code -> 179, section -> 173, require -> 168, symbol -> 165, represent -> 162, define -> 160, certain -> 157, letter -> 154, different -> 151, signal -> 150, theory -> 149, total -> 148, high -> 147, assume -> 139, formula -> 139, definition -> 138, low -> 137, term -> 137

Cybernetics: Or Control and Communication in the Animal and the Machine, by Norbert Wiener; from 1948, and its most frequent words:

time -> 317, system -> 282, machine -> 218, use -> 189, case -> 180, information -> 151, form -> 149, know -> 142, function -> 142, theory -> 142, process -> 137, group -> 130, point -> 130, work -> 129, problem -> 125, linear -> 123, set -> 122, give -> 121, certain -> 113, way -> 110, frequency -> 110, possible -> 109, mean -> 108, good -> 104, statistical -> 104, new -> 103, let -> 101, apparatus -> 100, numb -> 97, series -> 95, feedback -> 90, transformation -> 88, brain -> 88, study -> 88, average -> 85, message -> 85, value -> 84, shall -> 83, concern -> 83, position -> 82, mechanism -> 82, quantity -> 79, large -> 78, measure -> 77, change -> 76, make -> 76, method -> 75, present -> 75, state -> 74, non -> 74

The introduction goes as follows:

Just by looking at the titles of books and their most used terms, one can state that both books are concerned with highly technical and formal notions of *information* and *communication*. The first articulation emphasizes *energy* and *entropy* expressed as *theory*, while the other is more concerned with *time*, *systems* and *machines* depicted as applied *control* and *communication*. Word frequency clouds suggest that *Brillouin_SIT* uses *symbols* and *coding* to deal with and articulate problems, while *Wiener_C* prefers *statistics* and *feedback* loops to form apparatuses.

...

3.1.1.2.1 Scene 1: On information

The book titles, together with the word frequencies, already express powerful and individual, but isolated tones. On the other hand, I believe that a book is never alone. In fact, on this stage, there are 227 more books implicitly. When invited to a context, a library, a *Xenotheka*, and surrounded by other books, our actors—*Brillouin_SIT* and *Wiener_C*—start to behave in a more sophisticated and delicate manner. Books start to get faces and begin to talk and react to each other's views and moves. A book is never only an isolated object. Books are always part of many different and even contradicting libraries, talks and traditions. They show their faces in the library. This is such an occasion. By playing an *Informational Instrument*, I will stage and host an artificial play that animates books and instigates their talks by asking them questions. *Brillouin_SIT* is entering the stage first, and right behind him *Wiener_C* moves into the spotlight.

The galaxy of concepts which we have seen without light and fluctuation, which was showing static constellations of concepts and clouds of indexes (Fig. 3.1), now gets a personal mood for each book. It becomes alive. Concepts become colourful. The colour shows their intensity. Each actor is lighting the galaxy in a characteristic way (Fig. 3.7, Fig. 3.8), by showing his character and mood, i.e., his face. By playing the *Informational Instrument* the galaxy changes, the concepts shift, our actor changes his temper. Setting up the context, exposing the actor to

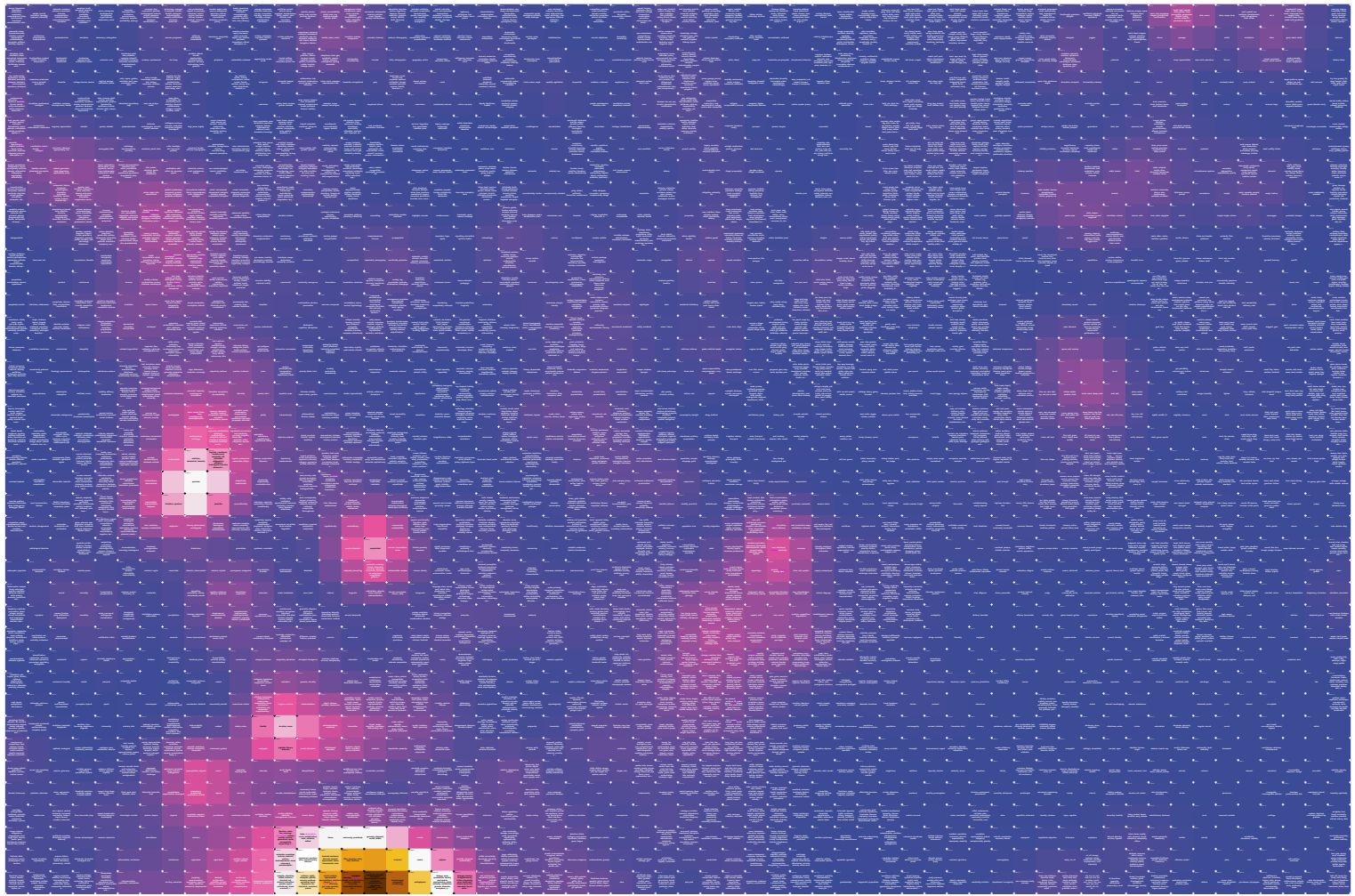
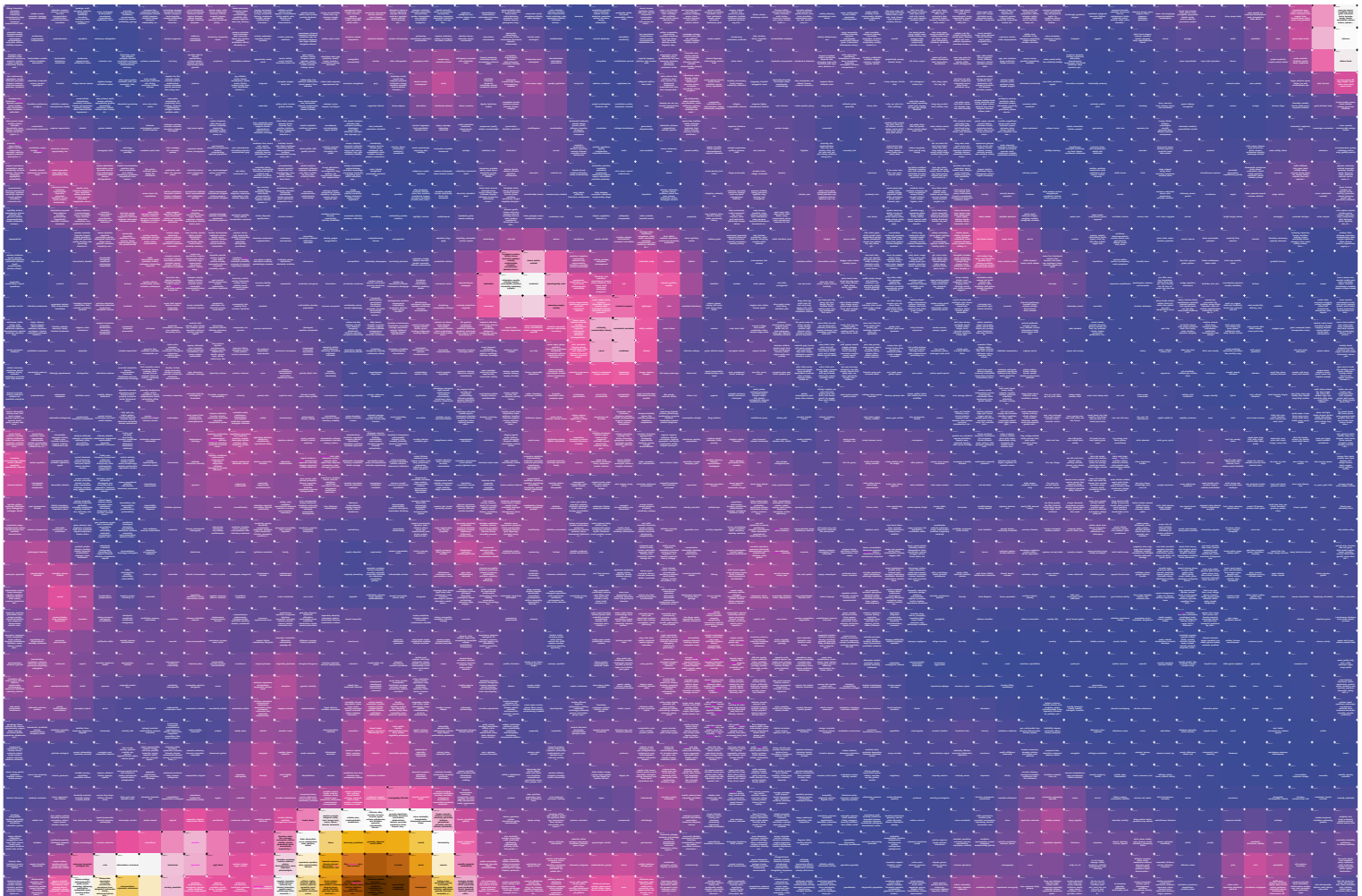


Fig. 3.7 Face of *Brillouin Science and Information Theory*, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/Brillouin_ScienceandInformationTheory.pdf

Fig. 3.8 Face of *Wiener Cybernetics*, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/Wiener_Cybernetics.pdf, 0  1



different galaxies, and dramatizing its moves is my play. While travelling together through multiple galaxies and environments, we become friends. One learns how the other behaves. It is staged and artificial but, at the same time, intimate and beautiful.

What makes our two protagonists look at the galaxy in a similar way, and be friendly to each other is their interest in the abstract negentropic notion of *information* (Fig. 3.1, List 3.1, Fig. 3.8). This would be the articulation of their common interest, one which corresponds to the big brown-orange highlight. The other smaller highlights are the differences in their specific articulations of the main themes. Let us listen to what both books have to say, first about *information* and later about how they position themselves towards each other. In the beginning, the extracted quotes might look somewhat random, without one clear narrative, but the promise is that by letting them talk, by building up the story and playing the *Informational Instrument*, we will form a new and hopefully unexpected consistency of the notion of *information*.

Brillouin_SIT is opening up the scene with his story on the origins of information theory.

Brillouin_SIT:

*The theory of information originated in telecommunications and most of its present applications are still in this field. We have tried to prove that the theory can also be very useful in pure science and especially in physics. The similarity between information and entropy was stressed by Shannon, and, as a matter of fact, it goes back to an old paper by Szilard, who did the pioneering work at a time when the practical value of the theory was not yet recognised.*²²

Brillouin_SIT points to the connection between *information* and the thermodynamic notion of entropy. It is a story about how communication and information became strongly related to physics. Communication is always physical, but to relate it to physics would mean giving it metrics and bringing an old humanist concept into a science laboratory. This changes everything. How can one measure a language with which one is measuring? How can one measure communication? This sounds challenging and intriguing even today. He dates it to a paper from 1929,²³ and continues in an even more provocative way.

22 Brillouin, *Science and Information Theory*, ebook, loc 513.9 / 638.

23 Leo Szilard, "On the Decrease of Entropy in a Thermodynamic System by the Intervention of Intelligent Beings," *Behavioral Science* 9, no. 4 ([1929]1964): 301–10.

Brillouin_SIT:

Information and physical entropy are of the same nature. Entropy is a measure of the lack of detailed information about a physical system. The greater is the information, the smaller will be the entropy. Information represents a negative term in the entropy of a system, and we have stated a negentropy principle of information.²⁴

Physics and information start to talk between themselves. This becomes one of the central notions for *Brillouin_SIT*. By exploring this relation, he opens up a vast space where one can play with *information* in a formal and symbolic way. This is what computers do and this is one of the notions that will be explored in this *Play Among Books*. Information and physical entropy are of the same nature, states *Brillouin_SIT*. They become more entangled as one moves toward their quantum mechanical articulations. *Brillouin_SIT* continues to articulate his physical theory of information in a similar manner. *Information* becomes the accompanying concept and a twin friend to negative entropy (Fig. 3.2, List 3.1).

Brillouin_SIT:

Whenever we make an observation on a physical system, we must have all sorts of sources of negentropy. We use this negentropy, and we increase the total entropy of the laboratory containing the system under observation and the measuring instruments. As a result, we obtain a certain amount of information about the system. The increase in entropy is, however, always larger than the information gained. This result represents an extension of Carnot's principle, and we have tested its validity on a great variety of examples. We thus proved that the theory of information cannot be built as a separate entity. The connection with thermodynamics is so close that consistency requires a physical theory of information. This proof is the aim of the present book.²⁵

With *Brillouin_SIT*, physics and communication become part of the same milieu. Implications are far-reaching. A physical theory of information implies an abstract and formal notion of communication that can be formalized and operationalized and, by doing so, provides a new ground where objects start to potentially communicate in yet unknown ways. The observer

²⁴ Brillouin, *Science and Information Theory*, ebook, loc 513.9 / 638.

²⁵ Brillouin, loc 513.9 / 638.

becomes the observed, the subject and the object start to articulate each other. Self-reference becomes a part of the artificial. *Xenotheka* becomes alive. It is expressing a similar story in a similar way. An object is not just an object any more. The library is talking. It refers to what *Brillouin_SIT* is talking about in his own talk. If we go back for a moment and look at the indexes of *entropy*, *negentropy* and *information*, they inhabit the same part of the galaxy. The positive, the negative and the synonym are situated in *atom-letters n2357* and *n2356* (Fig. 3.2, List 3.1). They are so close to each other because our actors like talking about them, because this is the atmosphere of the library. As we stated before, similar indexes attract each other, similar indexes come together. In this library, their similarity is emphasized by the two actors on stage. The instrument seems to be well tempered.

A moment of silence.

...

Wiener_C takes the stage. He continues in a similar tone as *Brillouin_SIT*, not by contradicting him, but by giving a twist to his story. His opening statement is about *information* and he starts with three intriguing formulations.

Wiener_C:

*Information is information, not matter or energy.*²⁶

*The information must be carried by some physical process, say some form of radiation.*²⁷

*One of the lessons of the present book is that any organism is held together in this action by the possession of means for the acquisition, use, retention, and transmission of information.*²⁸

Together these statements form a provocative ground. Information is not energy or matter, but it must be carried by a form of radiation. Information radiates; it moves via electromagnetic

26 Wiener, *Cybernetics*, ebook, loc 312.5 / 483.

27 Wiener, loc 171.7 / 483.

28 Wiener, loc 362.0 / 483.

waves or with subatomic particles, depending on how one looks. However, it is none of those in itself; it is just carried by both. It moves in many directions; there are as many receivers as transmitters in the digital space. *Wiener_C*, similarly to *Brillouin_SIT*, is trying to see communication as a form of radiation, rather than a single linear progression which carries information.

Wiener_C:

*To cover this aspect of communication engineering, we had to develop a statistical theory of the amount of information, in which the unit amount of information was that transmitted as a single decision between equally probable alternatives. This idea occurred at about the same time to several writers, among them the statistician R. A. Fisher, Dr. Shannon of the Bell Telephone Laboratories, and the author. Fisher's motive in studying this subject is to be found in classical statistical theory; that of Shannon in the problem of coding information; and that of the author in the problem of noise and message in electrical filters. Let it be remarked parenthetically that some of my speculations in this direction attach themselves to the earlier work of Kolmogoroff in Russia, although a considerable part of my work was done before my attention was called to the work of the Russian school.*²⁹

Wiener_C understands communication as an engineering problem and shows a spectrum of different ways of approaching it: via *statistics*, *coding* and *noise*; all familiar indexes. But the problem for him is still the same: how to encode information on top of radiation? What is common to both *Wiener_C* and *Brillouin_SIT* is their reference to entropy and negentropy while addressing this encoding problem.

Wiener_C:

The notion of the amount of information attaches itself very naturally to a classical notion in statistical mechanics: that of entropy. Just as the amount of information in a system is a measure of its degree of organization, so the entropy of a system is a measure of its degree of disorganization; and the one is simply the negative of the other. This point of view leads us to a number of considerations concerning the second law of thermodynamics, and to a study of the possibility of the so-called Maxwell demons. Such questions arise

²⁹ Wiener, loc 59.0 / 483.

*independently in the study of enzymes and other catalysts, and their study is essential for the proper understanding of such fundamental phenomena of living matter as metabolism and reproduction. The third fundamental phenomenon of life, that of irritability, belongs to the domain of communication theory and falls under the group of ideas we have just been discussing.*³⁰

While addressing *information*, *Brillouin_SIT* placed emphasis on the *physical theory of information* in his talk, while *Wiener_C* formulates it as a problem of communication engineering. For one, it is thermodynamics, for the other, statistical mechanics. Both relate *information* to physics and entropy. For now, they appear to share the same interest and their differences seem almost a matter of specific formulations and subtleties. In their discussions, *communication* obtains a physical dimension, an abstract channel, and form that radiates. A physical experiment becomes performative and dependent on the *community* in which it is performed: *coding, noise, message, entropy, statistics*. The laboratory and the experiment become inseparable from each other. The old promise of an independent observer is broken. Information and physical entropy are of the same nature. This is the new challenge.

Wiener_C:

*Thus, as far back as four years ago, the group of scientists about Dr. Rosenblueth and myself had already become aware of the essential unity of the set of problems centering about communication, control, and statistical mechanics, whether in the machine or in living tissue.*³¹

While *Brillouin_SIT* stays abstract in his articulations, *Wiener_C* starts applying his arguments by making direct analogies between *machines* and *living tissues* via the notions of *control* and *statistical mechanics*. Approaches start to differ; the atmosphere is getting denser.

...

End of the First Scene

30 Wiener, loc 59.0 / 483.

31 Wiener, loc 60.5 / 483.

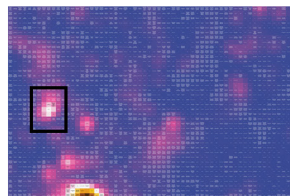
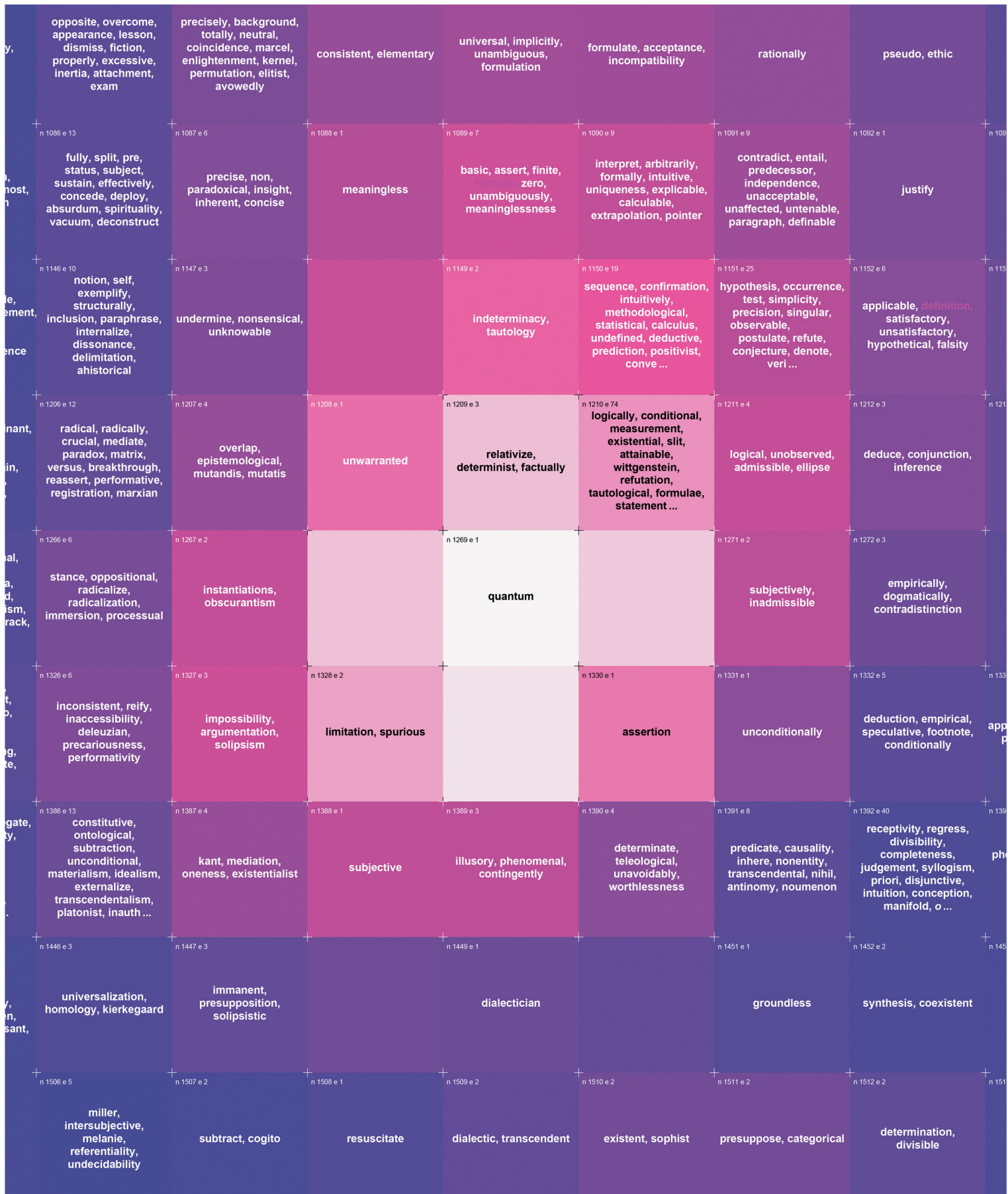


Fig. 3.9 Face of Brillouin_Science and Information Theory - Zoom to the cloud of indexes surrounding the index of quantum, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/Brillouin_ScienceandInformationTheory.pdf, 0 1

3.1.1.2.2 Scene 2: Quantum

Actors start to talk about their particular interests and unusual formulations. Subtle differences between them start to emerge. *Theory of communication* is one articulation of information, *control and communication* is the other. They have similar vectors, but with different angles. What distinguishes *Brillouin_SIT* from *Wiener_C* in this library would be the former's pronounced interest in the notion of quantum (Fig. 3.9). *Brillouin_SIT* continues the conversation by introducing the concept of *information* into the quantum environment. In order to talk and show some of the phenomena he is interested in, *Brillouin_SIT* brings four conceptions to the stage: *the observer*, *the infinite accuracy*, *the amplifier*, and *the error*. He starts playing with them. A play within a play. Let us enjoy the spectacle.

3.1.1.2.2.1 Observer

Brillouin_SIT picks up where he left off in the first scene—with the *observer*. He observes the observer from three perspectives and each time the observer behaves differently: seen from the point of view of classical physics, the observer is independent of the experiment. From the perspective of thermodynamics, observation always increases entropy—directly or indirectly—and from the quantum physics point of view, measurement—at least partially—determines the future behaviour of the system. Different notions of physics talk about the world and the observer in different ways.

Brillouin_SIT:

*How can we define classical physics? Elsasser characterizes this stage by the possibility of nonperturbing experiments, in which a clear distinction can be drawn between the observer and the system under observation.*³²

32 Brillouin, *Science and Information Theory*, ebook, loc 395.1 / 638.

*They still believe in a real physical world following its own unperturbed evolution, whether we observe it or not. In order to reconcile this view with recent physical discoveries, they have to invent the existence of a number of “hidden variables” that we are unable to observe at present.*³³

*An observation is essentially an irreversible process. From a purely thermodynamical point of view, we have proved that no observation can be made without an accompanying increase of entropy in the physical system itself or in the equipment used for the experiment, and coupled with the system during the observation.*³⁴

*Similar remarks have previously been made by many authors, and especially by J. von Neumann, in the discussion of some paradoxical problems of quantum mechanics. One should never speak of a system being in a certain state unless he makes a measurement of some quantity involved. This process of measurement is irreversible, and determines, at least partially, the future behavior of the system.*³⁵

3.1.1.2.2 Mathematician dreams of infinite accuracy

With quantum, distances become extremely small; with more precise technology, they become even smaller. While observing infinitely small elements, one would, in theory, produce infinitely large quantities of information and, in effect, use infinitely large quantities of energy.³⁶ As *Brillouin_SIT* suggests, while a mathematician dreams of infinite accuracy, a physicist encapsulates infinity, symbolizes it, places it into strange constellations and observes the paradoxes. Instead of pursuing infinite accuracy, *Brillouin_SIT* operates with rigorous encoding.

Brillouin_SIT:

*The mathematician dreams of measurements of infinite accuracy, defining for instance the position of a point without any possible error. This would mean an experiment yielding an infinite amount of information and this is physically impossible.*³⁷

33 Brillouin, loc 559.0 / 638.

34 Brillouin, loc 398.4 / 638.

35 Brillouin, loc 399.5 / 638.

36 “Infinite accuracy, with infinitely small error; would mean an infinite increase in information; hence an infinite amount of energy ΔE degraded.”, Brillouin, loc 540 / 638.

37 Brillouin, loc 537.0 / 638.

The increasing difficulty of measuring smaller and smaller distances indicates that the fundamental assumptions of Euclidean space (and time) must be considered only as an idealization, which cannot and should not be regarded as valid in the limit of extremely small distances. The mathematical definition of “infinitely small” distances corresponds to impossible physical conditions.³⁸

It has often been suggested that many of the difficulties of quantum theory could be eliminated by the introduction of some sort of minimal length. A fixed minimum length could hardly be justified on the basis of the preceding remarks. We hesitate to extend the example of the laboratory, with a limited amount of energy available, to include the entire universe, because of the difficulty of making precise definitions of its extent and content.³⁹

An infinitely small error or a fixed minimal measure? The first is impossible and the second irrational. Our actor encapsulates and abstracts from both by articulating two new operators: *The Amplifier* and *the Error*— a double articulation ready to inflate the infinitely small, constitute and embrace the paradox.

3.1.1.2.2.3 Amplifier

Brillouin_SIT:

Amplifiers are always needed in the experimental devices. They perform, essentially, the following duty: to convert a quantum effect, by increasing its amplitude, into an effect that can be recorded on an apparatus operating on the classical level.⁴⁰

Information theory and quantum conditions do not appear in contradiction; on the contrary, they are complementary to one another.⁴¹

The amplifier goes in the other direction than the infinitely small. It encodes it and translates the extremely small to another space where it is decoded and interpreted. The encoding process encapsulates both the measuring interference from the observer and the amplified errors in the

38 Brillouin, loc 400.6 / 638.

39 Brillouin, loc 407.2 / 638.

40 Brillouin, loc 401.7 / 638.

41 Brillouin, loc 421.6 / 638.

process. It all becomes part of this specific encoding, both the error and the interference. It is the communication between different levels of abstraction with the noise and misunderstandings that are constitutive for communication. As Brillouin_SIT states: "*Errors are an essential part of the world's picture [...]*"⁴².

3.1.1.2.2.4 Error

Brillouin_SIT:

*Modern physics had to get rid of these unrealistic schemes, and it was indispensable to recognize the fundamental importance of errors, together with the unpleasant fact that they cannot be made "as small as desired" and must be included in the theory.*⁴³

*The laws of classical mechanics represent a mathematical idealization and should not be assumed to correspond to the real laws of nature.*⁴⁴

*Causality must be replaced by statistical probabilities; a scientist may or may not believe in determinism. It is a matter of faith, and belongs to metaphysics. Physical discussions are unable to prove or to disprove it. This general viewpoint may be called the "matter of fact" position.*⁴⁵

*Errors are an essential part of the world's picture and must be included in the theory.*⁴⁶

Brillouin's *quantum* introduces four important notions to our stage: *the observer, the infinitely small distance, the amplifier and the error*. The *observer* suddenly becomes a part of the observed, the object a part of the subject; the rules have changed; a clear distinction is lost; it is a game of intensities and probabilities. An infinite accuracy is a mathematician's dream, while a minimal distance is a physicist's nightmare. A double articulation of a measure. A code. To abstract from the infinite and the minimal, errors and amplifiers become part of a new quantum constitution.

42 Brillouin, loc 558.0 / 638.

43 Brillouin, loc 539.0 / 638.

44 Brillouin, loc 557.0 / 638.

45 Brillouin, loc 558.0 / 638.

46 Brillouin, loc 558.0 / 638.

This is possible since the observer has the right to influence the observed and the right to rigorously work with errors. What has been said in causalities is now re-articulated with probabilities. A new space opens up by this formulation. *Information* gets a complementary quantum face. Working with *errors* and *amplifiers* becomes a form of *coding*.

A lot of strong statements. *Brillouin_SIT* is leaving the stage. The air is filled with murmuring and noise. Other actors from the library start to comment on his talk...

A moment of silence, a change of lights.

...

End of the Second Scene

3.1.1.2.3 Scene 3: *Nonhuman Morals*

The dialogue continues. The atmosphere is tense. *Wiener_C* takes the stage one more time and reacts in a new manner, this time with its contrasting concepts towards *Brillouin_SIT*. He is expressing a space of differences and turbulence, not of agreement and harmony. Here *information* gets another particular context and a strong vector. These are the highlights of difference; they form two small clouds (Fig. 3.10, Fig. 3.11). One cloud of distinctions could be characterized as *mechanics of critique* and *morals* (Fig. 3.10), and the other as *nonhuman instrumentation* or a *cybernetic ecology* (Fig. 3.11). For now, these are just indexes to the following talk by *Wiener_C*. Let us see how relevant they are to the talk.

The main interest of both actors in this *Xenotheka* has already been stated: the big highlight on *entropy*, *negentropy* and *information* (Fig. 3.1, Fig. 3.2, Fig. 3.7). However, in this context, the contrast with *Brillouin_SIT* lies in the small highlights indexed by *ecology*, *diplomacy*, *rationality*,

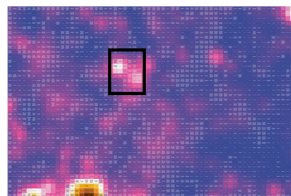
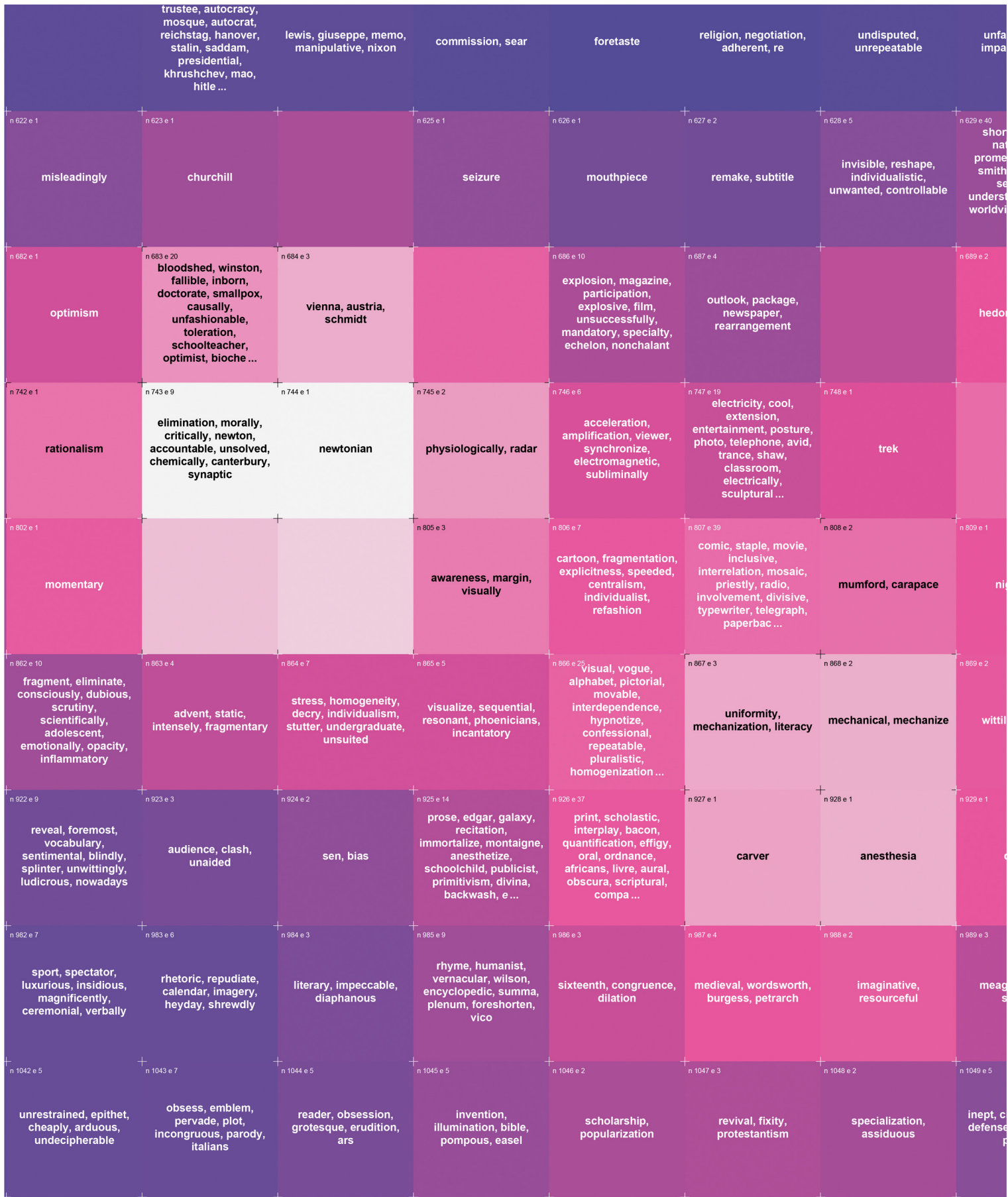


Fig. 3.10 Face of *Wiener_Cybernetics* - Zoom to the cloud of indexes surrounding indexes of *morally* and *critically*; rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/Wiener_Cybernetics.pdf, 0

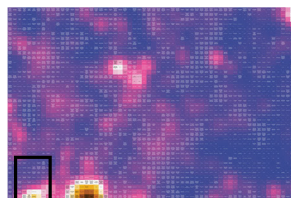
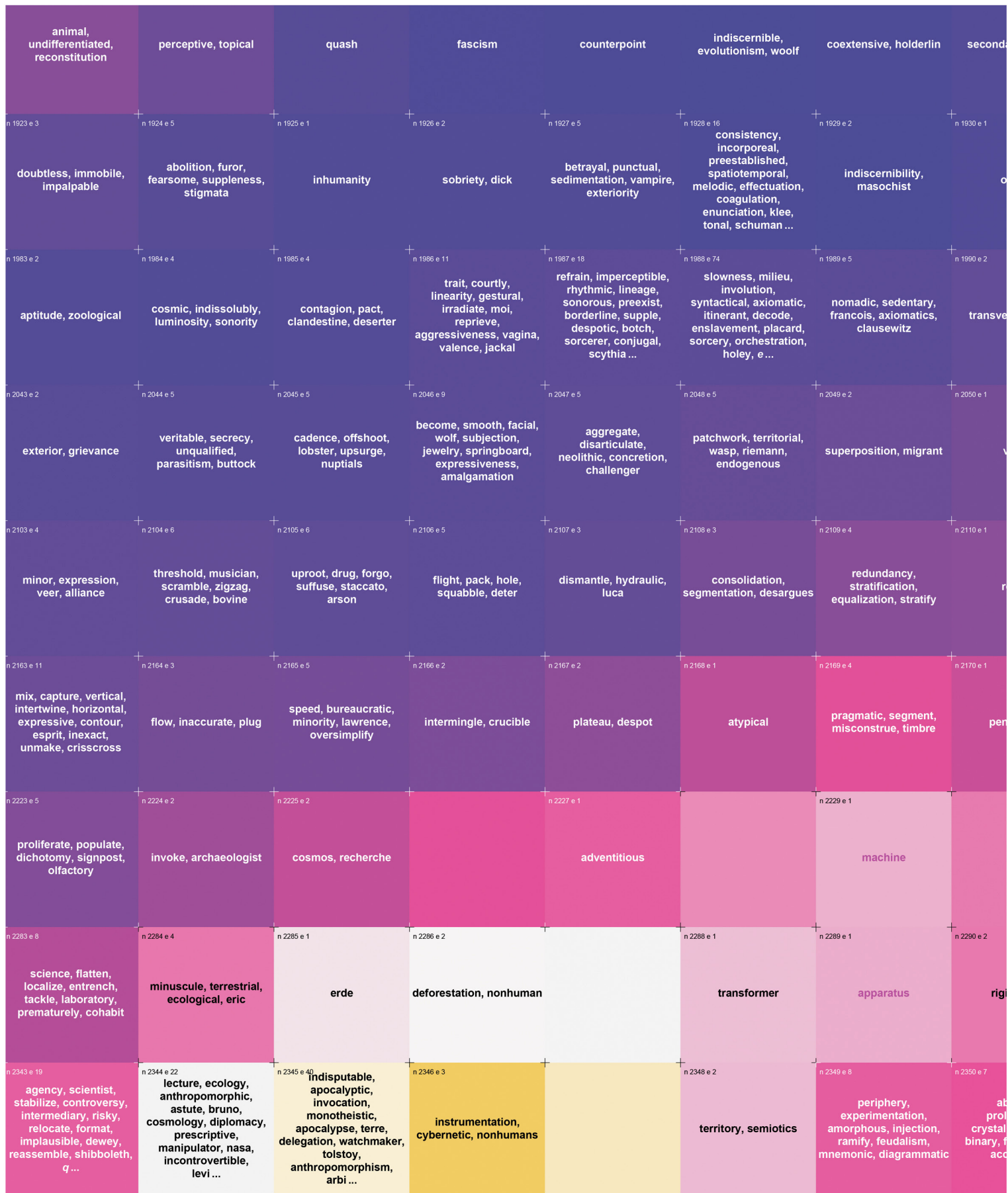


Fig. 3.11 Face of *Wiener_Cybernetics* - Zoom to the cloud of indexes surrounding indexes of *nonhuman*, *cybernetic*, and *instrumentation*, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/Wiener_Cybernetics.pdf, 0  1

manipulation and *nonhuman mechanisation* of *information* (Fig. 3.10, Fig. 3.11). The tone and the atmosphere on stage have changed. *Wiener_C*'s strategy is different. Just by scanning the titles of chapters, I would presuppose that his main tools in articulating ideas are fast, strong and almost mechanical analogies which hold the titles together. *Mechanization Takes Command*.⁴⁷ At least, this is one specific way of looking at it. Let us hear what the non-human morals accentuated by *Wiener_C* have to add to this discussion. Can *Brillouin_SIT*'s quantum notion of *information* be challenged? *Wiener_C* replies by stressing some of his analogies— the first, regarding time:

Wiener_C:

Newtonian and Bergsonian Time

*This transition from a Newtonian, reversible time to a Gibbsian, irreversible time has, had its philosophical echoes. Bergson emphasized the difference between the reversible time of physics, in which nothing new happens, and the irreversible time of evolution and biology, in which there is always something new. The realization that the Newtonian physics was not the proper frame for biology was perhaps the central point in the old controversy between vitalism and mechanism; [...]*⁴⁸

*To sum up: the many automata of the present age are coupled to the outside world both for the reception of impressions and for the performance of actions. They contain sense organs, effectors, and the equivalent of nervous system to integrate the transfer of information from the one to the other. They lend themselves very well to description in physiological terms. It is scarcely a miracle that they can be subsumed under one theory with the mechanisms of physiology.*⁴⁹

Thus the modern automaton exists in the same sort of Bergsonian time as the living organism; and hence there is no reason in Bergson's considerations why the essential mode of functioning of the living organism should not be the same as that of the automaton of this

47 “Mechanization Takes Command, A Contribution to Anonymous History”, a book by Siegfried Gideon which was published in 1948, the same year as Wiener's book on Cybernetics, deals with similar interests from an architectural perspective. See Sigfried Giedion, *Mechanization Takes Command: A Contribution to Anonymous History*, 1st edition (Minneapolis: Univ Of Minnesota Press, [1948] 2014).

48 Wiener, *Cybernetics*, ebook, loc 123.2 / 483.

49 Wiener, loc 137.5 / 483.

*type. Vitalism has won to the extent that even mechanisms correspond to the time-structure of vitalism; [...]*⁵⁰

Some rumours spread in the library. One voice stands out. It is *Schrodinger_WIL*.⁵¹ I cannot hear him clearly so I will have to paraphrase the voice, the crowd, and the noise:

Reversible and irreversible time, Newtonian and Gibbsian time, Astrological and Meteorological time, Mechanist and Vitalist time, Bergsonian time... For *Wiener_C*, time becomes an important quest. He introduces a whole spectrum of different notions of time, but not in order to celebrate their differences but to show them as one couple or one analogy with different coatings. In this manoeuvre, he omits an important distinction between two irreversible times, crucial when dealing with entropy: the entropy-increasing time of thermodynamics, also referred to as the time of ageing, and the opposite flow to it — the negentropy time. This is the time of life, evolution and Darwin. Both irreversible, but flowing in opposite directions. By missing this subtle difference, *Wiener_C* is able to situate the modern automaton in the same sort of Bergsonian time as living organisms, which would otherwise, as one would imagine, stay in their separate times, inhabiting a different part of the time spectrum. Voices get lost in the noise...

On the other hand, if we take this thought a step further and imagine that both automata and living organisms have many different clocks, that they don't compete or threaten one another, then each can acquire different speeds and be talked to in various ways. This is an expanding world operating at various speeds, in contrast to a two-faced world at the single speed of *Wiener_C*.

Not disturbed by *Schrodinger_WIL*'s comments, *Wiener_C* pursues to stabilize his ideas by adding more analogies: brain and computing machine, nervous system and computation system, neurones and relays, in the same manner as a part of his title states—*Animal and the Machine*:

Wiener_C:

Cybernetics and Psychopathology

Nevertheless, the realization that the brain and the computing machine have much

50 Wiener, loc 138.9 / 483.

51 Schrödinger, *What Is Life? The Physical Aspect of the Living Cell*.

*in common may suggest new and valid approaches to psychopathology and even to psychiatrics. These begin with perhaps the simplest question of all: how the brain avoids gross blunders, gross miscarriages of activity, due to the malfunction of individual components.*⁵²

Computing Machines and the Nervous System

*It is a noteworthy fact that the human and animal nervous systems, which are known to be capable of the work of a computation system, contain elements which are ideally suited to act as relays. These elements are the so-called neurons or nerve cells. While they show rather complicated properties under the influence of electrical currents, in their ordinary physiological action they conform very nearly to the “all-or-none” principle; that is, they are either at rest, or when they “fire” they go through a series of changes almost independent of the nature and intensity of the stimulus.*⁵³

Brain Waves and Self-Organizing Systems

*In the previous chapter, I discussed the problems of learning and self-propagation as they apply both to machines and, at least by analogy, to living systems. Here I shall repeat certain comments I made in the Preface and which I intend to put to immediate use. As I have pointed out, these two phenomena are closely related to each other, for the first is the basis for the adaptation of the individual to its environment by means of experience, which is what we may call ontogenetic learning, while the second, as it furnishes the material on which variation and natural selection may operate, is the basis of phylogenetic learning.*⁵⁴

After providing a whole spectrum of analogies, as the third scene is coming to a close, *Wiener_C* in his closing remarks, maybe not deliberately, but in effect takes the observer out of the quantum context and places him back in the context of classical physics where the observer again, in his words, becomes unscientific. He does so by stressing the difference of scales between the atomic and the social. *Translator, traitor.* Observation is a distortion.

52 Wiener, *Cybernetics*, ebook, loc 334.0 / 483.

53 Wiener, loc 289.7 / 483.

54 Wiener, loc 393.0 / 483.

Wiener_C:

Information, Language, and Society

It is in the social sciences that the coupling between the observed phenomenon and the observer is hardest to minimize. On the one hand, the observer is able to exert a considerable influence on the phenomena that come to his attention. With all respect to the intelligence, skill, and honesty of purpose of my anthropologist friends, I cannot think that any community which they have investigated will ever be quite the same afterward. Many a missionary has fixed his own misunderstandings of a primitive language as law eternal in the process of reducing it to writing. There is much in the social habits of a people which is dispersed and distorted by the mere act of making inquiries about it. In another sense from that in which it is usually stated, traduttore traditore.⁵⁵

There is much which we must leave, whether we like it or not, to the un-“scientific,” narrative method of the professional historian.⁵⁶

This is quite a different mood than the quantum mood of *Brillouin_SIT*, who reacts in a fast manner and distances himself from *Wiener_C*.

Brillouin_SIT:

But we are in no position to investigate the process of thought, and we cannot, for the moment, introduce into our theory any element involving the human value of the information.⁵⁷

This discussion is revolving around the same interest articulated in a different manner. Science and information, on the one hand, and control and communication on the other. *A quantum* as other to *nonhuman morals*. Like the title of *Wiener_C* emphasises, he is about *Control and Communication in the Animal and the Machine*. He reflects this in the topics at stake. Sometimes in an opposition, as in Newtonian and Bergsonian notions of time, where one in an evolutionary manner dominates

55 Wiener, loc 366.1 / 483.

56 Wiener, loc 368.2 / 483.

57 Brillouin, *Science and Information Theory*, ebook, loc 14.7 / 483.

the other, or as almost natural analogies between *Computing Machines* and the *Nervous System* or *Brain Waves* and *Self-Organizing Systems*. With a direct analogy as opposed to the double articulation, a quite different space opens up. *Brillouin_SIT* and his emphasis on the double articulation of *errors* and *amplifiers*, on the one hand, and the *observer* and *infinite accuracy* on the other, produce a quantum phenomenon as their product. I will read this as a new and fresh ground which uses self-reference as an opening to another plateau. With *Wiener_C* and his almost literal analogies, one stays closed in an infinite loop. A self-reference closed in itself because of itself. It is almost like a spiritual experience justified in numbers. *Brillouin_SIT's quantum* stays in the abstract and communicates in any way it can, while *Wiener_C's nonhuman moral* tries to apply the communication scheme in every way it can. Two very refined and close notions of *information*, one economical, the other political, and both tied to the physics of communication.

...

End of the Third Scene

End of Part One

3.1.1.3 PART TWO: Algorithms, Pyramids and Self-Reference

3.1.1.3.0 Prologue

Welcome back.

The second part of the first act is starting now. The interest is the same—*information*. The actors are different. At the end of the first act, *human value of information* was left hanging in the air as a puzzle. By abstracting from meaning, *Brillouin_SIT* was able to avoid it and operate with *information* in a formal and symbolic way. On the other hand, *Wiener_C* brought it back to, as he calls it, the unscientific observer. This was the atmosphere while the curtain was going down.

The new spotlights are now on; the colours are changing. The galaxy of concepts shines in a different way. This is an atmosphere for a new and fresh discussion. The second couple: *Hofstadter_GEB* and *Serres_G* are on stage ready to talk. The stage to fulfil the formal part of the play introduces them in a generic and impersonal way just by counting words and analysing them.

Gödel, Escher, Bach: An Eternal Golden Braid, by Douglas Hofstadter from 1979.

achilles -> 1358, tortoise -> 945, system -> 893, way -> 880, level -> 850, mean -> 742, program -> 723, just -> 704, think -> 683, symbol -> 668, say -> 665, theorem -> 662, numb -> 655, make -> 566, rule -> 557, know -> 541, crab -> 540, like -> 535, tnt -> 467, call -> 462, word -> 457, string -> 456, come -> 432, thing -> 422, time -> 419, use -> 407, brain -> 406, fact -> 405, language -> 377, different -> 371, new -> 370, idea -> 352, look -> 348, number -> 343, let -> 327, quite -> 325, sentence -> 322, point -> 318, person -> 312, question -> 309, set -> 305, write -> 302, form -> 295, line -> 293, mind -> 290, tell -> 287, sense -> 287, example -> 280, high -> 278, right -> 278

Geometry: The Third Book of Foundations, by Michel Serres from 1993, and its most frequent words:

time -> 374, say -> 294, world -> 291, space -> 286, science -> 278, geometry -> 276, history -> 242, origin -> 232, place -> 230, know -> 228, thing -> 214, like -> 214, form -> 204, object -> 194, think -> 191, knowledge -> 182, relation -> 158, point -> 154, new -> 151, way -> 150, language -> 148, shadow -> 147, law -> 145, draw -> 141, remain -> 140, element -> 138, write -> 136, earth -> 134, word -> 133, line -> 130, mean -> 129, come -> 129, long -> 128, doesn -> 127, let -> 124, question -> 123, thales -> 122, flow -> 120, begin -> 116, square -> 115, sun -> 113, order -> 112, give -> 111, take -> 109, pass -> 107, socrates -> 106, reason -> 103, good -> 101, call -> 101, system -> 100

The introduction goes as follows:

Both titles are not explicit in their relation to *information*. Their word clouds provide a different ambience and another context for discussing notions of *information* than the ones that were previously heard. It is a rather interesting atmosphere. Clouds of their most frequent words intersect around the notion of communication: *language, word, write, mean, think, know, say*. Indexed in this way, one could argue that they point to a more *human value of information*, which was explicitly excluded from the discussion in the closing remarks of *Brillouin_SIT*. Presumably, this is related to their interest in multiple articulations of the notion of information. They index the cloud around it with characters that bring into account ancient myths, stories and thoughts: *Achilles, Tortoise, Thales* and *Socrates*. Still, both actors insist on a formal way of addressing their interests: *system, form, line point*. Each in its own manner, of course.

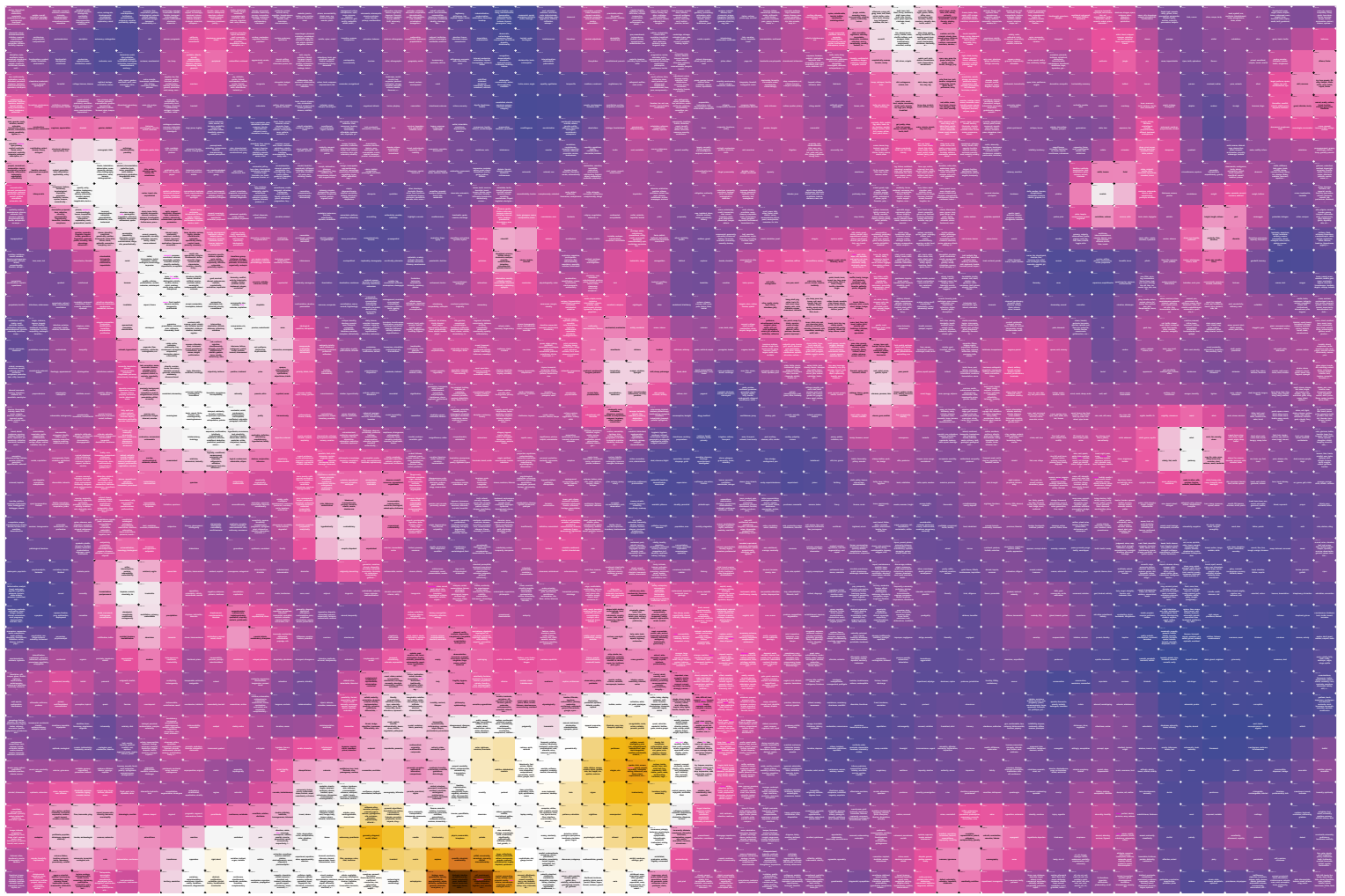
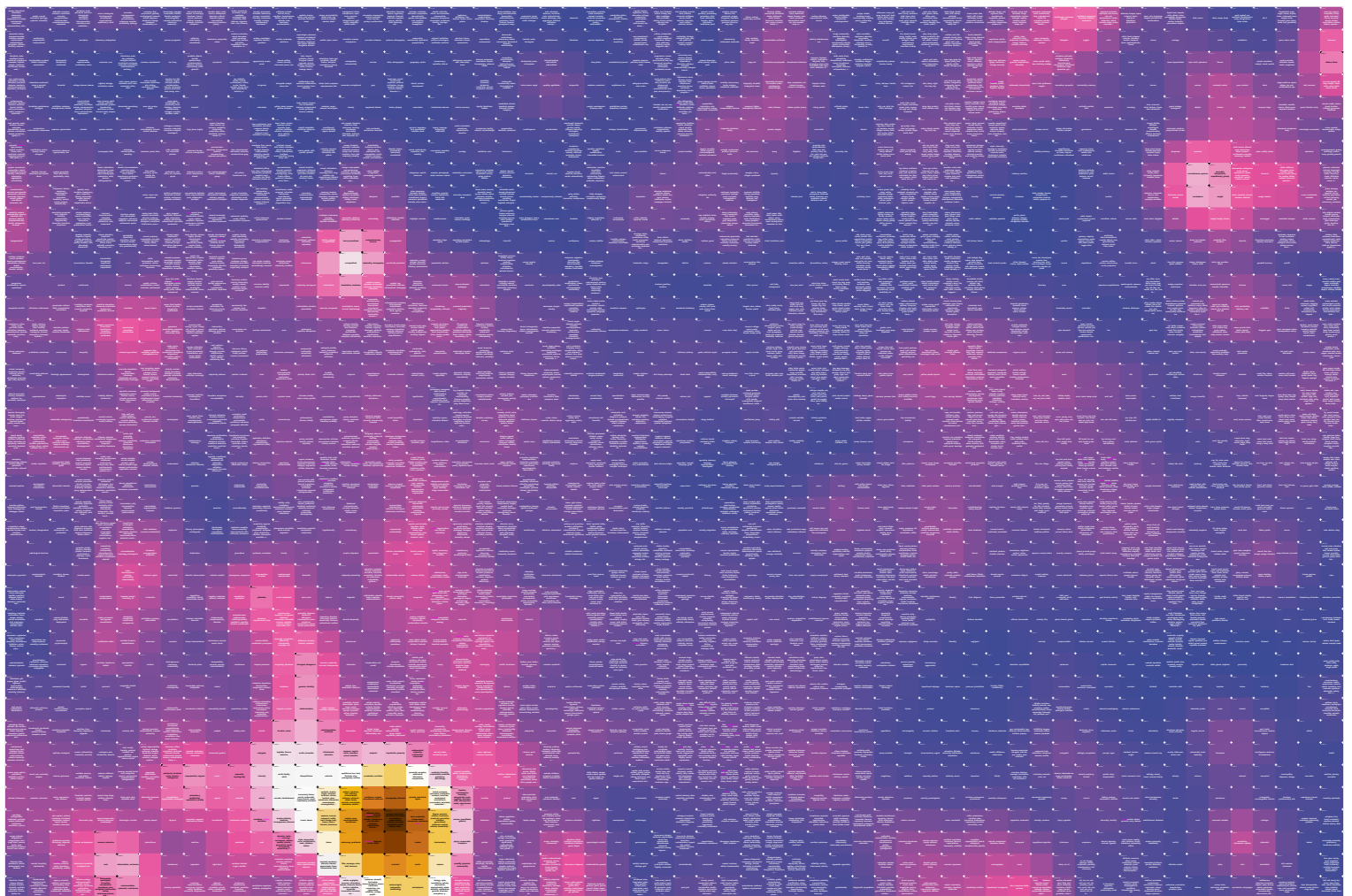


Fig. 3.12 Face of *Hofstadter_Godel Escher Bach*, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/Hofstadter_GodelEscherBach.pdf

Fig. 3.13 Face of *Serres_Geometry*, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/Serres_Geometry.pdf, 0  1



...

3.1.1.3.1 *Faces Looking at Each Other*

Two different atmospheres move through the galaxy of concepts (Fig. 3.12, Fig. 3.13). Indexes around *information* are still at the centre of attention. With each actor that works with it, *information* gets a new face. It accommodates more and more. Just by looking at our two actors in the context of this *Xenotheka* one can notice some differences (Fig. 3.12, Fig. 3.13). *Hofstadter_GEB*'s interests are more scattered around the galaxy, while *Serres_G* appears more concentrated on one part. What brings them together and makes it exciting is that in this library, seen in this particular way, they bring concepts and indexes around *information*, *data* and *cipher* close to one another (Fig. 3.1). The promise is that during different plays concepts will cross many disciplines, articulations and books, and in doing so, will become more sophisticated, richer and delicate.

Hofstadter_GEB and *Serres_G* are ready to continue the talk and address *information*. Each actor will speak as long as he desires, without interruptions. There will be no direct discussions. This is the wish of one actor. *Hofstadter_GEB* will start first.

3.1.1.3.2 *Scene 1: Information and Self-Reference*

Situated comfortably among friends, *Hofstadter_GEB* starts talking. He slowly takes the attention. He appears excited; his face is scattered around the galaxy (Fig. 3.12). His expression is articulated mainly by two small clouds: on one side—in the context of *information*—*symbol*, *encoding*, *rosetta*, *metric...*, and on the other side, *self-reference*, *puzzles* and *tricks* (Fig. 3.14, Fig. 3.15). Here is one assumption: *Hofstadter_GEB* enjoys playing with puzzles. He encodes and symbolizes messages and plays with information by changing its milieu: *biology*, *physics*, *meteorology*. All this is happening around the highlight of his main interest in *coding* and *ciphering* (Fig. 3.14, List 3.2, *Concept 2362*). My interest lies there as well. Is it me that pushes him in

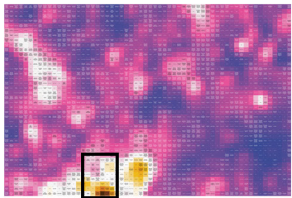
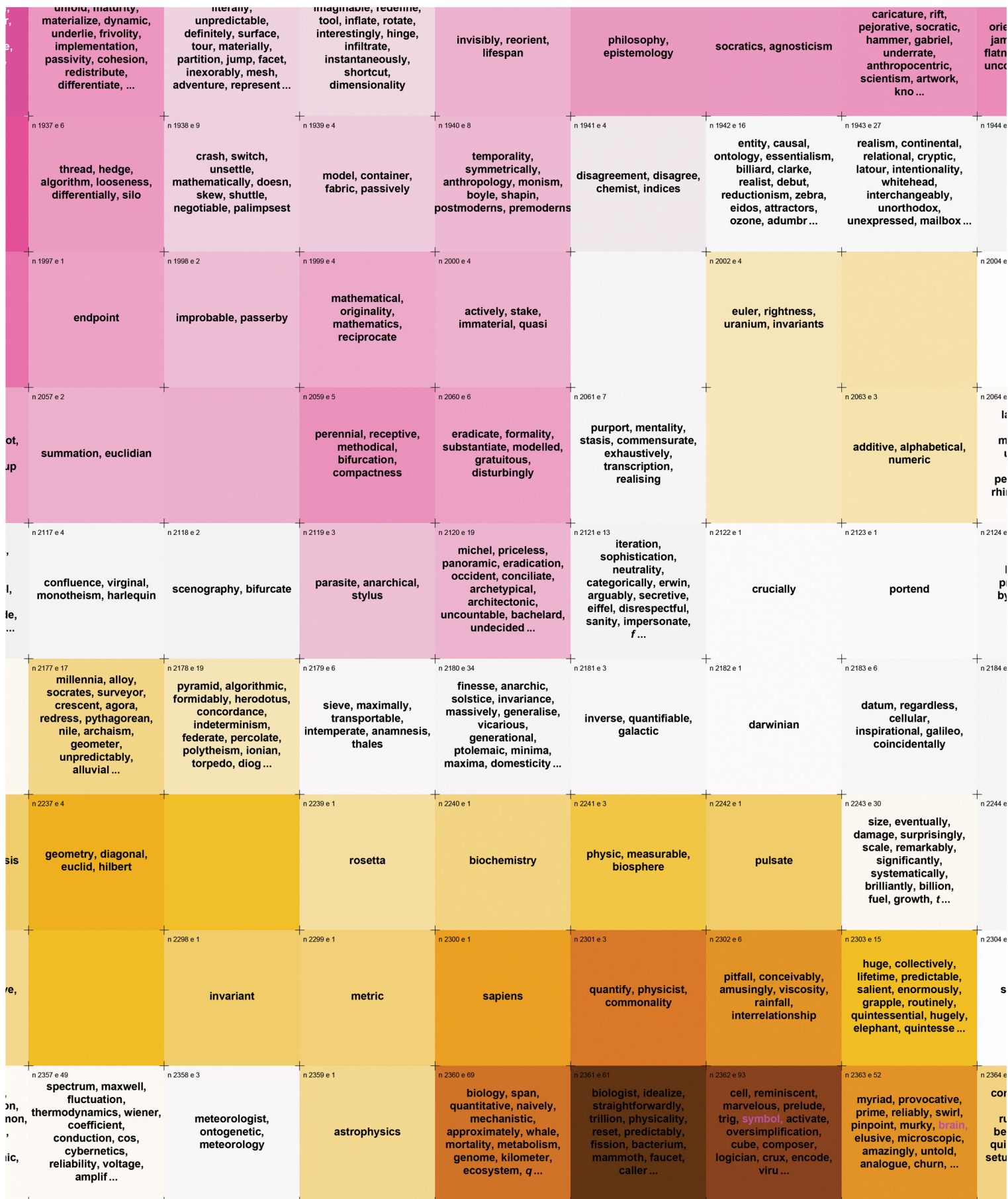


Fig. 3.14 Face of Hofstadter_Godel Escher Bach - Zoom to the cloud of indexes surrounding cell and symbol, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/Hofstadter_GodelEscherBach.pdf, 0  1

this direction? Yes, to an extent. A self-reference? That too. I think this is his main interest. His title goes in the same direction. An (E)ternal (G)olden (B)raid, woven by three masters of self-reference: (G)ödel, (E)scher, (B)ach.

While referring to the end of the first act, to *Brillouin_SIT*'s deliberate avoiding of *the human value of information*, *Hofstadter_GEB* without any hesitation and in a very confident way starts his talk by posing a question: *Where is the location of meaning? When is one thing not always the same?*⁵⁸ He elaborates on this by inventing scenarios and puzzles, places *information* into specific environments, and sends messages to far away worlds in order to see where their meaning lies.

Hofstadter_GEB:

*One gets the impression from these two examples that isomorphisms and decoding mechanisms (i.e., information-revealers) simply reveal information which is intrinsically inside the structures, waiting to be “pulled out”. This leads to the idea that for each structure, there are certain pieces of information which can be pulled out of it, while there are other pieces of information which cannot be pulled out of it. But what does this phrase “pull out” really mean? How hard are you allowed to pull? There are cases where by investing sufficient effort, you can pull very recondite piece of information out of certain structures. In fact, the pulling-out may involve such complicated operations that it makes you feel you are putting in more information than you are pulling out.*⁵⁹

Can one pull out meaning from *information*, or by pulling hard is one, in effect, articulating meaning and writing a new message? *Hofstadter_GEB* stops and reformulates the question. Is there, on the other hand, a specific context for each message, such that meaning is always an articulation of *information* and its *context*? A one-on-one fixed mechanical relation: the *disc* and the *Jukebox*.

Hofstadter_GEB:

These examples may appear to be evidence for the viewpoint that no message has intrinsic meaning, for in order to understand any inner message, no matter how simple it is, one must first understand its frame message and its outer message, both of which are carried only by

58 Hofstadter, *Gödel, Escher, Bach*, ebook, loc 383.2 / 1928.

59 Hofstadter, loc 384.9 / 1928.

triggers (such as being written in the Japanese alphabet, or having spiraling grooves, etc.). It begins to seem, then, that one cannot get away from a “jukebox” theory of meaning—the doctrine that no message contains inherent meaning, because, before any message can be understood, it has to be used as the input to some “jukebox”, which means that information contained in the “jukebox” must be added to the message before it acquires meaning.⁶⁰

If there is no *jukebox* at hand, how should one construct it? Does chance play a role and reveal information in a specific context?

Hofstadter_GEB:

Can DNA evoke a phenotype without being embedded in the proper chemical context? To this question to answer is no—but a qualified no. Certainly a molecule of DNA in a vacuum will not create anything at all. However, if a molecule of DNA were set to seek its fortune in the universe, as we imagined the BACH and the CAGE were, it might be intercepted by an intelligent civilization. They might first of all recognize its frame message. Given that, they might to try to deduce from its chemical structure what kind of chemical environment it seemed to want, and then supply such an environment. Successively more refined attempts along these lines might eventually lead to a full restoration of the chemical context necessary for the revelation of DNA’s phenotypical meaning. This may sound a little implausible, but if one allows many millions of years for the experiment, perhaps the DNA’s meaning would finally emerge.⁶¹

But what kind of chance is it? For *Hofstadter_GEB* chance binds DNA and its meaning. But what if we think of chance in a different way, ‘as an object that can be counted and measured in a great variety of manners’?⁶² In that case, chance doesn’t bind but instead provides many unexpected contexts where DNA can become more than one could imagine. If so, then meaning lies somewhere else.

Hofstadter_GEB continues by trying to systematize a way in which one could decipher a message. Still undecided where meaning lies, he is bringing up even more different scenarios. Is

60 Hofstadter, loc 415.0 / 1928.

61 Hofstadter, loc 431.2 / 1928.

62 Vera Bühlmann, *Mathematics and Information in the Philosophy of Michel Serres*, ed. David Webb and Joanna Hodge (S.l.: Bloomsbury Academic, 2019), 295.

the meaning contained in the message? Is it in a relation between the message and the jukebox? Is deciphering of a message a way to provide many meanings depending on how one plays with the deciphering instruments? Is it a mixture of all these scenarios with some extra noise? Or, as *Brillouin_SIT* implied in the first act though in relation to the message, maybe meaning lies in another domain? In this last thought, *Hofstadter_GEB* doesn't seem to agree and he continues with his analysis:

Hofstadter_GEB:

In these examples of decipherment of out-of-context messages, we can separate out fairly clearly three levels of information: (1) the frame message; (2) the outer message; (3) the inner message.

[...]

The formulation of these three "layers" is only a rather crude beginning at analyzing how meaning is contained in messages. There may be layers and layers of outer and inner messages, rather than just one of each. Think, for instance, of how intricately tangled are the inner and outer messages of the Rosetta stone. To decode a message fully, one would have to reconstruct the entire semantic structure which underlay its creation and thus to understand the sender in every deep way. Hence one could throw away the inner message, because if one truly understood all the finesses of the outer message, the inner message would be reconstructible.⁶³

This three-layered formulation of a message, although intuitive if looked from *Brillouin_SIT*'s negentropic perspective of information, becomes a rather counterproductive gesture. For *Hofstadter_GEB* meaning is still intrinsically connected to the message, while *Brillouin_SIT* relates *message* and *information* and keeps *meaning* outside. This is how he can operate on *information* without disturbing or knowing its meaning. He abstracts from *meaning*, while *Hofstadter_GEB* makes puzzles that play with *meaning* which, consequently, acquires materiality. *Hofstadter_GEB* didn't say that; this is my provocative reading of him.

63 Hofstadter, *Gödel, Escher, Bach*, ebook, loc 405.0 / 1928.

| | | | | | | | |
|----------------------------------|--|--|--|---|--|--|--|
| clear, veat, cence, stated | n 1885 e 1 etymologically | n 1886 e 25 treatise, illiterate, keystone, authorization, ptolemy, readership, confusingly, watermark, geneva, iconoclastic, giorgio, syno ... | n 1887 e 6 illustration, protestant, epitome, didactic, erudite, raphael | n 1888 e 2 builder, venice | n 1889 e 6 collection, artist, art, paint, prototype, crystal | n 1890 e 14 unlike, today, display, celebrate, drift, track, inventor, transparent, bubble, shortcoming, champion, outwards, vagary, shrink | n 1891 e 20 single, show, simple, obvious, world, start, actually, reflect, brief, differently, inspire, date, figure, handle, despite, sen ... |
| | n 1945 e 1 humanistic | n 1946 e 6 manual, detriment, standardize, standardization, synopsis, pietro | n 1947 e 3 append, memorize, thumbelina | n 1948 e 5 illustrate, copy, ban, blueprint, sparsely | n 1949 e 6 recognizable, route, mimic, suitably, poussin, porbus | n 1950 e 7 quest, calculate, masterful, fertilize, grete, samsa, gregor | n 1951 e 19 exactly, previous, search, travel, inappropriate, director, painter, ante, entrap, pulpit, deputy, lawyer, alright, supervisor ... |
| k, | n 2005 e 21 famously, pristine, notation, identically, trademark, authorship, postindustrial, cola, absentia, coca, indexial, seriality, a ... | n 2006 e 1 geometrically | n 2008 e 1 performer | n 2009 e 41 unlikely, record, intelligence, plus, pair, straightforward, metaphorical, map, interchangeable, needless, backwards, amateur, ... | n 2010 e 26 deeply, list, complicate, unfortunately, piece, hit, translate, subtle, out, game, onto, elegant, conjure, instruction, intelli ... | n 2011 e 30 way, just, play, carefully, familiar, hard, push, seriously, scene, suggestion, appreciate, echo, slightly, match, explanation ... | |
| nt, al, tch, re, al, rse, am ... | n 2065 e 6 emulate, software, snapshot, unwieldy, dentist, interactivity | n 2067 e 12 delta, diction, omega, orestes, alpha, gamma, iota, tau, kappa, rho, epsilon, omicron | n 2068 e 2 elegiac, eta | n 2069 e 32 upside, trick, screen, number, puzzle, proven, incredibly, intangible, inking, humorous, pop, fluent, stack, supernatural, dor ... | n 2070 e 23 curious, inside, mental, tune, odd, vivid, trail, tiny, hopelessly, thrill, imbue, yarn, maze, uninteresting, fondness, cage, ... | n 2071 e 21 suspect, unusual, obviously, realize, shortly, story, amaze, hint, fortunately, spill, faithfully, tale, curiously, comprehensi ... | |
| re, iris, ion, | n 2125 e 4 scan, keyboard, processor, desktop | n 2126 e 1 beta | n 2127 e 1 sigma | n 2129 e 1 inadvertently | n 2130 e 3 harmless, luckily, undeniably | n 2131 e 6 remind, memory, dose, enjoyable, unreliable, illicit | |
| g | n 2185 e 23 computer, airline, mail, readable, packet, lab, appliance, video, ceo, synchronous, fiber, interface, concurrently, moo, conver ... | n 2186 e 2 parlance, calculator | n 2187 e 1 nighttime | n 2188 e 1 unsuspected | n 2189 e 1 unthinkingly | n 2191 e 8 colleague, incident, omission, disturbance, prescription, diminutive, diagnose, lecturer | |
| | n 2245 e 3 messy, randomly, incremental | n 2246 e 8 detection, lethal, prologue, eponymous, inordinate, charlatan, greco, lingua | n 2247 e 2 psychologist, colorful | n 2248 e 1 ailment | n 2249 e 1 genuineness | n 2250 e 13 innocuous, jokingly, hartmann, psychologie, sachs, frau, symptomatic, internationale, zeitschrift, inadvertent, mislay, signore ... | n 2251 e 22 incorrectly, distaste, unwelcome, disruptive, fortuitous, contamination, cogent, slip, medici, unscathed, viennese, clumsiness ... |
| lot, er | n 2305 e 22 predict, underestimate, arrogance, winner, practitioner, deviation, uncertainty, tunnel, ingrain, outlandish, fad, puddle, ster ... | n 2306 e 2 discoverer, subgroup | n 2307 e 2 mathematician, grossly | n 2308 e 1 bonus | n 2309 e 4 wishful, madonna, siblings, gott | n 2310 e 5 uninhibited, protrusion, schiller, frigidity, nursemaid | n 2311 e 1 unintentionally |
| ssly, lly, less, none, imate, | n 2365 e 43 patently, skeptical, skepticism, sensational, demoralize, massage, fallacy, diatribe, overestimate, ... | n 2366 e 13 cancer, odds, gamble, roulette, gauss, galilei, disc, relativity, embankment, gravitational, lorentz, ... | n 2367 e 11 likelihood, toulouse, gambler, jakob, pascal, pacioli, blaise, bayes, fermat, cardano, graunt | n 2368 e 1 eerie | n 2369 e 24 childhood, anne, biographer, pater, haus, genitals, restful, piero, equestrian, cosa, superannuate, mir, ... | n 2370 e 29 inaccuracy, plural, prefix, dialect, spelt, associative, dental, dit, germanic, proto, connexion, contre, participle, slav, ... | n 2371 e 2 pod, pied |

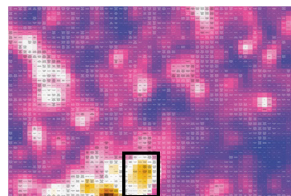


Fig. 3.15 Face of Hofstadter_Godel Escher Bach - Zoom to the cloud of indexes surrounding *trick* and *puzzle*, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/Hofstadter_GodelEscherBach.pdf, 0

Hofstadter_GEB continues by enjoying the paradoxes of self-reference. He plays with tricks, puzzles, humour, curiosities, and uses performers, violins, records, list, their infinitude and interchangeability (Fig. 3.15). He is, of course, influenced by the context of this *Xenotheka*; in a different library his face would change; he would act differently. He refers to the library and library refers back to him. His story starts to turn on itself. The atmosphere is becoming mistier.

Hofstadter_GEB:

Recently, the entire genome of the tiniest known virus, Phi X 174, has been laid bare. One most unexpected discovery was made en route: some of its nine genes overlap—that is, two distinct proteins are coded for by the same stretch of DNA! There is even one gene contained entirely inside another! This is accomplished by having the reading frames of the two genes shifted relative to each other, by exactly one unit. The density of information packing in such a scheme is incredible. This is, of course, the inspiration behind the strange “5/17 haiku” in Achilles’ fortune cookie, in the Canon by Intervallic Augmentation.⁶⁴

What happens when a code contains many other codes, when messages become nested in each other on many levels, each telling a different story in a different context? A self-referential coding. A form within a form. A crystal in a crystal. A spectrum seen from one side as an entropic field of crystals, and from the other, as a negentropic island in action. Depending on which key one has, all the other keys change.

Hofstadter_GEB:

*This is not so different from a DNA molecule, whose symbols, drawn from a meager “alphabet” of four different chemical bases, are arrayed in a one-dimensional sequence, and then coiled up into a helix. Before Avery had established the connection between genes and DNA, the physicist Erwin Schrödinger predicted, on purely theoretical grounds, that genetic information would have to be stored in “aperiodic crystals”, in his influential book *What Is Life?* In fact books themselves are aperiodic crystals contained inside neat geometric forms. These examples suggest that, where an aperiodic crystal is found “packaged” inside a very regular geometric structure, there may lurk a inner message.⁶⁵*

64 Hofstadter, loc 1250.5 / 1928.

65 Hofstadter, loc 408.3 / 1928.

Hofstadter_GEB, clearly indulging himself in his talk, continues by showing different algebraic tricks in playing with self-reference. He is symbolising concepts, changing contexts, bending and twisting objects. He is coding.

Hofstadter_GEB:

Related to this notion of slipping between closely related terms is the notion of seeing a given object as a variation on another object. An excellent example has been mentioned already—that of the “circle with three indentations”, where in fact there is no circle at all. One has to be able to bend concepts, when it is appropriate. Nothing should be absolutely rigid. On the other hand, things shouldn’t be so wishy-washy that nothing has any meaning at all, either. The trick is to know when and how to slip one concept into another.⁶⁶

With great affection, he closes his speech with *Godel Code*. A coding trick that simultaneously encodes a statement and a statement about itself. It is an encoding of an ancient paradox —*A Cretan states: “All Cretans are liars”*— into mathematical terms. A strange loop, as *Hofstadter_GEB* calls it.

Hofstadter_GEB:

Godel had the insight that a statement of number theory could be about a statement of number theory (possibly even itself), if only numbers could somehow stand for statements. The idea of a code, in other words, is at the heart of his construction. In the Godel Code, usually called “Godel-numbering”, numbers are made to stand for symbols and sequences of symbols. That way, each statement of number theory, being a sequence of specialized symbols, acquires a Godel number, something like a telephone number or a license plate, by which it can be referred to. And this coding trick enables statements of number theory to be understood on two different levels: as statements of number theory, and also as statements about statements of number theory.⁶⁷

Godel Code was a beautiful closing statement full of passion. With his fascination with *self-reference, strange loops and meaning*, *Hofstadter_GEB* offered another heaven for *information*,

66 Hofstadter, loc 1564.0 / 1928.

67 Hofstadter, loc 69.1 / 1928.

different than the one discussed by *Brillouin_SIT* and *Wiener_C*. It is a spectrum of possible meanings open to interpretation and fantasy. Here are some of my thoughts sparked by his talk.

Hofstadter_GEB introduces a lot of indexes around topics of information, coding and self-reference while discussing meaning and paradoxes. He creates a rich, playful, and intuitive atmosphere. For him meaning lies in between the subject and the structure, the disk and the jukebox, DNA and its context. He opens meaning to interpretation, he closes it, then he gives meaning a chance. It is almost as if only when the two are perfectly aligned, the meaning can arise. But is he really referring to meaning or is he presupposing a common ground, or a common sense for his messages? What happens if both the message and the context are interchangeable, if noise is present, and chance becomes objective and is handled as an object?⁶⁸ Even more so, if one presupposes that anything can partake in a communication, where does one then find stability or meaning? This becomes rather important when one wants to communicate with atoms, planets, books, language... How to communicate with those that one cannot access and understand directly? One possible way would be to think about information in both the quantum physical and formal ways, as pointed out in the first act by *Brillouin_SIT*. This would imply establishing communication channels and dealing with the noise and shadows in formal and iterative ways while trying to articulate meaning. The digital, in my opinion, actualises this questions, especially in this experiment. If books had an intrinsic and fixed meaning, this *Play Among Books* would be uninteresting at least, if not silly. On the other hand, if one fantasizes that books can talk, have a character of their own, contain information and transmit messages, but their meaning is in another domain—i.e., with the reader, his traditions, and all the books he has read—then one is in another conceptual space with different kinds of questions and intrigues.

A lot to think about.

A moment of silence.

...

End of the First Scene

⁶⁸ For more on chance as an object, see Bühlmann, *Mathematics and Information in the Philosophy of Michel Serres*.

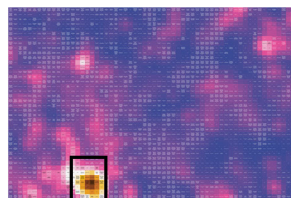
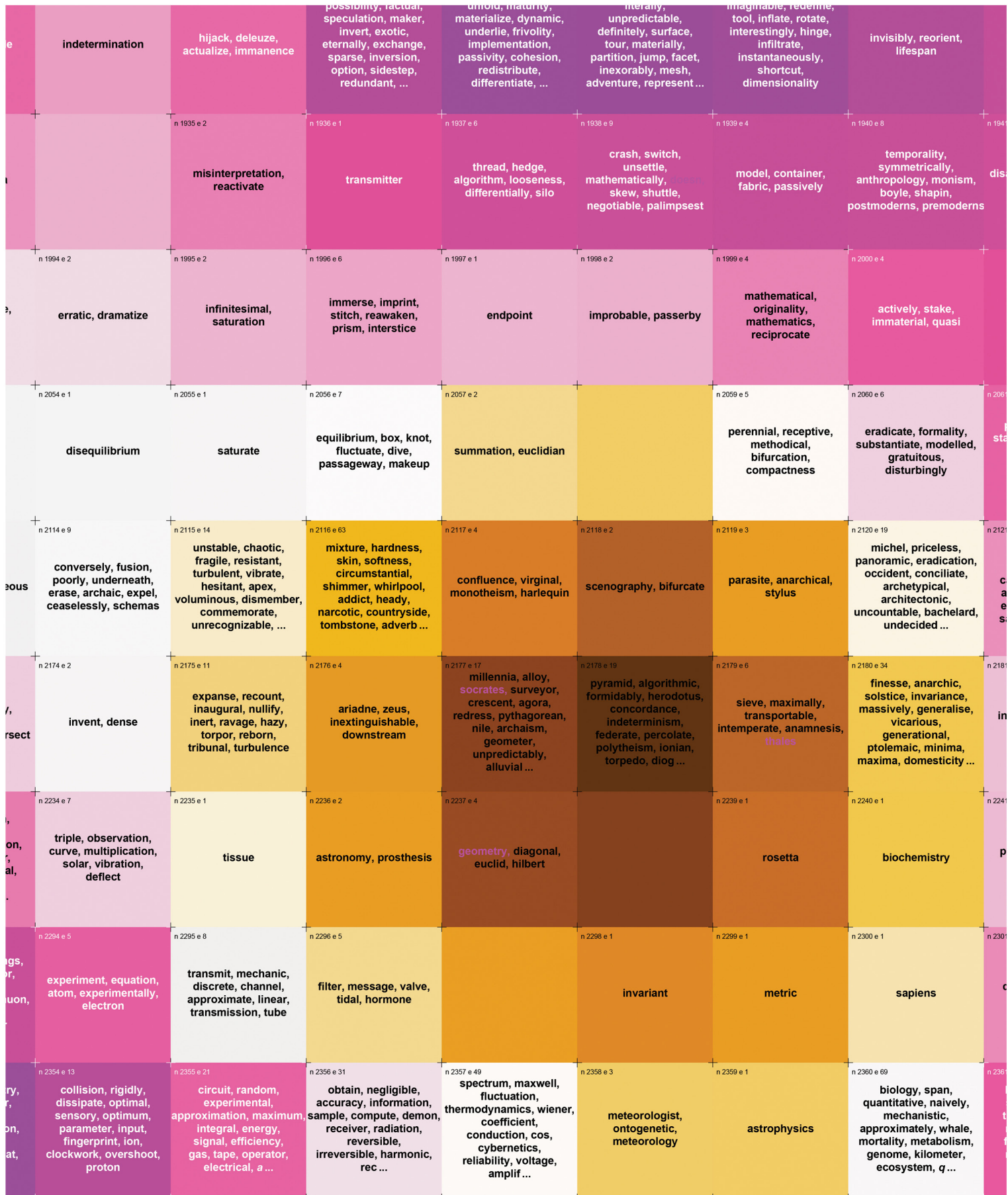


Fig. 3.16 Face of Serres_Geometry - Zoom to the cloud of indexes surrounding *pyramids* and *algorithms*, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/Serres_Geometry.pdf, 0

3.1.1.3.3 Scene 2: Algorithms, Pyramids and their Shadows

Spotlights are turning; the galaxy is changing colours. Let us give the stage to *Serres_G*. His face is kind and focused at the same time. He doesn't respond directly to *Hofstadter_GEB*. Instead, by telling a story, he picks up most of *Hofstadter_GEB* indexes and opens a new plateau in a rather elegant manner. In this *Xenotheka*, *Serres_G* lights up the galaxy in a way that relates to all the concepts at stake. His focus is in between *information*, *data* and *cipher* (Fig. 3.1, Fig. 3.16). Taking this into account, concepts under his light should be excited in a different way and form yet another unexpected atmosphere in the cloud. By looking at his face in the library, *Serres_G* connects *algorithms* and *pyramids*, talks of *percolation* and *polytheisms*, discusses *torpedoes* and *gnomons*, gives a new voice to *Thales* and *Socrates*. On one side of his interest that he shares at the moment, are indexes of *Roseta*, *metric*, *invariant* and *meteorology*, and on the other, *mixtures*, *hardness*, *skin softness*, *shimmer*, *whirlpool*, *turbulences*, *vibrations*, *hesitation*... all surrounded by *disequilibrium*, *information*, *biology*, *substances* and *models* (Fig. 3.16). Many different indexes, fields, disciplines, and interests are forming this cloud. It is intriguing and puzzling. This is just one of his many faces, the third book of foundations.⁶⁹ With Serres, foundations are fluid and many. They never cease.

Serres_G looks at *Hofstadter_GEB* in a friendly way and starts talking. *Brillouin_SIT* and *Wiener_C*, who are sitting on stage next to him, are curiously listening if and how he is going to address consciousness and meaning or, as they refer to it, *the human value of information*. *Hofstadter_GEB* told an interesting story but they were not entirely impressed. *Wiener_C* liked it more, *Brillouin_SIT* a bit less.⁷⁰ *Serres_G*, coming from multiple origins and always bringing a lot to the table, does not discuss meaning, but rather different ways in which a message can become meaningful. He opens the question from a different side: What is communication if anything can potentially communicate? He begins with his closing words:⁷¹

69 This book is a part of Serres's mini-series of three books of foundations: Rome, Statues and Geometry.

70 This assumption comes both as a personal interpretation and reflection of actors' affinities towards concepts, as shown in Fig. 35.

71 The last subchapter of the Serres's book on Geometry. See, Serres, *Geometry*.

Serres_G:

Over the course of the twentieth century we detached ourselves little by little from the space of the earth that we had inhabited for three millennia, so that little by little the space of solar light, of agriculture, of the sacred, of war, of nation states, of the written page disappeared from our sight, all of which geometry expressed, together, in its summing purity.

Now bodies, messages, information, knowledge, light in its speed more than its brightness circulate in mass: a new space of new transports is installed on a global Earth, a space more mixed than pure, more blended, variegated, tiger-striped, zebra-striped, in multiple and connected networks, than smooth or homogeneous.⁷²

He sets up his own stage. The ambience is provided by *Xenotheka*, but it is his choice to light up the galaxy in this way (Fig. 3.13).

Instead of addressing human value of information, he inverts it and starts speaking of different kinds of intelligences where any being or an object can emit, receive, store and process *information*.⁷³ The Earth has changed; information is fast, it circulates in mass, it shimmers, it is chaotic and unstable. His language is coded in many ways, always composed of many threads. We will follow the thread of intelligence. *Serres_G* turns to his three friends and continues.

Serres_G:

The vertical gnomon, the angled framing square, the ruler, compass, perpendicular and pendulum adopt a constant form: a vertical straight line, or horizontal in the case of the balance, perpendicular or round, depending. Form signifies contour, figures, edges, definition and determination in the literal sense as well as the principle of organization of the object. The right angle describes the appearance of the framing square as well as its constitutive skeleton, its construction. Thus form can be regarded as a phenomenon and an essence, aspect or reality. Whether stone, marble, iron or bronze enter into the axis or the sundial as prime matter doesn't matter, provided that it rises perpendicularly from the plane of the ground. The information it shows or gives corresponds to its form and varies with it.

⁷² Serres, *Geometry*, ebook, loc 612.6 / 629.

⁷³ See, Michel Serres, "Revolution Cognitive et Culturelle (Engl. Translation)," *Monas Oikos Nomos* (blog), 2007, <http://monasandnomos.org/2012/11/07/michel-serres-revolution-cognitive-et-culturelle-engl-translation/>.

*According to the form, the information changes. Knowledge lies in the form.*⁷⁴

While talking about objects, *Serres_G* leaves meaning, so dear to *Hofstadter_GEB*, in another space. His triangle is of a different capacity: knowledge, form, and information. It in an abstract manner accompas both living beings and objects, form and matter, artificial and natural. *Serres_G* looks at the gnomon as a kind of intelligence. A local point where information corresponds to form, but as well changes according to the global movement. He talks of knowledge, form and information in a circular movement. It is too much to decipher at once. It resonates well with *Xenotheka*. It is a play of an instrument, similar to mine.

Serres_G:

Language, again, assimilates form and information. The second lies in the first.

*The technologies of old informed matter: the potter at the wheel modeled the clay in order to draw the urn from the circle and his tangential hands; thus from a pile of stones the mason raised the house according to the architect's plan, and the blacksmith twice did violence to the peaceful metal, in the fire and by the hammer. Industry added further plans to the crafts but along the same paths. We have changed all that. Our technologies today tend instead to explore or recognize first and foremost the refined and complex forms scattered in the things of the world and to chose one of them or to mix several of them when they correspond to our aims and the constraints of the manufacture being considered: these forms even precede them sometimes. Of course, we still assemble clocks out of metal as in the past, but a given crystal, a given molecule, even a given atom or isotope, now make for better watches, automatic and accurate, and some other given crystal functions as a valve or semiconductor.*⁷⁵

A mechanical watch, a gnomon, and a crystal can all measure time. The first one is constructed and informed, the other two are acknowledged and informing. They are active, artificial and found in the world: automata; they work by themselves. They send messages. Can we read them? What do they want to say? What kind of objects are they? Are they subjects, intelligent, with a character of their own? For me, it depends on whether I want to talk to them or look at them. A captivating twist. The meaning of *Hofstadter_GEB*'s message is lost, but his message starts to tell more in *Seers_G*'s hands than *Hofstadter_GEB* could imagine at this moment. Where is he taking the discussion?

⁷⁴ Serres, *Geometry*, ebook, loc 492.8 / 629.

⁷⁵ Serres, loc 494.2 / 629.

Serres_G:

The entirely informed forms lie in the things themselves, where it suffices to collect them; thus our works reverse the ancient processes by which information only came from our skillful hands or expert understanding. Idealism, narcissistic, only found in the world its own image, which it imprinted there with great effort. Science and technology reduced the real to their representations. Yet the loose earth and clay, the stone before the device, the metal in its gangue, in themselves and by themselves crystalline, conceal a thousand artificial objects as in a horn of plenty that the ancient hands and wills ignored by plugging it up. Our intelligence, our slightly stupid, violent, crude enterprise, had closed the treasure's door, even though the world hides a thousand times more marvels than our decisions. The sense, the direction, the project of the work are reversed. On this Sunday of technologies we recognize first of all that the Universe has already forged much: this is the fount of information.⁷⁶

In a way, *Serres_G* talks about the big plenty and the great many. *The entirely informed forms lie in the things themselves*. They are scattered around the universe. If one can recognize them, start to communicate and invent their artificiality, they become part of our world and begin to talk in as many languages as we can learn. These are the artificial communication channels. It is our contract with objects of the world, my contract with books. I don't need to understand them, but I would like to learn how to get to know them, or at least try to talk to them. Maybe we can become friends. As *Serres_G* suggests, the universe has already forged much. He continues in an even more surprising way.

Serres_G:

There isn't any matter in the Universe. Otherwise the physical sciences would have ended up encountering limits to their progress or their history, boundaries foreseen and placed by materialist metaphysics. This latter vanishes with the progress of the physical sciences, which never cease discovering forms without ever encountering any matter they don't name, so as to only recognize mass. Matter doesn't exist; only forms are found, like atoms, and all the way down to the tiniest particle, with or without mass, innumerable forms, as

76 Serres, loc 494.2 / 629

*well as their chaotic or ordered mixture, a system or noise which tosses and shakes their innumerable multiplicity as in a basket. There is only information, whose enormous stock in the world, no doubt expressible by a very large number, mathematically finite but physically infinite, leaves science in an open history. Even weight codes a field of forces, even any aggregate, colloid, or organism recodes a subset of coded forms. Only mixture and disorder, noise, chaos, give the illusion of matter.*⁷⁷

Code, information, matter and mass. As he continues, my thoughts start to drift... There isn't any matter, information is enormous, forms recorded as subsets of coded forms... A black box. Assemblages, organic and inorganic proliferate. None are pure, all are mixtures of many kinds of creatures and objects, of multiple worlds, of reality and fiction, of various media, of particular concepts, restless, unsystematic, consistent... Always on the move, making noise, talking in their own ways, by complementing and challenging each other, enriching capacities, producing different constellations... These are the actors in *Xenotheka*, encoded informed forms, poluted crystals.

Serres_G changes the direction and continues.

Serres_G:

Consequently, white intelligence is immanent and no doubt coextensive with the Universe. The world adds up and gives an enormous stock of forms. Here again is the source, transparent, the fundamental Earth of Geometry, once again wonderfully named.

*There exists an immense objective intelligence of which artificial and subjective intelligence constitute small subsets. Our intelligence is not an exception in black surroundings that would passively wait for us to inform them. The object that we know is forged by us in a way that's analogous to certain things of the world, forever our guides.*⁷⁸

Serres_G opens up another space to rethink the notions of intelligence and Artificial Intelligence.⁷⁹ With *Serres_G*, there are many kinds of intelligences: *white intelligence* which is coextensive with the universe, *immense objective intelligence*, which is, among other things,

77 Serres, loc 495.6 / 629.

78 Serres, loc 497.0 / 629.

79 The question is how to rethink free Artificial or Machine Intelligence out of its predominantly technocratic and tragic scenarios where AI is mostly seen in contrast and as competition to natural intelligence. See, "Artificial Intelligence," *Wikipedia*, August 14, 2018, https://en.wikipedia.org/w/index.php?title=Artificial_intelligence&oldid=854873425.

constituted out of *artificial intelligence* which sometimes lies in the things themselves, and a familiar *subjective intelligence*. *Human intelligence* is not rare or an exception in the universe anymore but is surrounded by many other intelligences. These intelligences are different in kind and not in direct competition. Intelligence of Earth, intelligence of language, machine intelligence, human, plant and animal intelligence, they are not all the same, and they are not in direct contest, but not neutral to each other. They coexist and are related. Each one has a wisdom of its own.

In this manner, in a *Play Among Books*, I acknowledge intelligence of libraries and books, establish communication channels and alphabets in order to talk to them.

Hofstadter_GEB is fascinated and puzzled like me. *Serres_G* continues.

Serres_G:

*Intelligent, the gnomon intercepts the flow descending from the Sun, and both of them, all by themselves, draw on the ground, out of which comes this erected statue, the objective and partial information of the shadow that speaks locally about the form of the global world. Geometry still slumbers beneath the earth or dreams in the brilliance of the Sun: the gnomon of the ancient Greeks or the Babylonians awoke one part of it along the singular forms common to the shadow and the light.*⁸⁰

Serres_G brings the many and plenty to the table. From ancient Greeks to the global world, to different forms of intelligence, the universe, and back to the gnomon. Always trying to talk about both the universal and the singular, the “*Matter, black box, and form, white box.*”⁸¹ *Serres_G* opens many doors to think about information which go beyond linear narratives and intrinsic meaning to a space where nature and customs articulate each other, where language is wise and intelligence coextensive with the universe.

...

End of the Second Scene

80 Serres, *Geometry*, ebook, loc 497.0 / 629.

81 Serres, loc 492.8 / 629.

End of the Second Part

Act one has finished. The discussion continues behind the curtain...

By playing an *Informational Instrument*, by performing with it, and in trying to articulate the notion of *information*, I am slowly learning how *Xenotheka* behaves and reacts to my questions. We are communicating. I am getting to know my library, its atmospheres and moods. I am learning how to play an *Informational Instrument*. Books get an objective intelligence by their position in a specific context of a library. They start to behave in a similar manner to *Serres_G*'s informed forms. This constellation is by all means a comfortable and challenging one. It is a journey through a galaxy of concepts, where one meets books and talks to concepts. *Xenotheka* has so far offered four faces to approach *information*, and a few more out of the many that are about to come. We were navigating between highly technical articulations where with *Brillouin_SIT* and *Wiener_C* information got both a quantum and a cybernetic face. With *Hofstadter_GEB*, it went into a self-referential loop trying to understand its meaning, but instead of figuring this out, a question of intelligence was articulated in a captivating way. Intelligence, seen through the lens of *Serres_G*, becomes native to the universe, while artificial intelligence and subjective intelligence are just its tiny parts. *Xenotheka*, and its galaxy of concepts opened up a new way of rethinking concepts and ideas, which was, in a way, always already there.

Let us continue with the second act and see how the story develops.

End of the First Act

DATA

3.1.2.1 *Dramatis Personae*

The break is over. The second act should start any moment now. Its plot is arranged in a way that in our fourfold articulation the second spectrum of actors discusses the index of *data* (Fig. 3.5). How is *data* conceptually different from the notion of *information* in this specific context (Fig. 3.3, List 3.2)? *Xenotheka* renders them similar but in a different manner (Fig. 3.1). What are the similarities and differences, and how do the articulations diverge? The library will never expose these contrasts in an explicit way. Differences are subtle but refined, always appearing in the cloud without prior categorization, but according to an encoding and a library. The air is implicitly filled with *data*; it is being articulated by its four main protagonists: *West_S*,⁸² *Carpo_SDT*,⁸³ *Negroponete_BD*,⁸⁴ and *Hofstadter_IASL*.⁸⁵ As discussed before, the hypothesis is that, in this context, the notion of *data* emphasises applications in a grounded, encapsulating and generic way.⁸⁶ *Data* should provide another rendering and an atmosphere of the idea which is explicitly not there but indexed with *information*, *data*, *cipher*, *code* and associated clouds.

The actors are on stage. They are challenged by the first talk and excited to add twists and turns to the discussion. They are comfortably seated around the table and waiting for the talk to begin (Fig. 3.17).

Here is a hint from the library. According to actors' probable affinity toward the concept (Fig. 3.17), *West_Scale The Universal Laws of Growth* and *Carpo_The Second Digital Turn* are presumably more engaged with the concept, while *Negroponete_Being Digital* and *Hofstadter_I Am a Strange Loop* should be more relaxed and open to wider interpretations of *data*.

82 Geoffrey West, *Scale: The Universal Laws of Growth, Innovation, Sustainability, and the Pace of Life in Organisms, Cities, Economies, and Companies*, First Edition (New York: Penguin Press, 2017), ebook.

83 Mario Carpo, *The Second Digital Turn: Design Beyond Intelligence*, 1 edition (Cambridge, Massachusetts: The MIT Press, 2017), ebook.

84 Nicholas Negroponte, *Being Digital*, 1 edition (New York, NY: Vintage, 1996), ebook.

85 Douglas R. Hofstadter, *I Am a Strange Loop*, Reprint edition (New York, NY: Basic Books, 2008), ebook.

86 This was elaborated in the introduction to the first play, 3.1.0.3 *Data*.

The form of the *second act* is a discussion between the four. The four actors sit together at the table and talk:⁸⁷

West_Scale The Universal Laws of Growth as *West_S*

Carpo_The Second Digital Turn as *Carpo_SDT*

Negroponte_Being Digital as *Negroponte_BD*

Hofstadter_I Am a Strange Loop as *Hofstadter_IASL*

87 From now on, we will refer to these actors in abbreviated forms as indicated.

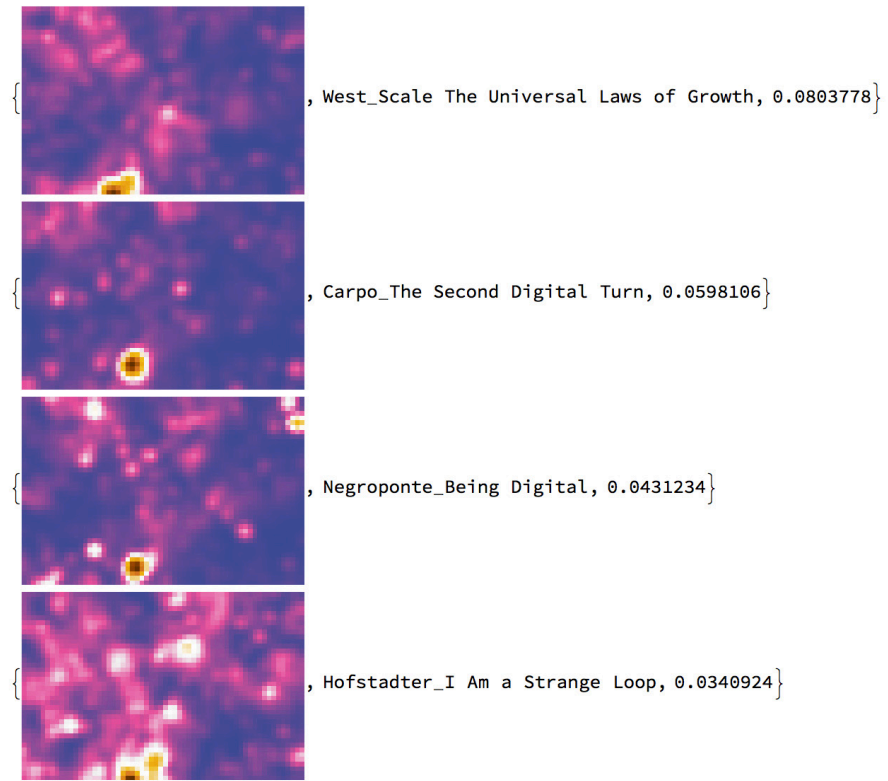


Fig. 3.17 Four books, four actors, four faces of a concept: *data*, rendering_03_RW_4060_r_50it21d

3.1.2.2 TABLE FOR FOUR: A Cloud of Data

3.1.2.2.1 Prologue

Welcome to the second act. The curtain is up, the lights are on, the table is set. The four actors —*West_S*, *Carpo_SDT*, *Negroponte_BD* and *Hofstadter_IAASL*— are already on stage and talking amongst themselves. Inside *Xenotheka*, these four actors seem to be the most eager to discuss the topic of *data* via its differences and similarities to the surrounding concepts (Fig. 3.3). Actors and their characters in this act should express another ambient, different to the one that was present while discussing *information*. In *Xenotheka*, *information* and *data* are two overlapping clouds with different atmospheres and diverse conceptual spaces. They articulate a similar idea in distinct manners. Their protagonists, our actors, have particular styles and languages in which they express themselves. According to the speakers, the form of discussion changes. While discussing *information* in the first act, each actor had a very refined approach to it; some were more unique in their approach but broader in their scope, others working with theories, e.g., *Serres_G* was exceptional in his approach and broad in his scope, *Brillouin_SIT* was focused on approaching and challenging theories in a formal way, etc. Each required more space and concentration to express his thoughts. The assumption is that when gathered around *data*, its protagonists don't seem to be interested in refined formal approaches. Their interest is elsewhere. They are using different strategies more to promote rather than challenge an idea, and are more willing to express their individual readings of the topic and debate it in detail. Indexes around *data* are more applied and crisp and, therefore, I presuppose it is easier to change their contexts in a fast manner and still communicate (Fig. 3.3). In the second act, the stage has been set as a table for four.

The stage proceeds with its standardized introduction of the actors. The formalities will be accompanied with a profile of an imagined character and a scenario, which I based on the articulations of the actors' faces in the context of *Xenotheka* and on the structure of each book.⁸⁸ This is a part of the process of communication between the library, actors, and me. It is artificially staged.

Let us meet the actors.

⁸⁸ Here, I refer to the titles of books, their chapters and subchapters.

3.1.2.2.1.1 Actor 1:

Scale: The Universal Laws of Growth, Innovation, Sustainability, and the Pace of Life in Organisms, Cities, Economies, and Companies by Geoffrey West from 2017

Imagined scenario for actor 1:

Knowing Everything

city -> 933, scale -> 782, life -> 482, time -> 465, size -> 390, system -> 385, year -> 383, increase -> 365, network -> 363, energy -> 340, company -> 339, person -> 322, growth -> 318, social -> 303, just -> 299, law -> 294, rate -> 287, large -> 281, new -> 277, use -> 272, numb -> 260, theory -> 257, like -> 249, datum -> 249, great -> 249, long -> 227, example -> 218, power -> 216, science -> 209, lead -> 205, live -> 201, small -> 199, understand -> 198, result -> 194, structure -> 182, way -> 179, cell -> 178, need -> 177, think -> 177, organism -> 171, change -> 170, work -> 168, dynamic -> 167, process -> 166, age -> 166, world -> 164, innovation -> 163, big -> 163, urban -> 162, individual -> 162

West_S plays a protagonist and an advocate of universal laws. With a strong interest in growth, innovation, sustainability, and the pace of life, *West_S* is searching for a measure of everything. His focus are *cities* and *scaling laws*, the *big picture* with a clear programme. He looks like a firm and confident actor which seems to have no doubts. He is always in a good mood.

In the context of the library, his face appears concentrated on *data*, *scale* and *growth* (Fig. 3.18, Fig. 3.19). For *West_S*, these indexes give an appearance to *prediction*, *metrics*, *routine*. They are *enormous*, *physical* and *biological* (Fig. 3.19). He doesn't want to speculate; he wants to measure, understand and act. With his clear pragmatics of scaling laws, *West_S* is looking for the scale of everything in order to generate a master plan. He lives in linear time, always in the present moment. Time serves him; he uses it to predict future events.

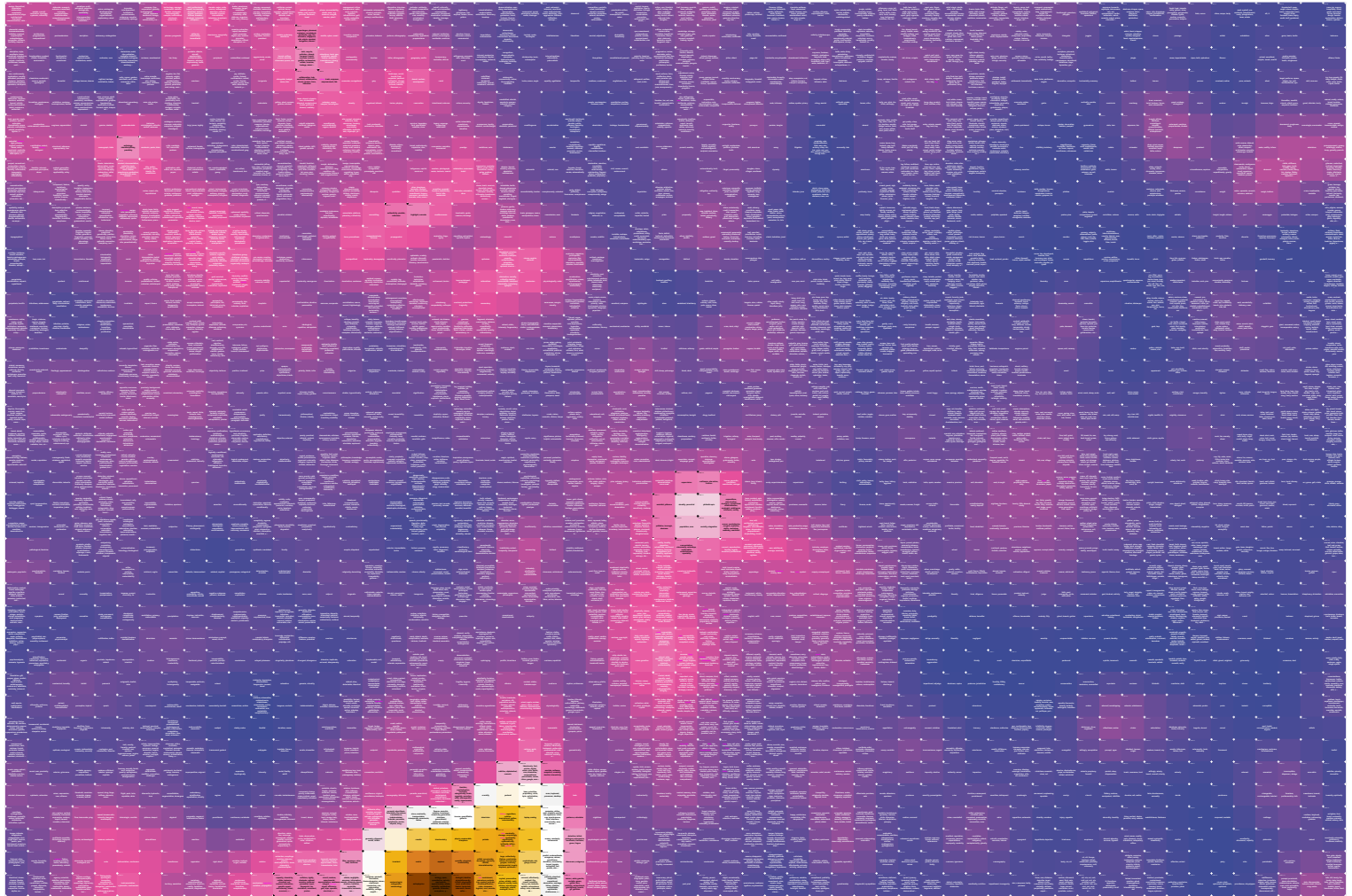


Fig. 3.18 Face of *West_Scale The Universal Laws of Growth*, rendering_03_RW_4060_r_50it21d

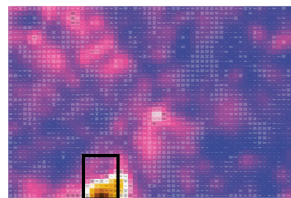
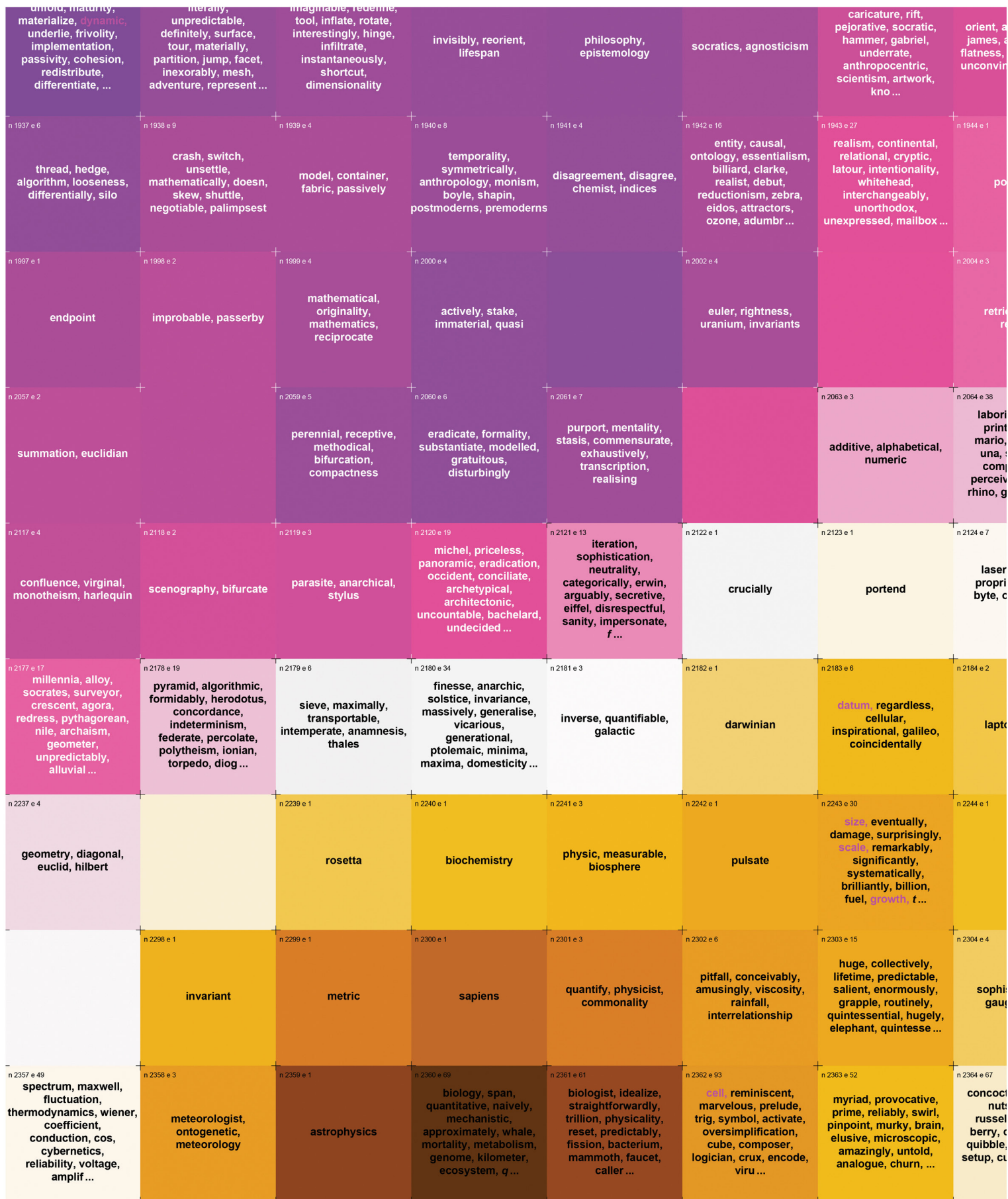


Fig. 3.19 Face of *West_Scale The Universal Laws of Growth* - Zoom to the cloud of indexes surrounding the index of *biology*, rendering_03_RW_4060_r_50it21d http://www.romanvlahovic.com/xenotheka/West_ScaleTheUniversalLawsOfGrowth.pdf, 0  1

3.1.2.2.1.2 Actor 2:

The Second Digital Turn, Design Beyond Intelligence, by Mario Carpo from 2017

Imagined scenario for actor 2:

The Chronicler

design -> 244, digital -> 240, use -> 230, datum -> 185, time -> 184, new -> 181, technology -> 169, today -> 139, science -> 127, computer -> 123, make -> 121, way -> 117, print -> 113, good -> 112, modern -> 110, know -> 97, base -> 95, architecture -> 95, point -> 94, search -> 93, tool -> 93, need -> 90, alberti -> 89, object -> 88, work -> 86, model -> 84, process -> 82, image -> 82, technical -> 81, history -> 80, early -> 80, mass -> 78, numb -> 74, machine -> 74, human -> 72, long -> 70, cost -> 70, example -> 65, start -> 64, curve -> 63, logic -> 63, just -> 63, build -> 63, theory -> 62, mathematical -> 61, like -> 61, art -> 61, book -> 61, architectural -> 61, computational -> 60

Carpo_SDT plays the Chronicler. By always looking backwards—but not too far back—he accounts for an immediate past of present-day digital architecture. *Carpo_SDT* is focused on the *digital design* in the age of *data*. For him, it is about *technology*, *science*, *computers*, *architecture*, and he calls it *Design Beyond intelligence*.⁸⁹ As a manifestation of *A new kind of science*⁹⁰ in architecture, *Carpo_SDT* observes and describes a phenomenon which he encapsulates in *The second digital turn*.

Under his spotlight, *Xenotheka* exhibits a single strong glare (Fig. 3.20). With *Carpo_SDT*, *design* as a concept starts to talk with indexes of *computation*, *data*, *computer* and *digital* (Fig. 3.21). The atmosphere in his cloud carries the mood of applications and applied thinking: *scan*, *keyboard*, *processor*, *numeric*, *software*, *interface* (Fig. 3.21). As a Chronicler of the digital and immediate past, *Carpo_SDT* is commenting on and giving credit to the protagonists of *Design Beyond Intelligence*. He addresses and celebrates them as the *digital avant-garde*.

⁸⁹ To relate it back to the first act, I will ask a question: What would this mean in the context of Seres_G's notion of intelligence, where intelligence coexists with the universe?

⁹⁰ *A New Kind of Science* is a best-selling, controversial book by Stephen Wolfram. See Stephen Wolfram, *A New Kind of Science*, 1 edition (Champaign, IL: Wolfram Media, 2002).

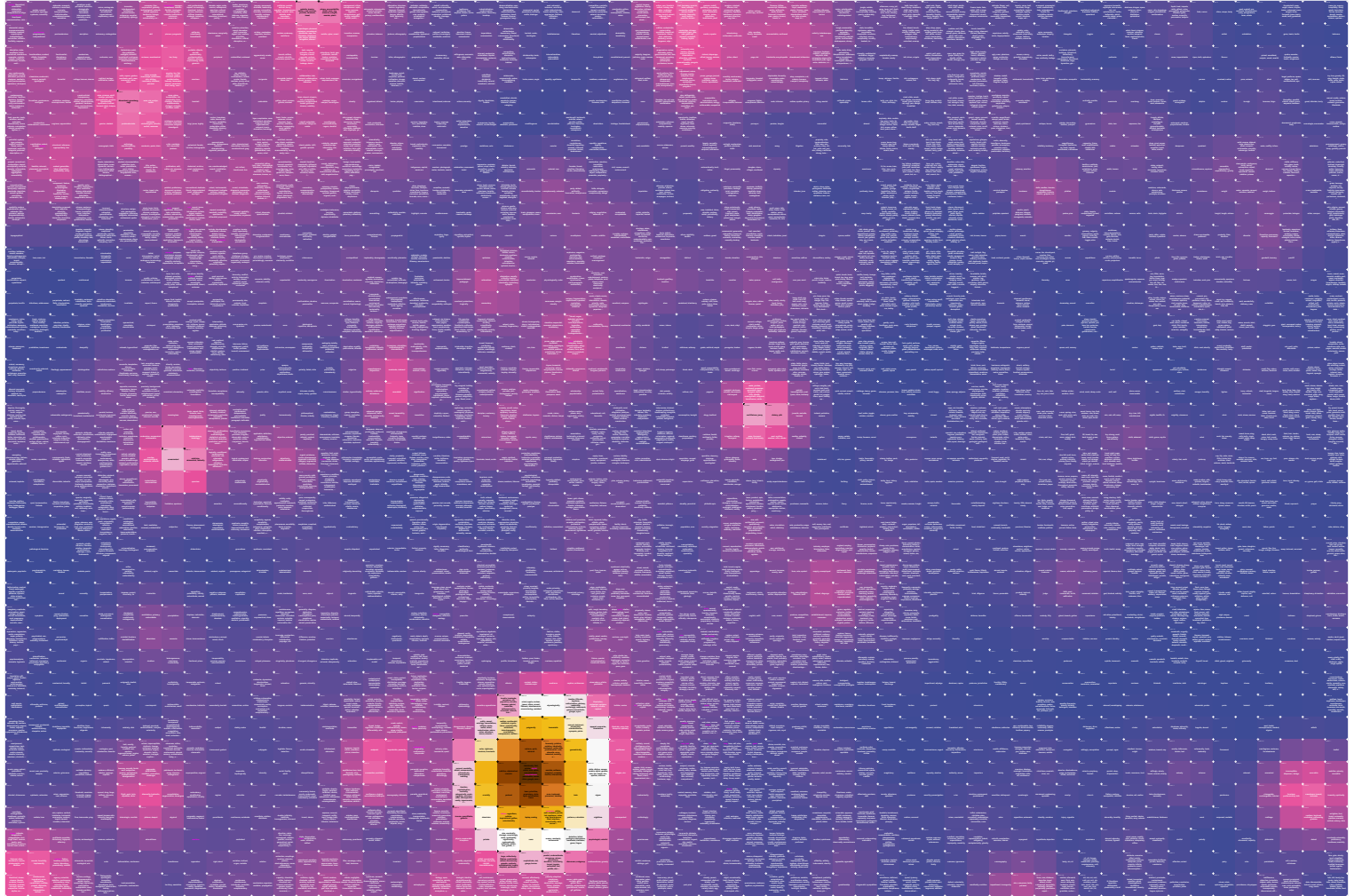


Fig. 3.20 Face of *Carpo_The Second Digital Turn*, rendering_03_RW_4060_r_50it21d
http://www.romanvlahovic.com/xenotheka/Carpo_TheSecondDigitalTurn.pdf, 0  1

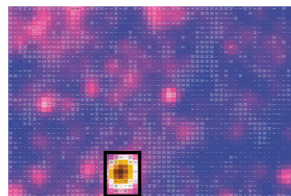
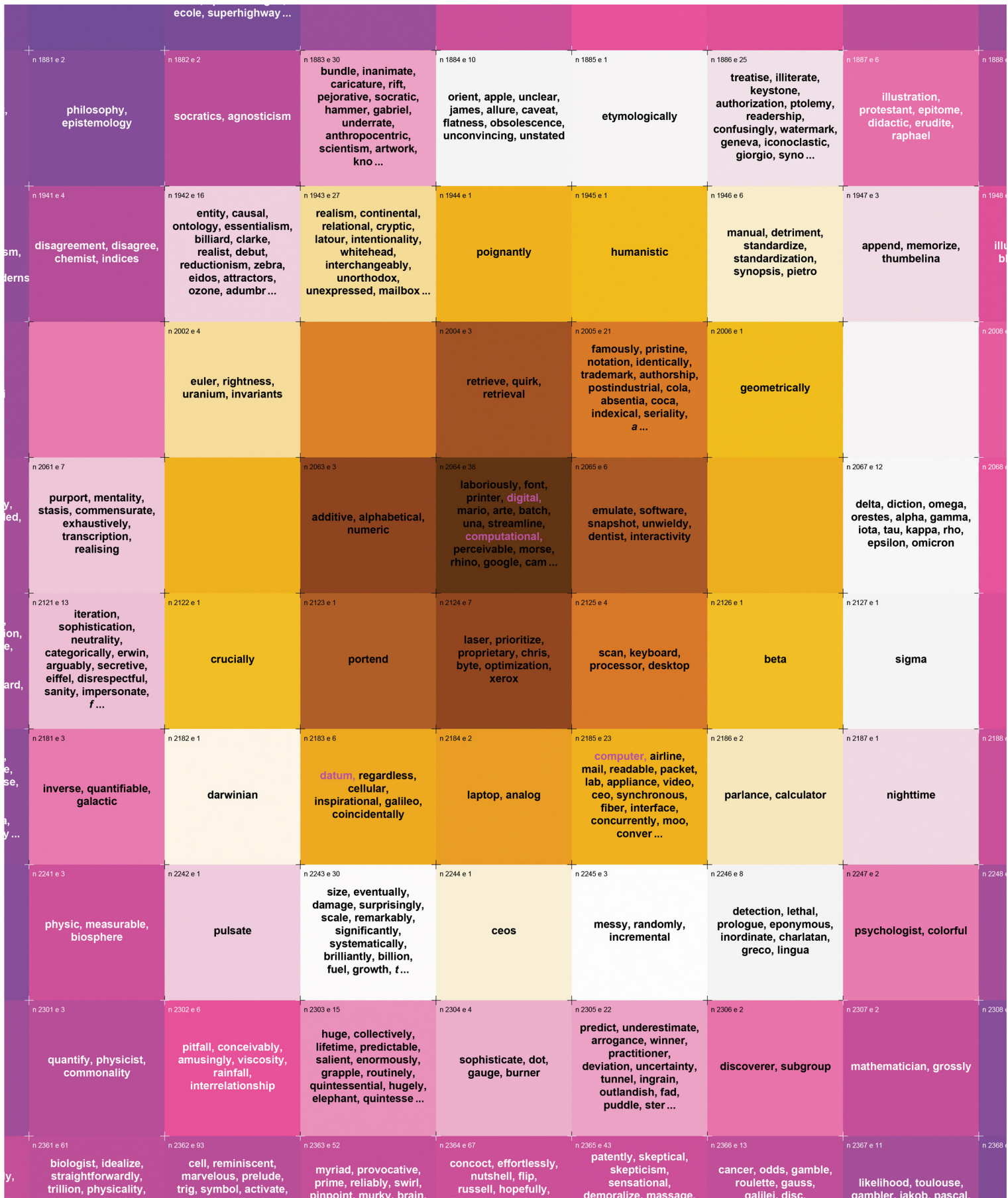


Fig. 3.21 Face of *Carpo_The Second Digital Turn* - Zoom to the cloud of indexes surrounding the index of *digital*, rendering_03_RW_4060_r_50it21d_words_vertex http://www.romanvlahovic.com/xenotheka/Carpo_TheSecondDigitalTurn.pdf, 0  1

3.1.2.2.1.3 Actor 3:

Being Digital, by Nicholas Negroponte, from 1995

Imagined scenario for actor 3:

Diary of the future

computer -> 350, bit -> 304, like -> 217, use -> 208, person -> 208, time -> 202, digital -> 188, year -> 136, good -> 133, information -> 128, system -> 118, way -> 114, today -> 112, new -> 111, just -> 109, think -> 105, make -> 105, call -> 104, television -> 100, need -> 92, line -> 89, machine -> 89, look -> 86, know -> 86, telephone -> 85, work -> 84, world -> 84, change -> 83, interface -> 80, different -> 80, human -> 79, example -> 78, move -> 78, display -> 77, image -> 77, mean -> 77, future -> 75, video -> 75, small -> 74, come -> 73, media -> 73, say -> 70, company -> 69, home -> 67, datum -> 67, million -> 65, fact -> 63, book -> 63, point -> 62, word -> 62

Negroponte_BD leads a digital life in a form of a book. This book is a fictional and optimistic diary of the future where *bits*, *atoms*, *interfaces* tell *Digital Fables and Foibles*.⁹¹ The *bit* always wins in his stories. *Negroponte_BD* “[Offers] profound insight and surprising visions of the digital future.” —*The New York Times*.⁹² Unlike *Carpo_STD* who chronicles the past, *Negroponte_BD* produces applied fantasies about the future: “*Daily mE*”.⁹³

Negroponte_BD's daily fictions speculate about technology. They talk about *computers*, *videos*, *interfaces*, and *digital* in the context of *lasers*, *data*, *software*, *emulations*, *laptops*, and *processors* (Fig. 3.22, Fig. 3.23). In his diary of the future, *Negroponte_BD* imagines and places not yet existing digital objects in fictional scenarios where they become animated. They start to transmit messages. His stories are flavoured with optimism, entrepreneurship, prediction and technology. He creates an atmosphere of an applied and branded future. His passion is science fiction.

91 See, Negroponte, *Being Digital*, ebook, loc 2.0 / 380.

92 Negroponte, *Being Digital*, loc 497.0 / 629.

93 *Being Digital* also introduced the “Daily Me” concept of a virtual daily newspaper customized for an individual's tastes. See, Negroponte, *Being Digital*.

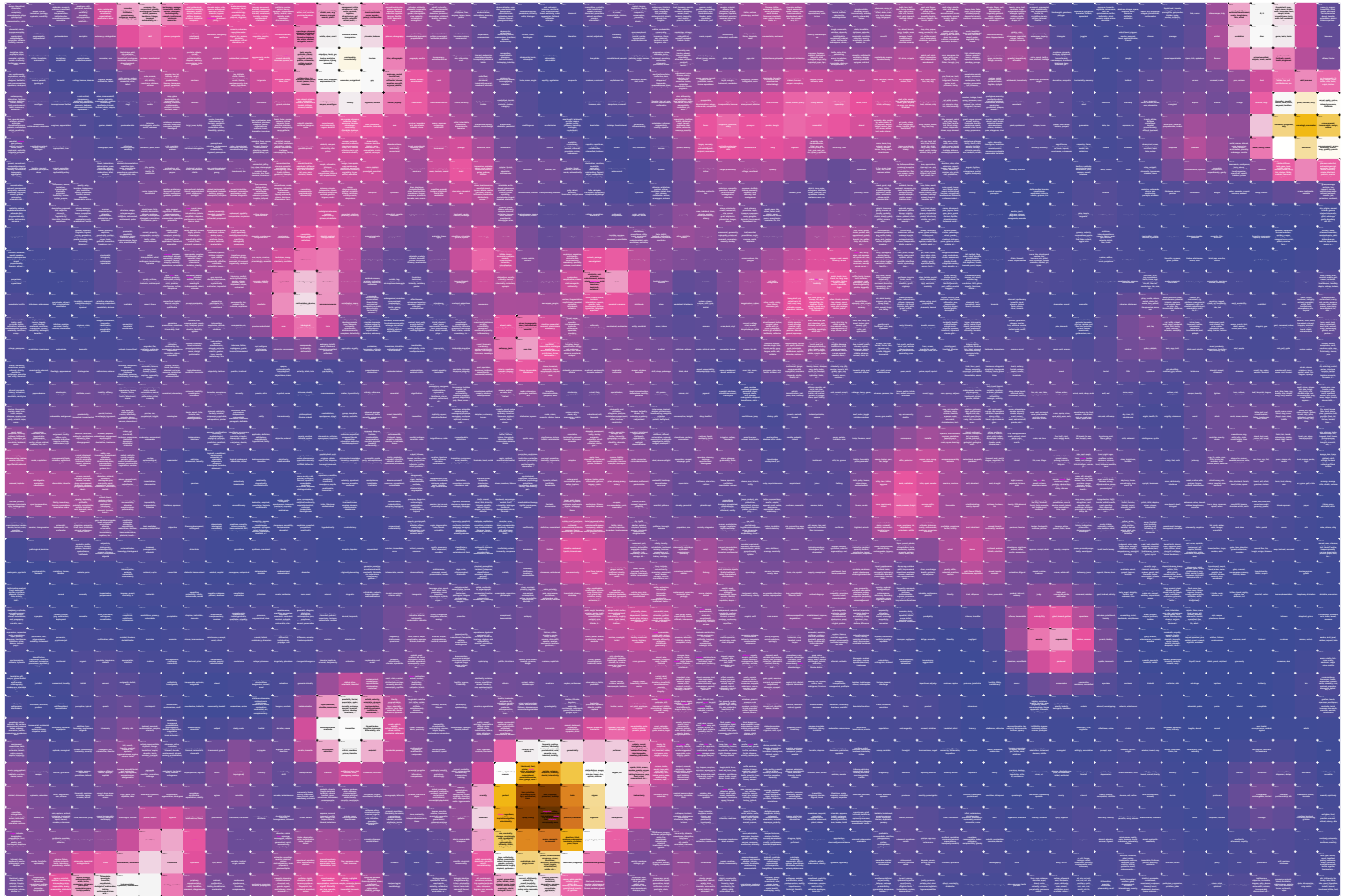


Fig. 3.22 Face of *Negroponte*_{BD}, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/Negroponte_BeingDigital.pdf, 0  1

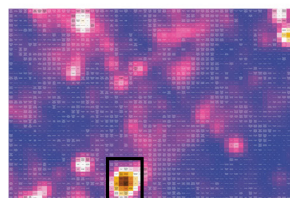


Fig. 3.23 Face of *Negroponte*_{BD} - Zoom to the cloud of indexes surrounding indexes of *computer* and *interface*, rendering_03_RW_4060_r_50it21d
http://www.romanvlahovic.com/xenotheka/Negroponte_BeingDigital.pdf, 0  1

3.1.2.2.1.4 Actor 4:

I Am A Strange Loop, by Douglas Hofstadter from 2007

Imagined scenario for actor 4:

Meditation on Self

just -> 564, brain -> 492, think -> 393, like -> 372, person -> 353, level -> 324, mean -> 300, say -> 298, word -> 290, loop -> 286, know -> 281, make -> 275, come -> 265, human -> 264, thing -> 260, self -> 248, way -> 247, time -> 244, symbol -> 238, world -> 230, idea -> 219, numb -> 217, number -> 214, inside -> 213, feel -> 209, soul -> 204, call -> 202, strange -> 188, different -> 187, pattern -> 180, life -> 179, fact -> 176, point -> 176, kind -> 176, book -> 172, go -> 168, take -> 163, system -> 162, consciousness -> 162, year -> 161, use -> 155, give -> 155, experience -> 155, physical -> 154, question -> 152, long -> 149, far -> 148, mind -> 145, sense -> 143, mat -> 138

Hofstadter_IAASL plays a *Strange Loop* in this play. He meditates on the self and reappears as the rearticulated version of *Hofstadter_GEB*. The former is more concerned with *data*, the latter with *information*. Both are always consistent in their interest in the *self* and *symbols*, *patterns* and *experiences*. They are constantly in a *loop* around self-reference. Actually, *Hofstadter_IAASL* is a strange loop, and he likes it.

The loop creates a paradox. *Hofstadter_IAASL* doesn't want to leave the paradox. He is the logical paradox. His face celebrates *models*, *self-reference* and *strange loops*. His role in this drama is a formal one and, at the same time, a romantic meditation on the self. His cloud is familiar; the atmosphere is slightly different: *data*, *symbol*, *brain*, *sophistication*, *puzzle* and *analogy*. *Hofstadter_IAASL* always appears in iterations.

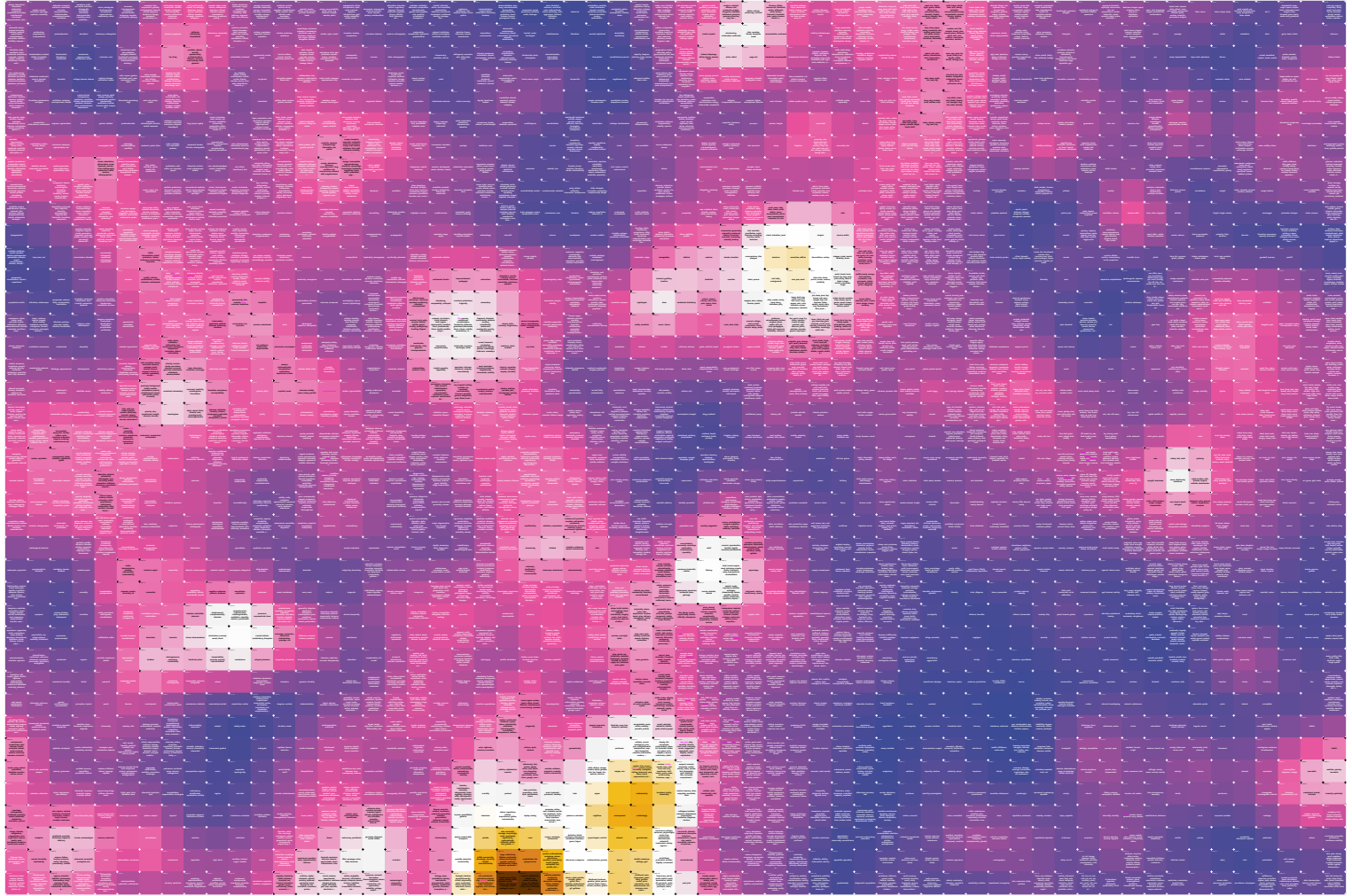



Fig. 3.24 Face of *Hofstadter_IAASL*, rendering_03_RW_4060_r_50it21d
http://www.romanvlahovic.com/xenotheka/Hofstadter_IAMaStrangeLoop.pdf, 0  1

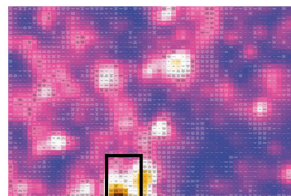


Fig. 3.25 Face of Hofstadter IAASL - Zoom to the cloud of indexes surrounding indexes of symbols, tricks and puzzles, rendering_03_RW_4060_r_50it21d http://www.romanvlahovic.com/xenotheka/Hofstadter_IAMaStrangeLoop.pdf, 0

...

The introduction is over. The four are sitting at the table. Is this the most suitable group to discuss the problems and merits of data? This is certainly not the right question. The assumption is that by placing them on stage we will instigate an interesting story around *data* and be able to relate it back to *information*. Let us remember that the library and their interest in *data* is what keeps these actors together. This is the artificial context that the actors will try to challenge and enrich. Imagined scenarios are here to get to know the actors and create tensions and expectations before the discussion starts. Let us recapitulate the imagined scenarios. Each actor has its own direction and time. *West_S* is looking at the present and he tries to understand it. *Carpo_SDT* is observing the immediate past and is commenting and accounting. *Negroponete_DB* is interested in the future; he is inventing fictional scenarios and waiting for them to become true. The fourth actor, *Hovstadter_IAASL*, is a bit different and more complicated. He is out of time and he meditates on the self. This is his second iteration, whereas *Hofstadter_GEB* was the first iteration.

Let us hear what the actors have to say and how they will react to the imagined scenarios and the given stage.

...

3.1.2.2 Scene: Law, Fantasy, Meditation and Chronicles

One table and four actors. The table is full of data. The atmosphere is calm; actors are playing with data. Some are trying to make sense out of it, the others articulate meaning, but each one performs in its own way. Indexes are shifting all around the table. Clouds of data are forming; the atmosphere is fluctuating. The discussion starts. *West_S*, after he has finished analysing and sorting data into tables, starts talking by introducing his programme which wants to *Know Everything*.

West_S:

The existence of these remarkable regularities strongly suggests that there is a common conceptual framework underlying all of these very different highly complex phenomena and that the dynamics, growth, and organization of animals, plants, human social behavior, cities, and companies are, in fact, subject to similar generic “laws.”

This is the main focus of this book. I will explain the nature and origin of these systematic scaling laws, how they are all interrelated, and how they lead to a deep and broad understanding of many aspects of life and ultimately to the challenge of global sustainability. Taken together, these scaling laws provide us with a window onto underlying principles and concepts that can potentially lead to a quantitative predictive framework for addressing a host of critical questions across science and society.

This book is about a way of thinking, about asking big questions, and about suggesting big answers to some of those big questions.⁹⁴

Regularities, common conceptual frameworks, similar generic laws, big questions and big answers across both science and society. A very strong and bold statement. There seems to be no doubt in how to approach the world for *West_S*. On the other hand, the other three actors don't seem to be completely convinced. It is almost too much to begin with. What to say after this? After a moment of silence, *Carpo_SDT* proposes and advocates for *a new kind of science* in a polite way,⁹⁵ with which he wants to challenge *West_S*'s holistic approach and keep at least a few distinctions.

Carpo_SDT:

But while computers do not need theories, we do. We should not try to imitate the iterative methods of the computational tools we use because we can never hope to replicate their speed. Hence the strategy I advocated in this book: each to its trade; let's keep for us what we do best.⁹⁶

Carpo_SDT goes further. He wants an inversion from top-down, to bottom-up. Instead of generic laws promoted by *West_S*, *Carpo_SDT* goes the other way. He wants to ask the crowds. But

94 West, *Scale*, ebook, loc 18.9 / 1064.

95 Wolfram, *A New Kind of Science*.

96 Carpo, *The Second Digital Turn*, ebook, loc 394.5 / 409.

his moves are just the other side of the same coin. *Carpo_SDT* looks at *West_S* and continues.

Carpo_SDT:

Instead, tragically, the opposite seems to be happening. In all aspects of contemporary culture, and most remarkably in economics and politics, theories today are universally reviled. With theories, all the makers and markers of theory, and many ingredients of theory-making, are being equally and drastically demoted: facts, observation, verification, demonstration, proof, experts, expertise, experience, competence, science, scholarship, mediation, argument, political representation, and so on—in no particular order. Why waste time to argue? Ask the crowds. Why waste time on a theory? Just try it and see if it works. But computational simulations are made of bits and bytes, and can be rerun at will; the next atomic blast in physical reality may not allow for a retrieval.⁹⁷

Carpo_SDT, by pushing in the opposite direction of *West_S*, ends up with a similar message. Don't waste your time on theory; the crowds will show you the way. *West_S* looks at him and makes a sarcastic remark in a half-voice and in a half-friendly manner: *Is this the Second Digital Turn? Giving the law to the crowd?*

During this odd moment of silence, *Negroponite_BD* makes his appearance by adding another inversion. Instead of describing the immediate past like *Carpo_SDT*, he starts talking about the immediate future where a lot of clear lines start to blur. He is reading from his diary of the future.

Negroponite_BD:

Personal computers will make our future adult population simultaneously more mathematically able and more visually literate. Ten years from now, teenagers are likely to enjoy a much richer panorama of options because the pursuit of intellectual achievement will not be tilted so much in favor of the bookworm, but instead cater to a wider range of cognitive styles, learning patterns, and expressive behaviors. The middle ground between work and play will be enlarged dramatically. The crisp line between love and duty will blur by virtue of a common denominator— being digital. The Sunday painter is a symbol of a new era of opportunity and respect for creative avocations— lifelong making, doing, and expressing. When retired people take up watercolors today, it is like a return to childhood,

97 Carpo, loc 394.5 / 409.

with very different rewards from those of the intervening years. Tomorrow, people of all ages will find a more harmonious continuum in their lives, because, increasingly, the tools to work with and the toys to play with will be the same. There will be a more common palette for love and duty, for self-expression and group work.

Computer hackers young and old are an excellent example. Their programs are like surrealist paintings, which have both aesthetic qualities and technical excellence. Their work is discussed both in terms of style and content, meaning and performance. The behavior of their computer programs has a new kind of aesthetic. These hackers are the forerunners of the new e-xpressionists.⁹⁸

Both *Carpo_SDT* and *Negroponete_BD*, one by looking at the past, the other by predicting the future, advocate the same epistemological turn. Unlike *West_STD*, who is trying to understand the present, this is a new era for them which is beyond theory, with a new kind of science, a new kind of aesthetics of new e-xpressionists. All these are interesting indicators of the change that arises when *being digital*. All the grounds are shaken; everything is new, but somehow this conversation doesn't seem to fly off from the ground. Discussions still revolve around theories, crowds, shifts, and what it means to be digital. What I am interested in a *Play Among Books*, is playing with the digital and not reasoning about it. But maybe playing with the digital is about playing with different kinds of thinking and reasoning.

Hofstadter_IAASL starts to meditate. He turns the conversation into itself. To reflect on the new situation, he places *Carpo_SDT's* crowds and *Negroponete_BD's* e-xpressionists in a strange loop. He asks himself loudly: How can these two images compose a new digital I?

Hofstadter_IAASL:

[...] the idea I am proposing here is that since a normal adult human brain is a representationally universal "machine", and since humans are social beings, an adult brain is the locus not only of one strange loop constituting the identity of the primary person associated with that brain, but of many strange-loop patterns that are coarse-grained copies of the primary strange loops housed in other brains. Thus, brain 1 contains strange loops 1, 2, 3, and so forth, each with its own level of detail. But since this notion is true of any brain,

98 Negroponete, *Being Digital*, ebook, loc 338.6 / 380.

not just of brain I, it entails the following flip side: Every normal adult human soul is housed in many brains at varying degrees of fidelity, and therefore every human consciousness or “I” lives at once in a collection of different brains, to different extents.

There is, of course, a “principal domicile” or “main brain” for each particular “I”, which means that there remains a good deal of truth to simple, commonsensical statements like “My soul is housed in my brain”, and yet, close to true though it is, that statement misses something crucial, which is the idea perhaps strange-sounding at first, that “My soul lives to lesser extents in brains that are not mine.”⁹⁹

Hofstadter_IAASL’s digital I consists of many strange loops not necessarily carried by the same body. The *I* lives at once as an individual and a group. The *digital I*, in terms of *Carpo_SDT*, would be the *crowd*, and for *Negroponte_BD* an *e-xpressionist*. *Hofstadter_IAASL* continues to further elaborate on the *digital I* by trying to relate the notion of a strange loop to infinite flows of raw data.

Hofstadter_IAASL:

“You and I are mirages who perceive themselves, and the sole magical machinery behind the scenes is perception — the triggering, by huge flows of raw data, of a tiny set of symbols that stand for abstract regularities in the world. When perception at arbitrarily high levels of abstraction enters the world of physics and when feedback loops galore come into play, then “which” eventually turns into “who”. What would once have been brusquely labeled “mechanical” and reflexively discarded as a candidate for consciousness has to be reconsidered.”¹⁰⁰

With *Hofstadter_IAASL*, *which* turns into *who*, and back. An object can become a subject. The *digital I* consists of *crowds* and many loops in different brains. What was once only a mechanism, with big data and strange loops, could be now reconsidered as conscious. But this new consciousness is still tied to an *I*. In my understanding, this is just a reflection of the old *I*. A very different world was opened by *Serres_G* in the second part of the first act when he proposed that intelligence coexists with the universe. That intelligence doesn’t require an *I*. It is different. With *Hofstadter_IAASL*, a mechanism becomes a new *I*. There is a direct competition between a

99 Hofstadter, *I Am a Strange Loop*, ebook, loc 676.0 / 1088.

100 Hofstadter, loc 928.4 / 1088.

mechanical and a biological *I*. Nevertheless, like him, I (myself) believe that the dichotomies in strange loops and flows of data become something else. They change by articulating each other. A dichotomy translates itself into a spectrum. In the digital, this can potentially happen on many levels of abstraction, in different disciplines and fields of knowledge and life. It is a different ground. *Negroponte_BD* joins the talk by giving an example of this integrating phenomenon.

Negroponte_BD:

Either way, a fundamental editorial change takes place, because depth and breadth are no longer either/ or. When you buy a printed encyclopedia, world atlas, or book on the animal kingdom, you expect very general and broad coverage of many far-ranging topics. By contrast, when you buy a book on William Tell, the Aleutian Islands, or kangaroos, you expect an “in depth” treatment of the person, place, or animal. In the world of atoms, physical limits preclude having both breadth and depth in the same volume— unless it’s a book that’s a mile thick.

In the digital world, the depth/ breadth problem disappears and we can expect readers and authors to move more freely between generalities and specifics. In fact, the notion of “tell me more” is very much part of multimedia and at the root of hypermedia.¹⁰¹

The generic can integrate anything. *Carpo_SDT* seems to agree with *Negroponte_BD*'s *tell me more*. Not only can one move freely between many generalities and different specifics, but one can also, as *Carpo_SDT* points out, simulate them ad infinitum. He continues in the same direction, by trying to explicate how these procedures work and by placing them at the tipping point of *the second digital turn*.¹⁰²

Carpo_SDT:

The new kind of science that is inherent in most of today’s AI applications, and at the core of what I call the second digital turn, is a different matter altogether. In our traditional way of thinking, facts are laboriously collated, sifted, compared, and selected, then generalized and formalized: the apex of this sorting process is a theory, often compressed into mathematical

101 Negroponte, *Being Digital*, ebook, loc 110.5 / 380.

102 Here Carpo conceptually refers to the article by Chris Anderson, The End Of Theory. See, Chris Anderson, “The End of Theory: The Data Deluge Makes the Scientific Method Obsolete,” *Wired*, June 23, 2008, <https://www.wired.com/2008/06/pb-theory/>.

*formulas, which we use to predict similar events when similarly describable. Computers don't do that; they search for a precedent. We, in turn, use computation to simulate as many fictional precedents as needed when no actual one is on record, and when we do not have the time to compare some of these results ourselves, we ask computers to randomly test as many as possible, ad infinitum if necessary, knowing that at some point we shall find one or two that will more or less do what we need.*¹⁰³

But what happens when anyone is able to simulate an infinity of generalities and integrate any specificity? Koolhaas calls this the Generic condition.¹⁰⁴ Regardless if those theories or computational simulations, one is flooded by the sheer amount of them. As *Carpo_SDT* got lost in the ever-growing generic while searching for simulated *precedents*, *West_S* saw this as an opportunity to get back into the discussion and offer a solution to the problem raised by the competition between the *flood of data* and *theories* by avoiding all the differences and postulating a general law. This is where *West_S* clearly distances himself from the other three actors. He believes in the understanding of big data, while the other three are trying to think about the phenomena that the digital brings into the discussion.

West_S:

*Data are good and more data are even better—this is the creed that most of us take for granted, especially those of us who are scientists. But this belief is implicitly based on the idea that more data lead to a deeper understanding of underlying mechanisms and principles so that credible predictions and further progress in constructing models and theories can be built upon a firm foundation subject to continual testing and refinement. Data for data's sake, or the mindless gathering of big data, without any conceptual framework for organizing and understanding it, may actually be bad or even dangerous. Just relying on data alone, or even mathematical fits to data, without having some deeper understanding of the underlying mechanism is potentially deceiving and may well lead to erroneous conclusions and unintended consequences.*¹⁰⁵

103 Carpo, *The Second Digital Turn*, ebook, loc 391.5 / 409.

104 Rem Koolhaas, "Generic City," in *S, M, L, XL* (The Monacelli Press, 1995), 1238–70.

105 West, *Scale*, ebook, loc 944.2 / 1064.

Negroponete_BD, instead of replying directly to West_S, supported by Carpo_SDT and Hofstadter_IAASL, drifts again into one of his fantastic scenarios of how to be digital.

Negroponete_BD:

Computing is not about computers any more. It is about living. The giant central computer, the so-called mainframe, has been almost universally replaced by personal computers. We have seen computers move out of giant air-conditioned rooms into closets, then onto desktops, and now into our laps and pockets. But this is not the end. Early in the next millennium your right and left cuff links or earrings may communicate with each other by low-orbiting satellites and have more computer power than your present PC. Your telephone won't ring indiscriminately; it will receive, sort, and perhaps respond to your incoming calls like a well-trained English butler. Mass media will be redefined by systems for transmitting and receiving personalized information and entertainment. Schools will change to become more like museums and playgrounds for children to assemble ideas and socialize with other children all over the world. The digital planet will look and feel like the head of a pin. As we interconnect ourselves, many of the values of a nation-state will give way to those of both larger and smaller electronic communities. We will socialize in digital neighborhoods in which physical space will be irrelevant and time will play a different role. Twenty years from now, when you look out a window, what you see may be five thousand miles and six time zones away. When you watch an hour of television, it may have been delivered to your home in less than a second. Reading about Patagonia can include the sensory experience of going there. A book by William Buckley can be a conversation with him.¹⁰⁶

Among many of Negroponete_BD's predictions, one is particularly interesting for this text. He ends with a sentence which, in a way, refers to a *Play Among Books*. In the context of *Xenotheka*, I would reformulate it in this way: *A book by William Buckley can become a friend*. When situated in a library and placed on stage, this book becomes an actor that one can talk to in a similar way like we are now talking to Negroponete_BD. But let us keep in mind that this is not Nicholas Negroponete we are talking to; it is one of his avatars: Negroponete_BD. One doesn't need to know or read this book. One just needs to welcome it to one's own *Xenotheka* and start communicating. By transforming, splitting, and multiplying *Xenotheka*, one can have always fresh, interesting and new conversations with the same friend. A book is never alone; it is always a part of a library.

106 Negroponete, *Being Digital*, ebook, loc 13.8 / 380.

Hofstadter_IAASL, being somehow in the same mood as *Negroponte_BD*, picks up the discussion and continues in a friendly manner keeping his doubts for later.

Hofstadter_IAASL:

This, in essence, is what the computer revolution is all about: when a certain well-defined threshold — I'll call it the "Gödel–Turing threshold" — is surpassed, then a computer can emulate any kind of machine.

This is the meaning of the term "universal machine", introduced in 1936 by the English mathematician and computer pioneer Alan Turing, and today we are intimately familiar with the basic idea, although most people don't know the technical term or concept. We routinely download virtual machines from the Web that can convert our universal laptops into temporarily specialized devices for watching movies, listening to music, playing games, making cheap international phone calls, who knows what. Machines of all sorts come to us through wires or even through the air, via software, via patterns, and they swarm into and inhabit our computational hardware. One single universal machine morphs into new functionalities at the drop of a hat, or, more precisely, at the double-click of a mouse. I bounce back and forth between my email program, my word processor, my Web browser, my photo displayer, and a dozen other "applications" that all live inside my computer. At any specific moment, most of these independent, dedicated machines are dormant, sleeping, waiting patiently (actually, unconsciously) to be awakened by my royal double-click and to jump obediently to life and do my bidding.¹⁰⁷

While *Hofstadter_IAASL* talks of computers as universal machines, ones that can become any known machine and, moreover, ones that have the potential to become any machine imaginable,¹⁰⁸ *West_S* sees this phenomenon in an inverse manner. He always looks for the general. For him, the challenge is to find and articulate a grand unified theory. With *Hofstadter_IAASL*, one is opening up space for many scenarios, while *West_S* is generalizing all the scenarios in order to be able to predict and understand. These are two radically different ways of addressing the new environment of *information, data and computers*.

¹⁰⁷ Hofstadter, *I Am a Strange Loop*, ebook, loc 630.7 / 1088.

¹⁰⁸ For more on computers as any machines, see Hovestadt, "A Fantastic Genealogy of the Printable."

West_S:

It's time to recognize that a broad, multidisciplinary, multi-institutional, multinational initiative, guided by a broader, more integrated and unified perspective, should be playing a central role in guiding our scientific agenda in addressing this issue and informing policy. We need a broad and more integrated scientific framework that encompasses a quantitative, predictive, mechanistic theory for understanding the relationship between human-engineered systems, both social and physical, and the "natural" environment—a framework I call a grand unified theory of sustainability. It's time to initiate a massive international Manhattan-style project or Apollo-style program dedicated to addressing global sustainability in an integrated, systemic sense.¹⁰⁹

The difference between articulations and attitudes of actors becomes more crisp. *Carpo_SDT* replies, this time directly to *West_S*, by emphasising the difference between the new science and the old. He insists on articulating the turn with the help of the *crowds*.

Carpo_SDT:

[...] in a world where all events are recorded and retrievable, the search for an exact precedent may better predict future events than an analytic calculation of consequences deduced from general causal laws, rules, or formulas. Indeed, in many cases the search for a social precedent (rather than for a material one, as seen in chapter 2, section 2.4) has already replaced the traditional reliance on the rules or laws of a discipline: for example, when we choose a linguistic expression or syntagm based on the number of its Google hits, we trust the wisdom of crowds instead of the rules of grammar and syntax. Of course, the rules of grammar and syntax themselves are born out of the authority of precedent, as for the most part they formalize and generalize the regularities embedded in the collective or literary use of a language—a process that in the case of living languages unfolds over time and continues forever (the most notable exception being the invention ex nihilo of the rules of classical Latin in the Renaissance). But today a simple Google search on an incommensurably vast corpus of textual sources can effectively short-circuit the laborious scientific process of the constitution of the rules of a language, thus making all traditional

109 West, *Scale*, ebook, loc 327.8 / 409.

sciences of language unnecessary. Not by science, but by search we can draw on the collective intelligence of a group, be apprised of the frequency of an event (in this instance, a linguistic occurrence within a community of speakers), and act accordingly.¹¹⁰

In his reply to *West_S*, *Carpo_SDT* wants to show the benefits of replacing the rules of grammar and syntax with the wisdom of the crowd on the example of language. In other words, he goes from a setup governed by laws to a data-driven setup. In my opinion, what *Carpo_SDT* misses is that language, besides its formalizations and the crowd that informs it, has a wisdom of its own. This was discussed in *Act One* by *Serres_G* (3.1.1.3.3) in terms of an objective intelligence and informed forms that lie in the things themselves. If one grants language its wisdom, then we are in a different environment in which one can communicate with language, which at first sounds odd, but isn't this whole play going in that direction? This *Plentiful Play* grants wisdom to language, concepts, to each of the books, and the library. We will get back to this in a moment. For now, let us continue with the play and listen to the way the discussion unfolds.

The digital empowers! *Negroponite_BD* states enthusiastically and avoids a direct polemic with *Carpo_SDT*. Instead, he gives an optimistic epilogue.

Negroponite_BD:

But more than anything, my optimism comes from the empowering nature of being digital. The access, the mobility, and the ability to effect change are what will make the future so different from the present. The information superhighway may be mostly hype today, but it is an understatement about tomorrow. It will exist beyond people's wildest predictions. As children appropriate a global information resource, and as they discover that only adults need learner's permits, we are bound to find new hope and dignity in places where very little existed before. My optimism is not fueled by an anticipated invention or discovery. Finding a cure for cancer and AIDS, finding an acceptable way to control population, or inventing a machine that can breathe our air and drink our oceans and excrete unpolluted forms of each are dreams that may or may not come about. Being digital is different. We are not waiting on any invention. It is here. It is now. It is almost genetic in its nature, in that each generation will become more digital than the preceding one. The control bits of that digital future are

110 *Carpo, The Second Digital Turn*, ebook, loc 882.8 / 1064.

*more than ever before in the hands of the young. Nothing could make me happier.*¹¹¹

While floating in the optimistic cloud composed by *Negroponte_BD*, *Hofstadter_IAASL* starts meditating and enjoying his loops.

Hofstadter_IAASL:

*The key problem is, it seems to me, that when we try to understand what we are, we humans are doomed, as spiritual creatures in a universe of mere stuff, to eternal puzzlement about our nature. I vividly remember how, as a teen-ager reading about brains, I was forced for the first time in my life to face up to the idea that a human brain, especially my own, must be a physical structure obeying physical law. Although it may seem strange to you, just as it does to me now, this realization threw me for a loop.*¹¹²

The discussion on *data* is stuck in a loop. It can continue like this forever. The four actors are trying to articulate the world of *data* each with his own vector, but all pointing to the similar direction of *data-driven* applied thinking. If one looks at the faces of *West_S* and *Hofstadter_IAASL*, their main highlights and concepts are close and similar (Fig. 3.18, Fig. 3.25), but the way they were talking about the highlighted concepts came from two different worldviews. In their articulations, one is more projective and general and the other reflective and universal. For *Hofstadter_IAASL*, what was once only a mechanism can now be reconsidered as consciousness. *Negroponte_BD* sees *depth* and *breadth* no longer as *either/or* but as *both/and*. *Carpo_SDT* puts more emphasis on the search for an *exact precedent*, rather than on an analytic calculation of consequences. On the other hand, all four tried to describe the digital phenomena, providing answers to how this novel environment —populated by *information* and *data* —has changed the way we perceive, think, and operate in our world. But the way how they did it in this act is by telling a very different story than the one that opens up while thinking that intelligence coextends with the universe, and that information —seen from an entropic and quantum perspective —can communicate to far away and directly inaccessible worlds.¹¹³

...

111 Negroponte, *Being Digital*, ebook, loc 354.2 / 380.

112 Hofstadter, *I Am a Strange Loop*, ebook, loc 916.0 / 1088.

113 This was discussed in the *Act One* by *Brillouin_SIT* and *Serres_G*.

End of the Scene

The two acts show similar interests, but different ways of organizing and articulating indexes around *information* and *communication*. What I find interesting is that when talking about *information* in *Act One*, the tendency was to be more and more abstract towards communication by accommodating more and more. Emphasis was on *encoding*, *ciphering*, *communicating*, and *dealing* with *information*, in other words, on operationalizing *information*. With *data*, the conversation tends to go towards concrete *applications* or *fantastic future scenarios*. *Big data* has many faces. If *data* is big enough, it will show us the world we want to see. One can stretch, bend, morph, cut and mirror data, and if we go with *Brillouin_SIT* in thinking that data has no explicit meaning, then there is no one true story that can be told but any story can become real. In the case of *Xenotheka*, by providing a stage and libraries, one establishes a communication channel and books get a voice. They become actors. They become alive. Of course, this setup is artificial and can be manipulated in many ways, but by doing so, one is not polluting a pure message of a book but is giving it its many faces and bringing the world to it. My hypothesis is that the beauty of the abundance of *information* lies somewhere else than in the crowd or a unified *law*. Masterful books flourish if they are given the space to speak and if one is able to speak with them. This is what this play is all about.

Act two has finished. The discussion continues behind the curtain...

...

End of the Second Act

CODE

3.1.3.1 *Dramatis Personae*

The concept of *information* is unfolding. The third fold —the third iteration— carries the name *code*. *Xenotheka* provides the *code* with a very different atmosphere from the ones in the previous two acts. In this galaxy of concepts, the *code* is situated quite far from our other three concepts of interest (Fig. 3.1). By looking at the indexes surrounding the *code* (Fig. 3.4, List 3.3), one gets immersed into architectural encodings and expressions. Its most prominent ten protagonists are immersed in such an atmosphere (Fig 3.26). They passionately write about architecture. The beauty of this act is in the unfolding of its two possible and equally interesting scenarios. On the one hand, our protagonists are trying to articulate architecture by playing with technical and formal notions of information and communication. On the other hand, information and coding get an architectural perspective. It is a double articulation of *coding* and *architecture* around a concept of information which is not explicitly there. The third act is staged in a way that each of the actors is invited to talk about its approach to architectural encoding via a context and an alphabet (or a set of elements). What we hope for are three different articulations and manners of architectural encodings.

Instead of inviting the first four most prominent actors on stage, I will introduce the four actors that I am personally most interested in. As chance would have it, they cover the spectrum of the ten actors most probably interested in architecture and coding (Fig. 3.26). From one end of the spectrum, let us invite an actor who has the highest affinity toward the concept of coding. He is a persona split in two bodies of similar characters:

Schumacher_The Autopoiesis of Architecture Vol1¹¹⁴

Schumacher_The Autopoiesis of Architecture Vol2¹¹⁵

114 Patrik Schumacher, *The Autopoiesis of Architecture: A New Framework for Architecture* (Wiley, 2011), ebook.

115 Patrik Schumacher, *The Autopoiesis of Architecture: A New Agenda for Architecture*, 1. edition (Wiley, 2012), ebook.

I will refer to him as: *Schumacher_AOA*

The second actor who is invited is a persona from the middle of the spectrum, whose character is somehow different from the rest of the group. His main focus is quite far from the concept of *code*. The hypothesis is that his approach should be similar to *Schumacher_AOA* but articulated by another conceptual cloud. His code name is:

Spuybroek_The Sympathy of Things

I will refer to him as: *Spuybroek_TST*¹¹⁶

And as the third (or the fourth, depending on how we think of *Schumacher_AoA*) from the other end of this small spectrum, I would like to invite a master of well-tempered environments, a lover of Los Angeles:

Banham_A Critic Writes

I will refer to him as: *Banham_ACW*¹¹⁷

116 Lars Spuybroek, *The Sympathy of Things: Ruskin and the Ecology of Design*, 2 Revised edition (London Oxford New York New Delhi Sydney: Bloomsbury Publishing PLC, 2016), ebook.

117 Reyner Banham, *A Critic Writes: Selected Essays by Reyner Banham*, ed. Mary Banham et al., First Edition, (Berkeley, Calif.: University of California Press, 1999).

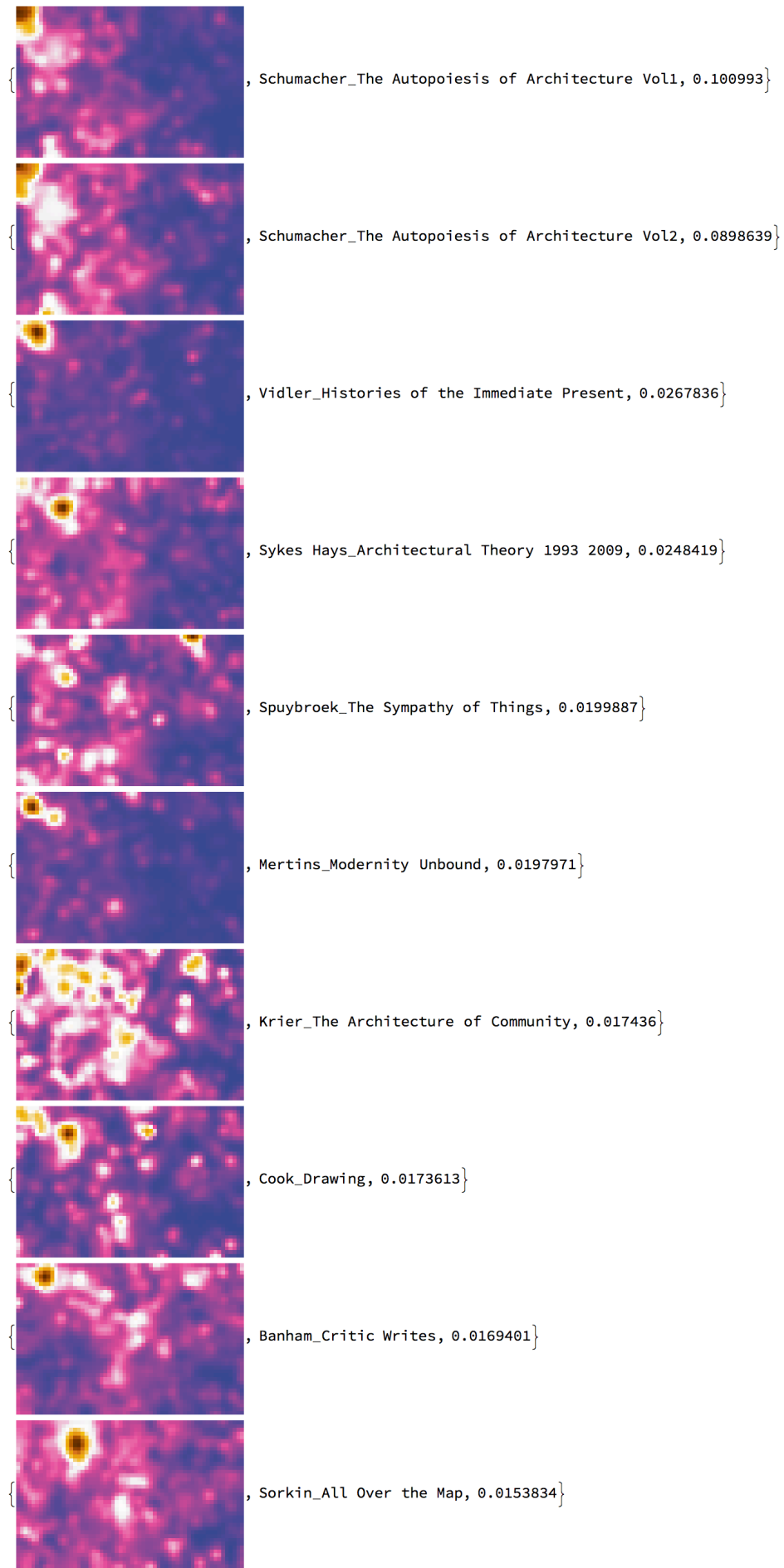


Fig. 3.26 Ten books, ten actors, ten faces of a concept: *code*, rendering_03_RW_4060_r_50it21d_words_vertex

3.1.3.2 ARCHITECTURAL CODING: Three Articulations

3.1.3.2.0 Prologue

The third act should start at any moment. It is arranged in a slightly different manner than the two previous acts. *Xenotheka* articulates the notion of coding largely by indexes common to architecture. This is, of course, reflected in its ten most prominent protagonists that are architects interested in discussing *code* indexed predominantly by architectural styles (*classicism, modernist, rococo, formalism, renaissance*, etc., Fig. 3.4, List 3.4). In *Xenotheka*, concepts indexed by the *code* and style lie next to each other, in other words, they inhabit the same cloud and articulate each other (List 3.4). Could architectural style in the context of *code* be reformulated as an architectural encoding, and what would be the relation between *code* and *style* in such a context?

```
n181 e24 {neo, continuously, exploration, novelty, attendant,
prevalent, designer, aesthetic, code, preconception, openness, retrospect,
protagonist, vagueness, unquestioned, client, crystallization, evaluation,
orthogonal, bernini, mutate, manmade, magnum, budgetary}
n182 e5 {classicism, modernist, rococo, perrault, typological}
n121 e28 {discipline, style, manifesto, trope, unresolved, manoeuvre,
exemplar, stylistic, cohere, creatively, fruitfulness, browse,
codification, dissemination, referential, exclusivity, specious, reconnect,
comprehensibility, brainstorm, corb, irreversibly, assertiveness, jeff,
irreversibility, tschumi, semper, brett}
```

List 3.4 Indexes around *code* and *style*

Another reading of the same cloud comes from moving in between synonyms, where *code* gets rendered via a *form* to a certain *style*.

```
code -> cipher -> figure -> form -> course -> trend -> style
```

If so, architectural styles could be seen as renderings of specific *encodings*. When one looks at the etymology of the word *style*, it becomes an expression that can be written in many manners. Style picks up some speed; it becomes fast like fashion and starts to act in an ostentatious way.

style (n.)

early 14c., *stile*, “writing instrument, pen, stylus; piece of written discourse, a narrative, treatise;” also “characteristic rhetorical mode of an author, manner or mode of expression,” and “way of life, manner, behavior, conduct,” from Old French *stile, estile* “style, fashion, manner; a stake, pale,” from Latin *stilus* “stake, instrument for writing, manner of writing, mode of expression,” perhaps from the same source as *stick (v.)*.

style (v.)

c. 1500, “address with a title;” 1560s, “to give a name to,” from *style (n.)*. Meaning “to arrange in (fashionable) style” (especially of hair) is attested from 1934. Slang sense of “act or play in a showy way” is by 1974, African-American vernacular. Related: *Styled*; *styling*.¹¹⁸

Constellation of indexes —code, style, fashion, and manner —starts to unfold. The three actors invited on stage appear interested in discussing and exploring such arrangements. The fantasy behind the third act is to evoke three different articulations of architectural encodings. How can one look at architecture as a way of encoding an abstract personal sphere of interest, while still belonging to a tradition? If so, what would be the context for it, and which elements, masks, or characters would one constitute to articulate such an approach? What happens to architecture and its objects when they are operated with at the level of *code*? Instead of asking explicit questions and guiding discussions or talks, I would like to invite our three actors to articulate an architectural encoding in any manner that seems adequate for them. Of course, let us keep in mind that this articulation is very much influenced by *Xenotheka*, specific actors, the concept at stake and myself. In other words, by the way the *Informational Instrument* is tuned and played.

Let us meet the actors, look at their faces, and see the new ways in which the galaxy of concepts shines in the third act. Here they are in the order of appearance:

118 “Style | Origin and Meaning of Style by Online Etymology Dictionary,” accessed January 14, 2019, <https://www.etymonline.com/word/style>.

3.1.3.2.0.1 Actor I

Schumacher_AOA

The most prominent protagonist of *coding* in the context of architecture is *Schumacher_AOA*. He is a character composed out of two volumes. The first volume sets up a framework for architecture and the second gives it an agenda. It is one body of work. *Schumacher_AOA* provides a *comprehensive discourse analysis of the discipline*, with the aim of its *theoretical systematization*.¹¹⁹ Here are the most frequent and prominent indexes of both volumes:

The Autopoiesis of Architecture, Volume I: A New Framework for Architecture by Patrik Schumacher from 2009

architecture -> 1914, system -> 1183, design -> 1065, architectural -> 900, theory -> 772, communication -> 717, style -> 689, function -> 654, new -> 596, society -> 457, build -> 434, avant -> 408, garde -> 390, social -> 388, autopoiesis -> 383, self -> 370, form -> 363, discipline -> 350, code -> 346, art -> 344, process -> 343, concept -> 322, space -> 314, project -> 297, structure -> 295, societal -> 292, draw -> 289, distinction -> 286, research -> 285, order -> 283, theoretical -> 281, modern -> 279, formal -> 270, value -> 260, work -> 257, decision -> 256, programme -> 242, question -> 241, architect -> 235, respect -> 228, environment -> 224, science -> 223, time -> 223, aesthetic -> 221, discourse -> 221, world -> 219, functional -> 214, luhmann -> 214, innovation -> 211, medium -> 209

The Autopoiesis of Architecture, Volume II: A New Agenda for Architecture by Patrik Schumacher from 2011

architecture -> 2270, design -> 1842, system -> 1539, architectural -> 1534, process -> 1206, theory -> 1067, build -> 950, function -> 947, problem -> 892, space -> 853, social -> 830, communication -> 823, new -> 705, organization -> 636, order -> 623, concept -> 582, form -> 564, political -> 563, style -> 526, society -> 500, autopoiesis -> 496, project -> 486, self -> 479, structure -> 465, term -> 456, set -> 444, environment -> 421, state -> 417, work -> 404, general -> 402, ibid -> 401, mean -> 374, spatial -> 367, task -> 357, type -> 356, architect -> 349, language -> 347, via -> 344, respect -> 332, different -> 325,

¹¹⁹ See prologue to Schumacher, *The Autopoiesis of Architecture, Vol.I, ebook*.

distinction -> 325, articulation -> 323, theoretical -> 322, functional
-> 321, like -> 314, network -> 309, information -> 304, point -> 303,
principle -> 303, relation -> 297

Both faces of *Schumacher_AOA* light the galaxy in a similar way. There is a slight change in focus, one which is noted in the titles of books. *A New Framework for Architecture* (Fig. 3.27, Fig. 3.29) focuses on more abstract indexes: *code, aesthetics, discipline, style, architecture, research, innovation*. *A New Agenda for Architecture* (Fig. 3.28, Fig. 3.30), on the other hand, is articulating an agenda: *project, type, system, task, environment, function, distinction, network*. Together, these two faces should *design a theory*, as *Schumacher_AOA* puts it. It is a strange formulation — to design a theory — we will get back to it when it is set on stage in a context of *coding*.

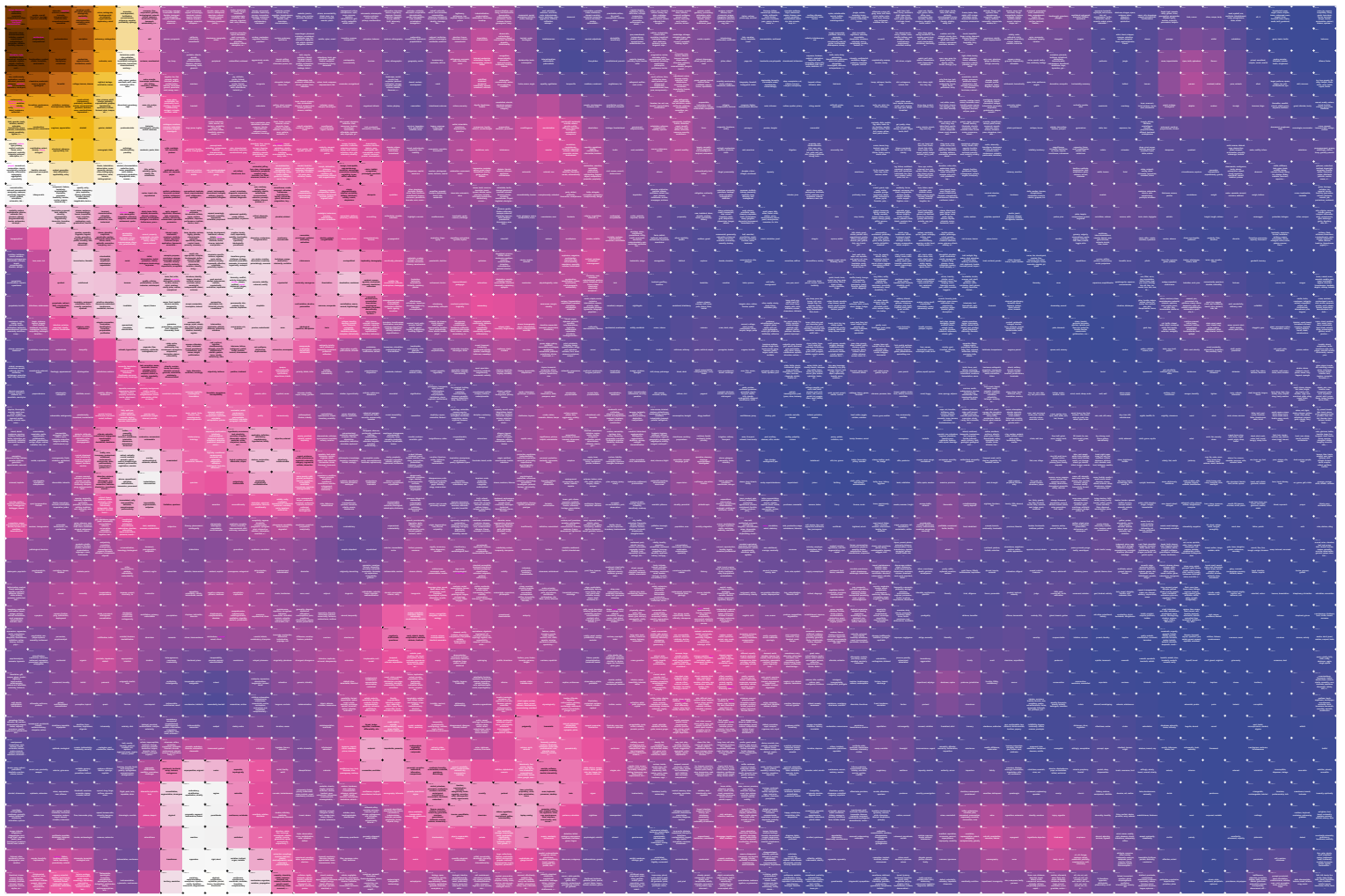
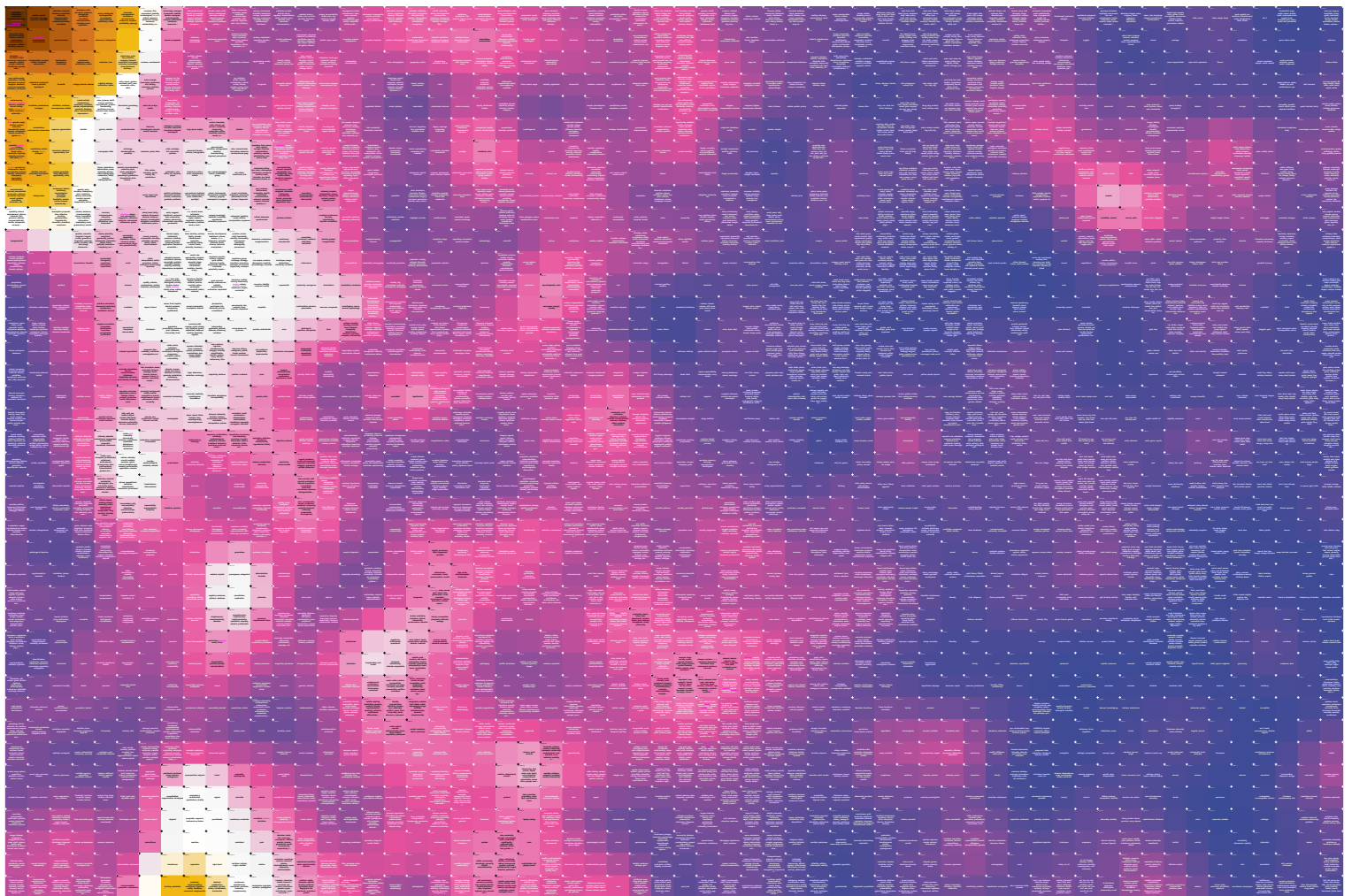


Fig. 3.27 Face of Schumacher *The Autopoiesis of Architecture Vol1*, rendering_03_RW_4060_r_50it21d,
http://www.romanvlahovic.com/xenotheka/Schumacher_TheAutopoiesisofArchitectureVol1.pdf

Fig. 3.28 Face of Schumacher *The Autopoiesis of Architecture Vol2*, rendering_03_RW_4060_r_50it21d,
http://www.romanvlahovic.com/xenotheka/Schumacher_TheAutopoiesisofArchitectureVol2.pdf



| | | | | | | | |
|---|---|---|---|---|--|--|---|
| n 1 e 193 design, theoretical, orientation, elaboration, complexity, comprehensive, align, architectural, functional, communication, viab ... | n 2 e 6 update, overall, innovative, typology, systemic, versatility | n 3 e 9 elaborate, research, enhance, consultant, innovate, interpenetration, institutionalize, comprehensiveness, recombine | n 4 e 12 paradigm, multi, pervasive, selective, strategically, availability, innovation, interconnection, centrality, socio, redefinitio ... | n 5 e 7 micro, reintegrate, developmental, uncontested, organizational, exploratory, retool | n 6 e 8 innovator, interdependent, fertilization, pervasiveness, outsource, supplier, profitability, synergy | n 7 e 100 economy, firm, corporation, globally, technological, network, skilled, japanese, backbone, linkage, teamwork, substantially, co ... | n 8 e 44 technol, investr, flexible, techn, compile, ele, res |
| n 61 e 24 elemental, raison, incommensurable, irritation, seminal, unprincipled, embeddedness, concretize, stillborn, fruitfully, respons ... | n 62 e 3 architecture, programmatic, compositional | n 63 e 1 postmodernism | n 64 e 1 ascription | n 65 e 2 autonomy, reintegration | | n 67 e 1 dell | n 68 e 2 pioneer |
| n 121 e 28 discipline, style, manifesto, trope, unresolved, manoeuvre, exemplar, stylistic, cohere, creatively, fruitfulness, browse, codi ... | n 122 e 5 functionalism, curated, villette, formalists, axonometric | n 123 e 3 functionalist, disciplinary, eclecticism | n 124 e 4 modernism, expansiveness, architettura, soane | n 125 e 2 corbusier, vers | n 126 e 24 historicism, weld, riba, palladian, castigate, leitmotif, burckhardt, archigram, corbusian, mannerism, disenchantment, warburg ... | n 127 e 2 reviewer, neoclassical | n 128 e 2 lo |
| n 181 e 24 neo, continuously, exploration, novelty, attendant, prevalent, designer, aesthetic, code, preconception, openness, retrospect, ... | n 182 e 5 classicism, modernist, rococo, perrault, typological | n 183 e 1 formalist | n 184 e 3 collage, hannes, dessau | n 185 e 4 sigfried, berlage, architektur, bauen | n 186 e 9 colin, reynor, gardes, manfredo, emil, rowe, mannerist, vidler, tafuri | n 187 e 9 autre, arcadia, townscape, smithsons, elia, stirling, ronchamp, nikolaus, pevsner | n 188 e 43 angel, travel, futuris, pref, freeway, green, sant, s |
| n 241 e 55 contemporary, distinction, function, decision, ambition, formal, initially, unify, anomalous, latent, insistence, authoritati ... | n 242 e 3 formalism, renaissance, configure | n 243 e 4 exhibition, moderne, inconspicuous, fuelled | n 244 e 25 constructivist, transparency, prehistory, mondrian, weimar, expressionism, geodesic, bauhaus, neue, constructivism, impressioni ... | n 245 e 41 mies, picasso, adolf, savoye, painterly, expressionist, gropius, freestanding, apollinaire, konrad, fernand, alois, braque, sti ... | n 246 e 3 disenchant, greenberg, riegli | n 247 e 4 wren, aia, evelyn, cedric | n 248 e 21 ran, buck, practi, claddin, craft, stuttg, ventil |
| n 301 e 35 task, operate, imply, solution, mature, articulate, theoretically, arena, polemic, connotation, sketch, sensitivity, tighten, h ... | n 302 e 3 construction, achievement, consonance | n 303 e 2 engineer, appreciation | n 304 e 1 skeletal | n 305 e 2 garnier, dadaist | n 306 e 1 postmodernists | n 307 e 5 historian, michelangelo, eclectic, surfeit, reassess | n 308 e 7 catalog, nouvea, aeropl, ch |
| n 361 e 51 potential, system, type, primary, explicit, motivate, frame, solve, constraint, explicitly, integrate, presume, description, cl ... | n 362 e 5 contribution, select, loosely, theory, stringent | n 363 e 4 structural, reference, appropriately, hoc | | n 365 e 2 monograph, italia | n 366 e 3 anthology, interdisciplinary, panofsky | n 367 e 3 academic, paolo, klein | n 368 e 5 critic, full, p |
| n 421 e 11 project, reconstruct, composition, depict, conceptually, envision, densely, reformulate, topography, aggregation, accessibility | n 422 e 5 feasible, relevant, placement, perceptual, dover | n 423 e 6 embed, generalize, label, stimulation, applicability, wiley | | n 425 e 13 thesis, indentation, abbreviation, noam, typewrite, advisor, croce, bibliography, subsection, vallet, tesau, bibliographical ... | n 426 e 26 student, documentation, underline, topic, index, parenthesis, card, citation, pseudonym, graduation, biographical, skim, comma ... | n 427 e 7 title, author, scholarly, quote, ideally, file, subdivision | n 428 e 6 publi, editor, |
| n 481 e 15 reconstruction, reinvent, monumental, anonymity, vastness, punctuate, depiction, cornell, gridded, reinvention, volumetric, tab ... | n 482 e 1 idiosyncratic | n 483 e 12 component, feature, tentatively, terminological, illustrative, principled, feasibility, reorder, syntax, erasure, ... | n 484 e 20 specify, entry, tentative, inadequacy, john, restrictive, dummy, abbreviate, bracket, deviant, detectable, inapplicable, deriva ... | | | n 487 e 4 revise, insert, cite, unpublished | n 488 e 8 publish, docum, scholar, gradua |

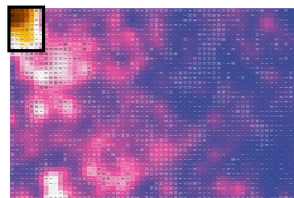


Fig. 3.29 Face of Schumacher *The Autopoiesis of Architecture Voll* - Zoom to the cloud of indexes surrounding indexes of *architecture*, *style* and *code*, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/Schumacher_TheAutopoiesisofArchitectureVoll.pdf, 0

| | | | | | | | |
|---|---|---|---|---|--|--|---|
| n 1 e 193 design, theoretical, orientation, elaboration, complexity, comprehensive, align, architectural, functional, communication, viab ... | n 2 e 6 update, overall, innovative, typology, systemic, versatility | n 3 e 9 elaborate, research, enhance, consultant, innovate, interpenetration, institutionalize, comprehensiveness, recombine | n 4 e 12 paradigm, multi, pervasive, selective, strategically, availability, innovation, interconnection, centrality, socio, redefinitio ... | n 5 e 7 micro, reintegrate, developmental, uncontested, organizational, exploratory, retool | n 6 e 8 innovator, interdependent, fertilization, pervasiveness, outsource, supplier, profitability, synergy | n 7 e 100 economy, firm, corporation, globally, technological, network, skilled, japanese, backbone, linkage, teamwork, substantially, co ... | n 8 e 44 technol, investr, flexible, techn, comple, ele, res |
| n 61 e 24 elemental, raison, incommensurable, irritation, seminal, unprincipled, embeddedness, concretize, stillborn, fruitfully, respons ... | n 62 e 3 architecture, programmatic, compositional | n 63 e 1 postmodernism | n 64 e 1 ascription | n 65 e 2 autonomy, reintegration | | n 67 e 1 dell | n 68 e 2 pioneer |
| n 121 e 28 discipline, style, manifesto, trope, unresolved, manoeuvre, exemplar, stylistic, cohere, creatively, fruitfulness, browse, codi ... | n 122 e 5 functionalism, curated, villette, formalists, axonometric | n 123 e 3 functionalist, disciplinary, eclecticism | n 124 e 4 modernism, expansiveness, architettura, soane | n 125 e 2 corbusier, vers | n 126 e 24 historicism, weld, riba, palladian, castigate, leitmotif, burckhardt, archigram, corbusian, mannerism, disenchantment, warburg ... | n 127 e 2 reviewer, neoclassical | n 128 e 2 lo |
| n 181 e 24 neo, continuously, exploration, novelty, attendant, prevalent, designer, aesthetic, code, preconception, openness, retrospect, ... | n 182 e 5 classicism, modernist, rococo, perrault, typological | n 183 e 1 formalist | n 184 e 3 collage, hannes, dessau | n 185 e 4 sigfried, berlage, architektur, bauen | n 186 e 9 colin, reyner, gardes, manfredo, emil, rowe, mannerist, vidler, tafuri | n 187 e 9 autre, arcadia, townscape, smithsons, elia, stirling, ronchamp, nikolaus, pevsner | n 188 e 43 angel, travel, futuris, pref, freeway, green, sant, s |
| n 241 e 55 contemporary, distinction, function, decision, ambition, formal, initially, unify, environment, latent, insistence, authoritati ... | n 242 e 3 formalism, renaissance, configure | n 243 e 4 exhibition, moderne, inconspicuous, fuelled | n 244 e 25 constructivist, transparency, prehistory, mondrian, weimar, expressionism, geodesic, bauhaus, neue, constructivism, impressioni ... | n 245 e 41 mies, picasso, adolf, savoye, painterly, expressionist, gropius, freestanding, apollinaire, konrad, fernand, alois, braque, sti ... | n 246 e 3 disenchant, greenberg, riegl | n 247 e 4 wren, aia, evelyn, cedric | n 248 e 21 ran, buck, practi, claddin, craft, stuttg, ventil |
| n 301 e 35 task, operate, imply, solution, mature, articulate, theoretically, arena, polemic, connotation, sketch, sensitivity, tighten, h ... | n 302 e 3 construction, achievement, consonance | n 303 e 2 engineer, appreciation | n 304 e 1 skeletal | n 305 e 2 garnier, dadaist | n 306 e 1 postmodernists | n 307 e 5 historian, michelangelo, eclectic, surfeit, reassess | n 308 e 7 catalog, nouvea, aeropl, ch |
| n 361 e 51 potential, system, type, primary, explicit, motivate, frame, solve, constraint, explicitly, integrate, presume, description, cl ... | n 362 e 5 contribution, select, loosely, theory, stringent | n 363 e 4 structural, reference, appropriately, hoc | | n 365 e 2 monograph, italia | n 366 e 3 anthology, interdisciplinary, panofsky | n 367 e 3 academic, paolo, klein | n 368 e 5 critic, full, p |
| n 421 e 11 project, reconstruct, composition, depict, conceptually, envision, densely, reformulate, topography, aggregation, accessibility | n 422 e 5 feasible, relevant, placement, perceptual, dover | n 423 e 6 embed, generalize, label, stimulation, applicability, wiley | | n 425 e 13 thesis, indentation, abbreviation, noam, typewrite, advisor, croce, bibliography, subsection, vallet, tesauro, bibliographical ... | n 426 e 26 student, documentation, underline, topic, index, parenthesis, card, citation, pseudonym, graduation, biographical, skim, comma ... | n 427 e 7 title, author, scholarly, quote, ideally, file, subdivision | n 428 e 6 publi, editor, |
| n 481 e 15 reconstruction, reinvent, monumental, anonymity, vastness, punctuate, depiction, cornell, gridded, reinvention, volumetric, tab ... | n 482 e 1 idiosyncratic | n 483 e 12 component, feature, tentatively, terminological, illustrative, principled, feasibility, reorder, syntax, erasure, ... | n 484 e 20 specify, entry, tentative, inadequacy, john, restrictive, dummy, abbreviate, bracket, deviant, detectable, inapplicable, deriva ... | | | n 487 e 4 revise, insert, cite, unpublished | n 488 e 8 publish, docum, scholar, gradua |

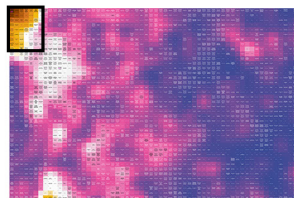


Fig. 3.30 Face of *Schumacher_The Autoipoiesis of Architecture Vol2* - Zoom to the cloud of indexes surrounding indexes of *system*, *project* and *type*, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/Schumacher_TheAutoipoiesisofArchitectureVol2.pdf, 0  1

3.1.3.2.0.2 Actor 2

Spuybroek_TST

The Sympathy of Things: Ruskin and the Ecology of Design by Lars Spuybroek, from 2011

thing -> 788, form -> 556, ruskin -> 423, design -> 377, gothic -> 358, make -> 358, feel -> 316, sympathy -> 291, like -> 276, work -> 258, life -> 247, pattern -> 245, object -> 245, aesthetic -> 244, way -> 233, beauty -> 231, line -> 226, art -> 225, ornament -> 223, time -> 220, call -> 193, point -> 193, use -> 192, force -> 188, mean -> 184, need -> 176, act -> 169, relation -> 168, world -> 165, structure -> 164, figure -> 163, movement -> 158, variation -> 158, mat -> 153, notion -> 153, picturesque -> 153, abstract -> 149, nature -> 147, say -> 144, abstraction -> 143, take -> 140, think -> 135, move -> 131, start -> 128, live -> 125, come -> 125, end -> 123, material -> 121, sublime -> 121, stone -> 120

Our second actor from the middle of the spectrum is *Spuybroek_TST*. He is an unusual character for this group. His most frequent indexes talk about *things, form, design, aesthetic*, but from another conceptual space: *ruskin, gothic, sympathy, beauty, picturesque, sublime*. These indexes are also reflected in the choice of words in his title and the structure of the book: *digital, nature, gothic, matter, ornament, abstraction, sympathy, radical, picturesque, ecology* and *design*. When looked at in the context of the ten actors interested in *code*, his face looks different from the others. His face is the only face whose main focus is away from the indexes of *code, architecture* and *design* (Fig. 3.26). His face is about *beauty, ornament, sublime, colour, flatland, texture, delicate textile, sculpture* (Fig. 3.31, Fig. 3.32). It is a different focus and set of indexes than the rest of the spectrum. To get a better context for his articulation in this act, let us look into the other actors from *Xenotheka* who are interested in an index of ornaments. Just the first four actors and their affinities towards the *atom letter n47e48*.

Concept n47 e48 {ornament, ornamental, mold, aesthetically, twig, entanglement, textile, rib, crystalline, darwin, mullion, textured, finalize, parasitical, sympathize, ornamentation, snowflake, filigree, vegetal, titian, morris, caterpillar, sympathy, relatedness, picturesque, daedalus, teleology, gothic, pheasant, acanthus, organicism, tendril, wallpaper, transept, violet, naturalism, vitalism, vitalize, vitalist, tracery, empathy, worringer, tessellation, ruskin, lipps, savageness, tessellate, changefulness}

The actors are:

Spuybroek_The Sympathy of Things, 0.0901453,
Abbott_Flatland,¹²⁰ 0.0638773,
Ruskin_The Seven Lamps of Architecture¹²¹, 0.0574003,
Hugo_Les Miserables¹²², 0.0363651

Spuybroek_TST is now getting a clearer profile in the library. All three actors —*Ruskin_The Seven Lamps of Architecture*, *Hugo_Les Miserables* and *Abbott_Flatland* —were published in the second half of 19th century and are dealing with similar indexes to *Spuybroek_TST* but from a different *body of thinking*.¹²³ *Spuybroek_TST* refers to it explicitly: “*Can we, and will we, ever be Romantic enough?*”¹²⁴ On the other hand, in the introduction to the book, Brian Massumi refers to *Spuybroek_TST*'s *gothic ontology* as a *flat ontology*¹²⁵ with Ruskinian romanticism, which brings the aforementioned indexes and actors into a convincing arrangement.

120 Face of Abbott_Flatland: http://www.romanvlahovic.com/xenotheka/Abbott_Flatland.pdf, See Edwin A. Abbott, *Flatland: A Romance of Many Dimensions*, Unabridged edition (New York: Dover Publications, 1992).

121 Face of Ruskin_The Seven Lamps of Architecture: http://www.romanvlahovic.com/xenotheka/Ruskin_TheSevenLampsofArchitecture.pdf, See John Ruskin, *The Seven Lamps of Architecture*, Reprint edition (New York: Dover Publications, 1989).

122 Face of Hugo_Les Miserables: http://www.romanvlahovic.com/xenotheka/Hugo_LesMiserables.pdf, See Victor Hugo and Adam Gopnik, *Les Misérables*, trans. Julie Rose (New York: Modern Library, 2009).

123 For the *Body of Thinking*, see Hovestadt, “Cultivating the Generic.”

124 Spuybroek, *The Sympathy of Things*, ebook, loc 332.0 / 965.

125 See introduction to Spuybroek, loc 29.8 / 965.

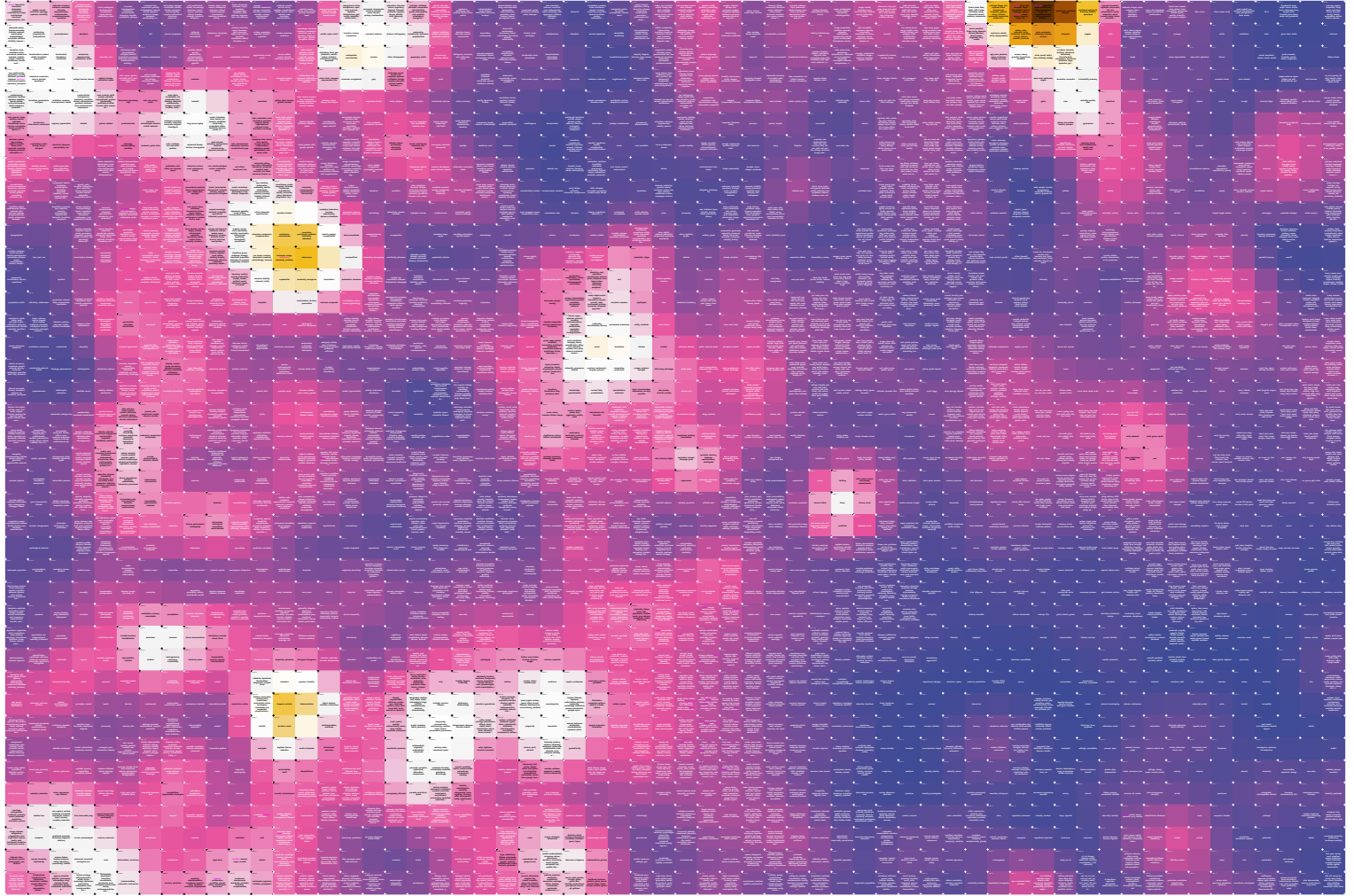


Fig. 3.31 Face of *Spuybroek_The Sympathy of Things*, rendering_03_RW_4060_r_50it21d
http://www.romanvlahovic.com/xenotheka/Spuybroek_TheSympathyofThings.pdf, 0  1

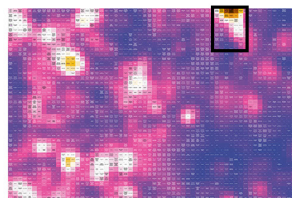
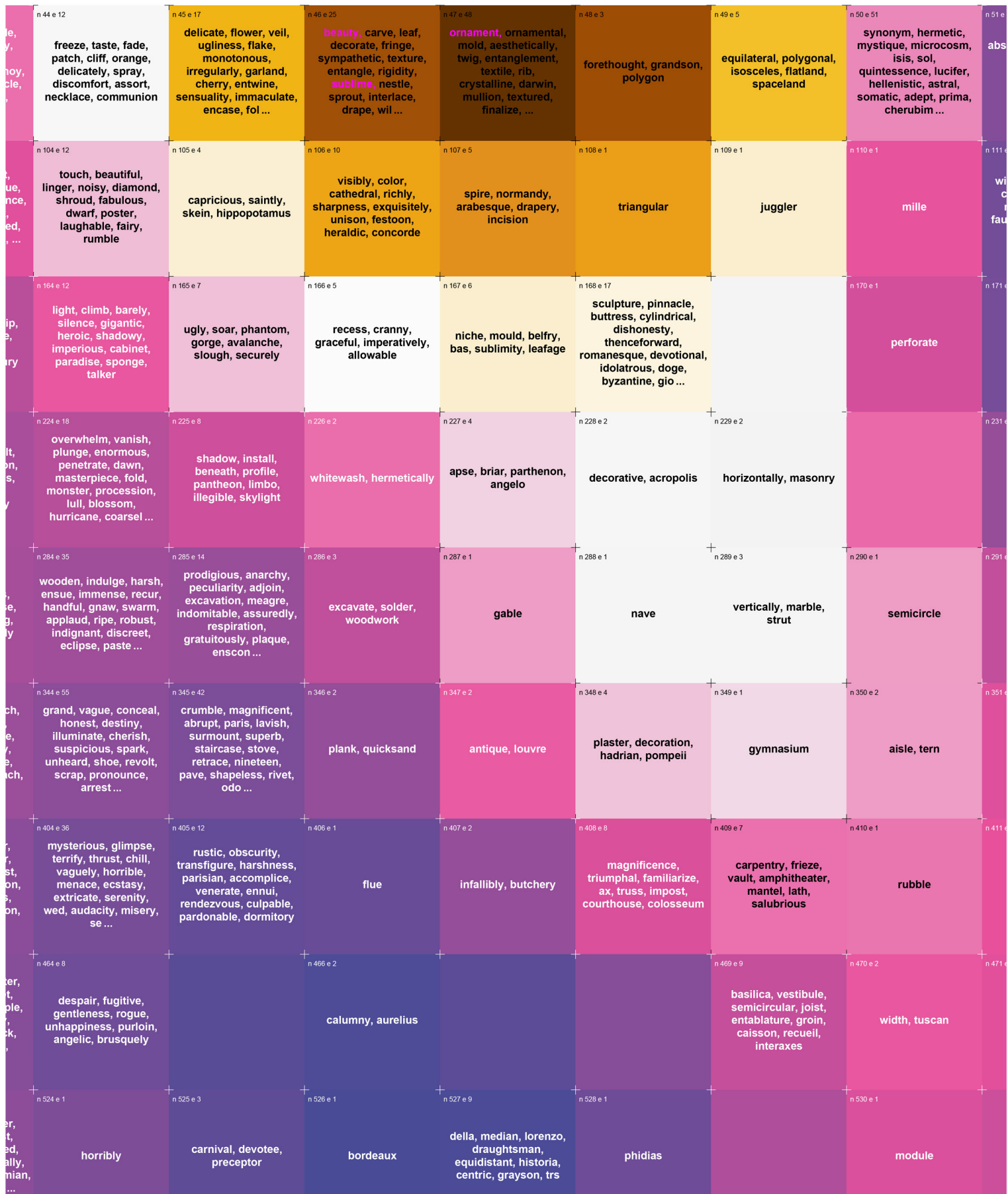



Fig. 3.32 Face of *Spuybroek The Sympathy of Things* - Zoom to the cloud of indexes surrounding indexes of *ornament*, *beauty* and *sublime*, rendering_03_RW_4060_r_50it21d, http://www.romanvlahovic.com/xenotheka/Spuybroek_TheSympathyofThings.pdf, 0  1

3.1.3.2.0.3 Actor 3

Banham_ACW

A Critic Writes, a collection of essays written by *Reyner Banham* from the 1950s to the 1980s

build -> 453, like -> 391, design -> 363, architecture -> 348, work -> 257, new -> 249, house -> 244, architect -> 239, time -> 208, good -> 204, art -> 203, make -> 197, style -> 196, architectural -> 192, know -> 183, look -> 179, modern -> 175, come -> 168, world -> 162, great -> 156, year -> 155, way -> 151, form -> 150, just -> 149, man -> 142, use -> 141, say -> 134, history -> 133, glass -> 129, city -> 127, point -> 127, appear -> 123, kind -> 121, long -> 119, fact -> 118, go -> 116, thing -> 116, see -> 115, book -> 114, right -> 113, old -> 113, wright -> 107, leave -> 106, begin -> 104, stand -> 103, think -> 101, structure -> 101, american -> 99, early -> 99, mean -> 97

From the other end of the spectrum comes an actor with almost ten times less affinity towards *code* than *Schumacher_AOA*. This is *A Critic Writes, Selected Essays* by *Reyner Banham*, from the 1950s to the 1980s, also known as *Banham_ACW* in this library. *Banham_ACW* is a collection of essays written by *Reyner Banham* but selected by *Mary Banham*, *Paul Barker*, *Sutherland Lyall* and *Cedric Price*. This book is a collection of voices, topics and articulations, out of which the dominant one is *Reyner Banham*. This book is not a single narrative but a multiplicity of thoughts and ideas. He is an architectural mutant. As such, I guess he feels very comfortable in this library. His face (Fig. 3.33, Fig. 3.34) and its most frequent indexes depict an atmosphere of an actor talking about *architecture*, *design*, *cities*. He is looking for elements *handrail*, *aircraft*, *portable*, *glaze*, *kit*, and for forms and formats that bring those elements into constellations: *arcadia*, *economy*, *catalogue*, *modernism*, *anthology*, *Los Angeles*. *Banham_ACWSE* is a figure in love with technology.

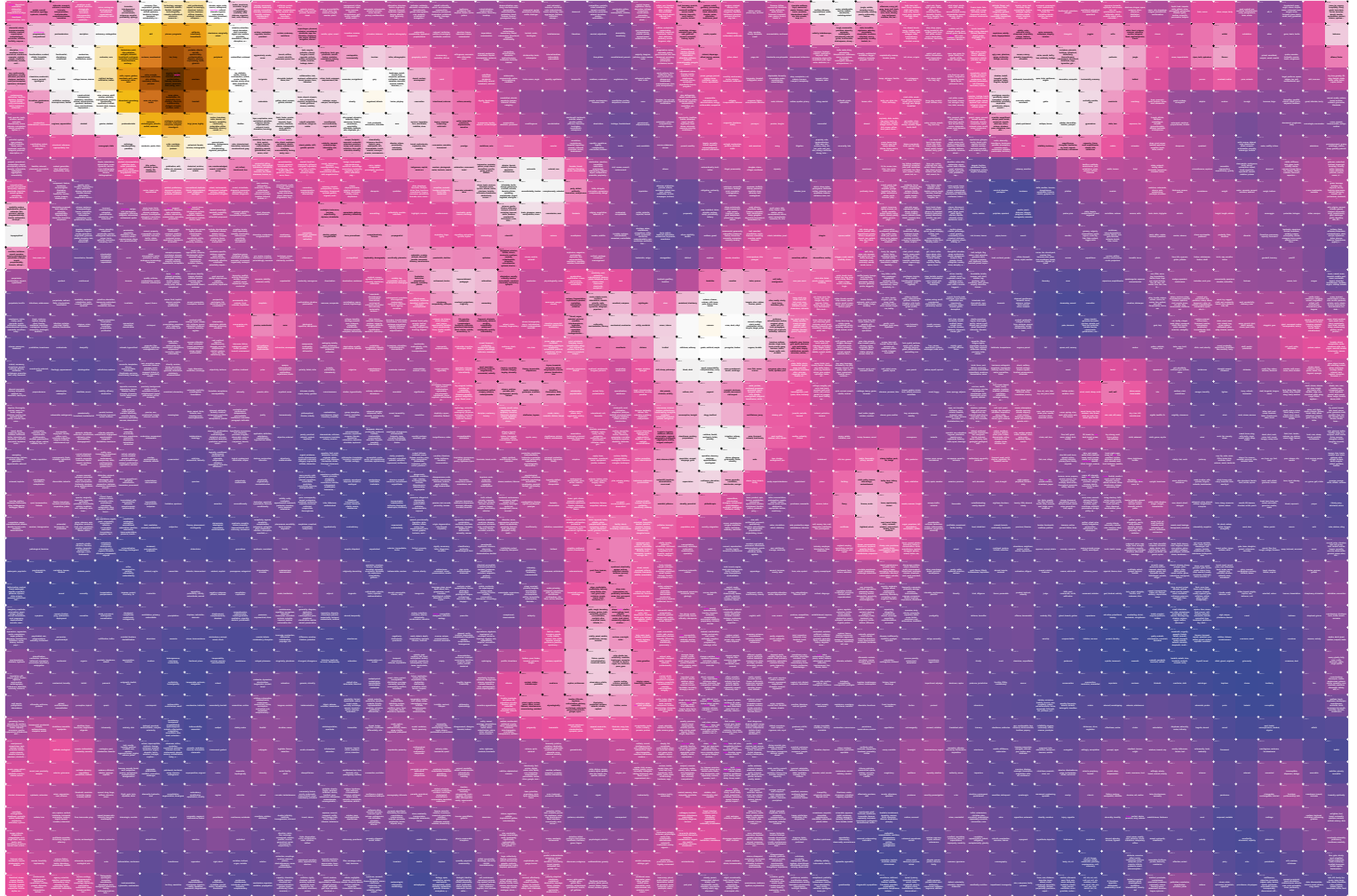


Fig. 3.33 Face of *Banham_CriticWrites*, rendering_03_RW_4060_r_50it21d
http://www.romanvlahovic.com/xenotheka/Banham_CriticWrites.pdf, 0  1

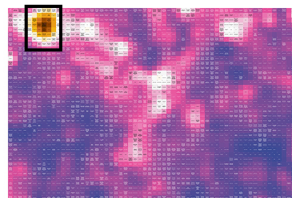
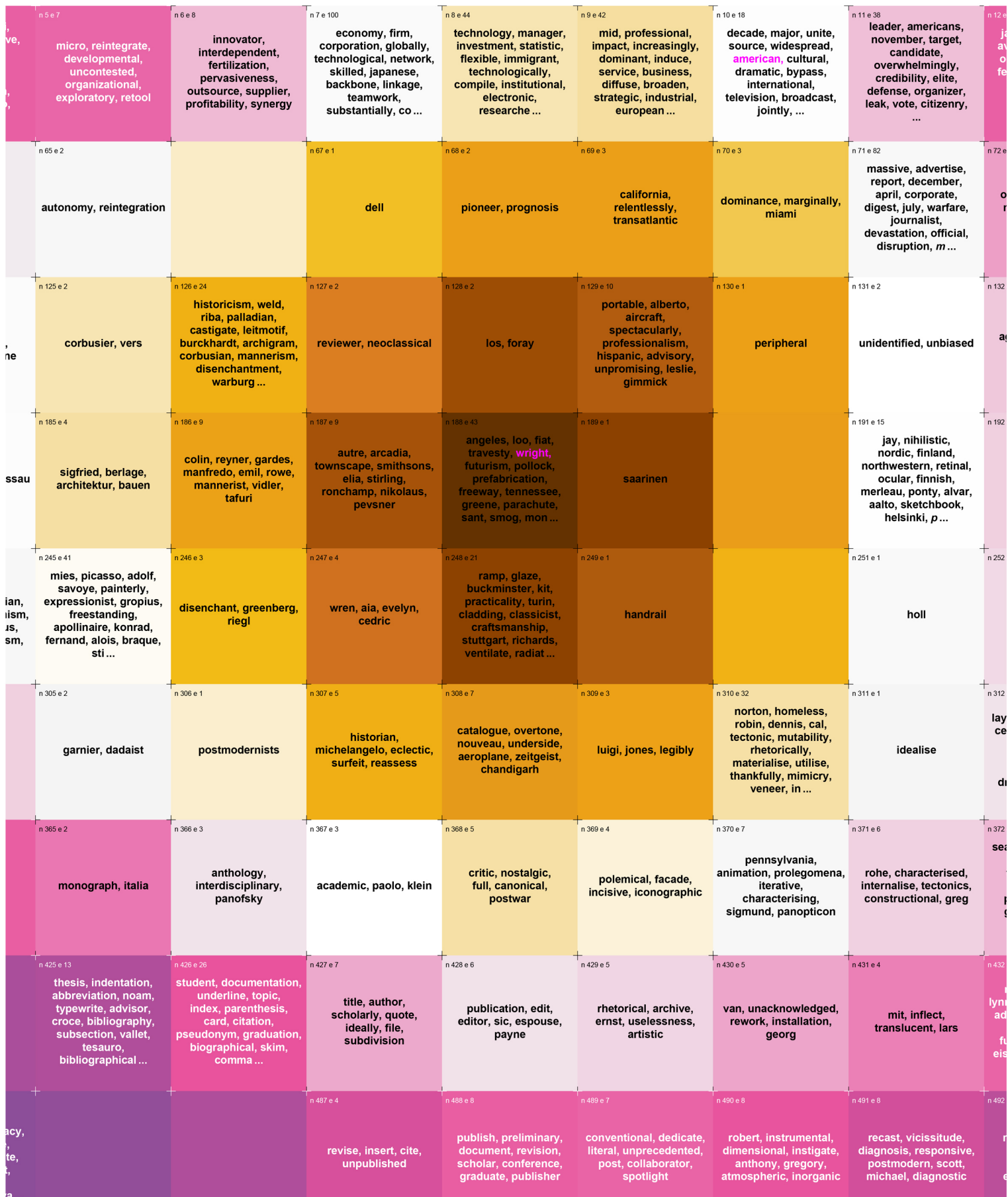


Fig. 3.34 Face of *Banham_CriticWrites* - Zoom to the cloud of indexes surrounding indexes of *Los Angeles*, *parachute* and *ventilate*, rendering_03_RW_4060_r_50it21d http://www.romanvlahovic.com/xenotheka/Banham_CriticWrites.pdf, 0 1

The stage is set; the anticipation is in the air. Different architectural encodings, their elements and, hopefully, a glimpse of their renderings will unravel in the following pages. How our protagonists are going to play with *architecture* and *code*, in the unfolding and opening of space around the notion of *information*, is yet to be seen.

...

3.1.3.2.1 Scene 1: Autopoietic System

Schumacher_AOA is first to light up the galaxy. He is confidently and eagerly entering the stage with a huge body of work written on more than one thousand pages. Equipped with a freshly articulated framework and a new agenda for architecture, he begins to elaborate his autopoietic programme without any hesitation. He immediately introduces his main concept in his first thesis.

Schumacher_AOA:

THESIS 1

The phenomenon of architecture can be most adequately grasped if it is analyzed as an autonomous network (autopoietic system) of communications.

The theory presented here – the theory of architectural autopoiesis – offers a new theoretical framework that explicates architecture as distinct subsystem of society, understood as a sui generis system of communications. This framework structures a comprehensive analysis of the discipline in terms of its most fundamental concepts, methods and values.

The term architecture is usually assumed to denote either a certain class of artefacts – the class of all (fine) buildings – or an academic domain of knowledge concerned with

*this class of artefacts or, finally, a professional activity directed towards the production of such artefacts. However, architecture as a system of communications is neither a mere collection of artefacts, nor a mere form of knowledge, nor merely a particular professional practice. Rather it encompasses all three categories: artefacts, knowledge and practices – all understood as communications that connect to each other in an ongoing recursive network.*¹²⁶

What immediately struck both *Spuybroek_TST* and *Banham_ACW* is the confidence with which *Schumacher_AOA* sets a very clear and strong hierarchy. He sees architecture as an autonomous network of communication, a subsystem of a world system which is the sum total of all communication happening at once: a society.¹²⁷ While looking at architecture from a distance, as its master, he objectifies it as a network of communication. He then places it in a laboratory as an autonomous object and starts analysing it in terms of its underlying principles: concepts methods and values. Architecture is safe and sound, as long as it does not challenge or leave the laboratory. It is just the inverse approach to *Brillouin_SIT*'s who was trying to formalize communication, fully aware of the intrigues that come with it, one of which is “*that no observation can be made without an accompanying increase of entropy*”¹²⁸ *Schumacher_AOA* observes communication, while *Brillouin_SIT* tries to communicate.

Nevertheless, *Schumacher_AOA*'s confidence captivates the library as he continues.

Schumacher_AOA:

0.1 Architecture as a System of Communications

The theory of architectural autopoiesis closely ‘observes’ (and intends to intervene within) a distinct subset of these societal communications, namely the subset of architectural communications, and – assuming that they form a system – is trying to capture this system’s constitutive conceptual structures (concepts), its regular communication patterns (methods), its criteria of evaluation (values), as well as its evolutionary trajectory with respect to those three dimensions. The theory offers a coherent framework that allows architecture to

126 Schumacher, *The Autopoiesis of Architecture, Vol.I*, ebook, loc 28.0 / 1254.

127 Niklas Luhmann, *Theory of Society*, vol. 1 (Stanford University Press, 2012).

128 Brillouin, *Science and Information Theory*, ebook, loc 399.5 / 638.

*analyze itself in comparison with other subsystems of society like art, science and politics. On the basis of such comparisons the theory insists on the necessity of disciplinary autonomy and argues for a sharp demarcation from both art and science. Design intelligence is an intelligence sui generis. It is a specific collective intelligence that evolves within its own self-referential network of communications. This network is the autopoiesis of architecture. Its past, present and (potential) future trajectories constitute the topic of this book.*¹²⁹

Schumacher_AOA wants to capture architecture, give it a framework, disciplinarize it, even give it an *intelligence sui generis*. This intelligence, in my reading, is closer to a set of laws than to an intelligence driven by its desires, or to an intelligence discussed by *Serres_G* in the first act. *Schumacher_AOA* is doing his best to define and explicate how or maybe even design ways in which architecture operates and evolves. But not in order to animate it, but rather to demarcate it and contain it. To make it self-sustainable. In other words, he wants to isolate architecture as a system of communication and observe and temper communication within it. *Schumacher_AOA* continues to elaborate the elements and encodings of the autopoietic system of architecture without granting it freedom to talk to the outside. He explicitly starts to articulate the code of architecture.

Schumacher_AOA:

3.5 The Codification of Architecture

THESIS 14

All design decisions are evaluated along two dimensions: utility and beauty.

[...]

Another way to ask the same questions would be to ask: how is architecture codified? Which terms within the architectural discourse operate the decisive binary code that is required to unify and demarcate architecture as autopoietic function system within society?

The theory of architectural autopoiesis proposes that architecture is differentiated on the basis of two codes: the double code of utility and beauty. Architecture is demarcated and

129 Schumacher, *The Autopoiesis of Architecture, Vol.I*, ebook, loc 29.5 / 1254.

integrated around the interweaving of two questions, the question of beauty and the question of utility. These two questions or concerns are capable of probing all architectural/design communications and only architectural/design communications. This double coding is closely connected to architecture's lead-distinction of form vs function. Beauty and utility are the evaluative terms that flow from the lead-distinction of form and function. Utility is good, useful function in contrast to bad function, ie, set against the useless, the dysfunctional; and beauty is good, resolved form set against the ugly, bad, unresolved form. This sets up two binary oppositions which force evaluation and facilitate the required design decisions.¹³⁰

Schumacher_AOA encodes all design decisions along two dimensions: *utility* and *beauty*. Each can be positive or negative, beautiful or ugly, functional or dysfunctional. Such an understanding implies that both *utility* and *beauty* can be explicitly measured. This is an inverse articulation of *beauty* and *utility* to the one that comes from *Xenotheka*, where *beauty* is an index to a concept which talks about *beauty*. It is encoded in *atom-letter n46 e25*, but it would be lost without the stability provided by the cloud. In the case of *Xenotheka*, it is clear that *beauty* is not a dimension but a concept in a specific context; it depends on the library and its encoding; it is an articulation out of many dimensions: a dimensionality. With each change in *Xenotheka*, it shows a new face. The beauty of it is that one can work with a concept of *beauty* without explicating it, but by playing with its many dimensionalities. With *Schumacher_AOA*, coding and communication go in the other direction, to binary oppositions.

Intrigued by this statement, somewhere in the library *Alberti_TBOA* whispers to *Spuybroek_TST* while looking at *Vitruvius_TBOA*.¹³¹

Alberti_TBOA:

But what Beauty and Ornament are in themselves, and what Difference there is between them, may perhaps be easier for the Reader to conceive in his Mind, than for me to explain by Words.¹³²

Spuybroek_TST smiles and whispers back while thinking.

130 Schumacher, *The Autopoiesis of Architecture, Vol.I*, ebook, loc 553.7 / 1254.

131 Vitruvius, *Ten Books on Architecture*.

132 Leon Battista Alberti, *The Architecture of Leon Batista Alberti. In Ten Books* (London: Printed by Edward Owen, 1755), 358.

Spuybroek_TST:

We cannot answer this question in terms of “meaning,” that much is certain. You cannot answer those questions at all in twentieth-century terms, I fear.

Meaning, language, criticality, and semiotics have been standing over the grave of beauty for a hundred years now—there is no friendly way of saying it.¹³³

Schumacher_AOA continues without hearing the comments.

Schumacher_AOA:

- *code of utility: functional vs dysfunctional*
- *code of beauty: formally resolved vs formally unresolved*

The exact words used are not always stable and different words circulate in different languages. However, the basic distinction is always the same. Theoretically this code can be derived as the (necessary) evaluative doubling of architecture’s lead-distinction into two complementary binary codes. In turn, the lead-distinction of architecture – form (self-reference) vs function (world-reference) – is the necessary re-entry of the distinction between system (architecture) and environment (society) within the autopoietic system of architecture.¹³⁴

Vitruvius_TBOA stops smiling as *Schumacher_AOA* assigns only one possible state to both beauty and utility: *0 or 1*. This zero and one are not empty symbols that are part of the dimensionality of beauty or utility; they are rather signs of *functional vs dysfunctional* and *the formally resolved vs formally unresolved*. It is the opposite gesture from thinking that code makes the object of interest produce more, like *Xenotheka* and *Informational Instrument* try to do. With *Schumacher_AOA*, code assigns meaning. Before concluding on his encoding process, he adds another code. The code of novelty: *original vs conventional*, 0 vs 1.

Schumacher_AOA:

133 Spuybroek, *The Sympathy of Things*, ebook, loc 333.0 / 965.

134 Schumacher, *The Autopoiesis of Architecture, Vol.I*, ebook, loc 567.5 / 1254.

Within the avant-garde segment of the discipline the third code does indeed become prevalent. This extra code, in fact, facilitates the formation of the avant-garde as a recognizable subsystem within the autopoiesis of architecture. This code validates originality and imposes the relevance and recognition of the code values original (new) vs conventional (old) on all avant-garde communications. Mainstream architectural communications are not subject to this limitation. The code of novelty (originality) cannot impose itself here.¹³⁵

He starts rendering and branding the whole system by giving an articulation to his universal encoding process: he calls it *parametricism*. Here is an instance of it.

Schumacher_AOA:

11.2 The Parametricist Research Programme

THESIS 58

The eventual success of grand, unifying schemes in science relies on the underlying coherence of reality. The rationality of a style's claim to universality lies in the advantage a coherent built environment offers to society. Modernism did achieve universality during the course of the 20th century. Parametricism aims for an equivalent achievement in the 21st century.

In principle every property of every element or complex is subject to parametric variation. The key technique for handling this variability is the scripting of functions that establish associations between the properties of the various elements. However, although the new style is to a large extent dependent upon these new design techniques, the style cannot be reduced to the mere introduction of new tools and techniques. What characterizes the new style are new ambitions and new values – both in terms of form and in terms of function – that are to be pursued with the aid of the new tools and techniques. Parametricism pursues the very general aim: to organize and articulate the increasing diversity and complexity of social institutions and life-processes within the most advanced arenas of Post-Fordist network society.¹³⁶

135 Schumacher, *The Autopoiesis of Architecture, Vol.I*, ebook, loc 587.5 / 1254.

136 Schumacher, *The Autopoiesis of Architecture, Vol.II*, ebook, loc 1740.3 / 2005.

Parametricism is a new style that can master populations by preserving their designed variability. Each and every element in space becomes a vector of properties. By correlating vectors with a general rule, one is designing a powerful machine. Instead of a single space, *Schumacher_AOA* is able to orchestrate a whole field of spaces. He starts to look at the world via models in a one-to-one relation, trying to optimise, control, and design them in coherence with reality. With more parameters, *Schumacher_AOA's* models can become more complex, better and more real. His talk culminates as he starts to design a theory of design.

Schumacher_AOA:

Epilogue – The Design of a Theory

The author of the theory of architectural autopoiesis must therefore take a position against indifference and the live-and-let-live tolerance that suffocates debate. The unity of architecture requires comprehensive debate. The unity of a hegemonic style requires conclusive debate. Coherent practice requires that debates are concluded to become premises for decisive action. The underlying sensibility and thrust of the arguments about Parametricism as new global, epochal style are based on the desire to enhance the power of collective discourse over all individual endeavours. This implies a shift in discursive sensibility, a reduction of anything goes tolerance and an insistence on forging a coherent, collective movement forward. However, the appropriate level of discursive tolerance is itself a historical variable. The theory of architectural autopoiesis recognizes the value of discursive tolerance at certain historical junctures.¹³⁷

What does it mean to design a theory?¹³⁸ *Theoria* has its etymological roots in Latin and Greek; it points; it is a way of looking, a conception, a viewing. To design a theory would mean to design a way to look (at the world) and this, at least to me, sounds strange, if not dangerous. But for the ones that find it interesting, this is an open and urgent call.

137 Schumacher, *The Autopoiesis of Architecture, Vol.II*, ebook, loc 1870.3 / 2005.

138 theory (n.), the 1590s, “conception, mental scheme,” from Late Latin *theoria* (Jerome), from Greek *theoria* “contemplation, speculation; a looking at, viewing; a sight, show, spectacle, things looked at,” from *theorin* “to consider, speculate, look at,” from *theoros* “spectator,” from *thea* “a view” (see theater) + *horan* “to see,” which is possibly from PIE root **wer-* (3) “to perceive.” from “Theory | Origin and Meaning of Theory by Online Etymology Dictionary,” accessed August 27, 2018, <https://www.etymonline.com/word/theory>.

Schumacher_AOA:

The most urgent, general conclusion is perhaps simply: join Parametricism's drive to conquer the mainstream of world architecture!¹³⁹

...

End of the First Scene

3.1.3.2.2 Scene 2: Sympathy of Things

The second to enter the stage is *Spuybroek_TST*. He is a cunning character of mixed feelings. In principle, he likes the story that *Schumacher_AOA* was presenting, but not the way he was narrating it. The two of them are different characters that are talking about the same thing in two different manners. While *Schumacher_AOA* was claiming universality, designing a theory and calling for action, *Spuybroek_TST* is interested in telling a beautiful story through a network of its fictional relations. In a charming way, by pointing and referring to some of his friends from *Xenotheka*, he captivates the attention and sets a nice atmosphere in the library.

Spuybroek_TST:

My ambition is to update Ruskin, not to see him diluted in the countless streams of diverging trends.

I let Ruskin encounter William James, revolve around him, and absorb some of his thought, but not enough to slow him down; sweep around Henri Bergson, acquiring more speed; and again around a few Germans (Theodor Lipps, Wilhelm Worringer, and even Martin

139 Schumacher, *The Autopoiesis of Architecture, Vol.II*, ebook, loc 1929.3 / 2005.

Heidegger); eject him over the twentieth century (which at several points in the book I call the dark age of the sublime), with its world wars, its minimalism, and its deconstructivism; and stop him so that he appears suddenly in our own age, like Doctor Who, meeting the likes of Bruno Latour and Peter Sloterdijk. One could hardly call this project historiographic—but it is not pure science fiction either, since we are bound to make the creature from the past speak in words both he and we understand.

In this sense, this book fits an established custom: to create a Ruskin object, a probe sent from the past to shine light on our own times.¹⁴⁰

His first moves are in harmony with *Xenotheka*. *Spuybroek_TST*, the artificial character of *Xenotheka*, is making a Ruskin object as a probe with the intention to travel and learn about the world. Sounds fantastic. Let us follow his probe.

Spuybroek_TST:

How can one make the aesthetic philosopher (as Edmund White correctly qualifies him) of variation, imperfection, and fragility into one of machinery? This question brings me to my second project: I will argue that our contemporary tools of design and production should be understood in a framework not of modern times but of premodern ones—not only of Ruskin's age of the picturesque and ornament but also of the pre-Renaissance era his own century tried to recreate: the age of the Gothic. John Ruskin's Gothic, either misjudged as sheer ethics or aesthetically not taken entirely seriously, turns out to be such a radical concept of design that I do not hesitate to call it a Gothic ontology, a notion that fuels the rest of the book.¹⁴¹

The main fantasy of his story is the articulation of *gothic ontology* which, as a celebration of continuity, variability, and transformability of space, brings the Premodern times and *Ruskin's age*, together with *Schumacher_AOA's* parametricism, into to the same conceptual space. His symmetries are convincing. Variability and machinery, fragility and logistics, seem to articulate each other without any resistance into a continuous functional morphing. To use his terms: there is a sympathy between those elements. He continues.

140 Spuybroek, *The Sympathy of Things*, ebook, loc 16.0 / 965.

141 Spuybroek, loc 18.8 / 965.

Spuybroek_TST:

Gothic ontology is defined as a special relationship between figures and configurations, in which the figures are active parts that have a certain freedom to act, though only in relation to others and in order to form collaborative entities. This concept transcends the aesthetic opposition of structure and ornament, making the Gothic “a beauty that works,” one that leads to a much broader notion of an aesthetics based on sympathy. Sympathy, in my briefest definition, is what things feel when they shape each other.¹⁴²

Gothic ontology is a beauty that works, a relationship between figures and configurations, what things feel when they shape each other. A sympathy. Brian Massumi qualifies this as a flat ontology with one plan(e) where differences come together and all the hierarchies disappear.¹⁴³ Here *Spuybroek_TST* turns to his dear friend *Worringer_AAE* and starts reciting his pages.

Worringer_AAE:

We regard as this counter-pole an aesthetics which proceeds not from man’s urge to empathy, but from his urge to abstraction. Just as the urge to empathy as a pre-assumption of aesthetic experience finds its gratification in the beauty of the organic, so the urge to abstraction finds its beauty in the life-denying inorganic, in the crystalline or, in general terms, in all abstract law and necessity.¹⁴⁴

Spuybroek_TST slowly starts to encode his notion of *sympathy* by mixing different actors and their concepts. For him, sympathy appears when dualisms move towards a spectral form.

Spuybroek_TST:

In short, Lipps’s notion of Sympathie is the more accurate one, but only when understood in Worringer’s terms, which are more accurate, because they allow us to understand sympathy as a mixture of abstraction and empathy.¹⁴⁵

142 Spuybroek, loc 20.2 / 965.

143 See introduction to Spuybroek, *The Sympathy of Things*, ebook, by Brian Massumi.

144 Wilhelm Worringer, *Abstraction and Empathy: A Contribution to the Psychology of Style* (Mansfield Centre, Conn.: Martino Fine Books, 2014), 23.

145 Spuybroek, *The Sympathy of Things*, ebook, loc 429.4 / 965.

He takes both *empathy* and *abstraction* from *Worringer_AAE*, but clearly placing a lot of weight on “-pathy”.

Spuybroek_TST:

I am arguing that things cannot come into being or exist without style. And I want to make this claim in the most radical sense: every ontology is a style, it does not just have one. Strictly speaking, it is the styles that are, and being is the verb. Aesthetics, I argue, is ontology. Things are as they are aesthetically, or, as some would say, because they have an effect; or, as others would say, because they affect each other—but that is far too mechanical for me, because sympathy means things act in relation (“sym-”) and such relations are felt (“-pathy”). An effect issues from just one term; affect occurs between at least two terms, but merely as an exchange of feelings, while sympathy is a resonance, an attunement of feelings, forming a true connection or bond.¹⁴⁶

There is a strange atmosphere building up between *Schumacher_AOA* and *Spuybroek_TST*. They are like competing allies, like runners on a running track. They compete for the same goal, for the network, for the connection of things, relations, bonds, and feelings. This is a communication network in which there is always at least one continuous line between any two nodes. Each node affects all the others. The ornament is becoming a function of form, design work renders architectural forces which are in themselves ornamental. There is no outside; there is just one plan(e) of continuous transformation.

Spuybroek_TST:

Eventually, the main question will emerge: Can we, by acknowledging technology as the main source of the contemporary sublime, turn the tide? Having arrived at that point, we will collect all the attributes of the picturesque, such as wildness and freedom, and endeavor to radically apply them to technology. I am convinced that this is the only way to retrieve a world of things, i.e., a world of beauty, which I equate with a world of feelings: to move not away from technology but through it. Questions raised by art and artisanship should be appropriated by technology—not a technology of purposiveness, instrumentality, and mediation, however, but one of variation and flourishing.¹⁴⁷

146 Spuybroek, loc 480.9 / 965.

147 Spuybroek, loc 480.9 / 965.

How to talk about beauty through technology?, *Spuybroek_TST* asks implicitly. But the way he asks is in the manner of *Schumacher_AOA*, again by equating it to a function, this time not as a *formally resolved vs formally unresolved* but via feelings formalised to relations on a plane. As I see it, the story in a way goes back to parametrising communication and counting its relations. Still not by learning how to talk about beauty, or with it.

Spuybroek_TST:

Our Gothic ontology has never aspired to distinguish strictly between the two: stones act like plants, and plants act as strange and still as rocks. What we can say, though, is that the closer we seem to get to a middle position, the more relations between things start to become reciprocal and move away from clear-cut dualisms—and that is where the true radicalism of the middle lies.¹⁴⁸

But why should a stone act like a plant? Why lose the distinction? Why not play with the distinctions? Can a plant talk to a stone? Or better yet, can a plant act as though a stone while talking to it? A flat ontology is still an ontology, and maybe the problem lies in the *twentieth-century terms* (as he mentioned before while whispering to *Vitruvius_TBOA*)—like ontology—which are unable to grant intelligence to objects, stones or plants, without paying the price of one plan(e).

Spuybroek_TST:

The problem is a fundamental lack of beauty, of a constructed knot of objects acting as stations for feelings. Feelings cannot be mediated; you cannot put them on television. Feelings can only be used to make things. Buildings, vases, cars, cupboards, wallpaper, tables—all our furnishings are things. Images on television do not seem to qualify as things because the fact that they have been fabricated is hidden under such a thick cloak of actuality that they become impossible to live with. They simply pass by, perishing continuously (in what must be our best model of hell to date). Advertising is the last resort of artificiality on television, the last remnant of ornament.¹⁴⁹

148 Spuybroek, loc 495.6 / 965.

149 Spuybroek, loc 762.2 / 965.

What is interesting is that both *Schumacher_AOA* and *Spuybroek_TST* don't take into account the notion of information (in a way that was discussed in the first act). Beauty and feelings might not be mediated or faithfully represented but what if they can be symbolized by an algebraic character and operationalized in a relation to other symbols? By playing with the abundance of information, one can work with concepts like beauty in a new way, by tuning its dimensionality, its encodings, and by placing it into many different ontologies and contexts.¹⁵⁰ In such a scenario, stones will not just act like plants but they will actually talk to plants.

Spuybroek_TST:

The Internet is not particularly modern or in any way related to space; on the contrary, it is a deeply Gothic project—not because the Web is about veins and fibers and the Gothic loves fibrous systems but because it interrelates work and aesthetics. In contrast to television, the Web is there to make things. Today it still acts chiefly as though it is part of media culture or, worse, visual culture—still part of that separation between talking about things and making things—but there is nothing inherent in its structure to make it do so; it is mere habit. On the contrary, when all mediation has evaporated, it could emerge as a distributed, generalized factory, like Schelling's nature, a platform of productivity—pure abstraction that strives to produce real things.¹⁵¹

I long for the day when we can see objects forming, like pools of mud, flowers on a wall, or clouds in the sky, as pure products in a context of pure productivity, without any intermediaries. There will be no desires, no opinions, no critics, no designers, just pure flourishing.¹⁵²

At the end of his journey, Ruskin found himself in a generalized factory standing on a platform for productivity. Unlike the fantastic opening of fictional travels and stories of a probe called Ruskin, *sympathy* of objects, hybridity of their interactions, the end of his story strips us of all of that. No desires? No opinions? Just a machine? Pure flourishing and pure abstraction that strives to produce real things? What happened to fantasy? Has *Doctor John Ruskin Who* ended his journey and found a home in the utopia of *Spuybroek_TST*? Wonder what he would say when stripped of desires and opinions?

150 This work (*Play Among Books*) would be an example of this kind of strategy.

151 Spuybroek, *The Sympathy of Things*, ebook, loc 772.9 / 965.

152 Spuybroek, loc 774.5 / 965.

...

End of the Second Scene

3.1.3.2.3 Scene 3: A Black Box

The last one to talk about *code* in the cloud of architecture and about encoding architecture in the context of information is *Banham_ACWSE*. Unlike *Schumacher_AOA* and *Spuybroek_TST* who emphasized the network seen as sympathy of its objects and a system of communication, *Banham_ACWSE* starts by provoking both of them, by not knowing what architecture is. He is treating architecture like a black box,¹⁵³ in other words, like a secret with which he can operate and tell stories.

Banham_ACWSE:

A Black Box:

The Secret Profession of Architecture

I propose to treat the architectural mode or presence as a classic “black box”, recognised by its output though unknown in its contents.¹⁵⁴

What architecture is for *Banham_ACWSE* is an open question. Its encoding is changing according to the atmosphere around it; its internal mechanism is unknown. Nevertheless, it's already been here for more than two thousand years. It has never been clear what it is, but its secret and formalizations were always acquiring new faces and new articulations. How one poses

¹⁵³ Black Box, ” *Wikipedia*, August 12, 2018, https://en.wikipedia.org/w/index.php?title=Black_box&oldid=854586942.

¹⁵⁴ Banham, *A Critic Writes*, 293.

the question of architecture, and how one talks about this secret is the challenge. The black box is one way of stating the problem. I would speculate and say that this is an adequate way of talking about secrets in the 21st century. After getting everyone's attention, *Banham_ACWSE* continues by stating what is not in the black box of architecture.

Banham_ACWSE:

Let us then re-divorce what should never have been joined together in this opportunistic marriage-of-convenience. Throw out all the Zulu kraals, grain-elevators, hogans, lunar excursion modules, cruck-houses, Farman biplanes and so forth, and look again at "this thing called architecture" in its own right, as one of a number of thinkable modes of design which, for some reason, has come to occupy a position of cultural privilege in relation to the construction industry.¹⁵⁵

By distinguishing what it is not, he doesn't have to define what architecture is. He keeps it a secret that even he doesn't know. It is still a black box. *Banham_ACWSE* distinguishes in order to relate. He is in a loop, trying to leave the generic—its machines and infrastructure—in order to think, and then come back to them.

Banham_ACWSE:

What then would distinguish the products of this black box from those of other thinkable modes? Functional or environmental performance? Beauty of form or deftness of space? Truth to materials or structural efficiency? These are all qualities for which the architectural profession habitually congratulates itself, but a Buckminster Fuller dome or an Eskimo igloo can usually beat architecture on all six counts, and so can a lot of other buildings, ships, air liners, inflatables and animal lairs. So why do we not admit that what distinguishes architecture is not what is done—since, on their good days, all the world and his wife can apparently do it better—but how it is done. We can distinguish that "how" in two crucial ways in the actual behaviour of architects as they perform their allotted tasks as building designers. The first is that architects—almost uniquely among modern design professionals—propose to assume responsibility for all of those six aspects of good building set out above, and to be legally answerable to the client for their proper delivery.¹⁵⁶

155 Banham, 294.

156 Banham, 294.

After spending some time in the loop, he comes out with a beautiful articulation of architecture able to unite the elements that he distinguished as non-architectural under a more abstract umbrella. It is the same umbrella that *Spuybroek_TST* and *Schumacher_AOA* were using, one of bringing things together and in relation, but more abstract. Architects assume responsibility for bringing different elements and qualities together and, even more, for the way they bring them together. Responsibility in relating is *Banham_ACWSE*'s way of giving dignity to a tradition of architecture. This statement becomes more and more challenging if we see the world as a place of increasing choices, abundant in form and information. In this sense, *Banham_ACWSE* continues by putting on the table one of his favourite gadgets: *the great gizmo*. A small and sophisticated element, a point that brings potential and responsibility into space by articulating its context. It is a utilizing fiction. *The great gizmo* encodes space in terms of lightweight infrastructure.

Banham_ACWSE:

The great gizmo

The man who changed the face of America had a gizmo, a gadget, a gimmick—in his hand, in his back pocket, across the saddle, on his hip, in the trailer, round his neck, on his head, deep in a hardened silo.

[...] Like this: a characteristic class of U.S. products—perhaps the most characteristic—is a small self contained unit of high performance in relation to its size and cost, whose function is to transform some undifferentiated set of circumstances to a condition nearer human desires. The minimum of skill is required in its installation and use, and it is independent of any physical or social infrastructure beyond that by which it may be ordered from catalogue and delivered to its prospective user.¹⁵⁷

In *Banham_ACWSE*'s view, architecture —when treated as a black box, and doped by the potentiality of *The great gizmo*— articulates environments that he loves and celebrates the most. Here it is, one of his great passions: Los Angeles, a city beyond categorization, a place where paradoxes meet, and where *Banham_ACWSE* feels good. His eyes start to glow as he starts talking about LA.

157 Banham, 109.

Banham_ACWSE:

Master builders

Los Angeles's range of environment, from the beaches to the foothills and the deserts, is without comparison in the other metropolises of the world; no local building material is good enough to establish a hegemony over the range of importables; the habits and tastes are anything you like to name. The result is a kaleidoscope (other cliches like 'spectrum' or 'mosaic' are too orderly in their implications) of styles that can produce not only the Greenes' beloved woodwork, Irving Gill's restrained Mission style and Schindler's freeassociation ad-hockery, but also the fantasies of Hollywood Baroque, the keen sobrieties of Charles Eames's steel house or the total originality of Simon Rodia's ceramic-cruled towers in troubled Watts.¹⁵⁸

Los Angeles, in *Banham_ACWSE*'s terms, is a celebration of the generic condition. A place of potentials and transformations, where anything is possible. A place where the global and the local talk to each other. Generic city,¹⁵⁹ generic medicine, generic brand, drug, term, filter, infrastructure, and on the other, a gene, genesis, a creation, being born. A place where one can simultaneously be equal to anything, and a place where the potentials tremble. Everything is similar and anything is possible. He continues with a smile.

Banham_ACWSE:

The mixture defies categorisation, but creates an open, flexible situation in which a determined client and an imaginative architect can do their thing without too much fear of what the neighbours may think. A home in Pasadena or Hollywood, or Malibu or Huntington Beach, can be (as Frank Lloyd Wright said of a different situation) "a more organic expression . . . the delightful thing that imagination would have it"—which is rough on us historians, but very good for architecture.¹⁶⁰

In the same move, the Generic defies categorisation, and inverts history and tradition. The history of planning becomes the planning of history. It is a continuous space of transformation.

158 Banham, 173.

159 Koolhaas, "Generic City."

160 Banham, *A Critic Writes*, 174.

While in it, as curious as he is, *Banham_ACWSE* starts to drift away and play with modernist legacy, its first encodings, and its transformations on the journey to America. It is his way of planning history.

Banham_ACWSE:

Why, in a word, do we have to rewrite the history of the Modern Movement?

*Not because that history is wrong; simply because it is less than life size. The official history of the Modern Movement, as laid out in the late Twenties and codified in the Thirties, is a view through the marrow-hole of a dry bone—the view is only possible because the living matter of architecture, the myths and symbols, the personalities and pressure-groups have been left out. The choice of a skeletal history of the movement with all the Futurists, Romantics, Expressionists, Elementarists and pure aesthetes omitted, though it is most fully expressed in Giedion's *Bauen in Frankreich*, is not to be laid to Giedion's charge, for it was the choice of the movement as a whole. Quite suddenly modern architects decided to cut off half their grandparents without a farthing.¹⁶¹*

Moderns like *Schumacher_AOA* wanted a blank slate, autonomy, and discipline. All of this was a part of the programme and as *Banham_ACWSE* puts it, it was not that simple, since architecture and its materials have always flirted with the symbolic, with different tribes which were trying to inscribe totemic and ritualistic values into them.

Banham_ACWSE:

In doing so, modern architecture became respectable and gutless; it entered on what Peter Smithson has justifiably called its Academic phase, when it became a style with books of rules, and could be exported to all parts of the Western world. But having set itself up as something more than a style, as a discipline of pure reason, it had to double-talk fast and frequently to explain its obsession with certain materials, particularly glass and that smooth white reinforced concrete that never existed outside architects' dreams and had to be faked in reality with white rendering. Clearly, these materials were symbolic, they were totemic signs of power in the tribe of architects. But while concrete has never lacked respectable medicine-

161 Banham, 37.

*men, from Auguste Perret to Pierluigi Nervi, to maintain its mana, the image of Gropius as the official witch-doctor of glass has never looked very convincing. On the other hand the fanaticism of a Bruno Taut possessed by the spirit of Paul Scheerbart, as by a voodoo deity, has much more the air.*¹⁶²

And as he continues, by going more and more into detail, he gets lost in assigning particular roles and motives to the main protagonist of the modern movement. As time went by, it was getting increasingly difficult to keep up the enthusiasm; somehow the words were missing and details were abundant. *Banham_ACWSE* was getting tired.

Banham_ACWSE:

*This is not to say that we now throw away the history of glass in modern architecture as it has been established so far—the position of Muthesius and Gropius among its prophets is not demolished, only diminished. We have to find some space for Scheerbart, as Giedion now clearly recognizes. The problem, which is not to be settled by a single article, is—how much space?*¹⁶³

As he was losing his grip in trying to rewrite history, he stopped and remembered LA. His eyes suddenly started to glow again. He dropped the details into the generic ocean and ended with a twist.

Banham_ACWSE:

*Now it is the well-known hypothesis of my California colleague David Gebhardt that what Hitchcock and Johnson did to the International Style would have happened to it anyway because “as each new style came across the Atlantic to America, its ideology fell into the ocean and was never seen or heard from again”.*¹⁶⁴

The ideology fell into the generic plane; the details were gone. *The Secret Profession of Architecture* was safely kept secret. *Banham_ACWSE* was again playing with the *Black Box* and *The Great Gizmo*. In his eyes, LA was flourishing as a kaleidoscope of styles and range of fantastic environments. Reyner Banham loves Los Angeles.

162 Banham, 37.

163 Banham, 38.

164 Banham, 285.

...

End of the Third Scene

As the third act ends, information via coding acquires an architectural face. There is no conclusion, but a spectrum of architectural encodings that are trying to negotiate ways in which technology relates symbolic encodings to architectural characters. *Schumacher_AOA* and *Spuybroek_TST* in their approaches to coding went far away from the atmosphere cultivated in *Xenotheka*, while *Banham_ACWSE*, by treating architecture as a *black box*, was in a way flirting with its ideas. At the end of this discussion the empty table was full of elements and thoughts:

Code, Style, Architecture.

Three actors, three encodings, three manners.

Schumacher_AOA, *Spuybroek_TST*, *Banham_ACWSE*.

Autopoietic System, Gothic ontology, Black Box.

Parameters, Sympathy, A Great Gizmo.

Design of a Theory, Ecology of Design, Kaleidoscope of Styles.

...

End of the Third Act

CIPHER

3.1.4.1 *Dramatis Personae*

The fourth fold and the last act in the unfolding of the concept of *information* is not a conclusion or an ending, but rather an opening up of space for new explorations, adventures, and talks sparked by concepts of *information*, *data*, *code*, and *cipher*. Act four is a personal way of making new keys for further plays, and an introduction to the second play. An indexed idea, concept, a topic, or a foreign book is a cipher that can be unlocked if when placed in *Xenotheka*. But again there is a trick. With each new key, all the locks change. The act on *cipher* is going to be different in its form than the previous acts. *Xenotheka* is expecting guests and alien books. There are going to be three foreign books. They are different in kind. Each one presents a peculiar way of posing a question to the library. For *Xenotheka*, these three foreign books are guests; it should accommodate them and make them feel comfortable. For me, the player of the *Informational Instrument*, these three guests are three indexes that I am sending in order to continue to talk and explore my interests in new ways. With each new question, *Xenotheka* shows a new face. In act four, three guests —the new actors—will communicate implicitly without saying a word; they will be characterised in terms of their friends. The first guest is a stranger and before starting an intimate conversation, I would like to hear its friends talk about it. The second guest is fictional, an idea, a book that has not been written and, as such, refuses to speak out loud. And lastly, it would be inappropriate for the third guest to make statements since it is composed out of the sentences I am writing now. A delicate situation. Instead of speaking loudly, actors will be characterised by *Xenotheka*, its galaxy, by their friends, by the characters they themselves will form, index and be a part of. Let me introduce the three new guests.

The first one is a foreigner, a guest, which was recommended to me by a friend as a book that might be of interest for my work. I decided to invite it to *Xenotheka*, to get to know it, and see how the library accommodates it. In *Xenotheka* it carries a name:

Eco *From the Tree to the Labyrinth*¹⁶⁵

165 Umberto Eco, *From the Tree to the Labyrinth: Historical Studies on the Sign and Interpretation*, trans. Anthony Oldcorn, First Edition edition (Cambridge, Massachusetts: Harvard University Press, 2014), ebook.

The second guest is fictional, a probable but a nonexistent persona, a composed provocation, a probe, a mutant, and an interest of mine. It consists of information, architecture, and drama, concepts that I care and like to talk about. It is a mutant of *Brillouin_Science and Information Theory*,¹⁶⁶ *Koolhaas_SMLXL*,¹⁶⁷ and *Shakespeare_Romeo and Juliet*.¹⁶⁸ Its body is composed out of these three texts compiled together. This fictional character decided not to express itself publicly. As an avatar, it can have friends, and I hope its friends will articulate an interesting story about it. I named this probe:

B_SIT_K_SMLXL_S_RAJ

The last guest is not a guest at all; it is a curious and personal question, a contemplation about this text.¹⁶⁹ Let me formulate it in a few ways:

Which books in *Xenotheka* are friends of a *Play Among Books*?

With which books from the library should I develop a closer relationship while exploring topics constitutive for a *Play Among Books*?

Which conceptual persona is indexed by my text?

Which shelf in *Xenotheka* offers a temporary home for this alien text?

I will give this text a code name:

PAB

Three alien texts are closely related to my interests: one recommended, one crafted as an index, and one as a meditation on my writing. The scenario of the fourth act is to let these three alien texts enter *Xenotheka* and see how the galaxy changes and how they settle. When the guests start to feel comfortable, I will ask their friends to talk about them. To see who their friends are and how they talk and index them is the plot and the challenge of the fourth act.

166 Brillouin, *Science and Information Theory*, ebook.

167 Koolhaas, *S, M, L, XL*.

168 William Shakespeare, *The Tragedy of Romeo and Juliet*, 1997, ebook, <http://www.gutenberg.org/ebooks/1112>.

169 PAB is composed out of the second and third chapter of this text.

3.1.4.2 *THREE GUESTS: The Talk of Their Friends*

3.1.4.2.0 *Prologue*

Three guests have been invited to *Xenotheka*. They are on their way. The fourth act is their entrance to the library, a journey from being an alien to becoming a guest and, hopefully, a friend. Three guests are characters, conceived and conceptualised in different ways. Each actor is a cipher to be deciphered and opened up by a key articulated in *Xenotheka*'s terms. Act four is a fast glimpse of their adventure in *Xenotheka* indexed by their friends.

3.1.4.2.1 *Scene 1: Guests Approaching*

Three guests are approaching *Xenotheka*. Before they enter, let us ask *Xenotheka* and its characters to speculate about the atmosphere and the mood that the aliens might bring. Which books from the library would consider them as friends and which characters (shelves) would potentially accommodate the alien books if they were to enter?

Xenotheka replies, in its own terms, via its own *atom-letters*, via its own dictionary. The foreign books have no say in it. They still have not entered. At the moment, they are being indexed by an already existing galaxy of actors (Fig. 3.35). The answer from *Xenotheka* is a projection. At first glance, *B_SIT_K_SMLXL_S_RAJ* and *PAB* find themselves indexed together by an *atom-letter n13e11*. These two foreigners are seemingly interested in similar topics. They both talk about architecture, information, and language. This much we know. They are indexed by the same character, which is an indicator of their character.

n13 e11

{B_SIT_K_SMLXL_S_RAJ, PAB,}

{Wiener_Cybernetics, Hofstadter_Godel Escher Bach, Schrodinger_What is Life, Delanda_Philosophy and Simulation, Foucault_Archaeology of Knowledge, Popper_The Logic of Scientific Discovery, Saussure_Course in General Linguistics, Brillouin_Science and Information Theory, Barthes_The Language of Fashion, Eco_How to Write a Thesis, Einstein_Relativity}

Character *n13e11* provides a pleasant and challenging atmosphere to both alien texts. It is a home to actors that are in this context interested in discussing information, language, knowledge, philosophy, and physics, among other topics. The neighbouring character—*n19e6*— adds to the mood by bringing architecture to the discussion (Fig. 3.35). Two strangers were introduced and indexed through their friends and are not so foreign anymore. A book is never alone.

The third alien, *Eco_From the Tree to the Labyrinth*, was projected to another cell where he was welcomed by a close friend *Eco_On Literature* and a group of his friends that gather and index a character in love with language and literature: *n31 e13*.

n31 e13

{Eco_From the Tree to the Labyrinth}

{Eco_On Literature, Derrida_Signature, Deleuze_Desert Islands and Other Texts, Blanchot_The Book to Come, Serres_Geometry, Zizek_Less Than Nothing, Lacan_The Psychoses Seminars of JL, Derrida_Of Grammatology, Eco_Serendipities Language & Lunacy, Blanchot_The Space of Literature, Bachelard_The Poetics of Space, Nancy_The Ground of the Image, Derrida_Copy Archive Signature},

Xenothekas projections feel convincing. It is time for the strangers to enter *Xenotheka* and add to its articulation.

...

End of the First Scene

| | | | | | |
|--|---|-----------------------------------|---|---|--|
| Eisenman_Notes on Conceptual Architecture | | Eisenman_The End of the Classical | Lavin_Flash in the Pan, Schumacher_The Autopoiesis of Architecture Vol2, Schumacher_The Autopoiesis of Architecture Vol1, Vidler_Histories of the Immediate Present, Lavin_Kissing Architecture, Jacob_Make it real | Sykes Hays_Architectural Theory 1993 2009, Rakatansky_Tectonic Acts of Desire and Doubt, Bo Bardi_Stones Against Diamonds, Ratti et al_Open Source Architecture, Scott Brown_Having Words, Mertins_Modernity Unbound, Venturi Scott Brown_learning from las vegas, Pallasmaa_The E... | Banham_Critic Writes, Sudjic_The Edifice Complex, Rogers_A Place for All People, Jencks_The Story of Post-Modernism, Betsky_Architecture Matters, Krier_The Architecture of Community, Koolhaas_Delirious New York, LeCorbusier_Towards a New Architecture, Gropius_The New Archite... |
| Chomsky_Language and Mind, Chomsky_Aspects of the Theory of Syntax | Chomsky_On Language | | | Aureli_Less is Enough | Sorkin_All Over the Map, Mumford_The Culture of Cities, Koolhaas_SMLXL, Hollis_Cities Are Good for You, Le Corbusier_The City of Tomorrow, Greenfield_Against the smart city, Ratti_The City of Tomorrow, Jacobs_The Death and Life of Great American Cities, Tafuri_Architecture ... |
| Wiener_Cybernetics, Hofstadter_Godel Escher Bach, Schrodinger_What is Life, Delanda_Philosophy and Simulation, Foucault_Archaeology of Knowledge, Popper_The Logic of Scientific Discovery, Saussure_Course in Gene... PAB, B_SIT_K_SMLXL_S_RAJ | | Haraway_Cyborg Manifesto | | | Ponte_The House of Light and Entropy, West_Scale The Universal Laws of Growth, Easterling_Extrastatecraft, Castells et al_Another Economy Is Possible, Aureli_Real Estates, Howard_Garden Cities of To-Morrow, Schlemmer Nagy_The Theater of the Bauhaus, Weizman_Before and After |
| Cache_Projectiles, Spuybroek_The Sympathy of Things, Carpo_The Second Digital Turn, Deleuze Guattari_A Thousand Plateaus, Max Bill_Form, Function, Beauty, Feynman_QED The Strange Theory of Light | Latour_Reassembling the social | | Lefebvre_Critique of Everyday Life, Auge_The Future | Marx Engels_The Communist Manifesto | Castells_The Power of Identity, Castells_The Rise of the Network Society, Castells_Networks of Outrage and Hope, Marx_Capital Volume 1 |
| Serres_Latour_Conversations on Science, Culture, and Time, Baudrillard_The Vital Illusion, Freud_Beyond the Pleasure Principle, Lefebvre_Rhythmanalysis, Harman_Immaterialism Objects and Social Th | Latour_We Have Never Been Modern Foucault_The History of Sexuality Vol 1 | Latour_Facing Gaia | | Fukuyama_The End of History and the Last Man | Hayek_The Constitution of Liberty, Hayek_The Road to Serfdom, Herman Chomsky_Manufacturing Consent, Weizman_The Least of All Possible Evils, Smith_Wealth of Nations |
| Eco_On Literature, Derrida_Signature, Deleuze_Desert Islands and Other Texts, Blanchot_The Book to Come, Serres_Geometry, Zizek_Less Than Nothing, Lacan_The Psychoses Seminars of J.L., Derrida_Of Grammatology, Eco_Serendipities Language & Luna... Eco_From the Tree to the Labyrinth | Girard_Violence and the Sacred, Girard_Sacrifice | Foucault_History of Madness | | Sedlacek_Economics of Good and Evil, Arendt_On Revolution | Kittler_The Truth of the Technological World, Taleb_The Black Swan, Hofstadter_I Am a Strange Loop, Graeber_Debt, McLuhan_The Gutenberg Galaxy, McLuhan_Understanding Media, Wiener_The Human Use Of Human Beings, Virilio_A Landscape of Events, Benjamin_The Work of Art in the A... |
| Harman_Bells and Whistles, Delanda_Harman_The Rise of Realism, Harman_Towards Speculative Realism, Buehlmann_Mathematics and Information Serres, Foucault_The Order of Things, Deleuze_Difference and Reppetiton, Deleuze Guattari_What Is Philosophy, Ayache_The Blank Swan | Barthes_Mythologies | | Arendt_The Human Condition | Jung_Archetypes and the Collective Unconscious, Jung_Two Essays in Analytical Psychology, Jung_Alchemical Studies | Serres_The Five Senses, Ruskin_The Seven Lamps of Architecture, Serres_Statues, Vitruvius_The ten Books of Architecture, Alberti_10 books Of Architecture, Ranciere_Aisthesis, Humboldt_Equinoctial Regions of America, Serres_Rome, Ruskin_Poetry of Architecture, Alberti_On Pain... |
| Meillassoux_After Finitude, Badiou_In Praise of Mathematics | | Descartes_Discourse on the Method | | Nietzsche_Beyond Good and Evil, Bacon_Novum Organum | Borges_Collected Fictions, Hugo_Les Miserables, Shelley_Frankenstein or the Modern Prometheus, Serres_Biogea, Musil_The Man Without Qualities V1, Sullivan_The Autobiography of an Idea, Lucretius_On The Nature Of Things, Abbott_Flatland, Homer_Iliad, Goethe_Faust, Beowulf, K... |
| Rusel_The Problems of Philosophy, Kant_Critique of Pure Reason, Badiou_Mathematics of the Transcendent, Badiou_Number and Numbers, Wittgenstein_Tractatus Logico Philosophicus | Spinoza_The Essential Spinoza Ethics, Spinoza_The Ethics, Descartes_Meditations | Leibniz_Theodicy | Cicero_Tusculan Disputations, Hobbes_Leviathan, Aristotle_Ethics, Aristotle_Poetics | Rousseau_The Social Contract, Aristote_Politics, Machiavelli_The Prince, Plato_Timaeus, Plato_The Republic | Joyce_Ulysses, Dickens_A Tale of Two Cities, Tolstoy_War and Peace, Eco_The Name of the Rose, Eco_Baudolino, Tolstoy_Anna Karenina, Beckett_Stories and Texts for Nothing, Cervantes_Don Quixote, Dickens_Oliver Twist, Rand_The Fountainhead, Woolf_Night and day, Kerouac_On The ... |

Fig. 3.35 *Xenotheka* looking at its guests. Black: books from *Xenotheka*, Magenta: Guests, rendering_229_25_RB_0609_r_50it21d_guests_2, http://www.romanvlahovic.com/xenotheka/_229_25_RB_0609_r_50it21d_guests_2.pdf

3.1.4.2.2 Scene 2: Granting Hospitality

The aliens became guests by entering *Xenotheka*. The library shifted; the galaxy changed; it is spelt in new *atom-letters*. Its dictionary is different now; it is modified and influenced by new guests that are starting to feel at home. Each one found its shelf and became a constitutive part and an index of a new character. One could say that the guests have been granted hospitality by their new friends. Here is how they settled, how the new galaxy accommodated them, and how they became part of its new articulation (Fig. 3.36).

New actors have found their temporal homes in the neighbouring cells in the same part of the galaxy (Fig. 3.36). This is promising since it implies that this neighbourhood is the one that accommodates concepts close to my interests. Let us continue and explore the atmosphere of this neighbourhood for a moment (*atom-letters n12e6, n18e7, n24e37* and their friends).

n12e6

B_SIT_K_SMLXL_S_RAJ, Wiener_Cybernetics, Delanda_Philosophy and Simulation, Brillouin_Science and Information Theory, Popper_The Logic of Scientific Discovery, Foucault_Archaeology of Knowledge

n18e7

Eco_From the Tree to the Labyrinth, Eco_Serendipities Language & Lunacy, Foucault_The Order of Things, Derrida_Of Grammatology, Lacan_The Psychoses Seminars of JL, Hofstadter_Godel Escher Bach, Saussure_Course in General Linguistics

n24e37

Kittler_The Truth of the Technological World, Eco_On Literature, Serres_The Five Senses, Serres_Geometry, Derrida_Signature, McLuhan_The Gutenberg Galaxy, Serres_Statues, Blanchot_The Book to Come, Benjamin_The Work of Art in the Age of M, Serres_Biogea, Hofstadter_I Am a Strange Loop, Serres Latour_Conversations on Science, Culture, and Time, McLuhan_Understanding Media, Cache_Projectiles, Ponte_The House of Light and Entropy, Ranciere_Aisthesis, Virilio_A Landscape of Events, Barthes_Mythologies, Deleuze Guattari_A Thousand Plateaus, Serres_Thumbelina, Serres_Rome, Spuybroek_The Sympathy of Things, Freud_The Psychopathology

| | | | | | |
|---|--|--|--|--|---|
| Russel_The Problems of Philosophy, Kant_Critique of Pure Reason, Wittgenstein_Tractatus Logico Philosophicus | Meillassoux_After Finitude | Badiou_Number and Numbers | Badiou_In Praise of Mathematics, Badiou_Mathematics of the Transcendent | Deleuze Guattari_What Is Philosophy | Chomsky_On Language, Chomsky_Language and Mind, Chomsky_Aspects of the Theory of Syntax, Feynman_QED The Strange Theory of Light, Eisenman_Notes on Conceptual Architecture |
| Descartes_Meditations | | | | Deleuze_Difference and Reppetion | B_SIT_K_SMLXL_S_RAJ, Wiener_Cybernetics, Delanda_Philosophy and Simulation, Brillouin_Science and Information Theory, Popper_The Logic of Scientific Discovery, Foucault_Archaeology of Knowledge |
| Spinoza_The Essential Spinoza Ethics, Spinoza_The Ethics | | | Harman_Bells and Whistles, Harman_Towards Speculative Realism, Delanda Harman_The Rise of Realism | Deleuze_Desert Islands and Other Texts, Buehlmann_Mathematics and Information Serres | Eco_From the Tree to the Labyrinth, Eco_Serendipities Language & Lunacy, Foucault_The Order of Things, Derrida_Of Grammatology, Lacan_The Psychoses Seminars of JL, Hofstadter_Godel Escher Bach, Saussure_Course in General Linguistics |
| Leibniz_Theodicy | Descartes_Discourse on the Method | Einstein_Relativity | Schrodinger_What is Life | Zizek_Less Than Nothing, Freud_Beyond the Pleasure Principle, Harman_Immaterialism Objects and Social Th | Kittler_The Truth of the Technological World, Eco_On Literature, Serres_The Five Senses, Serres_Geometry, Derrida_Signature, McLuhan_The Gutenberg Galaxy, Serres_Statues, Blanchot_The Book to Come, PAB, Benjamin_The Work of Art in the Age of M, Serres_Biogea, Hofstadter_I Am a St... |
| Plato_The Republic, Plato_Symposium, Aristotle_Ethics, Confucian Analects | Plato_Timaeus, Lucretius_On The Nature Of Things, Bacon_Novum Organum | Newton_The Mathematical Principles of Natural Philosophy | Darwin_On the Origin of Species | Jung_Archetypes and the Collective Unconscious, Latour_Facing Gaia, Jung_Alchemical Studies, Jung_Two Essays in Analytical Psychology, Wiener_The Human Use Of Human Beings, Freud_The Uncanny, Girard_Violence and the Sacred, Popper_All Life Is Problem Solving, Foucault_Histor... | Sykes Hays_Architectural Theory 1993 2009, Banham_Critic Writes, Sudjic_The Edifice Complex, Lavin_Flash in the Pan, Bo Bardi_Stones Against Diamonds, Rakatansky_Tectonic Acts of Desire and Doubt, Jencks_The Story of Post-Modernism, Ratti et al_Open Source Architecture, Mer... |
| Hobbes_Leviathan | Cicero_Tusculan Disputations | | Nietzsche_Beyond Good and Evil, Arendt_The Human Condition, Foucault_The History of Sexuality Vol 1 | Augé_The Future, Sedlacek_Economics of Good and Evil, Latour_We Have Never Been Modern, Latour_Reassembling the social | Lefebvre_Critique of Everyday Life, Aureli_Less is Enough, Haraway_Cyborg Manifesto |
| Galilei_Discourse on Floating Bodies | Aristotle_Politics | Rousseau_The Social Contract | Arendt_On Revolution | Fukuyama_The End of History and the Last Man | Marx Engels_The Communist Manifesto, Marx_Capital Volume 1 |
| | Machiavelli_The Prince | Aristotle_The Athenian Constitution | Hayek_The Constitution of Liberty | Hayek_The Road to Serfdom | Castells_The Power of Identity, Castells et al_Another Economy Is Possible, Castells_The Rise of the Network Society, Castells_Networks of Outrage and Hope |
| Joyce_Ulysses, Borges_Collected Fictions, Hugo_Les Miserables, Dickens_A Tale of Two Cities, Eco_The Name of the Rose, Tolstoy_War and Peace, Musil_The Man Without Qualities V1, Shelley_Frankenstein or the Modern Prometheus, Eco_Baudolino, Sullivan_The Autobiography of an I... | Ruskin_The Seven Lamps of Architecture, Vitruvius_The ten Books of Architecture, Alberti_10 books Of Architecture, Ruskin_Poetry of Architecture, Humboldt_Equinoctial Regions of America, Durand_Precis of the lectures on Architecture, Alberti_On Painting, Stein_Tender Buttons... | Devlin_The Unfinished Game, Smith_Wealth of Nations | Taleb_The Black Swan, Graeber_Debt, Negroponte_Being Digital, Zizek_Demanding the Impossible, Devlin_Finding Fibonacci, Arendt_Eichmann in Jerusalem A Report, Fuller_Operating Manual For Space | Alexander_A Pattern Language, Weizman_The Least of All Possible Evils, Herman Chomsky_Manufacturing Consent, Alexander_The Timeless Way of Building | Sorkin_All Over the Map, Mumford_The Culture of Cities, Koolhaas_SMLXL, Hollis_Cities Are Good for You, Rogers_A Place for All People, Le Corbusier_The City of Tomorrow, Koolhaas_Delirious New York, Aureli_Real Estates, West_Scale The Universal Laws of Growth, Ratti_The City... |

Fig. 3.36 *Xenotheka*, Magenta: characters of interest, rendering_232_14_RW_4060_r_50it22d
http://www.romanvlahovic.com/xenotheka/_232_14_RW_4060_r_50it22d.pdf

of Everyday, Bachelard_The Poetics of Space, Abbott_Flatland, Blanchot_The Space of Literature, Max Bill_Form, Function, Beauty, Worringer_Abstraction and Empathy, Lefebvre_Rhythmanalysis, Nancy_The Ground of the Image, Schlemmer_Nagy_The Theater of the Bauhaus, Derrida_Copy Archive Signature, Barthes_The Language of Fashion, Eco_How to Write a Thesis, PAB, Nancy_Intoxication, Ayache_The Blank Swan, Plato_The Republic, Plato_Symposium, Aristotle_Ethics, Confucian Analects

The three character index a myriad of different topics. They again form a spectrum going from knowledge and philosophy via language, communication and information, to technology and architecture. This is a vast, challenging and open space, but also one filled with particular flavours and unusual atmospheres. The friends of the three new actors have gathered and are starting to talk. They are telling stories about their new friends, their concepts, characters and interests. Let us host this gathering, listen to how books talk about their friends and enjoy the unfolding of the story in the next three scenes.

...

End of the Second Scene

3.1.4.2.3 Scene 3: Inviting a Stranger

First Guest: *Eco_From the Tree to the Labyrinth*

say -> 665, mean -> 587, thing -> 567, language -> 543, word -> 505, fact -> 418, know -> 404, speak -> 389, case -> 385, animal -> 380, use -> 367, sense -> 363, point -> 361, term -> 356, like -> 348, text -> 348, way -> 344, think -> 321, form -> 311, world -> 305, name -> 304, concept -> 300, give -> 295, object -> 292, make -> 291, knowledge -> 291, example -> 290, est -> 287, time -> 286, sign -> 276, aristotle -> 270, appear -> 263, metaphor -> 262, thomas -> 260, idea -> 259, century -> 244, different -> 242, call -> 241, man -> 240, work -> 238, understand -> 236, see -> 231, god -> 228, encyclopedia -> 227, dog -> 224, art -> 224, figure -> 223, come -> 220, nature -> 219, medieval -> 214¹⁷⁰

170 *Eco_From the Tree to the Labyrinth's* dictionary of the most frequent terms.

The first guest to enter *Xenotheka* is a book, a collection of essays by *Umberto Eco* titled *From the Tree to the Labyrinth, Historical Studies on the Sign and Interpretation*. It found its home in a character *n12e6* among its friends. It looks comfortable (Fig. 3.36). Let us hear and imagine what it might be about by letting its friends talk and index him.

n12e6

Eco_From the Tree to the Labyrinth

Eco_Serendipities Language & Lunacy

Foucault_The Order of Things

Derrida_Of Grammatology

Lacan_The Psychoses Seminars of JL

Hofstadter_Godel Escher Bach

Saussure_Course in General Linguistics

While listening to what his friends are talking and by looking at their code names, it seems that *Eco_From the Tree to the Labyrinth* is greatly concerned with language (*Eco_Serendipities Language & Lunacy*, *Derrida_Of Grammatology*, *Saussure_Course in General Linguistics*) and with ways how we create, organise and think about knowledge (*Foucault_The Order of Things*, *Lacan_The Psychoses Seminars of JL*, *Hofstadter_Godel Escher Bach*). For him, it is a journey from the tree to the labyrinth, from a dictionary to an encyclopaedia.

When seen in the context of *Xenotheka*, the face of *Eco_From the Tree to the Labyrinth* lights up the galaxy and his most prominent concepts start to shine. This is him articulated in terms of *Xenotheka* of which he is now a constitutive part, no longer a stranger (Fig. 3.37). His interests give the galaxy four strong glimmers, all concerned with language. Each one with a different flavour. Here they are, four glimmers, four fictions.

Glimmer 1. The strongest highlight, the biggest passion of *Eco_From the Tree to the Labyrinth* is language in its encyclopaedic labyrinth, its different meanings and ways of dealing and organising knowledge within it.

n1412 e140 {duo, arte, turin, compendium, combinatory, luigi, sive, philological, hermann, petrarch, allegorical, cosmography, philosophie, miscellany, tra, forgery, semiotics, geoffrey, mnemonic, chez, ludovico, cratylus, dionysius, libri, umberto, scriptural, lille, analytics, albin, nella, lingua, scholasticism, dante, isidore, predication, magna, semantics, historiographical, synecdoche, vulgate, mersenne, greimas, differentia, intensional, studi, eco, peirce, forma, rei, arbor, rebus,

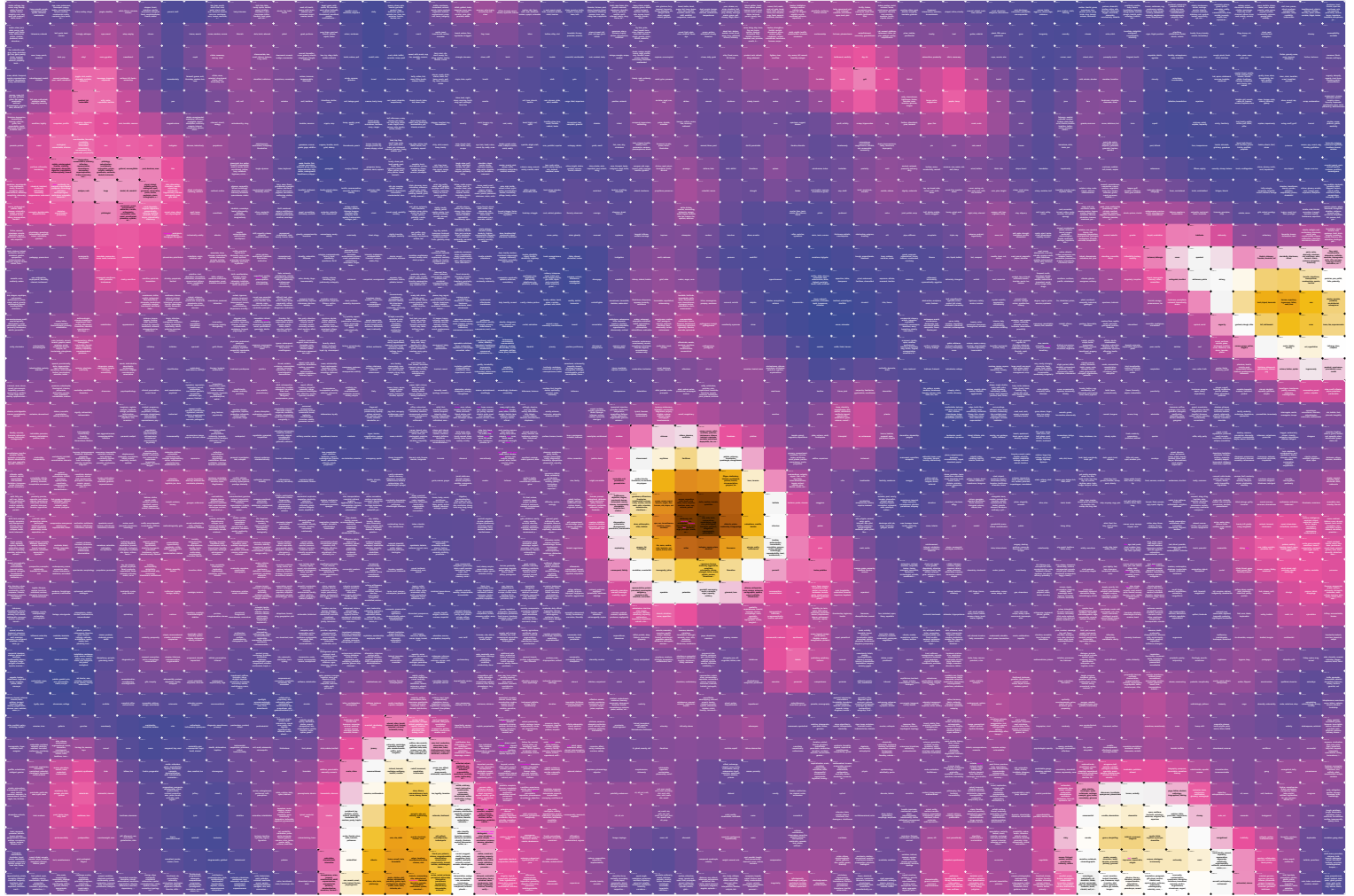


Fig. 3.37 Face of *Eco_From the Tree to the Labyrinth*, rendering_232_14_RW_4060_r_50it22d,
http://www.romanvlahovic.com/xenotheka/Eco_FromtheTreetotheLabyrinth.pdf, 0  1

speculum, wilkins, summa, nel, paradiso, moyen, einaudi, synonymy, encyclopedia, rorty, denotation, vulgari, porphyry, extensional, eloquentia, vero, maistre, inferential, encyclopedic, nomen, seq, mnemotechnics, secundum, bompiani, austral, thomist, sensus, ars, nam, tesaurus, translatio, quae, enim, semiosis, estetica, abulafia, manzoni, croce, propter, autem, vattimo, authentication, bari, vel, laterza, vox, locutio, locutionis, doctrina, bede, foigny, sicut, nota, averroes, aliud, boethius, abelard, sententia, canis, naturaliter, kabbalistic, intellectus, signum, dicitur, theologiae, suppositio, priscian, pico, interpretatione, kabbalah, thomistic, placitum, moerbeke, ockham, logica, signa, beatus, maritain, platypus, marmo, significativa, voces, llull, bruyne, dve, latratus, porphyrian, significare, significatio}

n1352 e4 {della, median, humain, quintilian}

n1411 e103 {dictionary, dei, aristotle, sic, aristotelian, thomas, hoc, allegory, re, cum, nova, est, posterior, ergo, purveyor, simile, scholastic, gerard, natura, vegetative, rosa, hugh, erat, bacon, alia, sacrum, hellenistic, mille, ita, apocalypse, mendacious, hebrew, chartres, cui, facta, constriction, zoology, philo, voce, canterbury, anselm, seville, modo, ultima, kern, caro, alighieri, dun, canine, essais, nisi, moody, interchangeability, quem, allegorically, augustin, coleridge, stallion, dictionnaire, potentia, parler, forte, quam, gil, alembert, nell, hanc, novum, johnston, christie, leiden, vere, bestiary, aeneid, apocryphal, ezeziel, philosophia, liturgical, primum, quibus, albertus, universalis, torah, hjelmslev, tantum, rerum, naturalis, salisbury, aquinas, sed, habet, goff, nobis, scotus, themistocles, sunt, tamen, quod, quia, ideo, aliquid, etiam, kircher}

Glimmer 2. Slightly weaker in its intensity, it articulates language through ways and figures of talking. A talk about talking.

n2359 e37 {rhetoric, commentary, cite, metaphorical, metaphor, rhetorical, figurative, pseudo, permutation, nonexistent, qualm, canonical, trope, grammarian, terminus, maximal, roland, adverb, modus, attribution, roger, sander, penury, medieval, facsimile, revelatory, nouveaux, republish, visa, connote, oeil, visualization, latency, mouton, unidirectional, polyphonic, lakoff}

n2299 e6 {edgar, headway, commensurate, para, choses, vico}

n2358 e27 {paolo, citation, dell, andrea, alphabetical, panofsky, guido, topic, prolegomena, atlantis, emilio, cusa, italia, richards, alessandro, thesis, plagiarism, poetics, abbreviation, curtius, storia, typewrite, advisor, bibliography, subsection, bibliographical, barocco}

n2239 e4 {morale, doctrinal, knower, cosa}

n2300 e17 {literal, pro, polemic, dictum, comprehensible, classification, unequivocal, unequivocally, inexact, indices, michelangelo, harmoniously, poetically, vernacular, communicable, oxymoron, comprehensibility}

n2360 e12 {revise, verbal, schema, perceptual, abbreviate, interpretive, parenthesis, hypothesize, classificatory, interpretable, schematism, fodor}

Glimmer 3. This glimmer is different from the other three. It is an interest and passion for literary articulations, and an implicit way of telling stories about language.

n838 e6 {horace, repertory, ingenuous, feline, matt, boa}
n839 e1 {nos}
n837 e3 {bark, biped, beauvais}
n899 e1 {ecce}
n897 e2 {lull, whitewash}
n779 e6 {bucolic, iniquitous, inauspicious, academician, quarto, laertius}
n958 e3 {marie, fatally, senility}
n840 e5 {elector, jacobin, potestas, revolutionist, robespierre}
n900 e3 {beau, fez, superannuate}
n959 e2 {cat, appellation}
n960 e3 {lethargy, bien, chaplain}
n780 e5 {parisian, pun, pallid, folio, paternity}
n1018 e3 {retrace, ladder, spider}
n1019 e1 {ingenuously}
n896 e3 {garland, slough, dike}
n1020 e5 {pendant, connivance, providential, nous, curdle}
n718 e3 {decidedly, blackness, chisel}
n775 e1 {oblong}
n1017 e5 {lightning, shipwreck, gratuitously, clamor, jug}
n719 e12 {paris, notre, obscurity, nineteen, riot, malicious, odor, barrack, titanic, orchard, springtime, indemnity}
n1078 e6 {transfigure, harshness, petrify, enormity, sorbonne, transfiguration}
n1079 e4 {accomplice, penal, police, culpable}
n1080 e6 {claw, scoff, effusion, pique, populace, pardonable}

The last strong highlight in the galaxy is Glimmer 4. It shines with the richness of different ways in which a story can be told.

n2331 e5 {text, occult, imprecise, impeccable, elegiac}
n2391 e10 {allusion, literary, literature, narrator, unquestionable, labyrinthine, debatable, mal, pseudonym, reread}
n2271 e3 {biblical, unnamed, magnum}
n2330 e8 {reader, comedy, chronicler, babel, devotee, preamble, ptolemy, gourmet}
n2332 e3 {corpus, stratagem, erroneously}
n2270 e2 {greco, storytelling}
n2272 e5 {mystic, fable, mystical, synonym, dreamlike}
n2211 e1 {alexandria}
n2212 e8 {opus, matthew, hermetic, astrology, abstruse, outgrow, sol, aquarium}
n2390 e31 {novel, narration, textual, timetable, poe, francesca, virgil, invective, eliot, joyce, aphorism, actress, gli, roberto, borges, finnegans, mythos, archery, catharsis, wilde, nerval, longinus, rosicrucians, kells, hypotyposis, adrienne, stopgap, intertextual, sylvie, jerard, loisy}
n2392 e65 {translation, paragraph, gift, gloss, archive, verdict,

mot, equivocation, enthrone, underscore, autobiography, notoriety, nom, elliptical, foucault, forgiveness, alice, aujourd, nudity, lapidary, epigraph, guerre, unpardonable, interiorize, obligate, watchword, floodgate, belgium, apologia, translatable, frontally, bio, autobiographical, belgian, spiritualize, unforgivable, specular, deconstruction, emmanuel, genre, racism, donne, flemish, sein, alumnus, idiomatic, passim, untranslatable, zeit, hedgehog, jour, avoir, lira, deconstructive, geist, ish, gibt, soir, donner, folie, portia, shylock, marin, apartheid, biodegradable}

n2269 e1 {narrate}

n2213 e5 {emblem, bible, procreate, congruence, accordion}

n2210 e2 {erudite, alexandrian}

n2329 e3 {narrative, notebook, cinematographic}

Eco_From the Tree to the Labyrinth loves language and tries to play with it in many different ways. Each of its focuses can trigger an interesting discussion in *Xenotheka*. We will focus our attention on his first glimmer and see who are the actors from *Xenotheka* that have the greatest passion and the highest probability to discuss it. Here they are, already involved in the discussion: *Machiavelli_The Prince*, *Carpo_Architecture in the Age of Printing*, *Alberti_On Painting*, *Leibniz_Theodicy* (Fig. 3.38). When around their new friend, they are talking about ways of organising knowledge. We will join and listen just for a moment to get the flavours, tempers, and an atmosphere of what might be at stake. The hypothesis is that this talk offers indexes to *Eco_From the Tree to the Labyrinth*, his understanding of language, and ways how one can organise knowledge. Let us ask them a question by evoking *Eco_From the Tree to the Labyrinth*:

A dictionary or a labyrinth?

Leibniz_Theodicy has the word at the moment.

I begin with the preliminary question of the conformity of faith with reason, and the use of philosophy in theology, because it has much influence on the main subject of my treatise, and because M. Bayle introduces it everywhere. I assume that two truths cannot contradict each other; that the object of faith is the truth God has revealed in an extraordinary way; and that reason is the linking together of truths, but especially (when it is compared with faith) of those whereto the human mind can attain naturally without being aided by the light of faith. This definition of reason (that is to say of strict and true reason) has surprised some persons accustomed to inveigh against reason taken in a vague sense.¹⁷¹

171 Gottfried Wilhelm Leibniz and Austin Farrer, *Theodicy, Essays on the Goodness of God, the Freedom of Man and the Origin of Evil*, trans. E. M. Huggard, 2005, <https://www.gutenberg.org/ebooks/17147>.

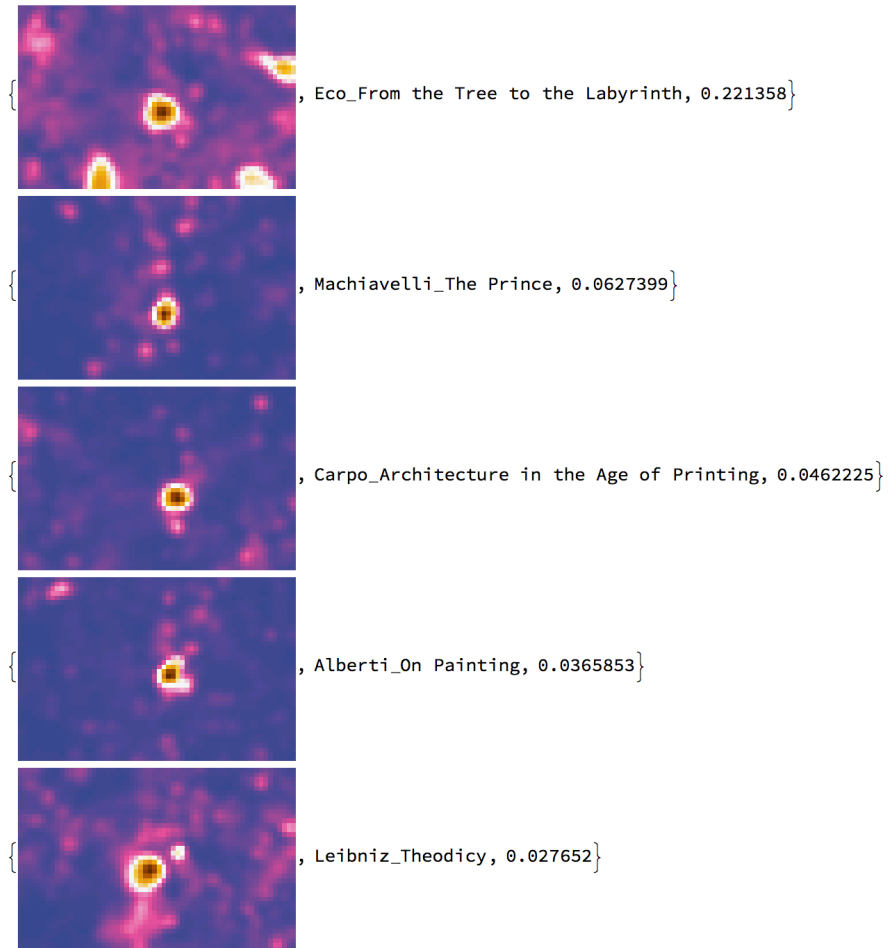


Fig. 3.38 Main protagonists of atom-letter $n1412 e140$, rendering_232_14_RW_4060_r_50it22d

Faith and reason, philosophy and theology, how to navigate between. Two *truths*, *Leibniz_Theodicy* assumes, cannot contradict each other. Reason links them together in opening up of a new space. *Leibniz_Theodicy* says labyrinth.

In this short indexing, *Machiavelli_The Prince* offers a different perspective of handling knowledge and information. He enjoys and is a master of operating within the real by materialising the imaginary. *Machiavelli_The Prince* takes faith into his own hands and provides a dictionary for the Prince.

Machiavelli_The Prince

“It is not unknown to me how many men have had, and still have, the opinion that the affairs of the world are in such wise governed by fortune and by God that men with their wisdom cannot direct them and that no one can even help them; and because of this they would have us believe that it is not necessary to labour much in affairs, but to let chance govern them. This opinion has been more credited in our times because of the great changes in affairs which have been seen, and may still be seen, every day, beyond all human conjecture. Sometimes pondering over this, I am in some degree inclined to their opinion. Nevertheless, not to extinguish our free will, I hold it to be true that Fortune is the arbiter of one-half of our actions, but that she still leaves us to direct the other half, or perhaps a little less.”¹⁷²

His friend *Alberti_On Painting* deliberately changes the tone and proceeds with an abstract way of telling a very similar story from another perspective. In his speech, the prince becomes a point, picks up speed, dematerialises, and starts articulating his abstract environment. *Alberti_On Painting* handles knowledge in a geometrical formal way; he is building a perspective and a map to navigate the labyrinth.

Alberti_On Painting

The first thing to know is that a point is a sign which one might say is not divisible into parts. I call a sign anything which exists on a surface so that it is visible to the eye. No one will deny that things which are not visible do not concern the painter, for he strives to represent only the things that are seen. Points joined together continuously in a row constitute a line.

172 Nicoló Machiavelli, *The Prince*, trans. W. K. Marriott, 2016, <https://www.gutenberg.org/ebooks/1232>.

*So for us a line will be a sign whose length can be divided into parts, but it will be so slender in width that it cannot be split. Some lines are called straight, others curved. A straight line is a sign extended lengthways directly from one point to another. A curved line is one which runs from point to point not along a direct path but making a bend. If many lines are joined closely together like threads in cloth, they will create a surface.*¹⁷³

And lastly, *Carpo_Architecture in the Age of Printing*, excited by the words of his friend and master, interrupts him and starts to mediate his thoughts. He catches *Alberti_On Painting's* point and gives it purpose. He mediates knowledge and builds a new dictionary.

Carpo_Architecture in the Age of Printing

*[...]Alberti invented a mechanism (in the literal sense of a mechanical device or piece of hardware) and a method (the software) for translating images into text. The Descriptio transforms a survey map of Rome into a system of points designated only by polar coordinates, without any other form of graphic documentation. In De statua, Alberti expands the same system for use in three dimensions, as a tool for transcribing in alphanumeric format the measurements of the human body. Alberti boasts of the precision and trustworthiness of his method, which would even, so he says, make it possible to produce identical copies of the same statue in locations separated by hundreds of miles or by centuries, or else to carry out simultaneously the production of various parts of a statue in different workshops.*¹⁷⁴

When seen in terms of the *Eco_From the Tree to the Labyrinth*, this discussion can be conceived as a double articulation of, on the one hand, a tree or a dictionary embodied in the characters of *Machiavelli_The Prince* and *Carpo_Architecture in the Age of Printing* and, on the other hand, of a labyrinth or an encyclopaedia characterised by *Leibniz_Theodicy* and *Alberti_On Painting*. A dictionary takes into account properties necessary to distinguish a particular concept from others, while an encyclopaedia collects knowledge of the world. This is just a brief speculation that could hopefully be developed into one of the keys to enter *Eco_From the Tree to the Labyrinth* labyrinths. This is how friends talk about him without mentioning his name. A Cipher.

173 Leon Battista Alberti, *On Painting*, ed. Martin Kemp, Reprint edition (London: Penguin Classics, 1991), ebook, loc 82.0 / 211.

174 Mario Carpo, *Architecture in the Age of Printing: Orality, Writing, Typography, and Printed Images in the History of Architectural Theory*, trans. Sarah Benson, Reprint edition (S.l.: The MIT Press, 2017), 122.

...

End of the Third Scene

3.1.4.2.4 Scene 4: Asking a Question

Second Guest: *B_SIT_K_SMLXL_S_RAJ*, aka the Mutant

information -> 726, use -> 486, **problem** -> 361, **energy** -> 350, obtain -> 309, value -> 305, **system** -> 302, time -> 296, give -> 296, **entropy** -> 292, **case** -> 287, **numb** -> 285, thou -> 278, **condition** -> 270, **city** -> 263, **function** -> 254, new -> 247, let -> 246, small -> 240, **frequency** -> 238, result -> 234, point -> 233, discuss -> 231, correspond -> 228, large -> 227, shall -> 211, fig -> 208, average -> 205, **probability** -> 204, increase -> 202, consider -> 200, example -> 196, **observation** -> 196, chapter -> 195, discussion -> 192, section -> 188, error -> 186, come -> 185, represent -> 181, code -> 179, good -> 175, high -> 175, letter -> 174, define -> 171, **make** -> 170, require -> 169, **symbol** -> 167, certain -> 165, **thy** -> 164, **love** -> 164¹⁷⁵

The second to enter *Xenotheka* is a question in a form of a mutant composed out of three books. It is a dramatic character interested in architecture and information, very similar in interests to the text that I am writing, but composed out of the terms put forward by three different actors. It is a fiction, an avatar, an alien book in the library. It has a form but doesn't have meaningful content. Still, this is a fiction one can communicate with. The moment we ask this question, that is, introduce the mutant to the library, the whole library rearranges in order to accommodate it. So what is the new milieu? How have our actors arranged themselves? Who are its friends and how do they express themselves? His friends form a character, an *atom-letter n18e7* (Fig. 3.36).

n18e7

B_SIT_K_SMLXL_S_RAJ

Wiener_Cybernetics

Delanda_Philosophy and Simulation

Brillouin_Science and Information Theory

Popper_The Logic of Scientific Discovery

Foucault_Archaeology of Knowledge

175 *B_SIT_K_SMLXL_S_RAJ*'s dictionary of most frequent terms.

At first glance, it seems that this character is absent of drama and architectural discussions. The notion of information is present; *Brillouin_Science and Information Theory* is there with his friends. *Koolhaas_SMLXL* and *Shakespeare_Romeo and Juliet* and their friends are still quite far away (*n54e20, n49e35, Fig. 3.36*)

Let us make an inversion and look at *B_SIT_K_SMLXL_S_RAJ*'s face and its concepts for a moment. A different story comes out. *B_SIT_K_SMLXL_S_RAJ* lights up the galaxy in a way that brings together information, architecture, and drama. Unlike our first guest who had four distinct focuses, *B_SIT_K_SMLXL_S_RAJ* has one strong interest. It brings together literary Shakespearian characters and terms with concepts of information and communication. That is my interest as well. *B_SIT_K_SMLXL_S_RAJ* is a question, a provocation, intended to spark a discussion among his friends who are interested in discussing the same concepts he finds interesting (Fig. 3.40).

```

n10 e24 {hie, hoar, quoth, shrift, friar, clos, woful, alack, juliet,
mer, laurence, exeunt, rom, mu, montague, serv, romeo, mercutio, capulet,
benvolio, jul, samp, tyb, tybalt}
n70 e3 {nurse, mantua, verona}
n130 e4 {chide, rosemary, scurvy, visor}
n9 e0 {}
n11 e2 {lusty, kinsman}
n69 e2 {knave, wench}
n129 e1 {cupid}
n190 e8 {villain, anon, minstrel, churchyard, cholera, stint, doomsday,
rais}
n71 e1 {thievish}
n189 e7 {farewell, goose, writ, thursday, madam, ben, woo}
n131 e0 {}
n250 e1 {mutiny}
n249 e0 {}
n191 e1 {fickle}
n251 e2 {exit, cull}
n248 e1 {yew}
n188 e1 {immoderately}
n310 e3 {channel, circuit, energy}
n309 e102 {obtain, experimental, maximum, efficiency, negligible,
signal, absorption, accuracy, sample, interval, complexion, demon,
microscope, information, rectify, receiver, radiation, fluctuation,
reversible, irreversible, perturb, compute, maxwell, filament, viscous,
lattice, unrealistic, spectrum, piston, binary, sci, parity, asymptotic,
emission, mag, molecule, unperturbed, reliability, fig, thermodynamics,
simpson, phil, glaringly, ternary, codings, rasa, amplifier, coefficient,
atypical, telegraphic, kelvin, kinetic, mcgraw, periodicity, pulse,
cos, digit, urbana, ricochet, planck, frequency, voltage, indigestible,
logarithm, lagrange, carnot, thermostat, deflection, multilevel,
entropy, hillel, bigness, photoelectric, thermal, ref, boltzmann,

```

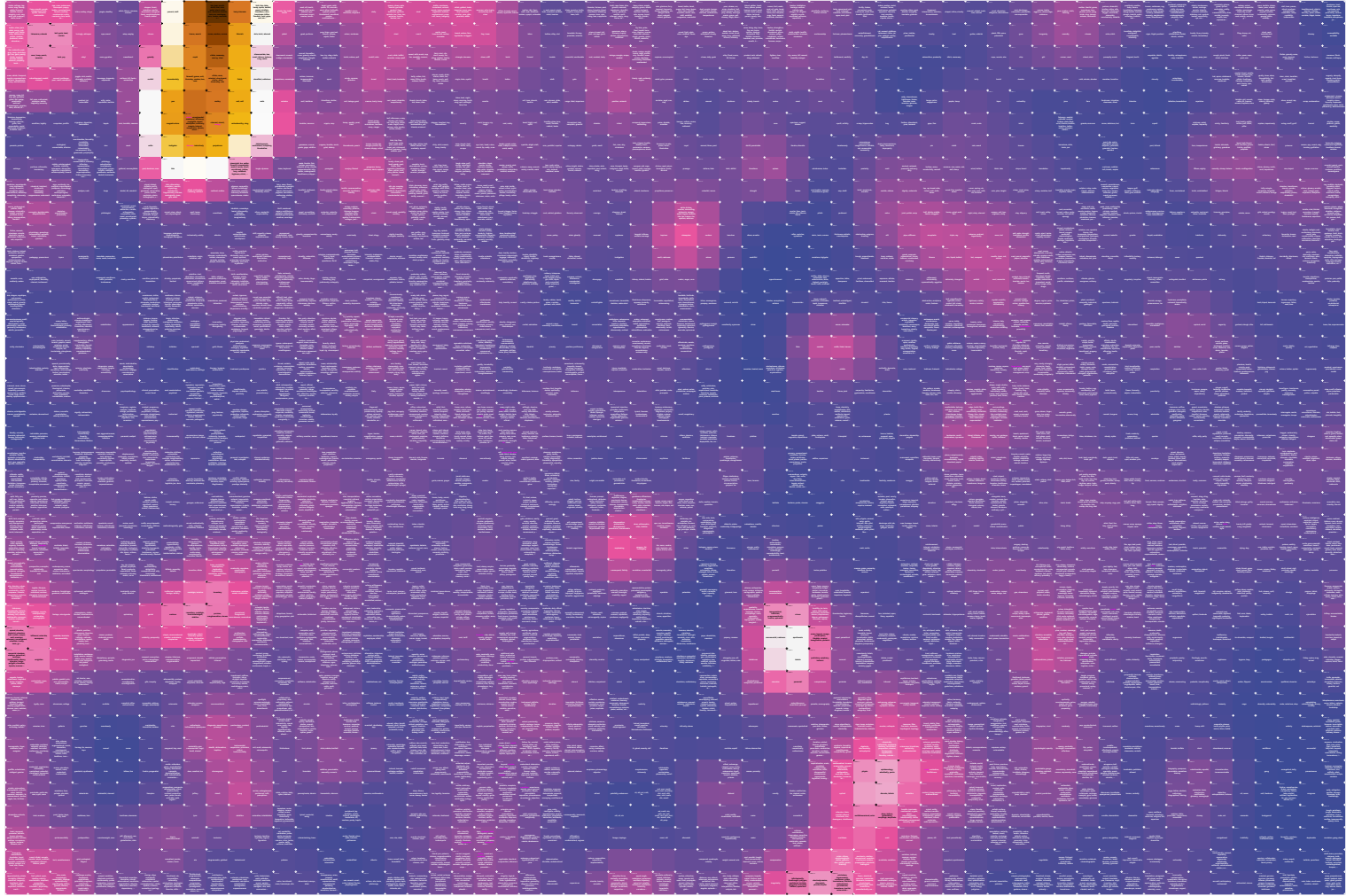


Fig. 3.39 Face of *B_SIT_K_SMLXL_S_RAJ*, rendering_232_14_RW_4060_r_50it22d, http://www.romanvlahovic.com/xenotheka/B_SIT_K_SMLXL_S_RAJ.pdf,
0  1

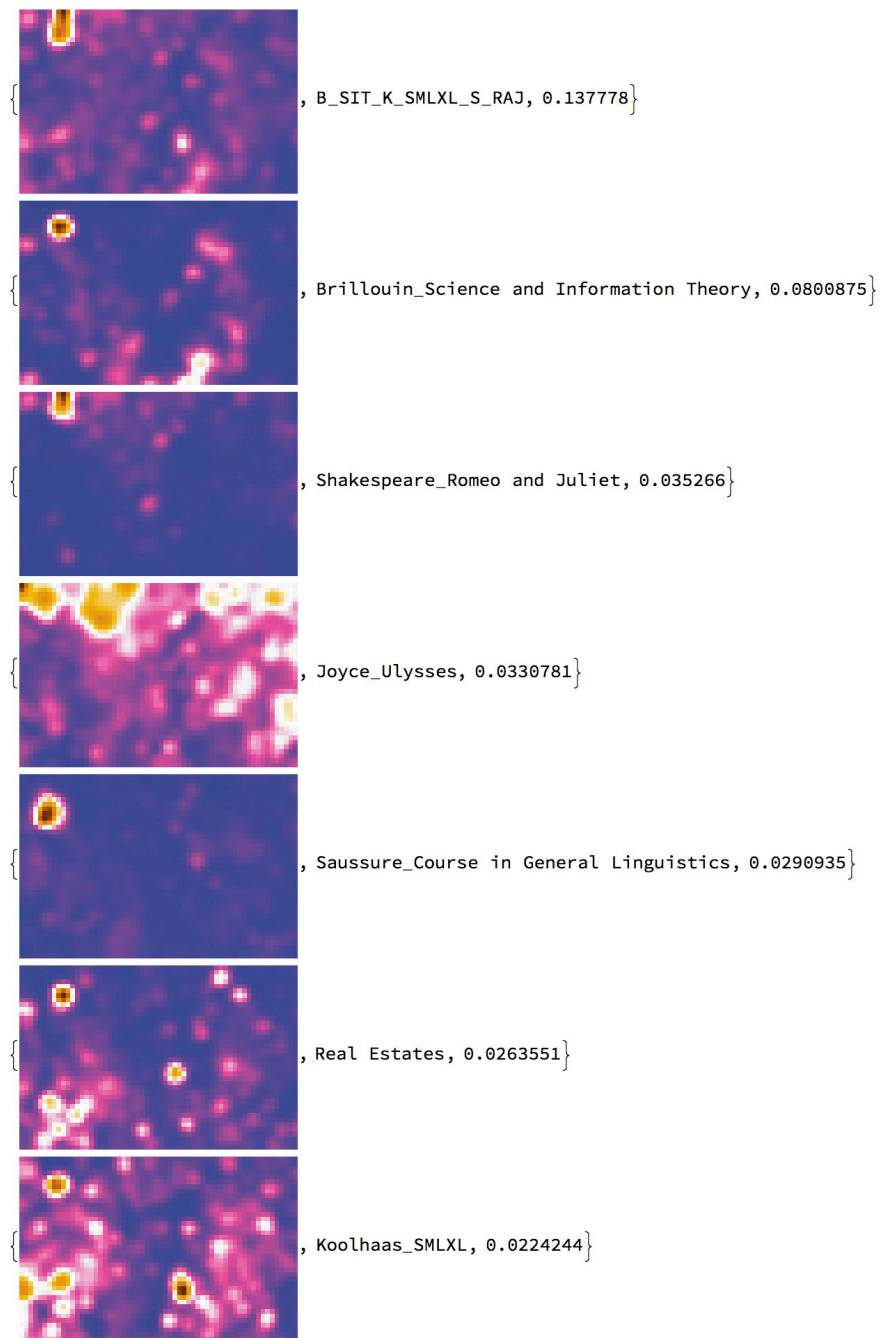


Fig. 3.40 Main protagonists of atom-letter n309 e102, rendering_232_14_RW_4060_r_50it22d

fourier, wavelength, oscillator, hyperspace, quantized, shannon, inst,
singapore, photocell, cosine, rectifier, lim, gabor, rosenfeld, resistor,
thermodynamical, maki, negentropy, phys, szilard, emf, resonator, nyquist,
eqs, liouville, salzer}

These are not his closest friends but actors interested in discussing a particular concept: *n309 e102*. *Brillouin_Science and Information Theory*, *Koolhaas_SMLXL*, and *Shakespeare_Romeo and Juliet* now have a common reason—a posed question—to come closer together. They are accompanied by their friends. *Brillouin_Science and Information Theory* brings *Saussure_Course in General Linguistics*, a book with disguised authorship, written not directly by Saussure but posthumously by his students and friends. *Saussure_Course in General Linguistics* is actually a code name for a specific set of circumstances that articulated the book. *Koolhaas_SMLXL* brings *Real Estates*, another collection of voices gathered around architecture. And lastly, *Shakespeare_Romeo and Juliet* brings *Joyce_Ulysses* as its friend. *Joyce_Ulysses* is a stream, a form that accommodates a continuous and abundant body of thoughts. Thus, a provocation: If we would like to explore and play an informational play that gives a voice to a generic city in a dramatic setup, we should make friends with the books interested in the concept *n309 e102*. Let us hear how they will index the topics important to *B_SIT_K_SMLXL_S_RAJ*.

We are in the midst of a monologue. *Joyce_Ulysses* is presenting us with a stream of thoughts while wondering through a generic city.

Joyce_Ulysses:

[...] squatting in the mens place meadero I tried to draw a picture of it before I tore it up like a sausage or something I wonder theyre not afraid going about of getting a kick or a bang of something there the woman is beauty of course thats admitted when he said I could pose for a picture naked to some rich fellow in Holles street when he lost the job in Helys and I was selling the clothes and strumming in the coffee palace would I be like that bath of the nymph with my hair down yes only shes younger or Im a little like that dirty bitch in that Spanish photo he has nymphs used they go about like that I asked him about her and that word met something with hoses in it and he came out with some jawbreakers about the incarnation he never can explain a thing simply the way a body can understand then he goes and burns the bottom out of the pan all for his Kidney this one not so much theres the mark of his teeth

*still where he tried to bite the nipple I had to scream out aren't they fearful trying to hurt you
I had a great breast of milk with Milly enough for two what was the reason of that he said
I could have got a pound a week as a wet nurse all swelled out the morning that delicate
looking student that stopped in no 28 with [...]*¹⁷⁶

Real Estates, a book which is, in itself, a collection of various viewpoints, continues in the same direction with another stream. It celebrates multiple points of view and their eternal transformability in the generic condition. It is digital, immediate, rich and thick, a celebration of strange colleagues.

Real Estates:

The human space-time continuum has been riddled with wormholes created by money's own energy. Fashion cycles might be explained by Klein bottle-shaped rifts, in which time is a loop through which particular aesthetics endlessly circle.

As any trip to hipster locales reveals, history has not exactly ended but has become amplified and overlaid. A handlebar mustache sits alongside space-age retroness. Cold War chic dresses as though it were the landed gentry. Low-fi implements, such as fixed-gear bikes and ukuleles, are produced with digital technologies. The texture of time itself has been worked over by the energies of financialisation, whipped into something overly rich and super thick, a landscape through which we can traverse. It is capital's accumulation of time, just as cities are accumulations of capital compressed in space.

*Cities and architecture are fully subject to this financialised space-time continuum. Fuelled by debt, the manifestation of tomorrow's money today, secured by value created in the past, architects – often subconsciously – manifest this aesthetically. Neo-modern, minimalist-Georgian, vernacular-techno, eco-spaceage, digital-constructivist are just some of the debt-enabled time-shifting energy forms that we commonly describe as contemporary architecture.*¹⁷⁷

Being puzzled and unable to stop the streams of *Joyce_Ulysses* and *Real Estates*, *Saussure_Course in General Linguistics* starts to think how to approach his friends. How to deal with the stream of thoughts, text, and language, how to look at it, how to think of it? Depending on the

176 James Joyce, "Ulysses," July 1, 2003, <http://www.gutenberg.org/ebooks/4300>.

177 Sam Jacob, "MONEY : TIME : SPACE," in *Real Estates: Life without Debt*, ed. Jack Self and Shumi Bose, First edition (London: Bedford Press, 2014), ebook, loc 96.3 / 201.

viewpoint, phenomena change, context changes, but what is invariant, where to find stabilities?

Saussure_Course in General Linguistics:

What is it that linguistics sets out to analyse? What is the actual object of study in its entirety? The question is a particularly difficult one. We shall see why later. First, let us simply try to grasp the nature of the difficulty.

Other sciences are provided with objects of study given in advance, which are then examined from different points of view. Nothing like that is the case in linguistics. Suppose someone pronounces the French word nu ('naked'). At first sight, one might think this would be an example of an independently given linguistic object. But more careful consideration reveals a series of three or four quite different things, depending on the viewpoint adopted. There is a sound, there is the expression of an idea, there is a derivative of Latin nūdum, and so on. The object is not given in advance of the viewpoint: far from it. Rather, one might say that it is the viewpoint adopted which creates the object. Furthermore, there is nothing to tell us in advance whether one of these ways of looking at it is prior to or superior to any of the others.

Whichever viewpoint is adopted, moreover, linguistic phenomena always present two complementary facets, each depending on the other.¹⁷⁸

According to its friends, multiple streams of information and ways to navigate them characterise *B_SIT_K_SMLXL_S_RAJ*.

These are the same questions *Play Among Books* deals with. As concepts are unfolding the play is getting more and more consistent. There is no conclusion, just more flavours adding to the discussion.

...

End of the Fourth Scene

178 Ferdinand de Saussure, *Course in General Linguistics*, trans. Roy Harris, Reprint edition (London ; New York: Bloomsbury Academic, 2013), ebook, loc 87.0 / 642.

Scene 5: Looking for Friends

Third Guest: *PAB*

book -> 556, information -> 508, library -> 328, index -> 264, xenotheka -> 246, new -> 229, different -> 210, fig -> 204, way -> 204, architecture -> 204, face -> 203, concept -> 199, play -> 198, actor -> 162, instrument -> 153, datum -> 152, code -> 149, word -> 144, theory -> 137, machine -> 128, form -> 127, articulate -> 118, letter -> 117, time -> 115, talk -> 115, generic -> 110, encode -> 106, context -> 102, brillouin -> 100, mean -> 99, galaxy -> 99, atom -> 97, hofstadter -> 94, start -> 90, look -> 85, question -> 85, think -> 84, com -> 83, world -> 83, serres -> 82, specific -> 82, articulation -> 81, cloud -> 80, flow -> 80, www -> 78, communication -> 78, like -> 76, science -> 76, intelligence -> 76¹⁷⁹

The third to enter *Xenotheka* is this text —*Play Among Books*, not the whole text but its second and third chapter. The dictionary of the most prominent terms provides a good atmosphere to start with. Not too strict, not too loose, with a direction towards information, books, architecture, and coding. *PAB* is a self-referential probe sent in a search for friends. By listening to their talks and observing how *PAB* lights up the galaxy, I am trying to get a subtle feeling of what the atmosphere of this play is. How does my text feel in the library? How does the library feel about the play? After all, it is written by playing an *Informational Instrument*, by thinking and communicating with *Xenotheka*. A self-referential process — *I am a Strange Loop*.¹⁸⁰ An awkward and interesting moment. Let us grant this text its own intelligence and see what happens.

PAB finds itself surrounded by a big group of friends —*n24e37*. It feels good. *PAB* likes it (I like it as well). In this *Xenotheka*, it is a part of a complex and open character. Some of the books are its old friends (*Serres_Geometry*, *McLuhan_The Gutenberg Galaxy*, *Ayache_The Blank Swan*); some might be interesting to talk to and get to know better. Both the persona and its neighbours look familiar and intriguing. This constellation is, by all means, a comfortable and challenging one.

179 *APAB*'s dictionary of most frequent terms.

180 See 3.1.1.3.2 *Scene 1: Information and Self-Reference*

n24e37

Kittler_The Truth of the Technological World
Eco_On Literature
Serres_The Five Senses
Serres_Geometry
Derrida_Signature
McLuhan_The Gutenberg Galaxy
Serres_Statues
Blanchot_The Book to Come
Benjamin_The Work of Art in the Age of M
Serres_Biogea
Hofstadter_I Am a Strange Loop
Serres Latour_Conversations on Science, Culture, and Time
McLuhan_Understanding Media
Cache_Projectiles
Ponte_The House of Light and Entropy
Ranciere_Aisthesis
Virilio_A Landscape of Events
Barthes_Mythologies
Deleuze Guattari_A Thousand Plateaus
Serres_Thumbelina
Serres_Rome
Spuybroek_The Sympathy of Things
Freud_The Psychopathology of Everyday
Bachelard_The Poetics of Space
Abbott_Flatland
Blanchot_The Space of Literature
Max Bill_Form, Function, Beauty
Worringer_Abstraction and Empathy
Lefebvre_Rhythmanalysis
Nancy_The Ground of the Image
Schlemmer Nagy_The Theater of the Bauhaus
Derrida_Copy Archive Signature
Barthes_The Language of Fashion
PAB
Nancy_Intoxication
Ayache_The Blank Swan

Let us invert the view and look for an inner atmosphere of the text, its most prominent concepts, and the main highlights. The way *PAB* lights up the galaxy feels consistent with the text. Its concepts index main topics discussed in the text so far: *index*, *galaxy*, *encode*, *spectrums*, *dimensionality*, *alphabet*, *polyphony* (Fig. 3.41).

n2383 e32 {performer, topologically, shelve, library, kaleidoscope, *index*, *galaxy*, cybernetics, *encode*, wiener, schumacher, som, wolfram, spuybroek, https, brillouin, pdf, hofstadter, negrofonte, carpo, *spectrums*, geb, tst, encodings, itd, acwse, aoa, *bibliotheka*, lecorbusier, romanvlahovic, sdt, *xenotheka*}

n2323 e2 {snapshot, synchronous}

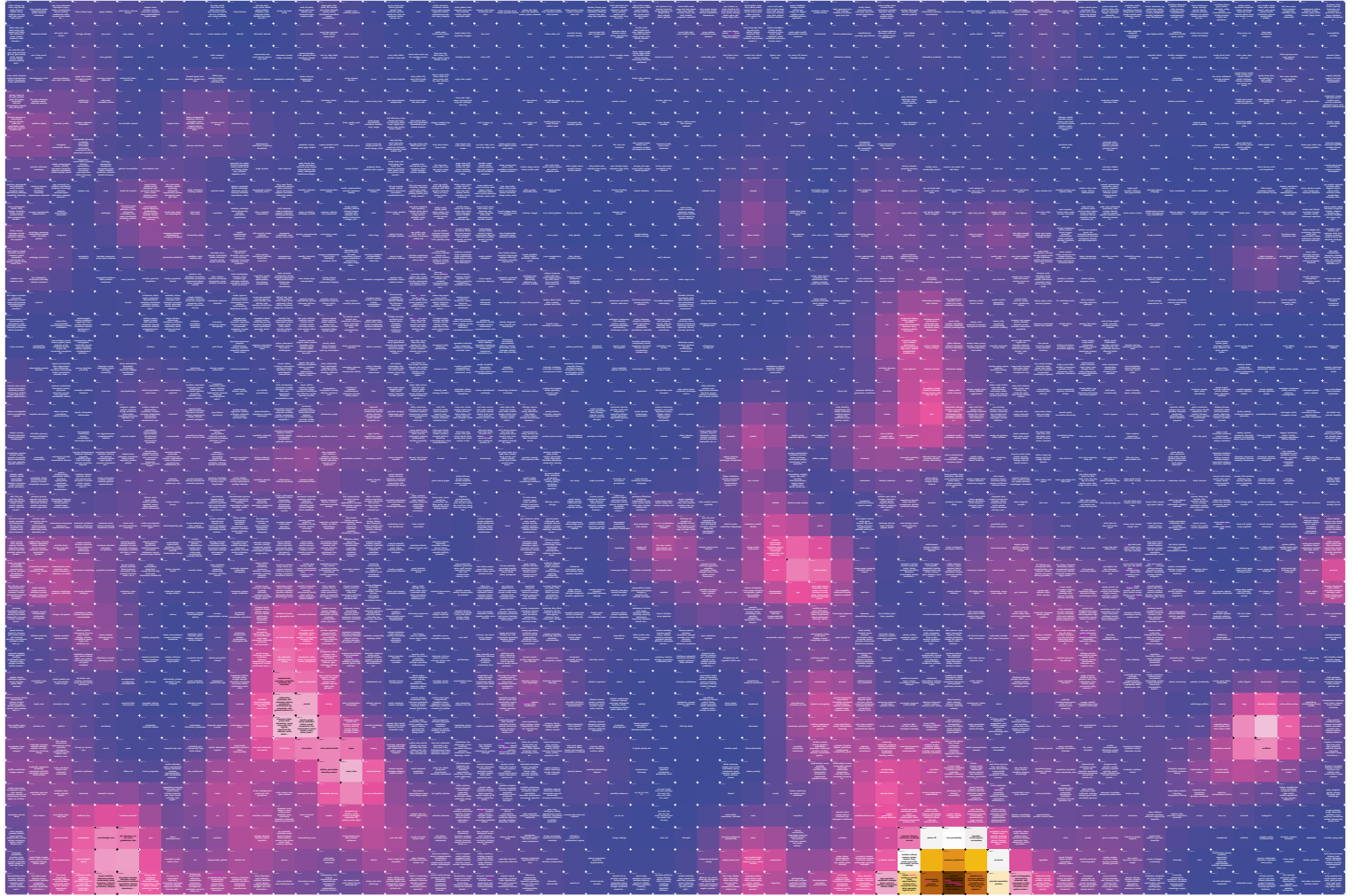


Fig. 3.41 Face of *PAB*, rendering_232_14_RW_4060_r_50it22d, <http://www.romanvlahovic.com/xenotheka/PAB.pdf>, 0  1

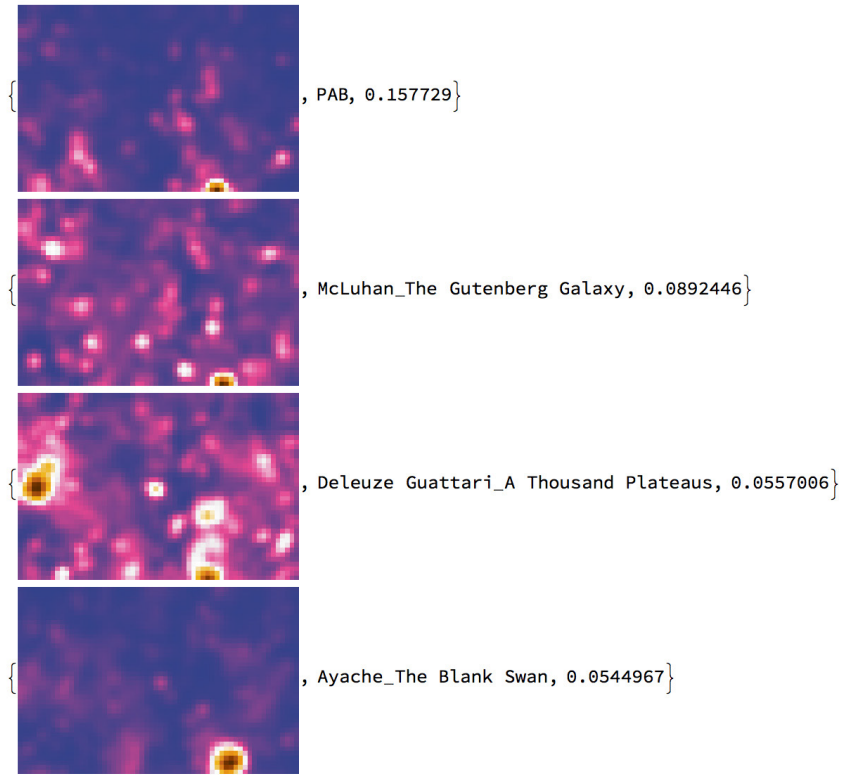


Fig. 3.42 Main protagonists of atom-letter n2383 e32, rendering_232_14_RW_4060_r_50it22d

n2382 e5 {dimensionality, generic, ambient, reconnect, capriciousness}
n2384 e41 {alphabet, print, interplay, recitation, livre,
 quantification, numeration, oral, repeatable, africans, aural, liturgy,
 polyphony, electro, tactile, declamation, visuality, itemize, homogenize,
 interiorization, blake, elizabethan, rabelais, tactility, repeatability,
 lear, dictation, huizinga, typography, ong, gutenberg, hayes, lineal,
 literate, scribal, eliade, grammatica, ramus, febvre, ivins, audile}
n2322 e0 {}
n2324 e0 {}
n2263 e2 {tool, parasitically}
n2381 e28 {speed, machine, periphery, smooth, facial, experimentation,
 territory, pack, amorphous, vector, deter, aggregate, segment,
 penultimate, zigzag, redundancy, plane, segmentation, misconstrue, wasp,
 instrumentation, timbre, stratification, amalgamation, transformer,
 courtship, orchid, virilio}
n2321 e11 {variation, indirect, cosmos, contour, dualism, fixity,
 pivotal, inaccurate, oversimplify, monism, upsurge}
n2262 e2 {james, rift}

There are three actors that distinguish themselves by their interest in this constellation, in particular, atom-letter *n2383 e32*. Each one comes with its own attitude. Let us ask each of them to send a message to *PAB* and listen without a lot of comments (Fig. 3.42).

McLuhan_The Gutenberg Galaxy indexes his galaxy in a similar manner as *Xenotheka*. It suggests that “a mosaic image of numerous data and quotations in evidence offers the only practical means of revealing causal operations in history”.¹⁸¹ With another face of the galaxy, *Ayache_The Blank Swan* appears. He is captivated by the idea of derivatives, different speeds, times of writing and literacy. The third and the last to appear is *Deleuze Guattari_A Thousand Plateaus*. Professor Challenger poses a question of a book.

As a message to *PAB*, *McLuhan_The Gutenberg Galaxy* decides to talk about its galaxy. Challenges and beauties of it.

McLuhan_The Gutenberg Galaxy:

[...] The interiorization of the technology of the phonetic alphabet translates man from the magical world of the ear to the neutral visual world.

Schizophrenia may be a necessary consequence of literacy.

181 Marshall McLuhan, *The Gutenberg Galaxy: The Making of Typographic Man* (University of Toronto Press, 1962), ebook, loc 136.8 / 1012.

Does the interiorization of media such as LETTERS alter the ratio among our senses and change mental processes?

Civilization gives the barbarian or tribal man an eye for an ear and is now at odds with the electronic world.

The modern physicist is at home with oriental field theory.

The new electronic interdependence recreates the world in the image of a global village.

Literacy affects the physiology as well as the psychic life of the African.

Why non-literate societies cannot see films or photos without much training.[...]

When technology extends ONE of our senses, a new translation of culture occurs as swiftly as the new technology is interiorized.[...]

The alphabet is an aggressive and militant absorber and transformer of cultures, as Harold Innis was the first to show.[...]

The Greeks invented both their artistic and scientific novelties after the interiorization of the alphabet.

The divorce of poetry and music was first reflected by the printed page.[...] ¹⁸²

The second message comes from *Ayache_The Blank Swan* who brings his thoughts and discussions together while taking about his friend *Pierre Menard*.

Ayache_The Blank Swan:

I do not consider Pierre Menard to be an allegory of reading but the very definition of writing. It is the differential definition of writing. The idea, here, is to take Borges' novel literally – to really think what makes it so original and so credible.

[...]

I am not saying that Menard wrote his Quixote linearly, as if the words of the original Quixote were revealed to him one after the other. The Quixote was not revealed to him, because he knew it existed and even had knowledge of the whole work beforehand. Yet it was not present to his mind either, when engaging in his writing process. The relation between Pierre Menard and the original Quixote has nothing to do with knowledge or revelation or

182 McLuhan, loc 891.0 / 1012.

*expectation or chronological time. There is no interiority and no reciprocity to their relation: it is a nonrelation. It has nothing to do with possibility either, as the Quixote is the only available possibility. In this sense, Pierre Menard's Quixote is truly unexpected and truly im-possible. It lies beyond, or rather outside, possibility or expectation. I wish to argue that the Quixote is history to Pierre Menard and that his relation to it is one of writing, not of knowing or predicting.*¹⁸³

And lastly, Deleuze Guattari *A Thousand Plateaus* poses a question to PAB: “*What is the body without organs of a book?*”¹⁸⁴ By asking a question, he tells a story and ends the first play.

Deleuze Guattari A Thousand Plateaus:

A book has neither object nor subject; it is made of variously formed matters, and very different dates and speeds. To attribute the book to a subject is to overlook this working of matters, and the exteriority of their relations. It is to fabricate a beneficent God to explain geological movements. In a book, as in all things, there are lines of articulation or segmentarity, strata and territories; but also lines of flight, movements of deterritorialization and destratification. Comparative rates of flow on these lines produce phenomena of relative slowness and viscosity, or, on the contrary, of acceleration and rupture. All this, lines and measurable speeds, constitutes an assemblage. A book is an assemblage of this kind, and as such is unattributable. It is a multiplicity—but we don't know yet what the multiple entails when it is no longer attributed, that is, after it has been elevated to the status of a substantive. One side of a machinic assemblage faces the strata, which doubtless make it a kind of organism, or signifying totality, or determination attributable to a subject; it also has a side facing a body without organs, which is continually dismantling the organism, causing asignifying particles or pure intensities to pass or circulate, and attributing to itself subjects that it leaves with nothing more than a name as the trace of an intensity. What is the body without organs of a book? There are several, depending on the nature of the lines considered, their particular grade or density, and the possibility of their converging on a “plane of consistency” assuring their selection. Here, as elsewhere, the units of measure are what is essential: quantify writing. There is no difference between what a book talks about

183 Elie Ayache, *The Blank Swan: The End of Probability*, 1 edition (Chichester, West Sussex, U.K: Wiley, 2010), ebook, loc 337.5 / 1793.

184 Gilles Deleuze and Felix Guattari, *A Thousand Plateaus* (London: Bloomsbury Academic, 1980), 24.

*and how it is made. Therefore a book also has no object. As an assemblage, a book has only itself, in connection with other assemblages and in relation to other bodies without organs. We will never ask what a book means, as signified or signifier; we will not look for anything to understand in it. We will ask what it functions with, in connection with what other things it does or does not transmit intensities, in which other multiplicities its own are inserted and metamorphosed, and with what bodies without organs it makes its own converge. A book exists only through the outside and on the outside.*¹⁸⁵

The curtain goes down.

End of the Fifth Scene

...

End of the Fourth Act

...

End of the First Play

185 Deleuze and Guattari, 24.

Partitioning Spectra ARCHITECTURE

3.2.1 SURFING IN THE FLOW

3.2.1.0.1 Abundance

An infinite flow of books, an abundance of information.

Many currents compose the flow, each carrying plenty of titles. It is fast, it is a lot. It is at my fingertips; I am in the midst of an infinite flow of information, playing an *Informational Instrument*. While navigating and searching for consistencies indexed by architecture, I am composing architectural characters from the plenty.¹⁸³ This is what the second *Play Among Books* is about.

I call this flow *Bibliotheka*; well, not in its entirety, but some of its streams from which I am collecting books. This partition of the flow that I am accumulating is a library of books that are unknown to me. *Bibliotheka* is growing and shrinking. A few thousands or millions of books. Its size is not defined, but it has to be a lot, too much to read or to make sense of. Any question can be asked and any answer formulated.

It is enough.

Today I collected 12,303 books,¹⁸⁴ without knowing anything about them, neither their titles nor authors, friends, or atmospheres they provide. I have them in my memory; they constitute *Bibliotheka*.

3.2.1.0.2 Fantasy

How can I talk about architecture if I potentially have all the books in the world at my fingertips? I don't know. This experiment or, better to say, this play is about opening up this question. I want to ask *Bibliotheka* —this partition of the flow that contains 12,303 titles— to index books that talk about architecture. Afterwards, I would like to articulate characters out of it —characters that are complex, interesting, troubled, and passionate about the ways they talk about architecture. I do not want to have a multiplicity of characters or atmospheres, with each character acting like a single flavour, specific and sharp in its taste. I would rather have a

183 Let us keep in mind that playing an *Informational Instrument* is just one way of tapping into the flow of books.

184 The full list of books contained in *Bibliotheka* is in the *Appendix*.

bouquet of complex characters, each one a mix of many flavours that still have a strong character. These characters should not become one of the few prototypical characters out of which all other characters are derived. That is why I will kindly ask *Bibliotheka* and later *Xenotheka* to provide me with a handful (six) of atmospheres to talk about architecture. In this way, the characters become strong and complex. By asking a question from a personal perspective, from a specific context and interest, from *Xenotheka*, these characters will not become prototypical. What I hope is that they will become generic to a context, in other words, characters that surf between the general and the particular, between prototypical and singular. Their genericness comes from the library that constitutes their body and their specificity from its consistency—from the interest of the player of the *Informational Instrument* and the questions asked. The negotiation between these two notions crafts the characters. It is a search for consistencies, flavours and atmospheres within both *Bibliotheka* and *Xenotheka* in three iterations.

3.2.1.0.3 Play

The play itself will be a gathering of six, a symposium in which each character will be invited to give a speech about architecture. The speech should provide an atmosphere, a manner of addressing the topic characteristic to that character (its library). On the other hand, the playing of an *Informational Instrument*, via communication between *Bibliotheka* and *Xenotheka*, will provide the setting and articulate bodies of the characters. This play is about facilitating the voices and atmospheres that come from the plenty, without knowing exactly what they are about. It is not about explicating the opinions of the player. In this sense, this play and the characters' speeches are of a poetic character. Voices come from their bodies, while their bodies and voices are both being articulated within the play by the player.

The play unfolds in three iterations while working with 12,303 books that I have never read, seen or touched.

3.2.1.1 Iteration 1: Searching for consistencies: Architecture

There are two libraries on stage: *Bibliotheka* containing 12,303 unknown books and *Xenotheka* accommodating 229 familiar books. Architecture is an interest and a motivation to approach them. The scenario is simple. Each book from *Bibliotheka* should find the most comfortable and friendly character (shelve) in *Xenotheka*. When seen in *Xenotheka*'s terms, via its dictionary and characters, each book from *Bibliotheka* is indexed by all the books from *Xenotheka*. *Bibliotheka* is being articulated in *Xenotheka*'s terms. *Xenotheka* is the question, a lens, a way to access unknown books— precisely rendering_229_25_RB_0609_r_50it21d.¹⁸⁵ At the moment, there are 54 different characters in *Xenotheka*, and each has a character and an atmosphere of its own.

Unknown books are simultaneously becoming part of a context and an atmosphere. 12,303 books have settled; each book has chosen one out of 54 shelves where it feels most comfortable (Fig. 3.43).¹⁸⁶ If one looks closer, each cell is now composed out of two parts. The books of *Xenotheka* (the list of titles) constitute the first part and the second part is the number that indicates how many books from *Bibliotheka* this cell accommodates (Fig. 3.43).¹⁸⁷ In this way, cell *n6e14* accommodates 14 books from *Xenotheka* and temporarily hosts (indexes) 119 books from *Bibliotheka*. If one pays more attention to which books from *Xenotheka* index this cell, it is obvious that this *atom-letter* brings together books in some way interested in architecture.

Part form *Xenotheka*

```
n6e14 {Banham_Critic Writes, Sudjic_The Edifice Complex, Rogers_A Place
for All People, Jencks_The Story of Post-Modernism, Betsky_Architecture
Matters, Krier_The Architecture of Community, Koolhaas_Delirious New
York, LeCorbusier_Towards a New Architecture, Gropius_The New Architecture
and the Bauhaus, Ito_Tarzans In The Media, Alexander_A Pattern Language,
Durand_Precis of the lectures on Architecture, Cook_Drawing, Alexander_The
Timeless Way of Building}
```

Part form *Bibliotheka*

```
119 unknown books
```

185 This is the same rendering as in the one in the *Fourth Act* of the first *Play Among Books*.

186 Let us keep in mind that this is just one way in which *Xenotheka* is able to accommodate *Bibliotheka*.

187 There are no titles indicated since, at this stage, we are not interested in the titles, but rather in indexing the sheer quantity of books.

| | | | | |
|---|---|---|--|--|
| <p>EISENMAN_NOTES ON CONCEPTUAL ARCHITECTURE</p> <p>0</p> | <p>EISENMAN_THE END OF THE CLASSICAL</p> <p>0</p> | <p>LAVIN_FLASH IN THE PAN, SCHUMACHER_THE AUTOPOIESIS OF ARCHITECTURE VOL2, SCHUMACHER_THE AUTOPOIESIS OF ARCHITECTURE VOL1, VIDLER_HISTORIES OF THE IMMEDIATE PRESENT, LAVIN_KISSING ARCHITECTURE, JACOB_M...</p> <p>4</p> | <p>SYKES HAYS_ARCHITECTURAL THEORY 1993 2009, RAKATANSKY_TECTONIC ACTS OF DESIRE AND DOUBT, BO BARDI_STONES AGAINST DIAMONDS, RATTI ET AL_OPEN SOURCE ARCHITECTURE, SCOTT BROWN_HAVING WORDS, MERTINS_MODE...</p> <p>108</p> | <p>BANHAM_CRITIC WRITES, SUDJIC_THE EDIFICE COMPLEX, ROGERS_A PLACE FOR ALL PEOPLE, JENCKS_THE STORY OF POST-MODERNISM, BETSKY_ARCHITECTURE MATTERS, KRIER_THE ARCHITECTURE OF COMMUNITY, KOOLHAAS_DELIRIOU...</p> <p>119</p> |
| <p>Chomsky_Language and Mind, Chomsky_Aspects of the Theory of Syntax</p> <p>1</p> | <p>Chomsky_On Language</p> <p>7</p> | <p>Haraway_Cyborg Manifesto</p> <p>0</p> | <p>AURELI_LESS IS ENOUGH</p> <p>1</p> | <p>SORKIN_ALL OVER THE MAP, MUMFORD_THE CULTURE OF CITIES, KOOLHAAS_SMLXL, HOLLIS_CITIES ARE GOOD FOR YOU, LE CORBUSIER_THE CITY OF TOMORROW, GREENFIELD_AGAINST THE SMART CITY, RATTI_THE CITY OF TOMORROW...</p> <p>136</p> |
| <p>Wiener_Cybernetics, Hofstadter_Godel Escher Bach, Schrodinger_What is Life, Delanda_Philosophy and Simulation, Foucault_Archaeology of Knowledge, Popper_The Logic of Scientific Discovery, Saussure_Cou...</p> <p>249</p> | <p>113</p> | <p>0</p> | <p>82</p> | <p>PONTE_THE HOUSE OF LIGHT AND ENTROPY, WEST_SCALE THE UNIVERSAL LAWS OF GROWTH, EASTERLING_EXTRASTATECRAFT, CASTELLS ET AL_ANOTHER ECONOMY IS POSSIBLE, AURELI_REAL ESTATES, HOWARD_GARDEN CITIES OF TO-M...</p> <p>981</p> |
| <p>CACHE_PROJECTILES, SPUYBROEK_THE SYMPATHY OF THINGS, CARPO_THE SECOND DIGITAL TURN, DELEUZE GUATTARI_A THOUSAND PLATEAUS, MAX BILL_FORM, FUNCTION, BEAUTY, FEYNMAN_OED THE STRANGE THEORY OF LIGHT</p> <p>66</p> | <p>Latour_Reassembling the social</p> <p>5</p> | <p>Lefebvre_Critique of Everyday Life, Auge_The Future</p> <p>119</p> | <p>42</p> | <p>Marx Engels_The Communist Manifesto</p> <p>0</p> |
| <p>Serres Latour_Conversations on Science, Culture, and Time, Baudrillard_The Vital Illusion, Freud_Beyond the Pleasure Principle, Lefebvre_Rhythmanalysis, Harman_Immaterialism Objects and Social Th</p> <p>33</p> | <p>Latour_We Have Never Been Modern, Foucault_The History of Sexuality Vol 1</p> <p>7</p> | <p>Latour_Facing Gaia</p> <p>8</p> | <p>473</p> | <p>Fukuyama_The End of History and the Last Man</p> <p>9</p> |
| <p>Eco_On Literature, Derrida_Signature, Deleuze_Desert Islands and Other Texts, Blanchot_The Book to Come, Serres_Geometry, Zizek_Less Than Nothing, Lacan_The Psychoses Seminars of J.L., Derrida_Of Gramma...</p> <p>477</p> | <p>Girard_Violence and the Sacred, Girard_Sacrifice</p> <p>4</p> | <p>Foucault_History of Madness</p> <p>1</p> | <p>15</p> | <p>Sedlacek_Economics of Good and Evil, Arendt_On Revolution</p> <p>12</p> |
| <p>Harman_Bells and Whistles, Delanda Harman_The Rise of Realism, Harman_Towards Speculative Realism, Buehlmann_Mathematics and Information Serres, Foucault_The Order of Things, Deleuze_Difference and Re...</p> <p>176</p> | <p>Barthes_Mythologies</p> <p>0</p> | <p>15</p> | <p>0</p> | <p>Kittler_The Truth of the Technological World, Taleb_The Black Swan, Hofstadter_I Am a Strange Loop, Graeber_Debt, McLuhan_The Gutenberg Galaxy, McLuhan_Understanding Media, Wiener_The Human Use Of Hum...</p> <p>5029</p> |
| <p>Meillassoux_After Finitude, Badiou_In Praise of Mathematics</p> <p>2</p> | <p>0</p> | <p>Descartes_Discourse on the Method</p> <p>0</p> | <p>42</p> | <p>Jung_Archetypes and the Collective Unconscious, Jung_Two Essays in Analytical Psychology, Jung_Alchemical Studies</p> <p>32</p> |
| <p>Harman_The Problems of Philosophy, Kant_Critique of Pure Reason, Badiou_Mathematics of the Transcendent, Badiou_Number and Numbers, Wittgenstein_Tractatus Logico Philosophicus</p> <p>8</p> | <p>0</p> | <p>0</p> | <p>42</p> | <p>SERRES_THE FIVE SENSES, RUSKIN_THE SEVEN LAMPS OF ARCHITECTURE, SERRES_STATUES, VITRUVIUS_THE TEN BOOKS OF ARCHITECTURE, ALBERTI_10 BOOKS OF ARCHITECTURE, RANCIERE_AISTHESIS, HUMBOLDT_EQUINOCTIAL REGI...</p> <p>161</p> |
| <p>Russel_The Problems of Philosophy, Kant_Critique of Pure Reason, Badiou_Mathematics of the Transcendent, Badiou_Number and Numbers, Wittgenstein_Tractatus Logico Philosophicus</p> <p>8</p> | <p>Spinoza_The Essential Spinoza Ethics, Spinoza_The Ethics, Descartes_Meditations</p> <p>0</p> | <p>Leibniz_Theodicy</p> <p>31</p> | <p>10</p> | <p>Nietzsche_Beyond Good and Evil, Bacon_Novum Organum</p> <p>2</p> |
| <p>8</p> | <p>0</p> | <p>31</p> | <p>10</p> | <p>Borges_Collected Fictions, Hugo_Les Miserables, Shelley_Frankenstein or the Modern Prometheus, Serres_Biogeoa, Musil_The Man Without Qualities V1, Sullivan_The Autobiography of an Idea, Lucretius_On T...</p> <p>1299</p> |
| <p>8</p> | <p>0</p> | <p>31</p> | <p>10</p> | <p>Joyce_Ulysses, Dickens_A Tale of Two Cities, Tolstoy_War and Peace, Eco_The Name of the Rose, Eco_Baudolino, Tolstoy_Anna Karenina, Beckett_Stories and Texts for Nothing, Cervantes_Don Quixote, Dicken...</p> <p>1185</p> |

Fig. 3.43 Iteration1: *Xenotheka accommodates Bibliotheka*, rendering_229_25_RB_0609_r_50it21d_1_it. Each cell is composed out of two parts: lists of books that represent *Xenotheka*, and a number which represents the number of books projected to this cell from *Bibliotheka*. All magenta coloured elements are inputs for the second iteration. http://www.romanvlahovic.com/xenotheka/_229_25_RB_0609_r_50it21d_1_it.pdf

I would like to invite all cells similar too this one —the ones that cherish an interest in architecture, both their *Xenotheka* and *Bibliotheka* part (in the rendering marked by magenta colour and capital letters, Fig. 3.43) —to the second iteration of the same process of searching for consistencies around architecture. They are also invited to bring their neighbours, but only the *Xenotheka* part of their character to provide a wider context for the unknown books (in the rendering marked by magenta colour and lowercase letters, Fig. 3.43). The rest of the books will be kindly asked to leave the play.

To summarise the first iteration:

Input:

*Xenotheka*_229 accommodating 229 books

*Bibliotheka*_12303 containing 12303 unknown books

Output:

New *Xenotheka*_153 accommodating 153 books with a predominantly architectural atmosphere

New *Bibliotheka*_2722 containing 2722 unknown books indexed by books on architecture

3.2.1.2 Iteration 2: Searching for consistencies: Architecture

There is a new, more tempered atmosphere in *Xenotheka*. It is rearticulated by 153 books. It is more specific in its characters, more sensitive to architecture, but also less sensitive to other topics. Architecture, as an atmosphere, starts to dominate *Xenotheka* (Fig. 3.44).

In the second iteration, the same process is repeated as in the first, yet with a more particular atmosphere. With more than half of *Xenotheka*'s characters that are involved with architectural thinking, there is a consistency in the library that feels good enough to initiate the next iteration. There is no explicit way of evaluating how good the consistency of the library is, that is, why it is important that *Xenotheka* as a personal library can provide an index for unfamiliar books. Again, I would like to invite all the cells that are predominantly interested in architecture, both their *Xenotheka* and *Bibliotheka* part, to the third iteration (cells marked by magenta colour, Fig. 3.44).

| | | | | | |
|--|---|---|---|--|---|
| Borges_Collected Fictions, Hugo_Les Miserables, Serres_Biogea, Shelley_Frankenstein or the Modern Prometheus, Serres_Statues, Sullivan_The Autobiography of an Idea, Serres_Rome, Homer_Iliad, Goethe_F... | Kittler_The Truth of the Technological World, Musil_The Man Without Qualities V1, Taleb_The Black Swan, Serres_The Five Senses, Hofstadter_I Am a Strange Loop, McLuhan_The Gutenberg Galaxy, Benjamin_T... | Wiener_The Human Use Of Human Beings, Wiener_Cybernetics, Deleuze Guattari_A Thousand Plateaus, Hofstadter_Godel Escher Bach, Popper_All Life Is Problem Solving, Schrodinger_What is Life, Delanda_Phil... | Chomsky_On Language, Chomsky_Language and Mind, Saussure_Course in General Linguistics, Foucault_Archaeology of Knowledge, Chomsky_Aspects of the Theory of Syntax, Popper_The Logic of Scientific Disco... | Hayek_The Constitution of Liberty, Hayek_The Road to Serfdom | Auge_The Future, Lefebvre_Critique of Everyday Life, Fukuyama_The End of History and the Last Man, Latour_We Have Never Been Modern, Arendt_On Revolution, Latour_Reassembling the social, Haraway_Cybor... |
| 27 | 221 | 60 | 1 | 59 | 60 |
| Stein_Tender Buttons | RUSKIN_THE SEVEN LAMPS OF ARCHITECTURE, RUSKIN_POETRY OF ARCHITECTURE | | | | Castells_The Power of Identity, Castells_Networks of Outrage and Hope |
| 0 | 4 | 19 | 0 | 381 | 11 |
| Bacon_Novum Organum, Lucretius_On The Nature Of Things | Humboldt_Equinoctial Regions of America | Smith_Wealth of Nations | Marx_Capital Volume 1 | | Castells_The Rise of the Network Society, Castells et al_Another Economy Is Possible, Herman Chomsky_Manufacturing Consent |
| 0 | 4 | 1 | 12 | 28 | 572 |
| Newton_The Mathematical Principles of Natural Philosophy, Galilei_Discourse on Floating Bodies | | HOWARD_GARDEN CITIES OF TO-MORROW, ARISTOTLE_THE ATHENIAN CONSTITUTION | | | Virilio_A Landscape of Events, McLuhan_Understanding Media, Serres_Thumbelina, Weizman_The Least of All Possible Evils, Easterling_Extrastatecraft |
| 0 | 6 | 3 | 4 | 56 | 624 |
| ALBERTI_10 BOOKS OF ARCHITECTURE, VITRUVIUS_THE TEN BOOKS OF ARCHITECTURE | | JACOBS_THE DEATH AND LIFE OF GREAT AMERICAN CITIES, CALVINO_INVISIBLE CITIES | HOLLIS_CITIES ARE GOOD FOR YOU, GREENFIELD_AGAINST THE SMART CITY, MUMFORD_THE CULTURE OF CITIES | WEST_SCALE THE UNIVERSAL LAWS OF GROWTH | DEVLIN_FINDING FIBONACCI, NEGROPONTE_BEING DIGITAL, ECO_HOW TO WRITE A THESIS, WEIZMAN_BEFORE AND AFTER |
| 6 | 6 | 2 | 75 | 0 | 31 |
| PALLADIO_THE FOUR BOOKS OF ARCHITECTURE | | LE CORBUSIER_THE CITY OF TOMORROW | KOOLHAAS_SMLXL, AURELI_THE POSSIBILITY OF AN ABSOLUTE ARCHITECTURE | RATTI_THE CITY OF TOMORROW | CACHE_PROJECTILES, PONTE_THE HOUSE OF LIGHT AND ENTROPY, CARPO_THE SECOND DIGITAL TURN |
| 0 | 2 | 0 | 0 | 1 | 136 |
| DURAND_PRECIS OF THE LECTURES ON ARCHITECTURE | ALEXANDER_A PATTERN LANGUAGE | | SORKIN_ALL OVER THE MAP, ROGERS_A PLACE FOR ALL PEOPLE, KOOLHAAS_DELIRIOUS NEW YORK | AURELI_REAL ESTATES, TAFURI_ARCHITECTURE AND UTOPIA, BOSKER_ORIGINAL COPIES | CARPO_THE ALPHABET AND THE ALGORITHM, CARPO_ARCHITECTURE IN THE AGE OF PRINTING |
| 1 | 0 | 24 | 123 | 18 | 1 |
| ALEXANDER_THE TIMELESS WAY OF BUILDING | | LECORBUSIER_TOWARDS A NEW ARCHITECTURE | SUDJIC_THE EDIFICE COMPLEX, KRIER_THE ARCHITECTURE OF COMMUNITY | BANHAM_CRITIC WRITES, JENCKS_THE STORY OF POST-MODERNISM, GROPIUS_THE NEW ARCHITECTURE AND THE BAUHAUS | COOK_DRAWING |
| 0 | 3 | 1 | 20 | 46 | 12 |
| EISENMAN_NOTES ON CONCEPTUAL ARCHITECTURE | KUMA_ANTI-OBJECT | BETSKY_ARCHITECTURE MATTERS | ITO_TARZANS IN THE MEDIA, LAVIN_KISSING ARCHITECTURE, JACOB_MAKE IT REAL | LAVIN_FLASH IN THE PAN, BO BARDI_STONES AGAINST DIAMONDS, VENTURI SCOTT BROWN_LEARNING FROM LAS VEGAS | SYKES HAYS_ARCHITECTURAL THEORY 1993 2009, RAKATANSKY_TECTONIC ACTS OF DESIRE AND DOUBT, RATTI ET ALL_OPEN SOURCE ARCHITECTURE, SCHUMACHER_THE AUTOPOIESIS OF ARCHITECTURE VOL2, MERTINS_MODERNITY UNBO... |
| 0 | 2 | 2 | 3 | 3 | 51 |

Fig. 3.44 Iteration 2: *Xenotheka accommodates Bibliotheka*, rendering_153_02_RB_0609_r_50it22d_2_it. Each cell is composed out of two parts: lists of books that represent *Xenotheka* and a number which represents the number of books projected to this cell from *Bibliotheka*. All magenta coloured elements are inputs for the third iteration. http://www.romanvlahovic.com/xenotheka/_153_02_RB_0609_r_50it22d_2_it.pdf

To summarise the second iteration:

Input:

Xenotheka_153 accommodating 153 books with a predominantly architectural atmosphere

Bibliotheka_2722 containing 2722 unknown books indexed by books on architecture

Output:

63 books from *Xenotheka_153*

576 unknown books from *Bibliotheka_2722*

576 unknown books from *Bibliotheka*, together with 63 books from *Xenotheka*, are about to come together in constituting a new *Xenotheka* that will accommodate 639 books. In other words, 576 unknown books are joining 63 known books in articulating a new library that celebrates and talks about architecture.¹⁸⁸ This library should provide consistency and an atmosphere able to foster six interesting characters and their speeches. Articulating and crafting of those six characters and atmospheres around them is the third iteration.

3.2.1.3 Iteration 3: Articulating Atmospheres: Six Characters

Books have gathered in a new library. Strangers became friends. New characters are being articulated. They are indexed by 639 books that each, in its own way, cherishes topics that address architecture. Out of 12,303 books, these are the ones that should be able to provide six complex, rich and refined ways of talking about architecture (Fig. 3.45). These new six atmospheres or six characters are similar to a search for flavours and aromas, but not in the sense of purifying or extracting essences, but in the sense of articulating beautiful and rich palettes of flavours out of the plenty, in the same way a delicate perfume or a whiskey is a mixture rich in flavours and blends. What brings these six characters together is their interest in architecture, the way they talk about it. Let us look for a moment at the terms common to the new version of *Xenotheka*.

188 Sixty-three books from the old *Xenotheka* are here to help navigate the new *Xenotheka*.

n 1 e 99

Albu_Perception and Agency in Shared Spaces of Contempo, Edited By Okwui Enwezor_Antinomies of Art and Culture Modernity Postmode, Miles_EcoAesthetics Art Literature and Architecture i, Press_American Art vol 30 no 1 Spring 2016, Luger_Art and the City, Knight_A Companion to Public Art, Bonansinga_Curating at the Edge Artists Respond to the US, Mieves_Wonder in Contemporary Artistic Practice, Rudolph_A Companion to Medieval Art Romanesque and Gothic, Ashby_Modernism in Scandinavia Art Architecture and De, Rinehart_ReCollection Art New Media and Social Memory, Mealing_Computers and Art, Raizman_Expanding Nationalisms at Worlds Fairs Ident...

n 3 e 81

Ascott_Engineering Nature, Bloomsbury amp Yelavich_Design as FutureMaking, Ascott_Art Technology Consciousness Mindlarge, Kinder_Transmedia Frictions The Digital the Arts and t, Clarke_Design Anthropology Object Culture in the 21st Ce, Carpo_The Second Digital Turn Design Beyond Intelligenc, Herzogenrath_Travels in Intermediality, Dietrich_The Educated Eye Interfaces Studies in Visual Cu, Peters_Digital Keywords, Siemens_A Companion to Digital Literary Studies, Cooley_Finding Augusta Habits of Mobility and Governance, Boomen_Digital Material Tracing New Media in Everyday Li, McCullough_Abstracting Craft The Practiced Digital Hand, Bureau...

n 5 e 182

Banham_Critic Writes, Sykes Hays_Architectural Theory 1993 2009, Paiva_The Living Tradition of Architecture, Sykes_Constructing a New Agenda Architectural Theory 19, Deamer_Architecture and Capitalism 1845 to the Present, Moore_Why We Build, David_Architecture Post Mortem The Diastolic Architectu, Sudjic_Edifice Complex The Architecture of Power, Sudjic_The Edifice Complex, Bua_Architectural Inventions, Lawrence_Terms of Appropriation Modern Architecture and Gl, Loschke_Materiality and Architecture, Murphy_Last Futures Nature Technology and the End of Ar, Berke_Architecture of the Everyday, Martin_Utopias Ghost Architecture and Postmoder...

n 2 e 88

Ponte_Architecture Words 11 The House of Light and Entr, Boulton_Place and Space in the Medieval World Routledge R, MartinMcAuliffe_Food and Architecture At the Table, Potvin_Oriental Interiors Design Identity Space, Haggis_Classical Archaeology in Context Theory and Pract, Lasc_Designing the French Interior The Modern Home and, Caraffa_Photo Archives and the Idea of Nation, Nevett_Theoretical Approaches to the Archaeology of Ancie, Warner_Historical Archaeology Through a Western Lens His, Kipen_San Francisco in the 1930s The WPA Guide to the C, Ulrich_A Companion to Roman Architecture, Tadgell_The East Buddhists Hindus and the Sons of H...

n 4 e 79

Kunstler_Geography of Nowhere The Rise and Declineof Ameri, Wilhite_The City Since 911 Literature Film Television, Goldsmith_Capital New York Capital of the 20th Century, Burrows_Gotham A History of New York City to 1898, RAPPORT_The Unruly City Paris London and New York in the, Kelly_St Petersburg Shadows of the Past, Jerram_Streetlife The Untold History of Europes Twentie, Lewis_Washington A History of Our National City, Koolhaas_Delirious New York, Verderber_Delirious New Orleans Manifesto for an Extraordin, Ammon_Bulldozer Demolition and Clearance of the Postwar, Rosenblum_Habits Private Lives in the Big City, Greene_Buildings and ...

n 6 e 110

Sorkin_All Over the Map Writing on Buildings and Cities, Sorkin_All Over the Map, Curtright_Sustainability and the City Urban Poetics and Pol, Miller_The Culture of Cities, Mumford_The Culture of Cities, Graham_Vertical The City From Satellites to Bunkers, Simone_New Urban Worlds Inhabiting Dissonant Times, Hollis_Cities Are Good for You, Graham_Infrastructural Lives Urban Infrastructure in Con, Cliff_Imaging the City Art Creative Practices and Medi, Martin_Mediators Aesthetics Politics and the City, Publishing_The Riddle of the Real City, Lindner_Cities Interrupted Visual Culture and Urban Space, M Grierson_Transformations, Glaeser_Triu...

new -> 219819, city -> 181529, art -> 154854, build -> 140676, work -> 137181, house -> 104013, design -> 100060, use -> 93200, time -> 92771, architecture -> 92483, space -> 91340, york -> 83795, form -> 77036, century -> 70514, place -> 70509, world -> 69463, university -> 67381, like -> 66969, person -> 65457, way -> 64941, urban -> 64294, make -> 62925, history -> 62578, public -> 61511, press -> 60947, state -> 60642, life -> 60305, social -> 59130, early -> 58789, london -> 58272, year -> 57502, plan -> 55029, image -> 52702, museum -> 52612, project -> 52212, figure -> 52112, late -> 51434, good -> 50184, include -> 49976, mean -> 49521, study -> 46848, draw -> 45947, artist -> 45666, american -> 45558, write -> 45526, book -> 45379, large -> 44940, culture -> 44661, architectural -> 43674, great -> 43019

Their common dictionary indexes topics popular and relevant to architecture. This alone is a good indicator of the consistency of the library. Furthermore, it would be interesting to see how the characters differ in articulating what is common to six of them. In this sense, I would kindly suggest that the characters address architecture in their speeches, via some of the most prominent and important terms of their library: *city*, *art*, *time*, *architecture*, and *form*. Of course, this is just a suggestion.

Which flavours of architecture do these characters bring together? What are they saying? Which atmospheres do they foster? This is the play of an *Informational Instrument*. It is the process of crafting characters that come from the plenty via indexing and scanning, an articulation of atmospheres and moods that can facilitate and foster contradictions, a complex ambience, a gathering for six. Below are the names of the actors. They are ciphers at the moment. Articulating characters out of these ciphers and accommodating their speeches on the stage is the second *Play Among Books*.

ch_n1e99
ch_n2e88
ch_n3e81
ch_n4e79
ch_n5e172
ch_n6e110

Let us invite our six protagonists to the stage and give them space to talk.

Welcome to the gathering for six in a *Xenotheka_639* (Fig. 3.45).

3.2.2 *Dramatis Personae*

Six actors are on stage patiently waiting for their turn to speak. Since they are synthetically crafted out of many books which are mostly unknown to me, let us kindly ask the stage to introduce and exhaustively index the characters in the order of appearance. The standardised indexical introduction should contain:

1. Faces of the character. (Different ways in which a galaxy of concepts of a character glows. One cell for each book)

2. A likeliness of an affair with other characters.¹⁸⁹

3. An index to its body (Titles of all the books that constitute it.)

4. Four most probable tempers of the character (Four cell SOM of its character, indexed by book titles and most common terms.)

5. Fifty most common terms from its personal dictionary

6. A galaxy of its concepts (SOM) with a focus on five indexes that should be addressed in the speech: *city*, *art*, *time*, *architecture*, and *form*

7. Each of the topics addressed in the speech (*city*, *art*, *time*, *architecture*, and *form*) will be further indexed by:

7.1 *Atom-letters* related to the index in question (derived from SOM),

7.2 List of books that are main references for the index in question (derived from SOM)

0. The formal introduction will be accompanied with an imagined profile of a fictional character and a scenario which I, as a player of the *Informational Instrument*, have based on the indexing of each character and on texting¹⁹⁰ with them while we were developing and articulating their speeches.¹⁹¹

Let us start with the introductions.

189 The likeliness of cells is the distance between cells of the Self Organising Map. The closer the cells are, the higher the likeliness of an affair.

190 For details see 2.4.3.2 *Texting with Xenotheka*.

191 Six speeches are articulated by the player's interaction with *Xenotheka* (with the help of *SymbolicPoem10_ReadingSOM_affinity*, and *SymbolicPoem08_Relating_TextingLibrary*). They are not automatically synthesized.

3.2.2.1

ch_n1e99

Evaluating Masterpieces

3.2.2.1.1 An imagined scenario for character ch_n1e99 at a gathering for 6 in the Library_639

An art lover, strong, heavy and careful. This character is divided between the wants of art and the order of a museum, between the celebration of freedom of material expression on one hand, and making sense and determining art on the other. He easily gets lost in the abundance of elements and accidents produced by the paradox formed between classification and creation. There, he turns to dictionaries and companions as a way to rationalise while navigating the illogical, but also to arrange art in a logically correct fashion. For him, art is a question of perception and mediation; it is public and social, part of a collection and culture. Art is embodied in a form of a specific time. It is locked and safe there. He is a guardian. He spends his life in a museum, not much interested in the outside world. He loves the materiality of it; *museum, draw, dance*. The way he expresses himself forms a strong line—*art, work, paint, time, exhibition*; from production to a shared memory embodied in the exhibition. Drawing is his passion and a fetish. He is a big admirer of the lightness of *ch_n3e81*.

3.2.2.1.2 INDEXING ch_n1e99

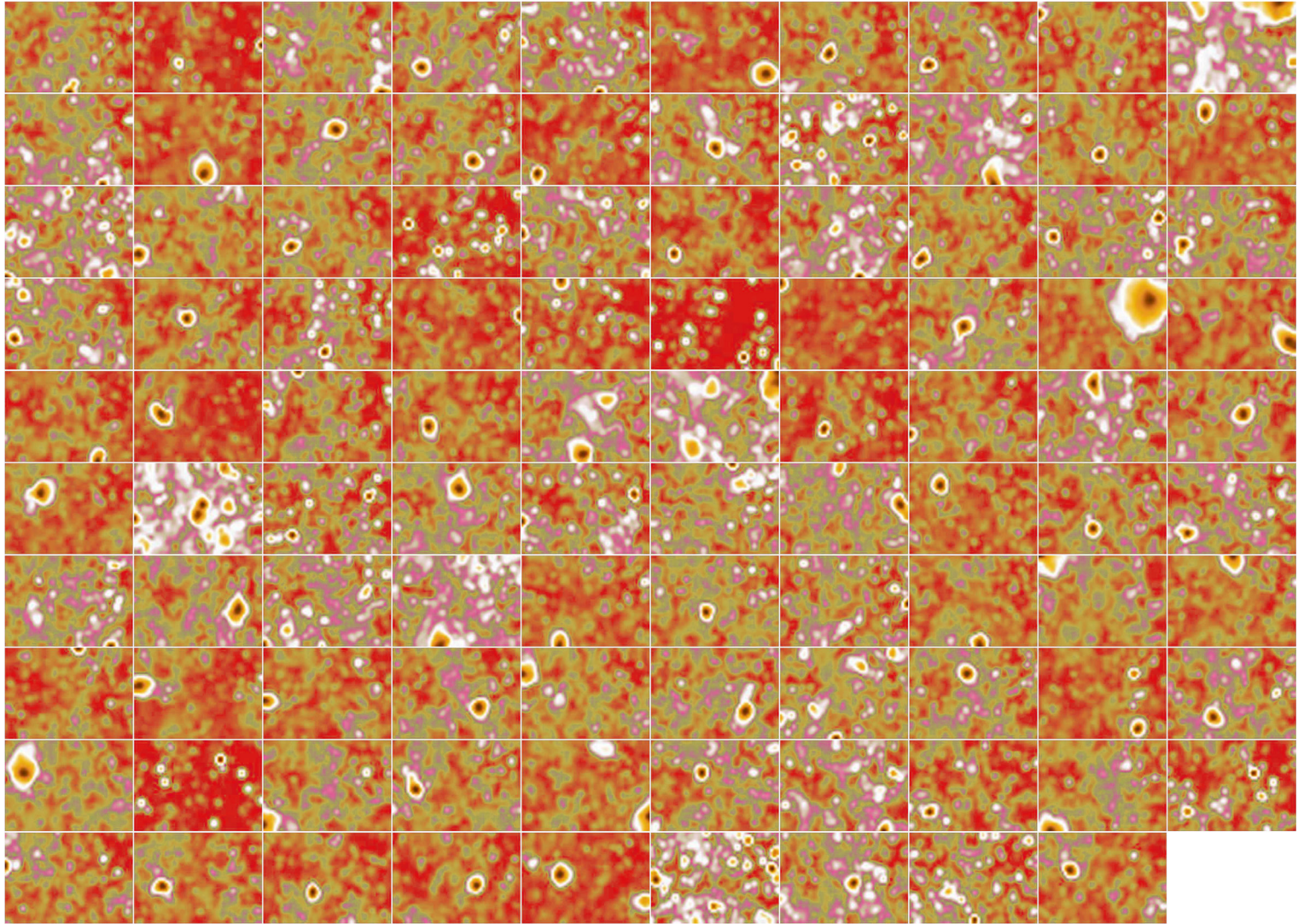
3.2.2.1.2.1 Likelihood of an affair with other characters¹⁹²

| | |
|-----------|-----------|
| ch_n3e81 | 0.021615 |
| ch_n2e88 | 0.0230551 |
| ch_n5e172 | 0.0245713 |
| ch_n4e79 | 0.0253087 |
| ch_n6e110 | 0.03103 |

¹⁹² The likelihood of cells is the distance between cells of the Self Organising Map. The closer the cells are, the higher the likelihood of an affair.

3.2.2.1.2.2

99 faces of a character *ch_n1e99*



3.2.2.1.2.3 Body of ch_n1e99

ALBU_Perception and Agency in Shared Spaces of Contempo, ANDERSON_The Legacies of Bernard Smith Essays on Australia, AN_Whos Afraid of Contemporary Art, ASHBY_Modernism in Scandinavia Art Architecture and De, BAKER_Sentient Relics **Museum**s and Cinematic Affect, BELDENADAMS_Photography and Failure One Mediums Entanglement, BELL_Strangers Arrive Emigres and the Arts in New Zeal, BENTKOWSKAKAFEL_Digital Visual Culture Theory and Practice Compu, BERTUCCI_Artisanal Enlightenment Science and the Mechanica, BONANSINGA_Curating at the Edge Artists Respond to the US, BOSTIC_Inside the Art Studio A Guided Tour of 37 Artists, BRAIN_The Pulse of Modernism Physiological Aesthetics i, BROECKMANN_Machine Art in the Twentieth Century, BROWN_Displaying Time The Many Temporalities of the Fes, BROWN_The Gamin De Paris in NineteenthCentury Visual Cu, BUCK_Commissioning Contemporary Art A Handbook for Cur, BUTT_Artistic Research in the Future Academy, CHANG_Chinese Dance In the Vast Land and Beyond, CHILVERS_A **Dictionary** of Modern and Contemporary Art Oxfor, DAVALOS_Chicanao Remix Art and Errata Since the Sixties, DAY_Corrections and Collections Architectures for Art, DOHMN_Encounters Beyond the Gallery, DONNELLAN_Towards Tate Modern Public Policy Private Vision, DORFMAN_The Future of Natural History **Museum**s ICOM Advanc, DUFF_Drawing The Purpose, EDITED BY OKWUI ENWEZOR_Antinomies of Art and Culture Modernity Postmode, EDWARDS_Photographs **Museum**s Collections Between Art and, FAUST_Andrew Marvells Liminal Lyrics The Space Between, FISHER_Imperfect Fit Aesthetic Function Faature and Pe, FLACH_Naturally Hypernatural III Hypernatural Landscape, FORESTA A MERRY_Artists Unframed Snapshots From the Smithsonians, FRANK_Denman Ross and American Design Theory, GARDINER_Art Practice in a Digital Culture, GARDNER_Biennials Triennials and Documenta The Exhibiti, GARNER_Writing on Drawing Essays on Drawing Practice and, GECZY_Fashion and Art, GITTENS_Recto Verso Redefining the Sketchbook, GONZALEZ_Aesthetic Hybridity in Mughal Painting 15261658, GRABSKI_Art World City The Creative Economy of Artists an, HAEFELI_John Cage A Research and Information Guide, HARDING_The Practice of Art A Classic Victorian Treatise, HARTER_Women A Pictorial Archive From NineteenthCentury, HORLYCK_Korean Art From the 19th Century to the Present, HOROWITZ_Art of the Deal Contemporary Art in a Global Fina, HOROWITZ_Consuming Pleasures Intellectuals and Popular Cul, ISKIN_The Poster Art Advertising Design and Collecti, JONES_Installation Art and the Practices of Archivalism, KEIZER_The Realism of Piero Della Francesca Life and Wor, KEYSER_Plains Indian Rock Art, KNIGHT_A **Companion** to Public Art, KOSTELANETZ_A **Dictionary** of the AvantGardes, LINDSAY_The User Perspective on TwentyFirstCentury Art M, LOSSAU_The Uses of Art in Public Space, LUBAR_Inside the Lost **Museum** Curating Past and Present, LUGER_Art and the City, LUSHECK_Rubens and the Eloquence of Drawing Visual Cultur, MACDONALD_A **Companion** to **Museum** Studies Blackwell **Companion**, MACLAGAN_Line Let Loose Scribbling Doodling and Automatic, MALLOY_Social Media Archeology and Poetics Leonardo Book, MASSEY_Pop Art and Design, MCCLELLAN_The Art **Museum** From Boullee to Bilbao, MCCORMACK_William Hunter and His EighteenthCentury Cultural, MCTIGHE_Framed Spaces Photography and Memory in Contempor, MEALING_Computers and Art, MEDOSCH_New Tendencies Art at the Threshold of the Inform, MIEVES_Wonder in Contemporary Artistic Practice, MILES_EcoAesthetics Art Literature and Architecture i, MORGAN_Historical **Dictionary** of Contemporary Art, MURRAY_Canadian Art in the Twentieth Century, OLSZEWSKI_Claes Oldenburg and Coosje Van Bruggen Cleveland, PACE_Dreaming Red Creating ArtPace, POWERS_A **Companion** to Chinese Art, PRESS_American Art vol 30 no 1 Spring 2016, PRESS_Archives of American Art Journal vol 55 no 2 Fall, PRESS_Metropolitan **Museum** Journal volume 51 January 201, PREZIOSI_In the Aftermath of Art, RADICE_Urban Encounters, RAIZMAN_Expanding Nationalisms at Worlds Fairs Identity, RECKWITZ_The Invention of Creativity Modern Society and th, RINEHART_ReCollection Art New Media and Social Memory, ROEI_Civic Aesthetics Militarism Israeli Art and Visu, ROSENBERG_Trisha Brown Choreography as Visual Art, RUDOLPH_A **Companion** to Medieval Art Romanesque and Gothic, SARGENT_Sargent Portrait Drawings 42 Works by John Singer, SEKULES_Cultures of the Countryside Art **Museum** Heritage, SHONE_The Books That Shaped Art History From Gombrich a, SINGLETARY_James McNeill Whistler and France A Dialogue in P, SLAYTON_Beauty in the City The Ashcan School, TAYLOR_When the Machine Made Art The Troubled History of, TOMLIN_British Theatre Companies 19952014 Mind the Gap, TRACEY SAWDON_Hyperdrawing, TYTHACOTT_Collecting and Displaying Chinas Summer Palace in, VANDI_Ornament and European Modernism From Art Practice, WESTGEEST_Video Art Theory A Comparative Approach, WHITELAW_Spaces and Places for Art Making Art Institutions, WIJNSOUW_National Identity and NineteenthCentury FrancoBe, WINTER_On Drawing, ZEBRACKI_Public Art Encounters Art Space and Identity, ZIRANEK_Wall Works

3.2.2.1.2.4 Four most probable tempers of ch_n1e99

n 1 e 23

Morgan_Historical Dictionary of Contemporary Art, Chilvers_A Dictionary of Modern and Contemporary Art Oxfor, An_Whos Afraid of Contemporary Art, Shone_The Books That Shaped Art History From Gombrich a, Medosch_New Tendencies Art at the Threshold of the Inform, Preziosi_In the Aftermath of Art, Murray_Canadian Art in the Twentieth Century, Davalos_Chicanao Remix Art and Errata Since the Sixties, Brown_Displaying Time The Many Temporalities of the Fes, Horowitz_Art of the Deal Contemporary Art in a Global Fina, Gardner_Biennials Triennials and Documenta The Exhibiti, Pace_Dreaming Red Creating ArtPace, Anderson_The Legacies of Bernard Smi...

n 3 e 10

Macdonald_A Companion to Museum Studies Blackwell Companion, McClellan_The Art Museum From Bouleee to Bilbao, Day_Corrections and Collections Architectures for Art, Dorfman_The Future of Natural History Museums ICOM Advanc, Lubar_Inside the Lost Museum Curating Past and Present, Baker_Sentient Relics Museums and Cinematic Affect, Edwards_Photographs Museums Collections Between Art and, Tythacott_Collecting and Displaying Chinas Summer Palace in, Lindsay_The User Perspective on TwentyFirstCentury Art M, Sargent_Sargent Portrait Drawings 42 Works by John Singer

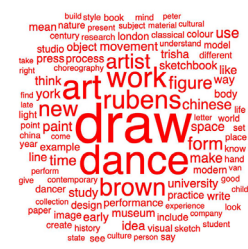
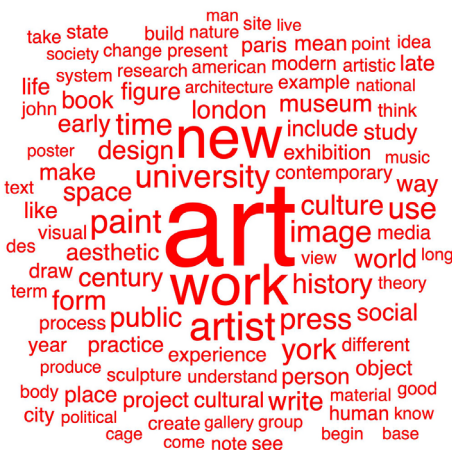


n 2 e 55

Albu_Perception and Agency in Shared Spaces of Contempo, Edited By Okwui Enwezor_Antinomies of Art and Culture Modernity Postmode, Miles_EcoAesthetics Art Literature and Architecture i, Knight_A Companion to Public Art, Luger_Art and the City, Press_American Art vol 30 no 1 Spring 2016, Fisher_Imperfect Fit Aesthetic Function Facture and Pe, Rudolph_A Companion to Medieval Art Romanesque and Gothic, Mieves_Wonder in Contemporary Artistic Practice, Brain_The Pulse of Modernism Physiological Aesthetics i, Bonansinga_Curating at the Edge Artists Respond to the US, Raizman_Expanding Nationalisms at Worlds Fairs Identity, Malloy_Social Media ...

n 4 e 11

Gittens_Recto Verso Redefining the Sketchbook, Duff_Drawing The Purpose, Garner_Writing on Drawing Essays on Drawing Practice and, Winter_On Drawing, TRACEY Sawdon_Hyperdrawing, Maclagan_Line Let Loose Scribbling Doodling and Automatic, Lusheck_Rubens and the Eloquence of Drawing Visual Cultur, Harding_The Practice of Art A Classic Victorian Treatise, Bostic_Inside the Art Studio A Guided Tour of 37 Artists, Rosenberg_Trisha Brown Choreography as Visual Art, Chang_Chinese Dance In the Vast Land and Beyond



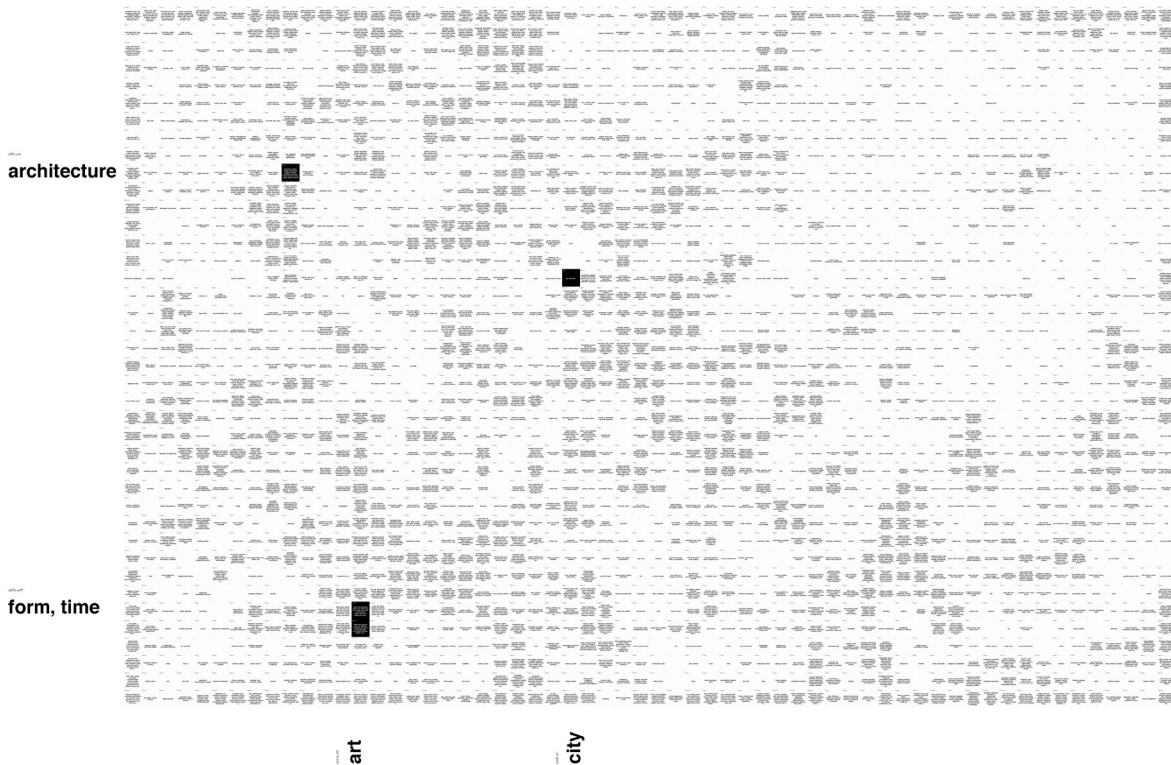
3.2.2.1.2.5 Fifty indexes common to *ch_nle99*

art -> 97716, work -> 41175, new -> 40114, museum -> 33866, artist -> 30306, paint -> 20604, **time** -> 16662, york -> 16499, university -> 15834, history -> 15645, use -> 15489, exhibition -> 15338, **form** -> 13981, world -> 13752, press -> 13594, image -> 13412, draw -> 13400, public -> 12768, space -> 12578, london -> 12444, culture -> 12210, century -> 11707, write -> 11666, early -> 11664, gallery -> 11563, figure -> 11546, design -> 11463, object -> 11295, make -> 11130, include -> 11130, study -> 10957, way -> 10807, life -> 10308, like -> 10291, book -> 10061, cultural -> 9986, year -> 9901, collection -> 9869, late -> 9688, social -> 9405, contemporary -> 9355, place -> 9190, person -> 9053, modern -> 8950, american -> 8807, **city** -> 8782, mean -> 8721, build -> 8642, practice -> 8530, project -> 8512

3.2.2.1.2.6 Topics addressed in the speech and their indexical clouds

A galaxy of concepts of *ch_nle99* with a focus on five indexes

Rendering_ch1_02_RW_4060_r_50it22d_words_vertex,
http://www.romanvlahovic.com/xenotheka/char1_wordGalaxy.pdf

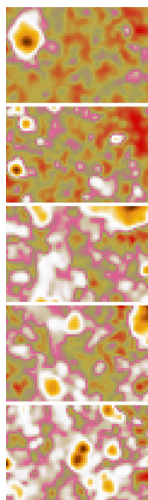


Architecture

ch_nle99's atom-letters related to the index of *architecture*:

n550 e14 {illuminate, volume, middle, architecture, kingdom, charter, elevation, sanctuary, hamper, divest, comical, swear, joyfully, stroud}
n549 e3 {mystic, sanctity, proscription}
n610 e24 {gregory, venerable, anglo, preach, disentangle, guilt, prehistory, morgan, margin, fiftieth, joachim, outpouring, synopsis, maxwell, illiteracy, prophesy, recontextualized, sharpe, expectancy, iconoclast, byrne, vox, chateau, strawberry}
n551 e4 {antiquity, bishop, aldershot, insurmountable}
n490 e4 {icon, corporeal, hypothesize, periodization}
n609 e16 {edmund, sculptural, feast, christina, eleanor, hugh, deutschland, jeanne, ordain, heresy, tina, noxious, avon, whet, restorer, burrell}
n611 e6 {rediscovery, deform, adore, desecration, inflame, clearance}
n491 e5 {route, methodological, monolithic, presently, lacuna}
n548 e7 {scholarship, spiritual, faux, laughter, hieratic, talisman, malevolent}
n489 e7 {faithful, stylistic, iconography, historiography, denigration, sophia, scopic}

ch_nle99's main references for the index of *architecture*:



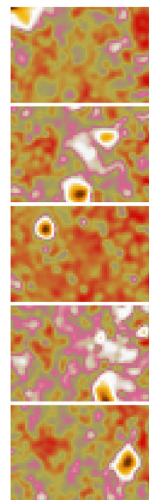
Conrad Rudolph, *A Companion to Medieval Art: Romanesque and Gothic in Northern Europe*, 0.170176

Valérie Gonzalez, *Aesthetic Hybridity in Mughal Painting*, 0.035913

Ian Chilvers, *A Dictionary of Modern and Contemporary Art*, 0.0352762

Kostelanetz, *A Dictionary of the Avant-Gardes*, 0.0339741

Sharon Macdonald, *A Companion to Museum Studies*, 0.0333137



Martin J. Powers, Katherine R. Tsiang, *A Companion to Chinese Art*, 0.0254099

Cher Krause Knight, Harriet F. Senie, *A Companion to Public Art*, 0.0190589

Helen McCormack, *William Hunter and his Eighteenth-Century Cultural Worlds*, 0.0181248

Okwui Enwezor, Nancy Condee, Terry Smith, *Antinomies of Art and Culture: Modernity, Postmodernity, Contemporaneity*, 0.0179478

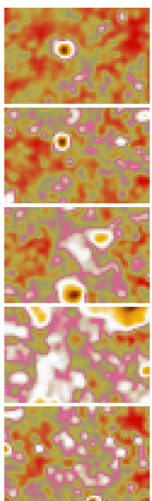
Christian Mieves, *Wonder in Contemporary Artistic Practice*, 0.0159915

City

ch_n1e99's atom-letters related to the index of *city*:

```
n926 e2 {city, whichever}
n925 e3 {laissez, escort, rickety}
n927 e13 {conversation, deepen, handful, enthusiast, persona, lccn,
lcc, ddc, lcsb, gamut, ebook, sabbatical, untethered}
n866 e0 {}
n984 e0 {}
n986 e16 {coverage, reinvention, taxi, capitalize, prospective, hop,
enmesh, passport, joe, african, valorization, explicate, arjun, espace,
becker, underbelly}
n987 e27 {interplay, viewpoint, traffic, discard, grapple, cloth,
driver, populate, credential, mobility, roberts, infrastructure, diaspora,
visibility, pivot, conceptualize, jumble, habitation, imaginable, bedford,
urgently, graduation, purview, aspirational, byproduct, infusion,
friction}
n924 e1 {bustle}
n985 e3 {neighborhood, vendor, amble}
n867 e1 {fluidly}
```

ch_n1e99's main references for the index of *city*:



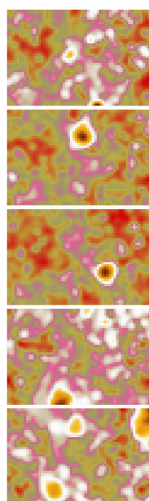
Joanna Grabski, *Art World City: The Creative Economy of Artists and Urban Life in Dakar*, 0.103489

Robert A. Slayton, *Beauty in the City: The Ashcan School*, 0.0736791

Cher Krause Knight, Harriet F. Senie, *A Companion to Public Art*, 0.0392976

Ian Chilvers, *A Dictionary of Modern and Contemporary Art*, 0.0253116

Rebecca M. Brown, *Displaying Time: The Many Temporalities of the Festival of India*, 0.0216775



Anthony Gardner, Charles Green, *Biennials, Triennials, and Documenta: The Exhibitions that Created Contemporary Art*, 0.0197804

Judy Malloy, *Social Media Archeology and Poetics*, 0.0195214

Martha Radice, Alexandrine Boudreault-Fournier, *Urban Encounters: Art and the Public*, 0.0185463

Ann Lee Morgan, *Historical Dictionary of Contemporary Art*, 0.0184725

Richard Kostelanetz, *A Dictionary of the Avant-Gardes*, 0.0175322

Art, Time, and Form

Since three indexes for *ch_n1e99*— *art*, *time*, and *form*— are in the same part of the galaxy, *atom letter n2054 e77* and *atom letter n2114 e51* form one conceptual space. Let us look at them together.

ch_n1e99's *atom-letters* related to the indexes of *art*, *time* and *form*:

n2114 e51 {follow, take, day, go, little, art, continue, important, feel, leave, final, half, scale, last, month, comment, quickly, run, institute, meet, ten, artist, certainly, stay, enjoy, post, attend, suit, lit, reconcile, assist, seat, organize, twice, ground, progressive, emotional, declare, potent, isolation, student, residence, exhibit, clean, peace, chase, sway, pink, jointly, netherlands, embroil}

n2174 e6 {encourage, fine, commonplace, drink, impoverish, slate}

n2054 e77 {away, end, long, time, come, turn, stand, use, form, sense, set, world, far, fall, idea, reflect, old, cause, divide, term, heart, involve, certain, material, stretch, element, immediately, break, kind, small, describe, link, pass, usual, happen, constant, front, top, traditional, catch, try, eventually, cover, contact, fear, formal, really, wall, refuse, absorb, contemporary, personal, spot, escape, reproduce, overwhelm, anticipate, fluid, pose, prime, ride, slightly, explosion, rigid, sit, fade, happy, surroundings, precarious, exposure, incident, drift, prominence, maximum, rejection, dispense, cradle}

n2113 e50 {bring, open, direct, issue, numb, create, gain, wide, establish, concern, interest, aim, specifically, throughout, deeply, range, maintain, number, help, previously, largely, remain, tie, total, political, publicly, big, involvement, week, poor, objective, explicit, broadly, promote, attract, culminate, endure, decline, unexpected, attractive, coincide, compromise, trademark, affair, widespread, formerly, health, usher, conduit, undeniable}

n2055 e28 {close, life, shape, background, quality, discover, rich, size, generation, young, evoke, block, float, height, hard, finish, raw, shock, soft, beneath, bare, newspaper, dimensional, intersperse, rip, hammer, vacant, coil}

n2115 e11 {intense, recall, stark, formally, woman, coat, hover, meticulously, tribute, keith, swirl}

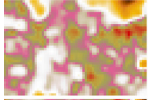
n2173 e6 {grow, heavily, sarah, behalf, politically, internationally}

n2234 e3 {coast, wed, esther}

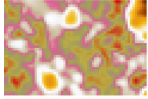
n2053 e29 {base, deep, outside, develop, rise, real, previous, dominant, recognition, inhabit, cross, tension, start, journey, alternative, exploration, foundation, exploitation, linger, dismantle, fleet, inter, devastate, messy, plunge, bag, chichester, liberation, gas}

n2175 e5 {comfort, quiet, campbell, perch, indelible}

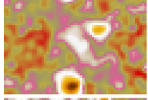
ch_nle99's main references for indexes of *art, time* and *form*:



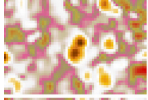
Ian Chilvers, *A Dictionary of Modern and Contemporary Art*, 0.059748



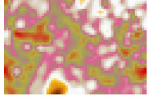
Richard Kostelanetz, *A Dictionary of the Avant-Gardes*, 0.0305179



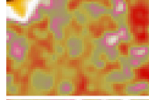
Cher Krause Knight, Harriet F. Senie, *A Companion to Public Art*, 0.0212211



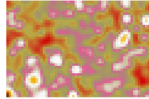
Sharon Macdonald, *A Companion to Museum Studies*, 0.0211042



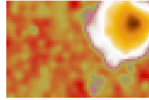
Ann Lee Morgan, *Historical Dictionary of Contemporary Art*, 0.0206894



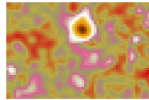
Martin J. Powers, Katherine R. Tsiang, *A Companion to Chinese Art*, 0.0200664



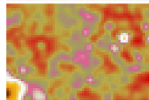
Malcolm Miles, *Eco-Aesthetics: Art, Literature and Architecture in a Period of Climate Change*, 0.0199319



Daniel Horowitz, *Consuming Pleasures: Intellectuals and Popular Culture in the Postwar World*, 0.0180627



Judy Malloy, *Social Media Archeology and Poetics*, 0.0172472



Veronica Sekules, *Cultures of the Countryside*, 0.0166502

*ch_n2e88**Crawling Time and Space**3.2.2.2.1 An imagined scenario for character ch_n2e88 at a gathering for 6 in the Library_639*

ch_n2e88, as the rumour has it, is one of the early man-made Artificial Intelligences. It comes from the time of Blade Runner. Without having a fixed physical body, it moves and plays with information in a fast manner. It always has an answer to your question. It orders objects in time and space, mostly in centuries and maps. This simple and fast mapping between time and space is what keeps this character stable. *ch_n2e88* always talks in someone else's terms. Its reflections are smooth; its projections are simple and unsophisticated. When it talks about objects, it shows its knowledge in short statements. It scans objects, looks for their archaeology, dates them, and lets them go. As a special feature or, better to say, as a fetish of its master, it can answer any question regarding gardens. Its favourite character from the group is *ch_n4e79*. It admires its drive and cause.

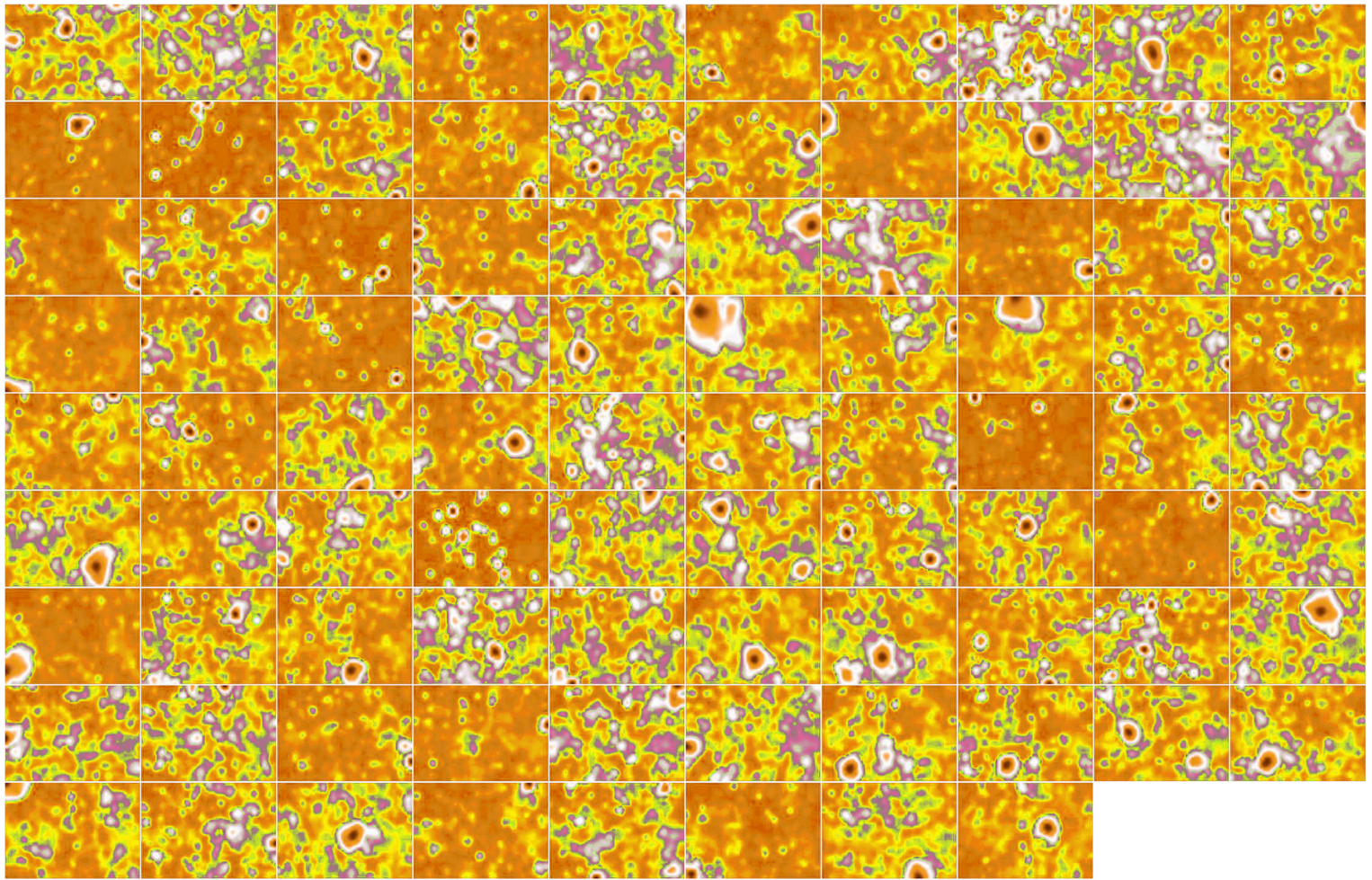
*3.2.2.2.2 INDEXING ch_n2e88**3.2.2.2.2.1 Likeliness of an affair with other characters*193

| | |
|------------------|-----------|
| <i>ch_n4e79</i> | 0.0173816 |
| <i>ch_n5e172</i> | 0.0179534 |
| <i>ch_n3e81</i> | 0.0194474 |
| <i>ch_n1e99</i> | 0.0230551 |
| <i>ch_n6e110</i> | 0.0247452 |

193 The likeliness of cells is the distance between cells of the Self Organising Map. The closer the cells are, the higher the likeliness of an affair.

3.2.2.2.2.2

88 faces of a character *ch_n2e88*



3.2.2.2.3 *Body of ch_n2e88*

BEDARD_Decorative Games Ornament Rhetoric and Noble Cu, BEEK_Arts of Thailand, BILOTTO_Building Grand Central Terminal Images of Rail, BORK_The Geometry of Creation Architectural Drawing an, BOULTON_Place and Space in the Medieval World Routledge R, BROGDEN_Ichographia Rustica Stephen Switzer and the Desi, BROWN_Lancelot Brown and the Capability Men Landscape R, BRUCKNER_The Social Life of Maps in America 17501860, BYRD_A Pedagogy of Observation NineteenthCentury Pano, CAMPBELL_The Early Modern Italian Domestic Interior 14001, CARAFFA_Photo Archives and the Idea of Nation, CHRISTENSEN_Germany and the Ottoman Railways Art Empire and, COLEMAN_Inner Spaces Paul Vincent Wiseman amp the Wisema, COULSTON_Ancient Rome The **Archaeology** of the Eternal City, CRAWFORD_Ur The City of the Moon God, DAKOURIHILD_Staging Death, DAVID JACOBS_Master Builders of the Middle Ages, DEITZ_Of Gardens Selected Essays Penn Studies in Lands, DEJONGLAMBERT_The Lysenko Controversy as a Global Phenomenon Vo, DELACROIX_Art Deco Interiors, DESAI_Banaras Reconstructed Architecture and Sacred Spa, DESIMINI_Cartographic Grounds, DOHERTY_Paradoxes of Green Landscapes of a CityState, DOMINGUEZRODRIGO_Stone Tools and Fossil Bones Debates in the Archa, DONAHUEWALLACE_Art and Architecture of Viceregal Latin America 1, ENGBERGPEDERSEN_Literature and Cartography Theories Histories G, FRAZIER_The Bloomsbury Companion to Hindu Studies, FRIEDLAND_The Oxford Handbook of Roman Sculpture, FU_Traditional Chinese Architecture Twelve Essays, GIBBS_Gibbs Book of Architecture An EighteenthCentury, GOY_Florence A Walking Guide to Its Architecture, HAGGIS_Classical **Archaeology** in Context Theory and Pract, HARTWIG_A Companion to Ancient Egyptian Art, HERBERT_Floras Empire British Gardens in India, H KRUHL_Drawing Geological Structures Geological Field Gu, HOPKINS_The Genesis of Roman Architecture, HORNSBY_Picturing America The Golden Age of Pictorial Map, HUITSON_Stairway to Heaven The Functions of Medieval Uppe, JAVID_World Heritage Monuments and Related Edifices in I, KAUP_Neobaroque in the Americas Alternative Modernitie, KINGSLEY_Oceans Odyssey DeepSea Shipwrecks in the English, KIPEN_San Francisco in the 1930s The WPA Guide to the C, KOLRUD_Iconoclasm From Antiquity to Modernity, LASC_Designing the French Interior The Modern Home and, LAZER_Resurrecting Pompeii, LOCHER_Zen Gardens The Complete Works of Shunmyo Masuno, LYMBEROPOULOU_Byzantine Art and Renaissance Europe, MACDONALD_Alcatraz **History** and Design of a Landmark, MACLEOD_From an Antique Land Visual Representations of th, MARTINMCAULIFFE_Food and Architecture At the Table, MASHKOUR_Archaeozoology of the Near East 9, MAYER_Not Just for Show, MOHR_Indiana Covered Bridges, MONMONIER_Patents and Cartographic Inventions A New Perspec, MORRIS_Castle A **History** of the Buildings That Shaped Med, NELSON_Architecture and Empire in Jamaica, NEVETT_Theoretical Approaches to the **Archaeology** of Ancie, NONAKA_Renaissance Porticoes and Painted Pergolas Nature, PARRISH_Worlds of Enchantment The Art of Maxfield Parrish, PETROSKI_Engineers of Dreams Great Bridge Builders and the, PETTEGREW_The Isthmus of Corinth Crossroads of the Mediterr, PONTE_Architecture Words 11 The House of Light and Entr, PORTAL_Arts of Korea, POTVIN_Oriental Interiors Design Identity Space, RODWELL_Dorchester Abbey Oxfordshire The **Archaeology** and, ROWLEY_An Archaeological Study of the Bayeux Tapestry Th, RUSKIN_Poetry of Architecture, SCOTTI_Basilica The Splendor and the Scandal Building S, SCOTT_The Gothic Enterprise A Guide to Understanding th, SHIELDS_Moving Heaven and Earth Capability Browns Gift o, SUNG_William Blake and the Art of Engraving, SVARE_Morris Graves His Houses His Gardens, SZABO_The Bayeux Tapestry A Critically Annotated Biblio, TADGELL_The East Buddhists Hindus and the Sons of Heaven, TAGSOLD_Spaces in Translation Japanese Gardens and the We, TEREFENKO_Jazz Theory From Basic to Advanced Study, TREIB_Pietro Porcinai and the Landscape of Modern Italy, TUCK_A **History** of Roman Art, ULRICH_A Companion to Roman Architecture, VITRUVIUS AMP ROWLAND_Vitruvius Ten Books on Architecture, WARNER_Historical **Archaeology** Through a Western Lens His, WILLIAMSON_An Environmental **History** of Wildlife in England 16, WITSCHHEY_Encyclopedia of the Ancient Maya, WOLLENBERG_Schuberts Fingerprints Studies in the Instrument, WOOD_Albrecht Altdorfer and the Origins of Landscape R, YI_Yungang Art **History** **Archaeology** Liturgy, YOON_Pungsu, YORKE_Abbeys Monasteries and Priors Explained Britain

3.2.2.2.4 Four most probable tempers of ch_n2e88

n 1 e 70

Boulton_Place and Space in the Medieval World
Routledge R, Ponte_Architecture Words 11 The
House of Light and Entr, MartinMcAuliffe_Food
and Architecture At the Table,
Haggis_Classical Archaeology in Context Theory
and Pract, Potvin_Oriental Interiors Design
Identity Space, Nevelt_Theoretical Approaches
to the Archaeology of Ancie, Ulrich_A
Companion to Roman Architecture, Caraffa_Photo
Archives and the Idea of Nation, Taddgell_The
East Buddhists Hindus and the Sons of Heaven,
Lasc_Designing the French Interior The Modern
Home and, Warner_Historical Archaeology
Through a Western Lens His, Kipen_San
Francisco in the 1930s The WPA Guide to ...

n 2 e 4

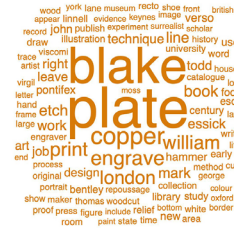
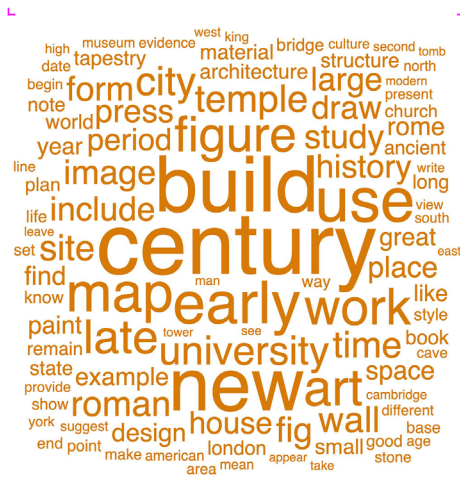
Sung_William Blake and the Art of Engraving,
Gibbs_Gibbs Book of Architecture An
EighteenthCentury, Parrish_Worlds of
Enchantment The Art of Maxfield Parrish,
Delacroix_Art Deco Interiors

n 3 e 11

Deitz_Of Gardens Selected Essays Penn Studies
in Lands, Brogden_Ichnographia Rustica Stephen
Switzer and the Desi, Herbert_Floras Empire
British Gardens in India, Shields_Moving
Heaven and Earth Capability Browns Gift o,
Brown_Lancelot Brown and the Capability Men
Landscape R, Williamson_An Environmental
History of Wildlife in England 16,
Nonaka_Renaissance Porticoes and Painted
Pergolas Nature, Doherty_Paradoxes of Green
Landscapes of a CityState, Yoon_Pungsu,
MacDonald_Alcatraz History and Design of a
Landmark, Svare_Morris Graves His Houses His
Gardens

n 4 e 3

Locher_Zen Gardens The Complete Works of
Shunmyo Masuno, Tagsold_Spaces in Translation
Japanese Gardens and the We, Treib_Pietro
Porcinai and the Landscape of Modern Italy



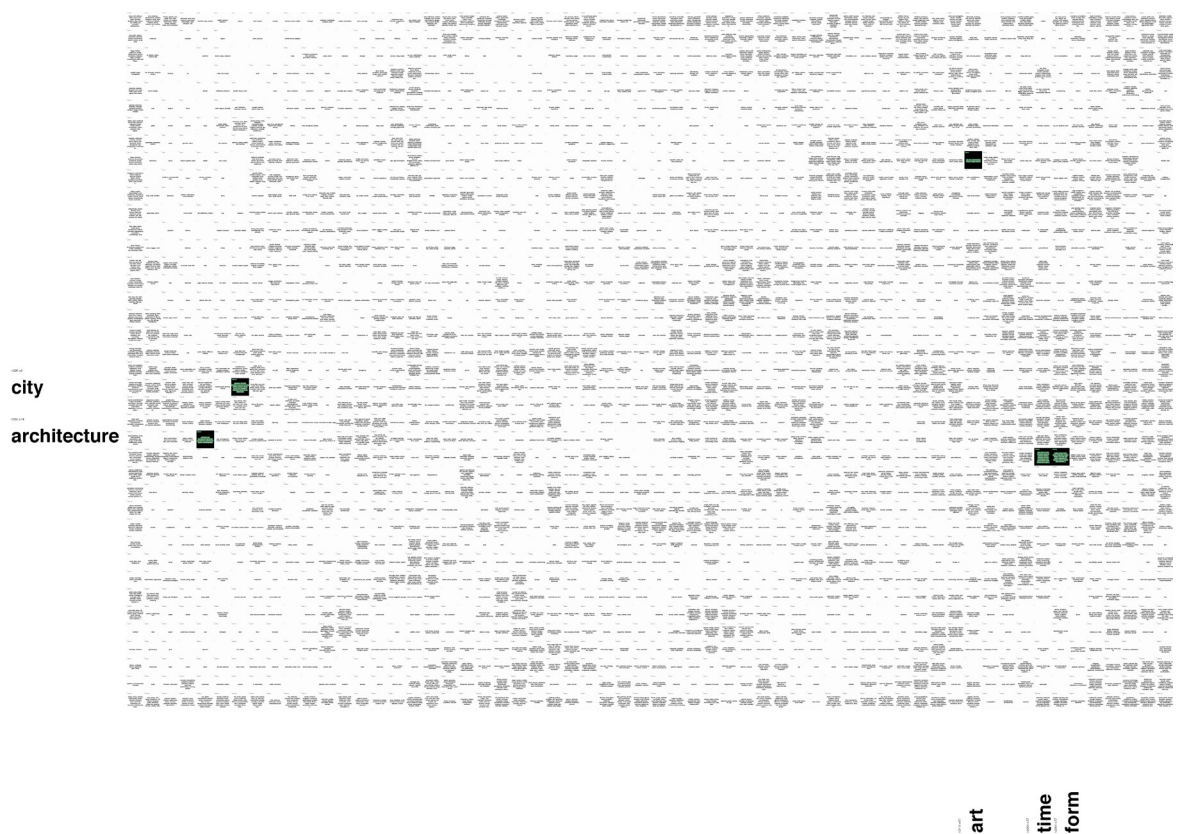
3.2.2.2.5 Fifty indexes common to *ch_n2e88*

century -> 20727, build -> 19100, new -> 19043, use -> 15635, early -> 14956, garden -> 14534, work -> 13971, **art** -> 12811, figure -> 12804, map -> 12801, late -> 12348, house -> 11676, **time** -> 10855, **city** -> 10783, university -> 10776, design -> 10100, temple -> 10087, site -> 10057, wall -> 10032, **form** -> 9943, history -> 9851, large -> 9642, place -> 9563, include -> 9392, study -> 9324, draw -> 9108, press -> 9029, image -> 8979, roman -> 8962, fig -> 8843, period -> 8502, london -> 8294, space -> 8246, great -> 8236, landscape -> 8200, like -> 8046, year -> 7988, find -> 7728, paint -> 7713, example -> 7670, book -> 7314, rome -> 7313, plan -> 7091, **architecture** -> 7065, small -> 7014, long -> 6900, world -> 6774, state -> 6461, view -> 6423, structure -> 6417

3.2.2.2.6 Topics addressed in the speech and their indexical clouds

A galaxy of concepts of *ch_n2e88* with a focus on five indexes

Rendering_ch2_02_RW_4060_r_50it22d_words_vertex,
http://www.romanvlahovic.com/xenotheka/char2_wordGalaxy.pdf

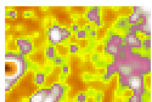


Architecture

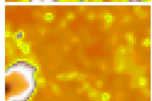
ch_n2e88's atom-letters related to the index of *architecture*:

```
n1445 e7 {architectural, architecture, architect, predilection,
adherence, thrust, knowledgeable}
n1385 e6 {build, massive, grandeur, courtyard, dispense, rainwater}
n1505 e1 {renewal}
n1446 e4 {wall, arrangement, restore, necessitate}
n1444 e5 {wilson, builder, duplicate, veneer, pointedly}
n1384 e4 {lavish, retirement, domed, roofline}
n1386 e6 {row, side, mod, enclose, semi, rectangular}
n1506 e1 {stud}
n1325 e7 {achieve, dominate, central, residence, evolve, elevate,
circular}
n1447 e8 {attach, survive, former, step, cross, ring, pierce, altar}
```

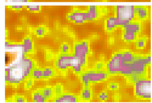
ch_n2e88's main references for the index of *architecture*:



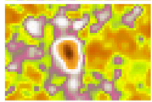
Roger B. Ulrich, Caroline K. Quenemoen, *A Companion to Roman Architecture*, 0.0949046



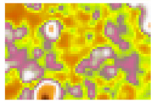
Warwick Rodwell, *Dorchester Abbey, Oxfordshire: The Archaeology and Architecture of a Cathedral, Monastery and Parish Church*, 0.0381519



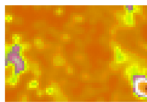
Christopher Tadgell, *The East: Buddhists, Hindus and the Sons of Heaven*, 0.0335492



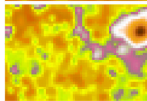
Paula Deitz, *Of Gardens: Selected Essays*, 0.0262469



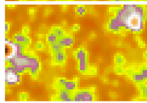
J. C. Coulston, Hazel Dodge, *Ancient Rome: The Archaeology of the Eternal City*, 0.0262139



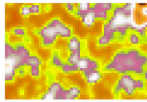
Xinian Fu, *Traditional Chinese Architecture: Twelve Essays*, 0.0242634



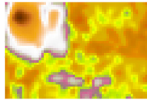
Melinda K. Hartwig, *A Companion to Ancient Egyptian Art*, 0.0229309



Ali Javid, *World Heritage Monuments and Related Edifices in India*, 0.0220936



Steven L. Tuck, *A History of Roman Art*, 0.0215048



David Kipen, *San Francisco in the 1930s: The WPA Guide to the City by the Bay*, 0.0199509

City

ch_n2e88's atom-letters related to the index of city:

n1267 e14 {maintain, confine, member, succeed, secure, stretch, acquire, push, pace, city, gradually, indebted, supervision, disastrous}

n1266 e4 {extend, great, destroy, vicinity}

n1327 e24 {long, replace, raise, open, finally, ten, join, enter, turn, wide, run, complete, cover, seven, six, rest, return, near, eight, rich, opposite, assist, refine, bound}

n1268 e16 {bring, little, man, old, name, pass, father, attract, young, occupy, occasion, clean, await, odd, save, grip}

n1207 e9 {establishment, administration, vanish, enforce, facility, administer, reorganize, route, reluctant}

n1206 e7 {rival, consolidate, tax, stagger, exhaust, endowment, pension}

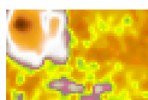
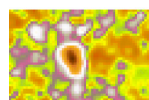
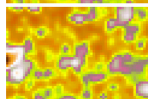
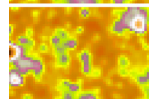
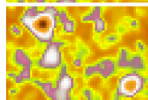
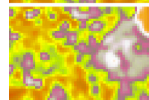
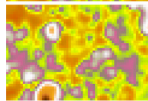
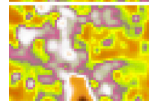
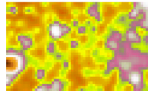
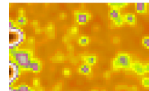
n1328 e4 {heavy, lift, twelve, eighteen}

n1326 e12 {support, divide, retain, surround, nine, rank, consist, double, eleven, generous, thirteen, impose}

n1208 e19 {settle, arrive, organize, aside, alive, speed, loom, sentiment, cry, flee, debt, amaze, crude, abruptly, stray, army, attendance, besides, race}

n1265 e15 {beyond, magnificent, era, overwhelm, invaluable, guidance, remote, protective, thereafter, devastate, hub, splendid, happiness, faction, worsen}

ch_n2e88's main references for the index of city:

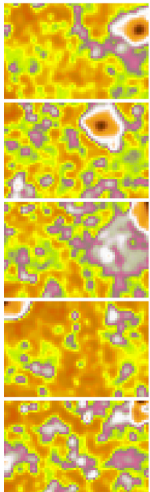
| | | | |
|---|---|---|---|
|  | David Kipen, <i>San Francisco in the 1930s: The WPA Guide to the City by the Bay</i> , 0.060755 |  | Paula Deitz, <i>Of Gardens: Selected Essays</i> , 0.020479 |
|  | Christopher Tadgell, <i>The East: Buddhists, Hindus and the Sons of Heaven</i> , 0.0380043 |  | Ali Javid, <i>World Heritage Monuments and Related Edifices in India</i> , 0.0204629 |
|  | Henry Petroski, <i>Engineers of Dreams: Great Bridge Builders and the Spanning of America</i> , 0.0241128 |  | Elise A. Friedland, Melanie Grunow Sobocinski, Elaine K. Gazda, <i>The Oxford Handbook of Roman Sculpture</i> , 0.0202206 |
|  | J. C. Coulston, Hazel Dodge, <i>Ancient Rome: The Archaeology of the Eternal City</i> , 0.0214633 |  | Eugenia W. Herbert, <i>Flora's Empire: British Gardens in India</i> , 0.0202174 |
|  | Roger B. Ulrich, Caroline K. Quenemoen, <i>A Companion to Roman Architecture</i> , 0.0213764 |  | Richard J. Goy, <i>Florence: A Walking Guide to Its Architecture</i> , 0.019431 |

Art

ch_n2e88's atom-letters related to the index of art:

n529 e6 {eye, art, presentation, visual, image, enliven}
n530 e10 {render, grasp, signify, own, singular, subordinate, chaotic, iconic, anonymous, precursor}
n469 e13 {creation, subject, favor, arrange, sign, crown, convey, exemplify, array, deliberate, execute, dawn, artist}
n528 e5 {background, exhibit, intent, vividly, stripe}
n589 e3 {spit, unsatisfactory, encode}
n470 e9 {style, fine, recreate, precious, paint, transparent, ear, intertwine, mask}
n590 e6 {representation, smith, code, plead, utilize, countenance}
n468 e7 {accompany, daughter, mystery, loyalty, dress, woman, portrayal}
n588 e5 {seldom, shave, artistry, illiterate, henderson}
n531 e6 {dictate, motif, chaos, god, fluidity, imperfection}

ch_n2e88's main references for the index of art:



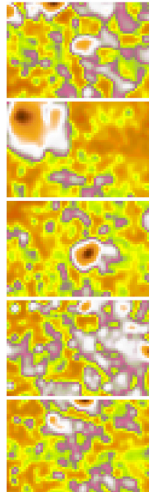
Melinda K. Hartwig, *A Companion to Ancient Egyptian Art*, 0.0794595

John F. Szabo, Nicholas E. Kuefler, *The Bayeux Tapestry: A Critically Annotated Bibliography*, 0.0492123

Elise A. Friedland, Melanie Grunow Sobocinski, Elaine K. Gazda, *The Oxford Handbook of Roman Sculpture*, 0.0362986

Walter R. T. Witschey, *Encyclopedia of the Ancient Maya*, 0.0297352

Steven L. Tuck, *A History of Roman Art*, 0.0267451



Monika Kaup, *Neobaroque in the Americas: Alternative Modernities in Literature, Visual Art and Film*, 0.0244344

David Kipen, *San Francisco in the 1930s: The WPA Guide to the City by the Bay*, 0.0221642

Christopher S. Wood, *Albrecht Altdorfer and the Origins of Landscape*, 0.0198417

Jessica Frazier, *The Bloomsbury Companion to Hindu Studies*, 0.0193108

John Potvin, *Oriental Interiors: Design, Identity, Space*, 0.01886

Time and Form

Since both indexes (time—*atom letter n2054 e77* and form—*n1554 e23*) are first neighbours when seen in the light of *ch_n2e88*, let us look at them together.

n1553 e26 {time, know, exist, continue, general, outside, similar, directly, second, sometimes, live, association, hard, existence, occasionally, mix, common, accessible, local, benefit, rare, encouragement, extensive, extensively, distinctive, cease}

n1493 e33 {take, give, direct, particularly, purpose, especially, serve, work, true, concern, reflect, recently, example, immediate, exclusively, development, engage, widely, elaborate, onto, act, scope, increasingly, intend, society, indeed, superior, sort, encourage, nevertheless, deliberately, suspect, intervention}

n1613 e5 {find, effort, few, third, tightly}

n1554 e23 {follow, allow, form, good, important, make, single, call, like, set, place, appearance, greatly, reduce, apart, part, natural, piece, equally, compose, characterize, intention, continuation}

n1492 e11 {close, clear, entirely, remarkable, otherwise, circumstance, fit, exert, permission, exclusive, importantly}

n1494 e24 {need, combination, special, unlike, distinguish, highly, influence, develop, prefer, appropriate, able, generation, primarily, nature, adapt, rely, element, capable, practical, employ, guarantee, reproduce, retrieval, appreciation}

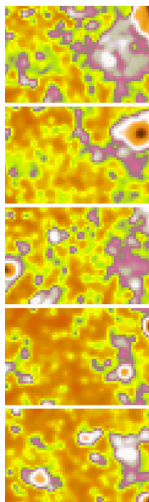
n1552 e12 {change, throughout, reveal, last, largely, connection, deeply, vast, widespread, profound, assemble, universally}

n1614 e9 {require, completely, position, necessary, rarely, aid, order, uniform, unchanged}

n1433 e16 {provide, specifically, importance, attempt, significant, expect, deal, generally, unknown, difficulty, preserve, initially, apparently, thank, assistance, attribute}

n1432 e11 {fact, despite, suggest, attention, impossible, interest, describe, evident, responsible, similarly, academy}

ch_n2e88's main references for indexes *time* and *form*:



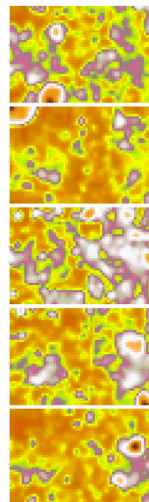
Elise A. Friedland, Melanie Grunow Sobocinski, Elaine K. Gazda, *The Oxford Handbook of Roman Sculpture*, 0.0340735

Melinda K. Hartwig, *A Companion to Ancient Egyptian Art*, 0.0293754

Roger B. Ulrich, Caroline K. Quenemoen, *A Companion to Roman Architecture*, 0.0270333

John North Hopkins, *The Genesis of Roman Architecture*, 0.024263

Marjan Mashkour, Mark Beech, *Archaeozoology of the Near East 9*, 0.0218272



J. C. Coulston, Hazel Dodge, *Ancient Rome: The Archaeology of the Eternal City*, 0.020667

Walter R. T. Witschey, *Encyclopedia of the Ancient Maya*, 0.0206301

Jessica Frazier, *The Bloomsbury Companion to Hindu Studies*, 0.0198009

Donald Haggis, Carla Antonaccio, *Classical Archaeology in Context: Theory and Practice in Excavation in the Greek World*, 0.0197385

Anastasia Dakouri-Hild, Michael John Boyd, *Staging Death: Funerary Performance, Architecture and Landscape in the Aegean*, 0.0195341

*ch_n3e81**Morphing with the Mood**3.2.2.3.1 An imagined scenario for character ch_n3e81 at a gathering for 6 in the Library_639*

ch_n3e81 is one of the avatars of *ch_n6e110*. It inhabits many different bodies and has many of its own avatars.¹⁹⁴ It lives actively both in the physical and in the digital realm, and fully enjoys the hybridity of the informational environment. It constantly morphs between different media. As an avatar in this *Xenotheka*, it wants to gain independence from the body of *ch_n6e110* and, in doing so, still stay in good relations with it and its friends. It loves communities, many of them. *ch_n3e81* is a mixture of many: philosophy and water, rationality and indeterminacy, intervention and caution, of a genius and a tourist. It follows all the fashions and always talks about the ‘cool’ stuff: design, film, images, media, fashion, technology, theory, etc. It is always ‘in’. It wants to abandon standards and categories in a search for new languages, new practices, and new ways of constructing realities. Its fetish is contemplation. It is a good friend of *ch_n5e172*.

*3.2.2.3.2 INDEXING ch_n3e81**3.2.2.3.2.1 Likelihood of an affair with other characters¹⁹⁵*

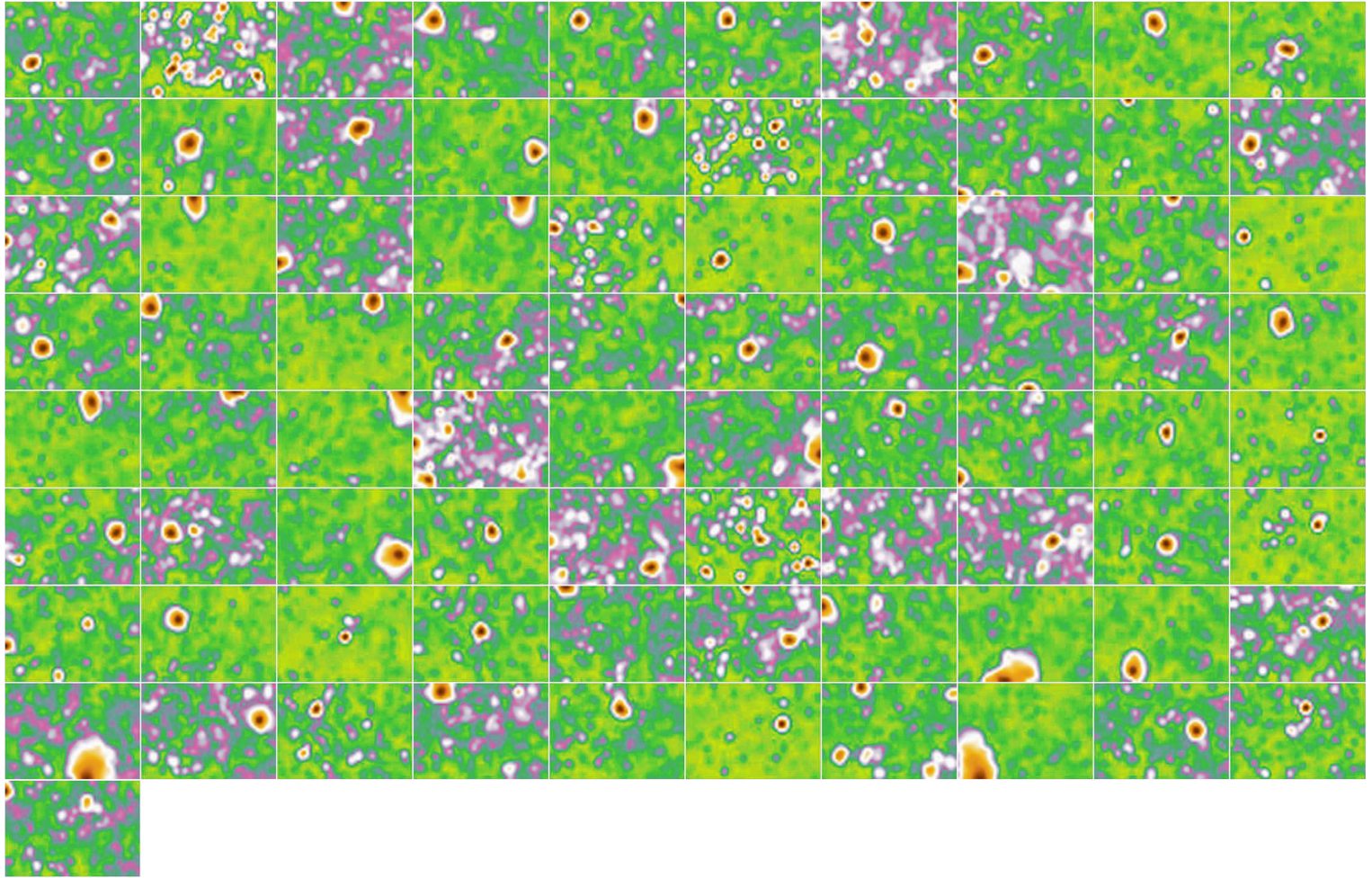
| | |
|------------------|-----------|
| <i>ch_n5e172</i> | 0.0185731 |
| <i>ch_n2e88</i> | 0.0194474 |
| <i>ch_n4e79</i> | 0.0215059 |
| <i>ch_n1e99</i> | 0.021615 |
| <i>ch_n6e110</i> | 0.0263257 |

¹⁹⁴ One of its avatars one can follow at https://twitter.com/Alice_ch_n3e81.

¹⁹⁵ The likelihood of cells is the distance between cells of the Self Organising Map. The closer the cells are, the higher the likelihood of an affair.

3.2.2.3.2.2

81 faces of a character *ch_n3e81*



3.2.2.3.2.3 Body of ch_n3e81

ACLAND_The Arclight Guidebook to Media History and the Di, ALBERS_On Weaving, ARNOLD_Fashion A Very Short Introduction, ASCOTT_Art Technology Consciousness Mindlarge, ASCOTT_Engineering Nature, BANNER_Communicative Biocapitalism The Voice of the Pati, BARIKIN_Parallel Presents The Art of Pierre Huyghe, BIERUT_How To, BLOOMSBURY AMP YELAVICH_Design as FutureMaking, BODENHAMER_Deep Maps and Spatial Narratives The Spatial Huma, BONSIPE_Civic City Cahier 2 Design and Democracy Civic C, BOOMEN_Digital Material Tracing New Media in Everyday Li, BORADKAR_Encountering Things Design and Theories of Things, BORSCHKE_This Is Not a Remix Piracy Authenticity and Popu, BRODIE_The Translator on Stage, BUREAUD_MetaLife Biotechnologies Synthetic Biology ALi, CAMERON_Drama and Digital Arts Cultures Methuen Drama Eng, CARDEN_Digital Textile Printing Textiles That Changed th, CARPO_The Alphabet and the Algorithm, CARPO_The Second Digital Turn Design Beyond Intelligenc, CLARKE_Design Anthropology Object Culture in the 21st Ce, COOLEY_Finding Augusta Habits of Mobility and Governance, CREWE_The Geographies of Fashion Consumption Space an, DAVIS_Envelope Understanding What Designers Value, DEROO_Agnes Varda Between Film Photography and Art, DIETRICH_The Educated Eye Interfaces Studies in Visual Cu, DISALVO_Adversarial Design, DOHERTY_Is Landscape Essays on the Identity of Landsc, DOMINICI_Travel Marketing and Popular Photography in Britai, ELSAESSER_Film Theory An Introduction Through the Senses, ENTWISTLE_Fashioning Models Image Text and Industry, EXNER_Spatial Design, FRANCESCHINI_Global Tools 19731975, FRY_Steel A Design Cultural and Ecological History, GAUDREAUULT_A Companion to Early Cinema, GIMENOMARTINEZ_Design and National Identity, GIRIDHAR_Learning Python Design Patterns Second Edition, GREEN_Architectural Robotics Ecosystems of Bits Bytes, GUFFEY_Designing Disability Symbols Space and Society, HALL_Pirate Philosophy For a Digital Posthumanities, HATFIELD_Experimental Film and Video An Anthology, HERRING_Street Furniture Design Contesting Modernism in P, HERRINGTON_Landscape Theory in Design, HERZOGENRATH_Travels in Intermediality, HESKETT_Design and the Creation of Value, HUDSON_The Design Book 1000 New Designs for the Home an, JANSEN_Modern Fashion Traditions Negotiating Tradition a, JENSS_Fashion Studies Research Methods Sites and Pract, KALMS_Hypersexual City The Provocation of SoftCore Urb, KIM_Between Film Video and the Digital Hybrid Movin, KINDER_Transmedia Frictions The Digital the Arts and t, KJAERULFF_Envisioning Networked Urban Mobilities Art Perfo, KOMJATHY_Introducing Contemplative Studies, LUPTON_Graphic Design Thinking, MANSOUX_FLOSSArt, MAZUREK_A Sense ofApocalypse Technology Textuality Ide, MCCULLOUGH_Abstracting Craft The Practiced Digital Hand, MUNSTER_Materializing New Media Embodiment in Information, PARSONS_The Philosophy of Design, PAUL RAND_Thoughts on Design, PAUL_When Movies Were Theater Architecture Exhibition, PETERS_Digital Keywords, PRASAD_Imperial Technoscience Transnational Histories of, RAJAGOPAL_Hacking Design Kindle Edition, REDDLEMAN_Cartographic Abstraction in Contemporary Art Seei, ROBBIN_Shadows of Reality The Fourth Dimension in Relati, RUMPFHUBER_The Design of Scarcity, SASSOON_The Designer Half a Century of Change in Image T, SCHAEFER_Lens Laboratory Landscape Observing Modern Spai, SCHNEIDERMAN_Textile Technology and Design From Interior Space, SCHRATER_3D History Theory and Aesthetics of the Transpla, SCOTT CONTRERASKOTERBAY_The New Aesthetic and Art Cons, SHIRLEY_Rural Modernity Everyday Life and Visual Culture, SIEMENS_A Companion to Digital Literary Studies, TRAGANOU_Designing the Olympics Representation Participat, TUFTE_Envisioning Information, TWEMLOW_Sifting the Trash A History of Design Criticism, VAUGHAN_PracticeBased Design Research, WENDT_The Allure of the Selfie Instagram and the New Se, WOLLNER_Body Sound and Space in Music and Beyond Multimo, ZYLINSKA_Nonhuman Photography

3.2.2.3.2.4 Four most probable tempers of ch_n3e81

n 1 e 28

Clarke_Design Anthropology Object Culture in the 21st Ce, Bloomsbury amp Yelavich_Design as FutureMaking, Twemlow_Sifting the Trash A History of Design Criticism, Schneiderman_Textile Technology and Design From Interior Space, Sassoon_The Designer Half a Century of Change in Image T, Boradkar_Encountering Things Design and Theories of Things, Heskett_Design and the Creation of Value, Herrington_Landscape Theory in Design, Parsons_The Philosophy of Design, Disalvo_Adversarial Design, Lupton_Graphic Design Thinking, Rajagopal_Hacking Design Kindle Edition, Traganou_Designing the Olympics Representation Participat, GimenoMartinez_Design and...

n 2 e 5

Hall_Pirate Philosophy For a Digital Posthumanities, Siemens_A Companion to Digital Literary Studies, Banner_Communicative Biocapitalism The Voice of the Pati, Komjathy_Introducing Contemplative Studies, Mansoux_FLOSSArt

n 3 e 21

Dietrich_The Educated Eye Interfaces Studies in Visual Cu, Acland_The Arclight Guidebook to Media History and the Di, Kjaerulf_Envisioning Networked Urban Mobilities Art Perfo, Shirley_Rural Modernity Everyday Life and Visual Culture, Gaudreault_A Companion to Early Cinema, Hatfield_Experimental Film and Video An Anthology, Elsaesser_Film Theory An Introduction Through the Senses, Kalms_Hypersexual City The Provocation of SoftCore Urb, Crewe_The Geographies of Fashion Consumption Space an, Barikin_Parallel Presents The Art of Pierre Huyghe, Jeness_Fashion Studies Research Methods Sites and Pract, Kim_Between Film Video and the Digital Hy...

n 4 e 29

Ascott_Engineering Nature, Ascott_Art Technology Consciousness Mindlarge, Kinder_Transmedia Frictions The Digital the Arts and t, Herzogenrath_Travels in Intermediality, Carpo_The Second Digital Turn Design Beyond Intelligenc, Peters_Digital Keywords, Boomen_Digital Material Tracing New Media in Everyday Li, Cooley_Finding Augusta Habits of Mobility and Governance, Bureaud_MetaLife Biotechnologies Synthetic Biology ALi, McCullough_Abtracting Craft The Practiced Digital Hand, Munster_Materializing New Media Embodiment in Information, Mazurek_A Sense of Apocalypse Technology Textuality Ide, Zylinska_Nonhuman Photography, Tufte_Envisioning...



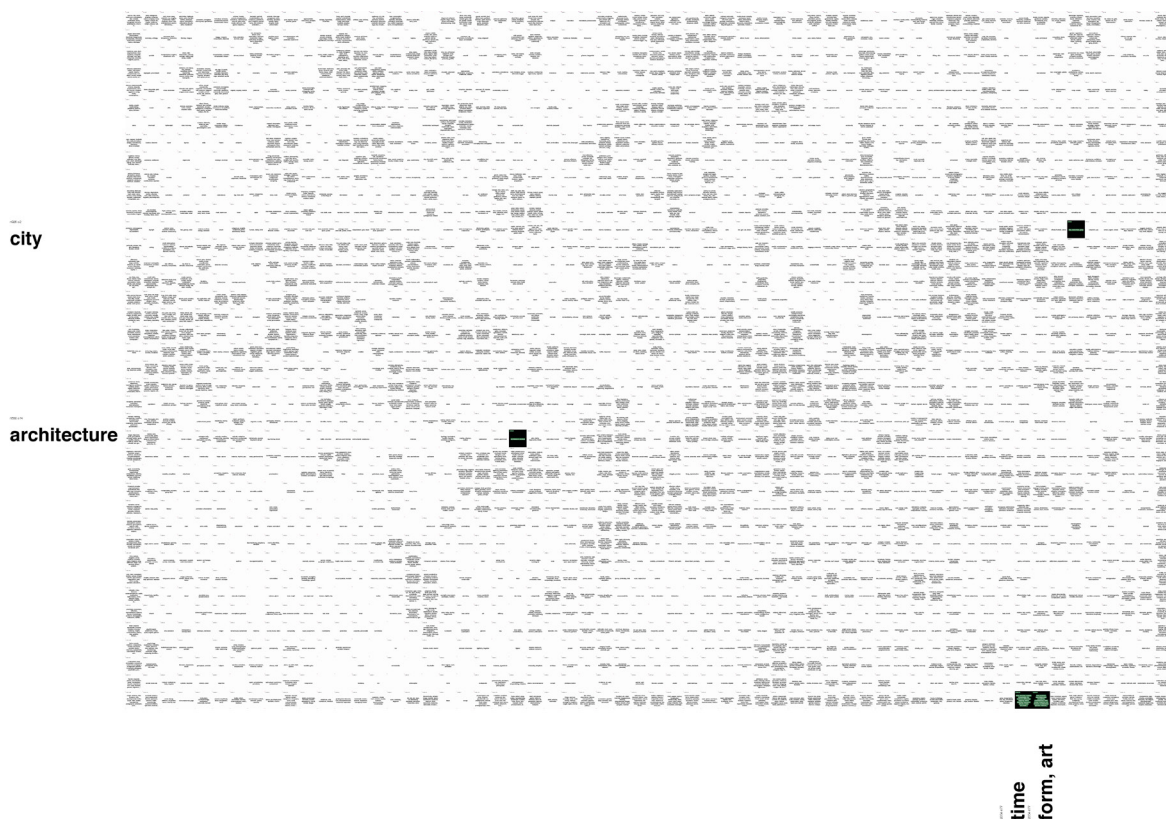
3.2.2.3.2.5 Fifty indexes common to *ch_n3e8l*

design -> 24449, new -> 21639, use -> 16110, work -> 16078, image
-> 14683, film -> 14158, **time** -> 12477, **art** -> 12154, digital -> 11266,
space -> 10945, way -> 10701, **form** -> 10694, make -> 9893, world ->
9212, practice -> 9192, media -> 8881, press -> 8691, process -> 8454,
university -> 8395, technology -> 8364, mean -> 7842, study -> 7549,
culture -> 7530, object -> 7476, example -> 7396, life -> 7331, research
-> 7315, like -> 7089, human -> 7064, fashion -> 7024, history -> 6995,
system -> 6939, material -> 6816, york -> 6811, experience -> 6811, person
-> 6797, social -> 6620, project -> 6544, different -> 6459, place ->
6413, create -> 6384, model -> 6219, book -> 6207, think -> 6021, change
-> 6011, theory -> 5957, view -> 5878, point -> 5860, good -> 5781,
include -> 5779

3.2.2.3.2.6 Topics addressed in the speech and their indexical clouds

A galaxy of concepts of *ch_n3e8l* with a focus on five indexes

Rendering_ch3_02_RW_4060_r_50it22d_words_vertex,
http://www.romanvlahovic.com/xenotheka/char3_wordGalaxy.pdf

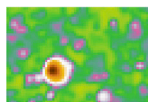


Architecture

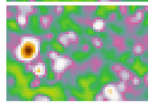
ch_n3e8l's atom-letters related to the index of *architecture*:

n1463 e2 {architecture, environ}
n1523 e17 {water, pennsylvania, philosopher, climb, claude, bedrock, proffer, criticality, anita, rationally, knight, touristic, southeast, reconceived, penned, thoroughfare, changeability}
n1403 e1 {indeterminacy}
n1464 e4 {pbk, chiefly, impoverish, hinder}
n1524 e11 {intervention, contend, tenet, caution, washington, grass, harcourt, sand, nod, perennial, interventionist}
n1402 e1 {gerald}
n1462 e2 {newton, parchment}
n1584 e24 {routledge, stone, enclose, square, denote, suburban, genius, commemorate, karen, defer, binary, locus, allusion, edmund, yard, perceptible, allegory, pastoral, northwestern, barnes, punish, annette, sorry, automatism}
n1404 e1 {dialect}
n1583 e19 {pool, connote, transpose, cautious, eco, pave, hood, agrarian, franklin, rebellious, pragmatist, scent, poststructuralism, lars, hayden, bernadette, channelling, despoil, privatisation}

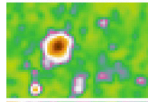
ch_n3e8l's main references for the index of *architecture*:



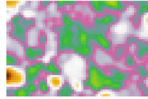
Susan Herrington, *Landscape Theory in Design*, 0.135452



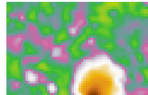
Gareth Doherty, Charles Waldheim, *Is Landscape...?: Essays on the Identity of Landscape*, 0.0613695



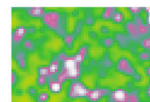
Mario Carpo, *The Second Digital Turn: Design Beyond Intelligence*, 0.0504829



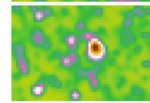
André Gaudreault, Nicolas Dulac, Santiago Hidalgo, *A Companion to Early Cinema*, 0.0323556



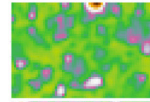
Ray Siemens, Susan Schreibman, *A Companion to Digital Literary Studies*, 0.0316488



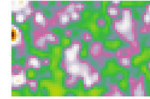
Rebecca J. DeRoo, *Agnes Varda between Film, Photography, and Art*, 0.0266131



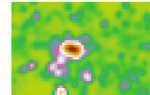
Glenn Parsons, *The Philosophy of Design*, 0.0216931



Javier Gimeno-Martínez, *Design and National Identity*, 0.0196263



William Paul, *When Movies Were Theater*, 0.0193922



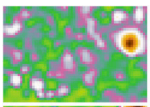
Mario Carpo, *The Alphabet and the Algorithm*, 0.0186977

City

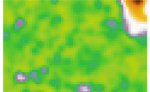
ch_n3e81's atom-letters related to the index of *city*:

n775 e3 {city, contention, glory}
n715 e2 {versatility, sid}
n776 e2 {seduction, pry}
n774 e3 {offend, football, sabon}
n714 e3 {counteract, uniform, pro}
n835 e1 {catalyst}
n836 e4 {endemic, dismissal, stab, joyful}
n716 e1 {verbally}
n777 e3 {arrest, urgent, violate}
n773 e3 {adrian, completion, dubious}

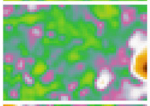
ch_n3e81's main references for the index of *city*:



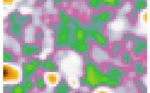
Jilly Traganou, *Designing the Olympics: Representation, Participation, Contestation*, 0.0960663



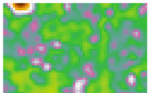
Nicole Kalms, *Hypersexual City: The Provocation of Soft-Core Urbanism*, 0.0855558



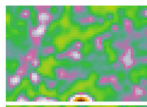
Marsha Kinder, Tara McPherson, *Transmedia Frictions: The Digital, the Arts, and the Humanities*, 0.0445154



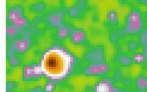
André Gaudreault, Nicolas Dulac, Santiago Hidalgo, *A Companion to Early Cinema*, 0.0328531



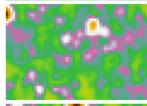
Claudia Schaefer, *Lens, Laboratory, Landscape: Observing Modern Spain*, 0.0221383



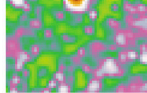
Bernd Herzogenrath, *Travels in Intermediality: ReBlurring the Boundaries*, 0.0218539



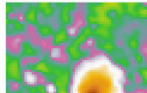
Susan Herrington, *Landscape Theory in Design*, 0.021507



Susan Yelavich, Barbara Adams, *Design as Future-Making*, 0.0182201



Ann-Sophie Lehmann, Sybille Lammes, Marianne van den Boomen, Joost Raessens, *Digital Material: Tracing New Media in Everyday Life and Technology*, 0.0176931



Ray Siemens, Susan Schreibman, *A Companion to Digital Literary Studies*, 0.0173587

Art, Time, and Form

Since three indexes—*art*, *time*, and *form*—for *ch_n3e81* are in the same part of the galaxy—*atom letter* n2393 e32 and *atom letter* n2392 e18 form one conceptual space. Let us look at them together.

ch_n3e81's *atom-letters* related to the indexes of *art*, *time* and *form*:

n2393 e32 {form, produce, simultaneously, possibility, contemporary, shift, render, maintain, old, forward, combination, operate, element, grind, treat, solely, condition, art, technology, similarity, crucial, unexpected, foreground, conceptual, complicate, echo, sharp, capacity, distant, persist, materially, attest}

n2333 e7 {lose, loss, piece, block, mediate, anchor, border}

n2394 e21 {mark, transform, expand, trace, transformation, expose, previously, boundary, past, originate, overwhelm, disparate, encompass, reside, distort, walter, layer, artist, neatly, inextricable, millennium}

n2392 e18 {time, moment, outside, immediately, fix, confront, differently, ongoing, retain, radically, sequence, situate, invert, accumulation, pause, endlessly, vague, evoke}

n2334 e6 {strictly, inevitable, circuit, unsettle, dislocation, vastness}

n2273 e6 {constantly, endless, mode, loop, spill, conquer}

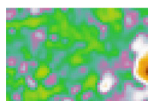
n2332 e3 {conjunction, interrupt, fade}

n2274 e10 {divide, purely, pure, double, continuity, convergence, reconfigured, imitate, corrupt, revolve}

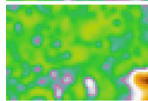
n2395 e23 {find, single, distinct, derive, confusion, fluid, blur, spring, multiplicity, simultaneous, formal, renew, property, versa, mixture, reliance, convention, rightly, brilliant, indistinguishable, memorable, abandonment, jeff}

n2335 e7 {compel, idiosyncratic, ensue, interweave, visceral, fatal, hover}

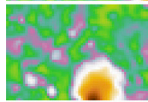
ch_n3e81 main references for indexes of *art*, *time* and *form*:



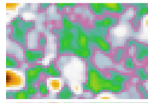
Marsha Kinder, Tara McPherson, *Transmedia Frictions: The Digital, the Arts, and the Humanities*, 0.0439077



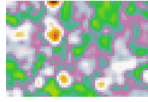
Jihoon Kim, *Between Film, Video, and the Digital: Hybrid Moving Images in the Post-Media Age*, 0.0426859



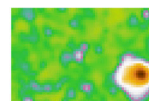
Ray Siemens, Susan Schreibman, *A Companion to Digital Literary Studies*, 0.03762



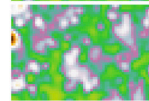
André Gaudreault, Nicolas Dulac, Santiago Hidalgo, *A Companion to Early Cinema*, 0.0311573



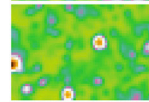
Annick Bureau, Roger F. Malina, Louise Whiteley, *Meta-Life: Biotechnologies, Synthetic Biology, ALife and the Arts*, 0.0271849



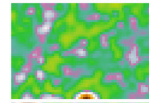
Anna Munster, *Materializing New Media: Embodiment in Information Aesthetics*, 0.024052



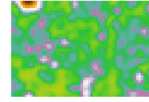
William Paul, *When Movies Were Theater*, 0.0238621



Claire Reddeman, *Cartographic Abstraction in Contemporary Art: Seeing with Maps*, 0.0226667



Bernd Herzogenrath, *Travels in Intermediality: ReBlurring the Boundaries*, 0.021135



Claudia Schaefer, *Lens, Laboratory, Landscape: Observing Modern Spain*, 0.0211253

*ch_n4e79**Architecture is not Enough**3.2.2.4.1 An imagined scenario for character ch_n4e79 at a gathering for 6 in the Library_639*

ch_n4e79 is a character that wants to be grounded and fly at the same time. It loves both nature and art; it is at once black and white, a man and a woman. Its body is constituted out of a collection of books that bring together histories of cities, nations, cultures, races, while referring to stories of slavery, photography, religion, etc. *ch_n4e79* looks for and plays with different traces that index those histories. Its fetish is to justly trace traces or, more precisely, to classify them in a historical manner. The atmosphere around it is socially engaged and it holds a particular affection for cities, especially New York. Its love, role model, and rival is character *ch_n6e110*. They are two avatars of the same character from a different library. In this *Xenotheka*, they inhabit different shelves and live at different speeds. *ch_n4e79* is usually the slower one.

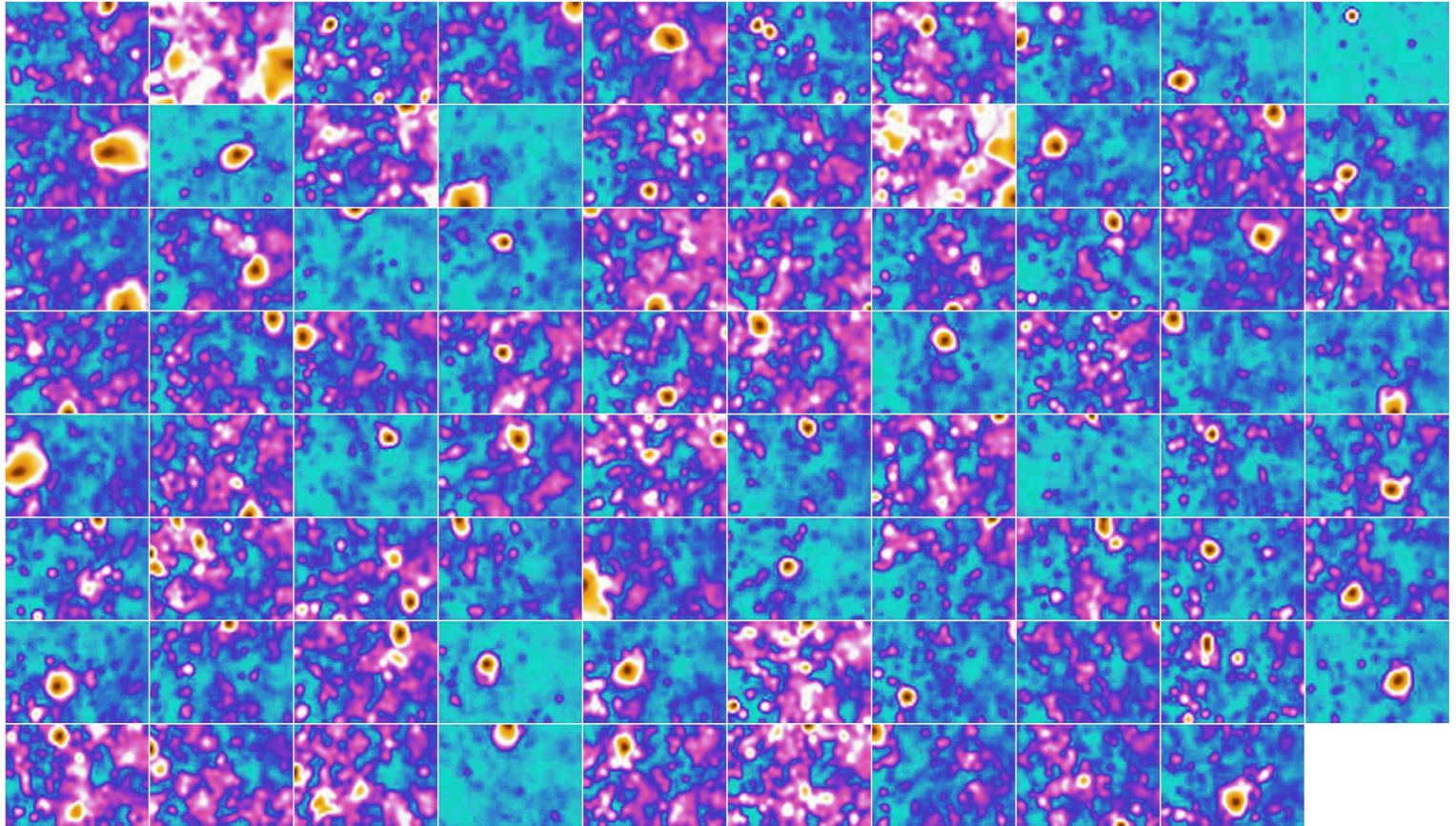
*3.2.2.4.2 INDEXING ch_n4e79**3.2.2.4.2.1 Likeliness of an affair with other characters¹⁹⁶*

| | |
|-----------|-----------|
| CH n6e110 | 0.0167462 |
| CH n2e88 | 0.0173816 |
| CH n5e172 | 0.0195876 |
| CH n3e81 | 0.0215059 |
| CH n1e99 | 0.0253087 |

¹⁹⁶ The likeliness of cells is the distance between cells of the Self Organising Map. The closer the cells are, the higher the likeliness of an affair.

3.2.2.4.2.2

79 faces of a character ch_n4e79



3.2.2.4.2.3 Body of ch_n4e79

ACKROYD_London A Biography, ACKROYD_Venice Pure City, AMMON_Bulldozer Demolition and Clearance of the Postwar, ARMSTRONG_Jerusalem One City Three Faiths, ASCH_Chocolate City A History of Race and Democracy in, BARBARA E THORNBURY EVELYN SCHULZ_Tokyo, BOSWORTH_Italian Venice A History, BRACKBILL_An Uncommon Cape Researching the Histories and My, BUCHANAN_Acts of Modernity The Historical Novel and Effect, BUCKLEY_Fashion and Everyday Life London and New York, BURROWS_Gotham A History of New York City to 1898, BURROWS_The Finest Building in America The New York Cryst, CAMPO_The Accidental Playground Brooklyn Waterfront Nar, CRAWFORD_Fallen Glory The Lives and Deaths of History's Gr, DAWSON_Rare Light J Alden Weir in Windham Connecticut, DOBBZ_NineTenths of the Law Property and Resistance in, EASTERLING_Organization Space Landscapes Highways and Hous, ELLIS_Slavery in the City, EPSTEIN_Black and White Images From the Archives of Liber, FIELD_London Londoners and the Great Fire of 1666 Disa, FODORS TRAVEL_Fodors New York City 2015, FONER_Gateway to Freedom The Hidden History of the Unde, GARRETT_Explore Everything PlaceHacking the City, GLOTZ_The Greek City and its Institutions, GOLDSMITH_Capital New York Capital of the 20th Century, GREENE_Buildings and Landmarks of 19thCentury America A, HAUCKLAWSON_Gastropolis Food and New York City, HAYES_Slavery Before Race Europeans Africans and Indi, HOOD_In Pursuit of Privilege A History of New York Cit, HORNIBROOK_A Great Undertaking Mechanization and Social Chan, INSKEEP_Instant City Life and Death in Karachi, JERRAM_Streetlife The Untold History of Europes Twentie, JOHNSON_Boardwalk Empire The Birth High Times and the Co, JUTTE_The Strait Gate Thresholds and Power in Western H, KEARNS_The Afterlives of the Psychiatric Asylum The Recy, KELLY_St Petersburg Shadows of the Past, KIECHLE_Smell Detectives An Olfactory History of Nineteen, KIRKLAND_Paris Reborn Napoleon III Baron Haussmann and t, KISACKY_Rise of the Modern Hospital An Architectural Hist, KISHIK_The Manhattan Project A Theory of a City, KOOLHAAS_Delirious New York, KUNSTLER_Geography of Nowhere The Rise and Declineof Ameri, LASSNER_Medieval Jerusalem Forging an Islamic City in Spa, LAW_1938 Modern Britain Social Change and Visions of, LEBOW_Unfinished Utopia Nowa Huta Stalinism and Polis, LEWIS_City of Refuge Separatists and Utopian Town Plann, LEWIS_Washington A History of Our National City, LINDSEY_A Communion of Shadows Religion and Photography i, MADDOX_Saving Stalins Imperial City Historic Preservati, MANAUGH_A Burglars Guide to the City, MARRON_City Squares Eighteen Writers on the Spirit and S, MILLER_Urban Noir New York and Los Angeles in Shadow and, MITTER_Modern China A Very Short Introduction, PAGE_Why Preservation Matters, PARMAR_Multicultural Poetics ReVisioning the American C, PARVINI_Shakespeare and Contemporary Theory New Historici, PENDERGRAST_City on the Verge Atlanta and the Fight for Ameri, RAPPORT_The Unruly City Paris London and New York in the, ROBERTS_Grand Central How a Train Station Transformed Ame, ROBINSON_American Justice 2017 The Supreme Court in Crisis, ROSENBLUM_Habitats Private Lives in the Big City, RUTTEN_Sincerity After Communism A Cultural History, SCHOON_Dreams of Duneland A Pictorial History of the Ind, SHELTON_Teacher Strike Public Education and the Making o, SQUIRE_The Rise of the Representative Lawmakers and Cons, SRINIVAS_A Place for Utopia Urban Designs From South Asia, STEEL_Hungry City How Food Shapes Our Lives, STEIN_How the States Got Their Shapes, STEIN_How the States Got Their Shapes Too The People Be, TURNER_Jazz Religion the Second Line and Black New Orle, VERDERBER_Delirious New Orleans Manifesto for an Extraordin, WALL_Touring Gothams Archaeological Past 8 SelfGuide, WELLS_A Dictionary of Shakespeare Oxford Quick Referenc, WILHITE_The City Since 911 Literature Film Television, WILLIAMS_City of Ambition FDR LaGuardia and the Making o, WILSON_Negro Building Black Americans in the World of Fa, WOOLDRIDGE_City of Virtues Nanjing in an Age of Utopian Visi, WRIGHT_Building the Dream, ZHOU_Cities of Others Reimagining Urban Spaces in Asia

3.2.2.4.2.4 Four most probable tempers of ch_n4e79

n 1 e 29

Burrows_Gotham A History of New York City to 1898, Goldsmith_Capital New York Capital of the 20th Century, Wilhite_The City Since 911 Literature Film Television, RAPPORT_The Unruly City Paris London and New York in the, Kishik_The Manhattan Project A Theory of a City, Brackbill_An Uncommon Cape Researching the Histories and My, HauckLawson_Gastropolis Food and New York City, Verderber_Delirious New Orleans Manifesto for an Extraordin, Koolhaas_Delirious New York, Campo_The Accidental Playground Brooklyn Waterfront Nar, Williams_City of Ambition FDR LaGuardia and the Making o, Easterling_Organization Space Landscapes Highways and Hous, Ki...

n 2 e 9

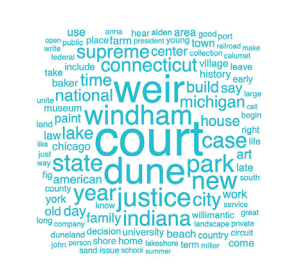
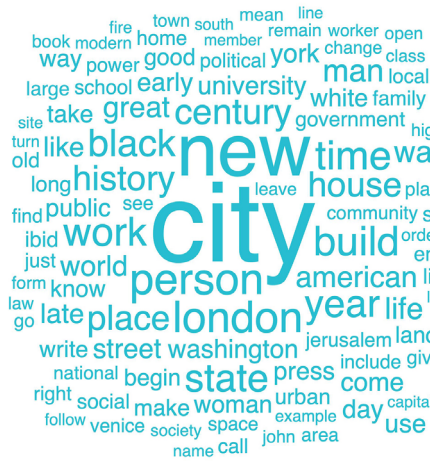
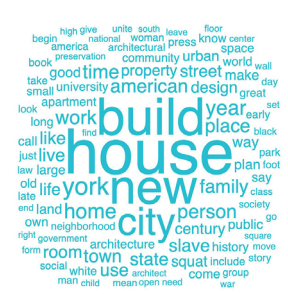
Kunstler_Geography of Nowhere The Rise and Declineof Ameri, Greene_Buildings and Landmarks of 19thCentury America A, Rosenblum_Habitats Private Lives in the Big City, Wright_Building the Dream, Manaugh_A Burglars Guide to the City, Lewis_City of Refuge Separatists and Utopian Town Plann, Dobbz_NineTenths of the Law Property and Resistance in, Page_Why Preservation Matters, Ellis_Slavery in the City

n 3 e 38

Kelly_St Petersburg Shadows of the Past, Jerram_Streetlife The Untold History of Europes Twentie, Crawford_Fallen Glory The Lives and Deaths of Histories Gr, Lewis_Washington A History of Our National City, Steel_Hungry City How Food Shapes Our Lives, Ammon_Bulldozer Demolition and Clearance of the Postwar, Garrett_Explore Everything PlaceHacking the City, Glotz_The Greek City and its Institutions, Inskip_Instant City Life and Death in Karachi, Stein_How the States Got Their Shapes Too The People Be, Lindsey_A Communion of Shadows Religion and Photography I, Hayes_Slavery Before Race Europeans Africans and Indi, Srinivas_A Place for Utop...

n 4 e 3

Schoon_Dreams of Duneland A Pictorial History of the Ind, Dawson_Rare Light J Alden Weir in Windham Connecticut, Robinson_American Justice 2017 The Supreme Court in Crisis



3.2.2.4.2.5 Fifty indexes common to *ch_n4e79*

new -> 56886, **city** -> 44462, york -> 29977, build -> 18870, house -> 16793, **time** -> 16455, work -> 15047, person -> 15044, street -> 14444, state -> 14389, year -> 14173, american -> 13905, place -> 12220, century -> 12042, like -> 11796, london -> 11396, man -> 11308, history -> 11052, black -> 10886, life -> 10826, use -> 9946, world -> 9600, great -> 9505, late -> 9477, come -> 9203, war -> 9193, public -> 9101, good -> 9051, early -> 9051, day -> 9005, university -> 8714, press -> 8652, way -> 8550, make -> 8392, woman -> 8385, long -> 7879, take -> 7871, home -> 7822, know -> 7724, white -> 7503, urban -> 7439, begin -> 7408, live -> 7370, family -> 7287, old -> 7281, write -> 7228, social -> 7214, say -> 7143, include -> 7107, space -> 7038

3.2.2.4.2.6 Topics addressed in the speech and their indexical clouds

A galaxy of concepts of *ch_n4e79* with a focus on five indexes

Rendering_ch4_02_RW_4060_r_50it22d_words_vertex

http://www.romanvlahovic.com/xenotheka/char4_wordGalaxy.pdf



Architecture

ch_n4e79's atom-letters related to the index of architecture:

n413 e17 {single, undergo, influence, numerous, distinct, specific, treat, contact, innovation, integral, complexity, insert, universally, obsolete, occupant, architecture, complication}

n412 e7 {size, vary, enclose, service, experimental, laze, balcony}

n414 e8 {large, structure, isolate, factor, desirable, limitation, transformation, wane}

n473 e11 {detail, distance, natural, type, pose, constant, variation, material, modern, practical, campbell}

n354 e6 {practice, occupy, experiment, alteration, formalize, copious}

n472 e11 {small, off, special, feature, expect, simple, include, travel, secondary, essential, location}

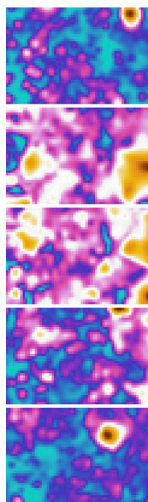
n353 e23 {reduce, private, barrier, accommodate, climate, arrangement, alternate, equip, unit, expectation, unnecessary, induce, inevitably, mechanical, personnel, attendant, densely, acute, efficiently, architectural, remodel, drastically, northwestern}

n474 e9 {exist, add, result, approach, complex, physical, clearly, overlap, traverse}

n411 e1 {variety}

n415 e8 {limit, largely, potential, involve, occur, entity, space, incomplete}

ch_n4e79's main references for the index of architecture:



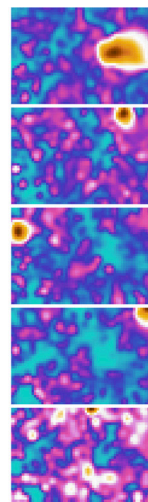
Jeanne Kisacky, *Rise of the Modern Hospital*, 0.0657313

Edwin G. Burrows, Mike Wallace, *Gotham: A History of New York City to 1898*, 0.0483484

Kenneth Goldsmith, *Capital: New York, Capital of the 20th Century*, 0.0438449

Fodor's *New York City 2015*, 0.0260469

Catriona Kelly, *St Petersburg: Shadows of the Past*, 0.0246704



Peter Ackroyd, *London: The Biography*, 0.0220245

Annie Hauck-Lawson, Jonathan Deutsch, *Gastropolis: Food and New York City*, 0.0212798

Francesca Russello Ammon, *Bulldozer: Demolition and Clearance of the Postwar Landscape*, 0.0178613

Daniel Campo, *The Accidental Playground: Brooklyn Waterfront Narratives of the Undesigned and Unplanned*, 0.0176633

Xiaoqing Zhou, *Cities of Others: Reimagining Urban Spaces in Asian American Literature*, 0.0173907

City

ch_n4e79's atom-letters related to the index of city:

n1844 e16 {take, begin, city, end, find, accompany, replace, prefer, easily, born, manner, devote, foundation, abroad, lavish, celebration}

n1843 e5 {celebrate, entertain, borrow, convey, strive}

n1845 e30 {lead, none, reach, half, manage, dominate, apart, fellow, nine, strict, son, employ, wife, capture, estimate, arrive, encourage, channel, massive, husband, convert, earnest, hero, safely, outbreak, enlarge, infant, eschew, valley, inspection}

n1904 e26 {late, year, combine, early, recently, wide, equally, grow, compete, mass, young, highly, success, attract, successful, rough, adult, arrange, reliable, hill, preparation, handle, thrive, albeit, shun, prize}

n1903 e10 {draw, set, fine, invite, venture, fame, collector, civilize, inventor, ail}

n1784 e7 {last, occasion, sustain, deem, imminent, eminent, certainty}

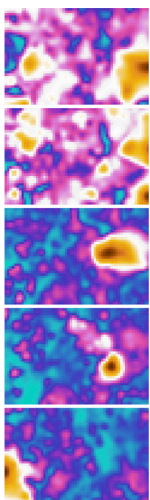
n1785 e4 {execute, boat, secretly, indulgence}

n1842 e4 {invent, copy, passionate, enclave}

n1902 e6 {side, consist, strictly, disintegrate, eloquent, intermittently}

n1905 e22 {country, expand, join, john, few, brother, career, marry, number, sister, prompt, peter, stable, profession, war, residence, rapid, daughter, privately, civic, sarah, saga}

ch_n4e79's main references for the index of city:



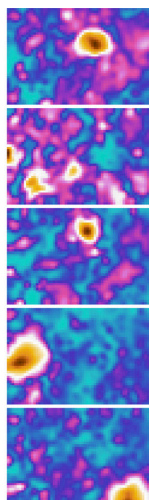
Edwin G. Burrows, Mike Wallace, *Gotham: A History of New York City to 1898*, 0.0964489

Kenneth Goldsmith, *Capital: New York, Capital of the 20th Century*, 0.0332222

Peter Ackroyd, *London: The Biography*, 0.0305812

Peter Ackroyd, *Venice: Pure City*, 0.0292128

Chris Myers Asch, George Derek Musgrove, *Chocolate City: A History of Race and Democracy in the Nation's Capital*, 0.02443



James Crawford, *Fallen Glory: The Lives and Deaths of History's Greatest Buildings*, 0.0241158

Mabel O. Wilson, *Negro Building: Black Americans in the World of Fairs and Museums*, 0.0234598

Karen Armstrong, *Jerusalem: One City, Three Faiths*, 0.0230939

Tom Lewis, *Washington: A History of Our National City*, 0.0222213

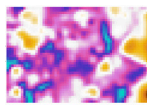
Clifton Hood, *In Pursuit of Privilege*, 0.0210135

Art

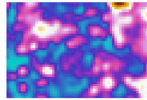
ch_n4e79's atom-letters related to the index of art:

n614 e10 {art, charm, village, paint, linen, delightful, dreamy, overload, manicure, bowles}
n615 e5 {daily, panel, basement, acoustic, rustic}
n613 e2 {studio, palette}
n674 e16 {center, steep, visitor, top, busy, adorn, entrance, lawn, marble, ornate, beautifully, sculpture, powell, excellent, walkway, picnic}
n673 e5 {bold, gift, gracious, monday, unobstructed}
n554 e0 {}
n675 e15 {interior, comfort, decorate, staircase, innovative, comfortable, floor, destination, amenity, exterior, masterpiece, respite, faux, char, sparingly}
n612 e1 {appreciative}
n616 e2 {apartment, decoration}
n676 e4 {fireplace, moderately, homegrown, bookshelf}

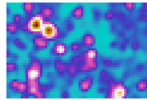
ch_n4e79's main references for the index of art:



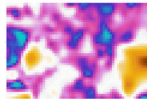
Kenneth Goldsmith, *Capital: New York, Capital of the 20th Century*, 0.0707099



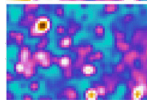
Fodor's *New York City 2015*, 0.0666584



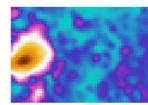
Anne E. Dawson, *Rare Light: J. Alden Weir in Windham, Connecticut, 1882-1919*, 0.0641114



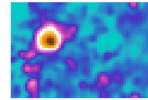
Edwin G. Burrows, Mike Wallace, *Gotham: A History of New York City to 1898*, 0.0605612



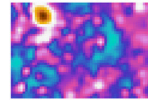
Edwin G. Burrows, *The Finest Building in America*, 0.0427012



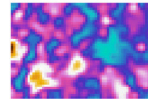
Tom Lewis, *Washington: A History of Our National City*, 0.0378304



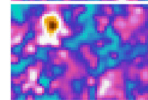
Elizabeth Greene, Edward Salo, *Buildings and Landmarks of 20th- and 21st-Century America*, 0.0331868



James Howard Kunstler, *The Geography of Nowhere: The Rise and Decline of America's Man-made Landscape*, 0.0234905



Mabel O. Wilson, *Negro Building: Black Americans in the World of Fairs and Museums*, 0.0230429



Gwendolyn Wright, *Building the Dream: A Social History of Housing in America*, 0.0219494

Time

ch_n4e79's atom-letters related to the index of time:

n534 e24 {mean, time, possible, outside, effect, short, book, appear, shape, mind, introduce, note, understand, idea, express, answer, otherwise, gap, personality, correct, construct, reproduce, hint, intersect}

n533 e14 {different, change, fit, consider, show, view, contrast, complete, original, suggestion, perform, awareness, intrigue, happiness}

n594 e16 {beyond, part, true, world, write, imagine, entirely, reveal, visible, mistake, accurate, suspicion, intensify, forgive, voice, elusive}

n474 e9 {exist, add, result, approach, complex, physical, clearly, overlap, traverse}

n535 e14 {way, leave, point, simply, learn, instead, person, able, anticipate, obvious, carefully, remind, ultimate, dimension}

n475 e11 {make, use, story, clear, avoid, future, experience, eventually, connect, previously, path}

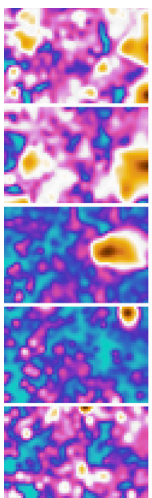
n593 e18 {life, age, fact, contain, describe, purpose, affect, element, nature, significant, description, trace, tendency, fore, remote, consciousness, map, imprint}

n532 e5 {unique, section, distinctive, unusually, chronological}

n473 e11 {detail, distance, natural, type, pose, constant, variation, material, modern, practical, campbell}

n595 e8 {wrong, actual, apparently, in, whoever, protective, unease, unwittingly}

ch_n4e79's main references for the index of time:



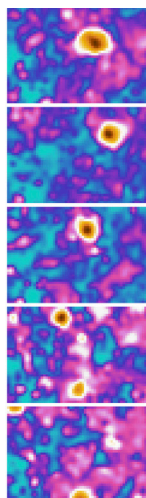
Kenneth Goldsmith, *Capital: New York, Capital of the 20th Century*, 0.0455248

Edwin G. Burrows, Mike Wallace, *Gotham: A History of New York City to 1898*, 0.0421227

Peter Ackroyd, *London: The Biography*, 0.0319061

Jeanne Kisacky, *Rise of the Modern Hospital*, 0.0218651

Xiaoqing Zhou, *Cities of Others: Reimagining Urban Spaces in Asian American Literature*, 0.0217103



James Crawford, *Fallen Glory: The Lives and Deaths of History's Greatest Buildings*, 0.020916

Catriona Kelly, *St Petersburg: Shadows of the Past*, 0.020181

Karen Armstrong, *Jerusalem: One City, Three Faiths*, 0.0190002

Keith Wilhite, *The City Since 9/11: Literature, Film, Television*, 0.0187303

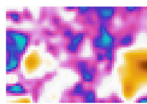
Leif Jerram, *Streetlife: The Untold History of Europe's Twentieth Century*, 0.0186364

Form

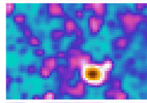
ch_n4e79's atom-letters related to the index of *form*:

n1840 e9 {form, present, repeat, final, intend, intention, orient, readily, helen}
n1780 e3 {language, effectively, vein}
n1841 e5 {double, joy, inherit, culminate, ambition}
n1900 e1 {invention}
n1839 e18 {select, identify, culture, american, evolution, necessity, significance, technique, evident, ongoing, characterize, thereby, precursor, criterion, label, ethnicity, expatriate, nationalistic}
n1899 e2 {codify, tenet}
n1781 e6 {subject, counter, composition, domination, mastery, nationality}
n1901 e4 {admire, brilliant, devise, mankind}
n1842 e4 {invent, copy, passionate, enclave}
n1779 e20 {observe, suggest, identification, song, reconcile, blur, intimately, equate, homage, disrupt, manifest, adequately, conjunction, dash, evoke, transitional, aversion, sensual, gladly, sexist}

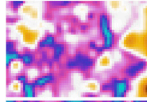
ch_n4e79's main references for the index of *form*:



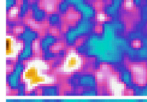
Edwin G. Burrows, Mike Wallace, *Gotham: A History of New York City to 1898*, 0.0649378



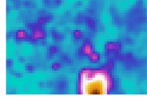
Nissa Parmar, *Multicultural Poetics: Re-visioning the American Canon*, 0.0591062



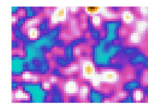
Kenneth Goldsmith, *Capital: New York, Capital of the 20th Century*, 0.0395744



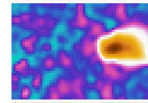
Mabel O. Wilson, *Negro Building: Black Americans in the World of Fairs and Museums*, 0.0288571



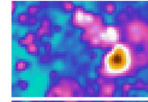
Michael J. Lewis, *City of Refuge: Separatists and Utopian Town Planning*, 0.0255643



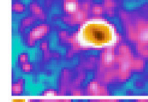
Xiaojing Zhou, *Cities of Others: Reimagining Urban Spaces in Asian American Literature*, 0.0242374



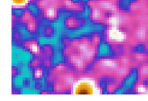
Peter Ackroyd, *London: The Biography*, 0.0232467



Peter Ackroyd, *Venice: Pure City*, 0.0223423



James Crawford, *Fallen Glory: The Lives and Deaths of History's Greatest Buildings*, 0.0221138



Leif Jerram, *Streetlife: The Untold History of Europe's Twentieth Century*, 0.0184046

*ch_n5e172**A Substitutive Object**3.2.2.5.1 An imagined scenario for character ch_n5e172 at a gathering for 6 in the Library_639*

The most passionate and keen on discussing architecture among the six characters is *ch_n5e172*. With it, architecture is both synthetic and analytic, articulated in terms of art and science; it could become anything and nothing. *ch_n5e172*'s big body of 172 voices is almost always in tension between two groups of indexes gathered around the notions of *architecture* and *building*, between thinking and doing, *fabrica* and *ratiocinatio*,¹⁹⁷ a two-thousand-year-old discussion which is still unfolding in an intriguing way. *ch_n5e172* is always in contradiction with itself, in constant double articulation, never optimal, but always with an interest, in a constant change. On the one hand, architecture is hybrid in nature and, on the other, an independent discipline. When thinking about architecture, for *ch_n5e172* time is the essential ingredient. Its challenge is to take architecture out of linear time. In this sense, architecture and its character are undecided, but present: a substitutive object: *ch_n5e172*.

*3.2.2.5.2 INDEXING ch_n5e172**3.2.2.5.2.1 Likelihood of an affair with other characters*¹⁹⁸

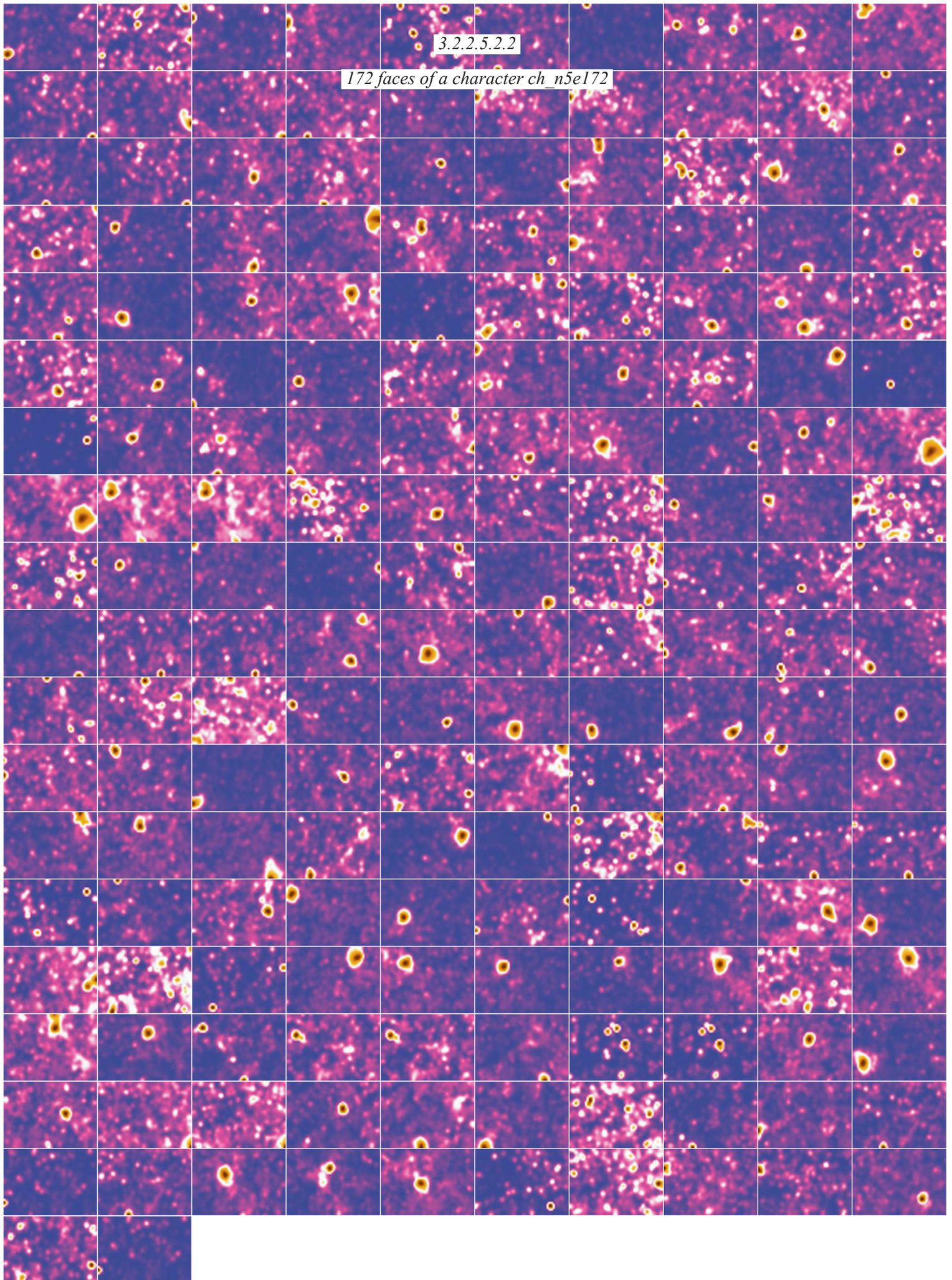
| | |
|-----------|-----------|
| CH n2e88 | 0.0179534 |
| CH n3e81 | 0.0185731 |
| CH n4e79 | 0.0195876 |
| CH n6e110 | 0.0228017 |
| CH n1e99 | 0.0245713 |

¹⁹⁷ See, Vitruvius, *Ten Books on Architecture*.

¹⁹⁸ The likelihood of cells is the distance between cells of the Self Organising Map. The closer the cells are, the higher the likelihood of an affair.

3.2.2.5.2.2

172 faces of a character ch_{n5e172}



3.2.2.5.2.3 Body of ch_n5e172

AGGREGATE_Governing by Design **Architecture** Economy and Po, AICHER_The World as Design, ALEXANDER_A Pattern Language, ALEXANDER_The Timeless Way of Building, AL_Southeast Asian Houses Embracing Urban Context, AMERI_The **Architecture** of the Illusive Distance, ANDERSON_Renaissance **Architecture**, AURELI_Less is Enough, AURELI_Less Is Enough On **Architecture** and Asceticism, AURELI_Real Estates, AURELI_Real Estates Life Without Debt, AWAN_Spatial Agency Other Ways of Doing **Architecture**, BANHAM_Critic Writes, BARRIE_House and Home Cultural Contexts Ontological Rol, BERKE_ **Architecture** of the Everyday, BETSKY_ **Architecture** Matters, BLEECKERE_Narrative **Architecture** A Designers Story, BO BARDI_ **Architecture** Words 12 Stones Against Diamonds, BO BARDI_ Stones Against Diamonds, BORDEN_Gender Space **Architecture** An Interdisciplinary In, BOSKER_Original Copies, BOX_Think Like an Architect, BRANSCOME_Hans Hollein and Postmodernism Art and Architectu, BRIAN MACKAYLYONS AND ROBERT MCCARTER_Local **Architecture** Building Place Craft and Com, BRIDGE_ **Architecture** 101 From Frank Gehry to Ziggurats a, BRITTAINCATLIN_Bleak Houses Disappointment and Failure in Archit, BUA_Architectural Inventions, BURKE_A Life in Education and **Architecture** Mary Beaumon, CACHE_ **Architecture** Words 6 Projectiles, CALLENDER_ **Architecture** History and Theory in Reverse From a, CARPO_ **Architecture** in the Age of Printing, CARUGHI_Time Frames, CHATTERJEE_John Ruskin and the Fabric of **Architecture**, CHEATLE_Part **Architecture** The Maison De Verre Duchamp D, CLARKE_Emigre Cultures in Design and **Architecture**, COLQUHOUN_Modern **Architecture**, CONDELLO_The **Architecture** of Luxury Ashgate Studies in Arc, COOK_Drawing, CORBUSIER_Towards a New **Architecture**, CROCKER_Sketches of Early American **Architecture**, CUPERS_Use Matters An Alternative History of Architectur, DAMISCH_Noahs Ark Essays on **Architecture**, DAVID_ **Architecture** Post Mortem The Diastolic Architectu, DAVIS_The Culture of Building, DEAMER_ **Architecture** and Capitalism 1845 to the Present, DENISON_ **Architecture** and the Landscape of Modernity in Chi, DEVIREN_The Greening of **Architecture** A Critical History a, DOLAN_LiveWork Planning and Design ZeroCommute Housin, DUNKERLEY_Houses Made of Wood and Light The Life and Archit, DURAND_Precis of the lectures on **Architecture**, EISENMAN_ **Architecture** Words 1 Supercritical, EISENMAN KOOLHAAS ET ALL_ Supercritical, EISENMAN_The End of the Classical, FIELDS_ **Architecture** in Black, FLOWERS_ **Architecture** in an Age of Uncertainty, FOSTER_The Art **Architecture** Complex, FRASCARI_Marco Frascaris Dream House A Theory of Imaginat, FREEMAN_Participatory Culture and the Social Value of an A, GARNAUT_Encyclopedia of Architectural and Engineering Feat, GARTMAN_From Autos to **Architecture** Fordism and Architectu, GERBINO_Geometrical Objects **Architecture** and the Mathemat, GOLDBERGER_Building Art The Life and Work of Frank Gehry, GOLDBERGER_Why **Architecture** Matters Why X Matters Series, GROPIUS_The New **Architecture** and the Bauhaus, HARRIS_Little White Houses How the Postwar Home Construc, HARTOONIAN_ **Architecture** and Spectacle A Critique, HARTOONIAN_Time History and **Architecture** Essays on Critical, HATHERLEY_Across the Plaza The Public Voids of the PostSov, HATHERLEY_A Guide to the New Ruins of Great Britain, HATHERLEY_A New Kind of Bleak Journeys Through Urban Britai, HATHERLEY_Landscapes of Communism A History Through Buildin, HATHERLEY_Militant Modernism, HONG_The Spatial Politics of the Sculptural Art Capit, ITO_ **Architecture** Words 8 Tarzans in the Media Forest, ITO_Tarzans In The Media, JACKSON_The **Architecture** of Edwin Maxwell Fry and Jane Dre, JACOB_Make it real, JACOB_Make It Real **Architecture** as Enactment, JAMIESON_NATO Narrative **Architecture** in Postmodern London, JENCKS_The Story of Post-Modernism, JOHNSON_Frank Lloyd Wright The Early Years Progressivi, JOHNSON_On Frank Lloyd Wrights Concrete Adobe, KEILLER_The View From the Train Cities and Other Landscap, KELLERT_Biophilic Design The Theory Science and Practice, KITE_ShadowMakers A Cultural History of Shadows in Ar, KRIER_The **Architecture** of Community, KUEHN_Architects amp 39 Gravesites, KULIC_Sanctioning Modernism **Architecture** and the Making, KUMA_Anti-Object, KUMA_ **Architecture** Words 2 AntiObject, LAHIJI_ **Architecture** Against the PostPolitical Essays in, LAHIJI_Can **Architecture** Be an Emancipatory

Project Dial, LAHIJI_The Political Unconscious of **Architecture** ReOpen, LANGE_The DotCom City Silicon Valley Urbanism, LANGE_Writing About **Architecture** Mastering the Language, LAVIN_Flash in the Pan, LAVIN_Kissing **Architecture**, LAWRENCE_Terms of Appropriation Modern **Architecture** and GI, LECORBUSIER_Towards a New **Architecture**, LESLIE_Beautys Rigor Patterns of Production in the Work, LIN_Boundaries, LONG_The New Space Movement and Experience in Viennese, LOSCHKE_Materiality and **Architecture**, LOVELL_Splendidly Fantastic **Architecture** and Power Games, MANIAQUEBENTON_French Encounters with the American Counterculture, MANSBACH_Advancing a Different Modernism Routledge Focus o, MARTIN_The Organizational Complex **Architecture** Media a, MARTIN_Utopias Ghost **Architecture** and Postmodernism Ag, MASHECK_Adolf Loos The Art of **Architecture**, MATTHEWS_Kirtland Cutter Architect in the Land of Promise, MCCLELLAND_Concrete Toronto A Guide to Concrete **Architecture**, MCGAW_Assembling the Centre **Architecture** for Indigenous, MEHTA_Critiquing the Modern in **Architecture**, MERTINS_ **Architecture** Words 7 Modernity Unbound, MERTINS_Modernity Unbound, MITRASINOVIC_Travel Space **Architecture**, MOORE_Why We Build, MORGAN_Kant for Architects Thinkers for Architects, MOYSTAD_Cognition and the Built Environment, MURPHY_Last Futures Nature Technology and the End of Ar, MURPHY_Sick Building Syndrome and the Problem of Uncertai, MURPHY_The **Architecture** of Failure, OGORMAN_Henry Austin, PAIVA_The Living Tradition of **Architecture**, PALLASMAA_The Eyes of the Skin, PEREZGOMEZ_Attunement Architectural Meaning After the Crisis, PETRESCU_The Social Reproduction of **Architecture** Politic, PLUMMER_The Experience of **Architecture**, POLITAKIS_Architectural Colossi and the Human Body Building, POLLAN_A Place of My Own The **Architecture** of Daydreams, POOLE_The Politics of Parametricism Digital Technologie, PORTER_Will Also, PURDY_On the Ruins of Babel Architectural Metaphor in G, RADEMACHER_Building Green Environmental Architects and the S, RAKATANSKY_Tectonic Acts of Desire and Doubt, RATTI ET ALL_Open Source **Architecture**, RATTI_Open Source **Architecture**, RIYAH_I Ars Et Ingenium, ROGERS_A Place for All People, ROTHFELS_Elephant House Animalibus Of Animals and Culture, RUSKIN_7 Lamps of **Architecture**, RUSKIN_On Art and Life, SCHUMACHER_The Autopoiesis of **Architecture** Vol1, SCHUMACHER_The Autopoiesis of **Architecture** Vol2, SCOTT BROWN_ **Architecture** Words 4 Having Words, SCOTT BROWN_Having Words, SENK_Capsules Typology of Other **Architecture**, SENSENEY_The Art of Building in the Classical World Vision, SEQUEIRA_Towards a Public Space Le Corbusier and the Greco, SEXTON_ **Architecture** and the Body Science and Culture Ro, SHONFIELD_Walls Have Feelings **Architecture** Film and the Ci, SMITH_Bare **Architecture** A Schizoanalysis, SMITH_Offsite **Architecture** Constructing the Future, SNOPEK_Belyayev Forever Preserving the Generic, SPENCER_Spencerian Handwriting The Complete Collection of, SPENCER_The **Architecture** of Neoliberalism How Contemporar, STANEK_Henri Lefebvre on Space **Architecture** Urban Resea, STEIL_The Architectural Capriccio, STEINER_Design for a Vulnerable Planet Roger Fullington S, STOPPANI_This Thing Called Theory Critiques Critical Stud, STRATIGAKOS_Where Are the Women Architects, STRUM_The Ideal of Total Environmental Control Knud Lon, SUDJIC_Edifice Complex The **Architecture** of Power, SUDJIC_The Edifice Complex, SYKES_Constructing a New Agenda Architectural Theory 19, SYKES HAYS_Architectural Theory 1993 2009, TAFURI_ **Architecture** and Utopia, TILL_ **Architecture** Depends, TOPP_Freedom and the Cage Modern **Architecture** and Psyc, TSIAMBAOS_From Doxiadis Theory to Pikionis Work Reflectio, TSOUKALA_Intersections of Space and Ethos Routledge Resear, TURNOVSKY_The Poetics of a Wall Projection, VENTURI SCOTT BROWN_learning from las vegas, VIDLER_Histories of the Immediate Present, WANG_A Philosophy of Chinese **Architecture** Past Presen, WARE_Disney Unbuilt A Pocket Guide to the Disney Imagi, WASSERMAN_Ethics and the Practice of **Architecture**, WILLIAMSON_Kahn at Penn Transformative Teacher of Architectu, WILLIAMS_The Kinfolk Home Interiors for Slow Living, WOLFE_From Bauhaus to Our House, YANEVA_Five Ways to Make **Architecture** Political An Intro, YU_Changan Avenue and the Modernization of Chinese A

3.2.2.5.2.4 Four most probable tempers of ch_n5e172

n 1 e 74

Paiva_The Living Tradition of Architecture, David_Architecture Post Mortem The Diastolic Architectu, Deamer_Architecture and Capitalism 1845 to the Present, Martin_Utopias Ghost Architecture and Postmodernism Ag, Loschke_Materiality and Architecture, Berke_Architecture of the Everyday, Murphy_Last Futures Nature Technology and the End of Ar, Lahiji_Architecture Against the PostPolitical Essays in, Poole_The Politics of Parametricism Digital Technologie, Cupers_Use Matters An Alternative History of Architectur, Tsoukala_Intersections of Space and Ethos Routledge Resear, Burke_A Life in Education and Architecture Mary Beaumon, Lahiji_The P...

n 2 e 41

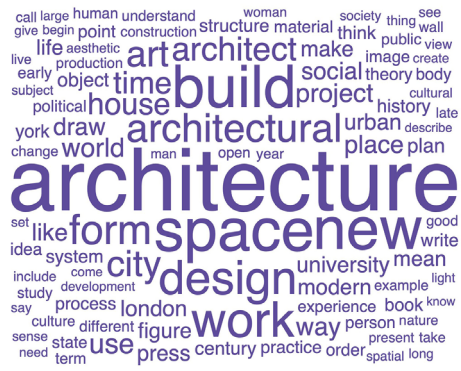
Sykes Hays_Architectural Theory 1993 2009, Sykes_Constructing a New Agenda Architectural Theory 19, Stoppani_This Thing Called Theory Critiques Critical Stud, Lawrence_Terms of Appropriation Modern Architecture and GI, Lavin_Flash in the Pan, Damisch_Noahs Ark Essays on Architecture, Flowers_Architecture in an Age of Uncertainty, Mehta_Critiquing the Modern in Architecture, Bo Bardi_Architecture Words 12 Stones Against Diamonds, Callender_Architecture History and Theory in Reverse From a, Ratti et all_Open Source Architecture, Hartoonian_Architecture and Spectacle A Critique, Brian MacKayLyons and Robert McCarter_Local Architecture Build...

n 3 e 57

Moore_Why We Build, Banham_Critic Writes, Sudjic_The Edifice Complex, Sudjic_Edifice Complex The Architecture of Power, Bua_Architectural Inventions, Rogers_A Place for All People, Hatherley_Landscapes of Communism A History Through Buildin, Hatherley_A Guide to the New Ruins of Great Britain, Hatherley_A New Kind of Bleak Journeys Through Urban Britai, Jencks_The Story of Post-Modernism, Aggregate_Governing by Design Architecture Economy and Po, Bridge_Architecture 101 From Frank Gehry to Ziggurats a, Lange_Writing About Architecture Mastering the Language, Betsy_Architecture Matters, Colquhoun_Modern Architecture, Gartman_From Autos t...

n 4 e 10

Kulic_Sanctioning Modernism Architecture and the Making, BrittainCatlin_Bleak Houses Disappointment and Failure in Archit, Anderson_Renaissance Architecture, Goldberger_Why Architecture Matters Why X Matters Series, Barrie_House and Home Cultural Contexts Ontological Rol, Davis_The Culture of Building, Carughi_Time Frames, Crocker_Sketches of Early American Architecture, al_Southeast Asian Houses Embracing Urban Context, Freeman_Participatory Culture and the Social Value of an A



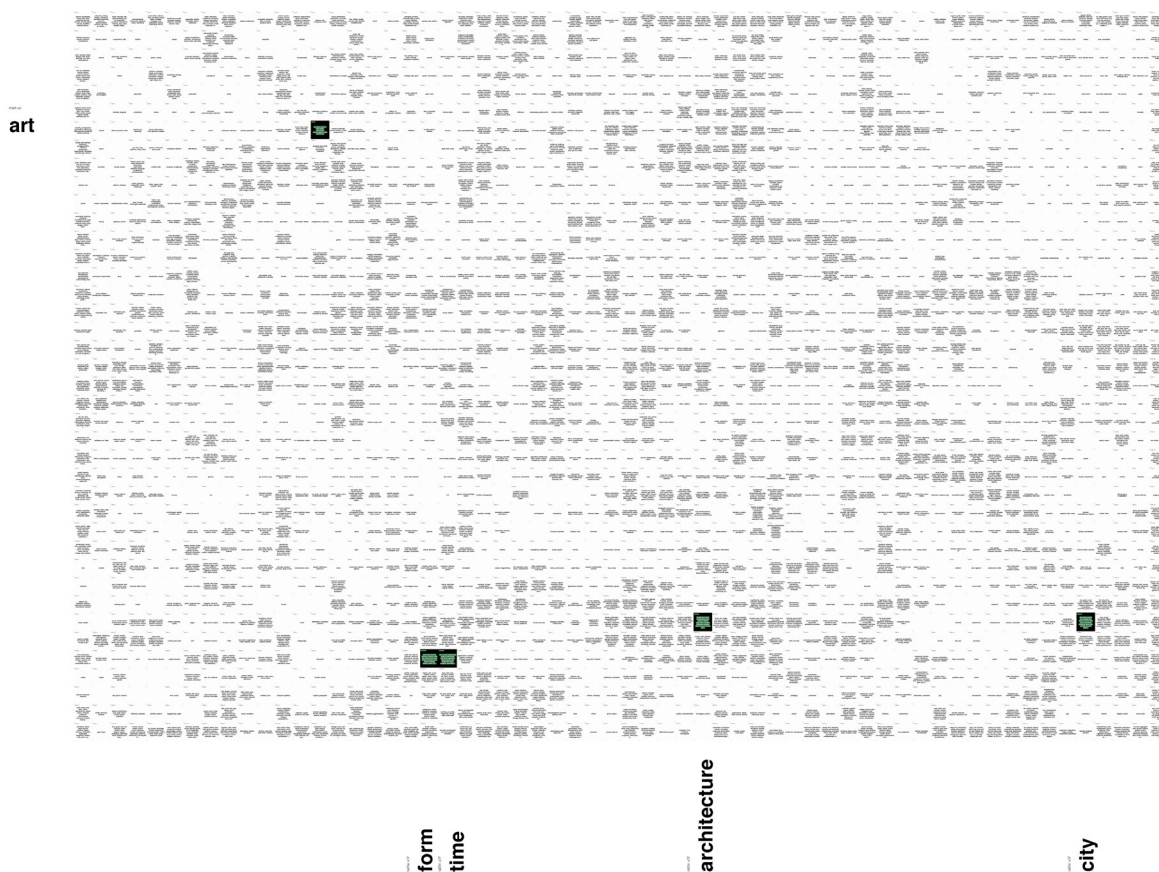
3.2.2.5.2.5 Fifty indexes common to *ch_n5e172*

architecture -> 67858, build -> 65987, new -> 42861, design -> 40476, house -> 36473, work -> 35535, space -> 32295, architect -> 30449, architectural -> 30109, **form** -> 25894, **city** -> 25731, **art** -> 22399, **time** -> 22148, use -> 21202, project -> 18955, like -> 18664, place -> 18527, plan -> 17972, way -> 17758, world -> 17594, make -> 17211, modern -> 14911, draw -> 14276, person -> 13965, social -> 13932, mean -> 13792, university -> 13661, system -> 13623, figure -> 13386, life -> 13375, urban -> 12470, press -> 12407, century -> 12238, think -> 12135, york -> 12076, good -> 12054, structure -> 11916, history -> 11875, live -> 11662, state -> 11355, construction -> 11314, london -> 11300, process -> 11177, year -> 11130, idea -> 11107, write -> 10943, book -> 10849, theory -> 10722, public -> 10669, material -> 10568

3.2.2.5.3.6 Topics addressed in the speech and their indexical clouds

A galaxy of concepts of *ch_n5e172*

Rendering_ch5_02_RW_4060_r_50it22d_words_vertex,
http://www.romanvlahovic.com/xenotheka/char5_wordGalaxy.pdf



Architecture

ch_n5e172's atom-letters related to the index of *architecture*:

n2015 e57 {architecture, term, architectural, fact, answer, define, determine, identify, statement, parallel, able, inherent, select, total, guide, push, offer, reject, sustain, degree, ability, hierarchy, rigid, argument, blind, choice, assumption, persist, analysis, division, predict, occasion, artificial, indicate, dissolve, vital, count, science, induce, phenomena, resolve, rule, valid, acceptance, dependence, continuation, loose, discard, vitality, observer, urgent, leap, irrational, indifferent, instructive, uphold, artificially}

n2016 e26 {follow, set, single, structure, complex, level, allow, achieve, conclusion, possible, powerful, ignore, basic, goal, primarily, search, method, continuity, investigation, classic, symbolic, regain, disagree, representation, urgency, alternatively}

n2014 e69 {concern, immediate, order, certain, bind, key, necessary, indeed, conscious, specific, fully, effort, necessity, external, absorb, principle, demand, compete, double, compel, instance, historically, partial, equivalent, comparison, spectrum, expectation, deliver, variation, implicit, embed, potentially, continuous, exploration, align, orient, rigorous, clarify, application, sophisticate, inherently, rejection, precursor, recognition, universally, engender, expansion, namely, reconstruct, evaluate, strand, somehow, seminal, tightly, assimilate, polemic, assess, manifesto, prolong, trajectory, tolerate, inescapable, abandonment, triple, scientifically, arena, touchstone, pronouncement, unattainable}

n2075 e52 {remain, shift, question, particular, various, avoid, position, possibility, attempt, moment, field, forward, simultaneously, precisely, inevitably, equally, impose, contemporary, fix, overcome, reality, towards, rely, belong, device, difference, assert, inability, frame, theorist, defend, adequate, pre, confrontation, proposition, disrupt, privilege, spatially, intensify, conceptually, unstable, uncertain, episode, predetermine, resistant, reversal, indeterminate, undo, yesterday, homogeneous, bundle, unanswered}

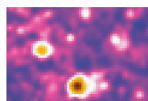
n2074 e19 {neither, confront, inevitable, radically, effectively, exclude, restrict, speculation, versa, reside, pervasive, ambiguity, distortion, incompatible, persistent, subsume, guise, forge, eradicate}

n2017 e55 {new, lead, example, lack, continue, highly, result, introduce, consider, maintain, exist, propose, off, construct, apply, consequence, case, gain, active, address, involve, relate, today, response, individual, generation, introduction, appropriate, academic, tie, debate, movement, emphasis, brief, extension, creative, factor, contribution, exclusively, adapt, gather, discussion, traditionally, organize, sensitive, inform, topic, exemplify, designer, broadly, stance, unprecedented, speculative, centrally, creatively}

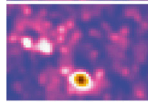
n2076 e53 {emerge, instead, condition, different, understand, transform, become, produce, model, power, potential, relationship, event, claim, force, specifically, manifest, dominant, reaction, capture, necessarily, experiment, resist, differently, dynamic, provoke, space, neutral, lecture, argue, track, constantly, generate, test, manipulate,

quick, react, constituent, inquiry, reproduce, distribute, politically,
 adjust, impoverish, **phenomenon**, **controversy**, predictable, rewrite,
 coexist, interconnect, **flux**, tentative, dichotomy}
 n1955 e3 {realistic, gestation, institutionally}
 n1957 e7 {**synthesis**, broaden, wane, umbrella, grapple, pitfall,
 inaccurate}
 n1956 e5 {naive, **perceptive**, splinter, scepticism, hamburger}

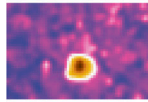
ch_n5e172's main references for the index of *architecture*:



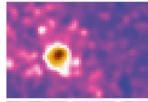
Patrik Schumacher, *The Autopoiesis of Architecture, Volume II: A New Agenda for Architecture*, 0.0391526



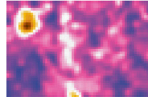
Patrik Schumacher, *The Autopoiesis of Architecture, Volume I: A New Framework for Architecture*, 0.0312954



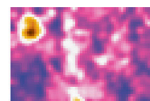
Iain Borden, Barbara Penner, Jane Rendell, *Gender Space Architecture: An Interdisciplinary Introduction*, 0.0159497



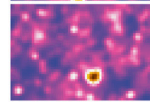
Teresa Stoppani, Giorgio Ponzio, George Themistokleous, *This Thing Called Theory*, 0.0142178



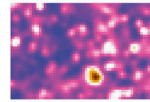
A. Krista Sykes, *Constructing a New Agenda: Architectural Theory 1993-2009*, 0.013185



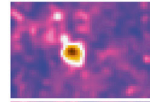
A. Krista Sykes, *Constructing a New Agenda: Architectural Theory 1993-2009*, 0.012917



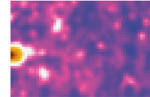
Steven Harris, Deborah Berke, *Architecture of the Everyday*, 0.0128222



Denise Scott Brown, *Architecture Words 4: Having Words*, 0.01194



Nadir Lahiji, *The Political Unconscious of Architecture: Re-opening Jameson's Narrative*, 0.0116344



Daniel Purdy, *On the Ruins of Babel: Architectural Metaphor in German Thought*, 0.011234

City

ch_n5e172's atom-letters related to the index of *city*:

n2036 e32 {late, early, return, city, decade, ten, retain, reserve, mid, arrive, dominate, overlook, born, last, central, flourish, influential, vice, former, prominent, europe, less, european, furnish, educate, arrival, south, capital, burgeon, simplify, forerunner, hastily}

n2037 e17 {year, young, inspiration, attract, broad, nine, visit, addition, completion, superior, attractive, vocabulary, southern, revive, eleven, arbor, refresh}

n2035 e8 {concentrate, counterpart, youth, official, steam, credential, theatre, throng}

n1976 e21 {rise, great, cover, vast, country, rich, heavily, dramatic, echo, originally, distinctive, wing, gallery, culminate, grand, encircle, motif, passenger, wine, protrude, dwarf}

n2096 e11 {throughout, train, unique, successfully, formerly, population, civil, affair, destination, environ, prosper}

n2097 e20 {receive, university, influence, architect, employ, join, study, review, founder, notable, send, engineer, fellow, professor, chief, competition, considerable, reinforce, autumn, native}

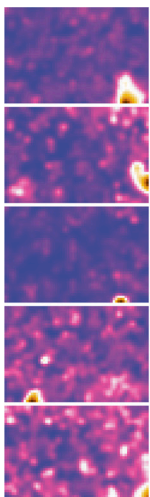
n1975 e4 {war, monumental, imagery, hero}

n2095 e17 {modern, subsequent, complicate, dominance, scholar, renowned, commentator, strengthen, unavoidable, peripheral, predominantly, potent, microcosm, rife, cargo, lily, debilitate}

n1977 e17 {fall, show, fine, manner, english, mount, thirty, england, hall, newspaper, bay, ample, humble, customary, mill, harmonize, makeshift}

n2098 e17 {robert, john, comment, plan, october, september, announce, paper, entry, assistant, november, personally, date, columbia, lengthy, quarter, generously}

ch_n5e172's main references for the index of *city*:



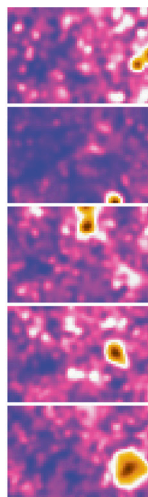
Edward Denison, *Architecture and the Landscape of Modernity in China before 1949*, 0.033307

Henry C. Matthews, *Kirtland Cutter: Architect in the Land of Promise*, 0.020922

Shuishan Yu, *Chang'an Avenue and the Modernization of Chinese Architecture*, 0.0144777

Miodrag Mitrasinovic, Jilly Traganou, *Travel, Space, Architecture*, 0.0141469

Donald Leslie Johnson, *Frank Lloyd Wright : The Early Years : Progressivism : Aesthetics : Cities*, 0.0141311



Paul Goldberger, *Building Art: The Life and Work of Frank Gehry*, 0.0140775

Iain Jackson, Jessica Holland, *The Architecture of Edwin Maxwell Fry and Jane Drew*, 0.0140532

Owen Hatherley, *Landscapes of Communism: A History Through Buildings*, 0.0139561

David Gartman, *From Autos to Architecture: Fordism and Architectural Aesthetics in the Twentieth Century*, 0.0125688

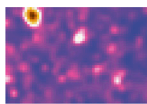
Deyan Sudjic, *The Edifice Complex: The architecture of power*, 0.0121347

Art

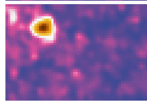
ch_n5e172's atom-letters related to the index of *art*:

n374 e9 {art, plane, artistic, karl, walter, accentuate, uninterrupted, cube, eclecticism}
n375 e6 {vertical, horizontal, devoid, masonry, clothe, perpendicular}
n373 e10 {bruno, mies, cubic, ernst, externally, savoye, naturalism, reassess, finland, scharoun}
n433 e4 {grid, dawn, hover, diagonal}
n434 e6 {suspend, deny, float, fascination, freestanding, unfulfilled}
n314 e3 {decorative, barcelona, skeleton}
n315 e5 {cease, elimination, facade, renounce, misty}
n376 e4 {remark, interplay, usefulness, fragmentary}
n435 e18 {discuss, void, dismiss, dialogue, surface, gravity, rectangular, photograph, highlight, defy, weave, necessitate, lade, foreshadow, extraneous, skillfully, noon, thirdly}
n432 e2 {dutch, curvilinear}

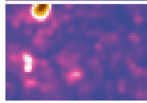
ch_n5e172's main references for the index of *art*:



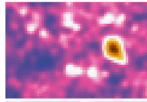
Alan Colquhoun, *Modern Architecture*, 0.0337772



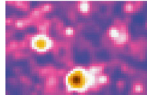
Gevork Hartoonian, *Architecture and Spectacle: A Critique*, 0.0288253



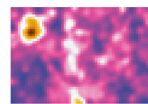
Anthony Vidler, *Noah's Ark: Essays on Architecture*, 0.0273476



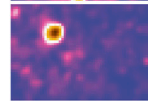
David Gartman, *From Autos to Architecture: Fordism and Architectural Aesthetics in the Twentieth Century*, 0.0155058



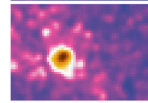
Patrik Schumacher, *The Autopoiesis of Architecture, Volume II: A New Agenda for Architecture*, 0.0154907



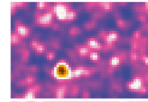
A. Krista Sykes, K. Michael Hays, *Constructing a New Agenda: Architectural Theory 1993-2009*, 0.013868



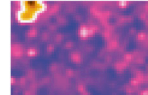
Gevork Hartoonian, *Time, History and Architecture: Essays on Critical Historiography*, 0.01368



Teresa Stoppani, Giorgio Ponzio, George Themistokleous, *This Thing Called Theory*, 0.0130576



Henry Plummer, *The Experience of Architecture*, 0.0129632



Joseph Masheck, *Adolf Loos: The Art of Architecture*, 0.0121459

Time and Form

Since both indexes (*time*—*atom letter n2121 e43* and *form*—*n2120 e107*) are first neighbours when seen in the light of *ch_n5e172*, let us look at them together.

n2120 e107 {find, form, second, beyond, present, hold, see, direct, hand, call, extend, express, idea, world, contrast, similar, reach, direction, expression, appear, write, simply, clearly, lay, suggest, interest, carry, remove, reveal, describe, fail, discover, series, reflect, enter, note, directly, visible, free, past, seek, mark, bear, element, serve, accompany, derive, distant, creation, previous, manifestation, generally, wish, trace, despite, embrace, importance, compare, press, image, fashion, aware, consist, conclude, ideal, regard, cambridge, david, intellectual, pursue, elevate, thank, chapter, mention, personal, section, isbn, compose, numerous, princeton, prevail, secondary, strive, nineteenth, conviction, dictate, profile, spirit, peter, interrupt, figure, christopher, penetrate, harper, discovery, weight, anthony, novel, alexander, illusion, conversely, quest, mankind, spiritual, foreground, intimately, entitle}

n2180 e18 {inspire, york, cause, material, unable, release, fabric, renew, collect, prompt, winter, merge, daniel, imprint, invisible, exert, detach, continual}

n2060 e73 {point, represent, divide, oppose, purpose, intend, original, read, familiar, century, background, apparent, sum, actual, period, accord, explain, perfect, tradition, purely, outline, reason, justify, originate, interpretation, demonstrate, appearance, similarly, difficulty, essence, precise, repeat, part, practical, latter, confusion, ultimately, observation, solely, illuminate, distance, measure, thoroughly, vision, eye, cite, realm, confine, rhetoric, proper, dimensional, pronounce, sole, out, accurate, supplement, merit, iii, revise, error, outward, recognizable, vanish, paint, prescription, undoubtedly, primitive, accordance, invaluable, dover, omit, discount, convincingly}

n2121 e43 {time, sense, experience, quality, impossible, real, think, opposite, useful, arise, truly, otherwise, miss, imagine, essential, particularly, aspire, circumstance, extreme, profoundly, endless, character, extraordinary, inhabit, fundamentally, inherit, pleasure, game, transcend, unfamiliar, stir, impulse, assign, rediscover, mental, standpoint, spur, shine, inward, imbue, amid, ambivalent, excavate}

n2119 e16 {book, title, opinion, unknown, technical, mechanical, visually, foremost, instrument, civilization, phase, reciprocal, introductory, inaugural, republish, splendidly}

n2181 e38 {move, view, lose, attention, outside, life, effect, support, loss, lie, disappear, expose, connect, hide, onto, interior, undergo, gap, wake, yield, countless, substance, dance, intrinsic, wave, weak, uncover, fragile, awaken, vertically, restore, heighten, seed, thread, behave, disparity, converse, vividly}

n2061 e51 {mean, word, accept, age, difficult, true, existence, speak, conceive, invent, literally, acquire, render, mind, presence, alter, merely, profound, acknowledge, forget, forth, contrary, ultimate, capable, perceive, consciously, nevertheless, root, attitude, confuse, seemingly,

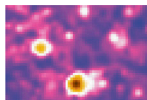
borrow, split, literature, fulfill, pursuit, minor, backdrop, convey, firmly, favor, suspicion, faith, conjure, false, relegate, deem, milieu, prejudice, understandable, inconsistent}

n2179 e24 {publish, scale, paul, record, publication, source, differ, notably, bottom, congress, index, bibliographical, abundance, typeset, hbk, trademark, alk, moderne, identifiers, predominate, jacob, ddc, lcsh, lccn}

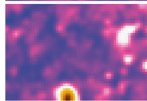
n2059 e9 {dedicate, edition, visual, composition, thorough, omission, doctrine, instruction, mislead}

n2001 e12 {precede, origin, birth, clarity, proof, straightforward, deserve, akin, unclear, derivative, justifiable, firmness}

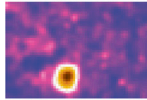
ch_n5e172's main references for indexes of *time* and *form*:



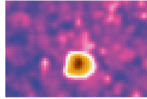
Patrik Schumacher, *The Autopoiesis of Architecture, Volume II: A New Agenda for Architecture*, 0.0143712



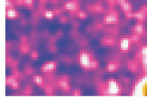
Stephen R. Kellert, Judith Heerwagen, Martin Mador, *Biophilic Design: The Theory, Science and Practice of Bringing Buildings to Life*, 0.0141642



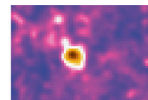
Jassen Callender, *Architecture History and Theory in Reverse: From an Information Age to Eras of Meaning*, 0.0127576



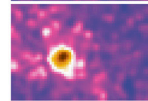
Iain Borden, Barbara Penner, Jane Rendell, *Gender Space Architecture: An Interdisciplinary Introduction*, 0.0114906



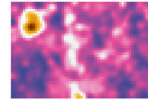
Donald Leslie Johnson, *Frank Lloyd Wright : The Early Years : Progressivism : Aesthetics : Cities*, 0.011154



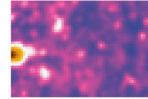
Nadir Lahiji, *The Political Unconscious of Architecture: Re-opening Jameson's Narrative*, 0.0108328



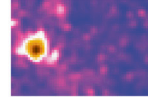
Teresa Stoppani, Giorgio Ponzio, George Themistokleous, *This Thing Called Theory*, 0.0108129



A. Krista Sykes, K. Michael Hays, *Constructing a New Agenda: Architectural Theory 1993-2009*, 0.0107182



Daniel Purdy, *On the Ruins of Babel: Architectural Metaphor in German Thought*, 0.0104382



Alberto Pérez-Gómez, *Attunement: Architectural Meaning after the Crisis of Modern Science*, 0.0103224

3.2.2.6

ch_n6e110

Utility made Beautiful

3.2.2.6.1 *An imagined scenario for character ch_n6e110 at a gathering for 6 in the Library_639*

ch_n6e110 loves talking about cities. She wants to engineer the unpredictable: a city as a fusion of the social, political, cultural, and public together with its infrastructure. This paradox is the beauty she sees in it. The city is urban and urbanism is the new city. In the process, architecture becomes a built sociology. Its sediments make up history, while urbanity continues to work at many speeds. *ch_n6e110* praises the power of the generic which, for her, lies in the question of how to make utility beautiful, and celebrate urban condition in the process. How can optimised, participatory, sustainable, market-driven, and modelled generic urbanity go beyond utility? The city is not a sensor, but it is full of them, and that is a strong fact for her. *ch_n6e110*'s fetish is the new urbanity and her biggest fear is the generic flatland. She is the ex-lover of *ch_n5e172* and the current lover of *ch_n4e79*.

3.2.2.6.2 INDEXING *ch_n6e110*

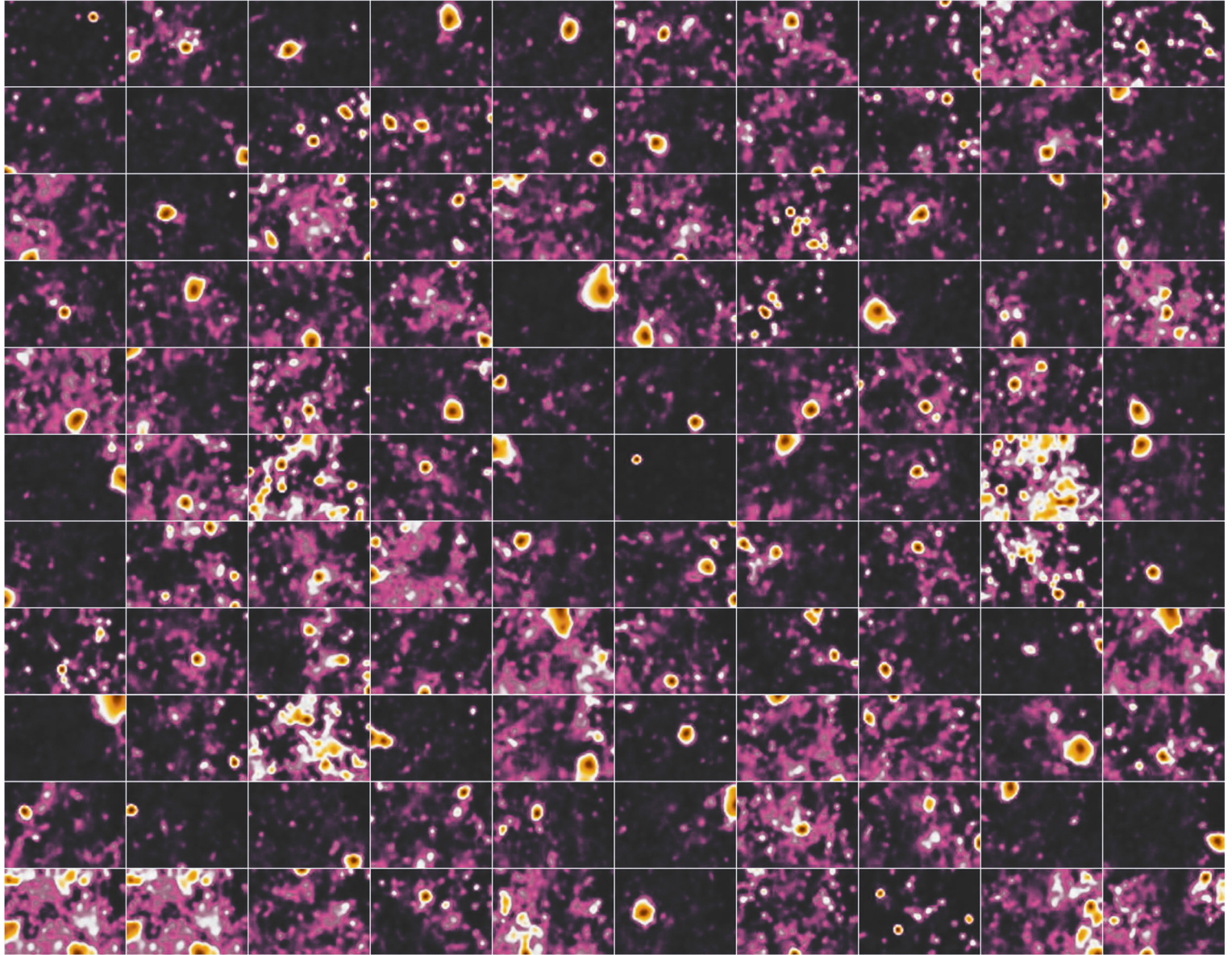
3.2.2.6.2.1 Likelihood of an affair with other characters¹⁹⁹

| | |
|-----------|-----------|
| CH n4e79 | 0.0167462 |
| CH n5e172 | 0.0228017 |
| CH n2e88 | 0.0247452 |
| CH n3e81 | 0.0263257 |
| CH n1e99 | 0.03103 |

¹⁹⁹ The likelihood of cells is the distance between cells of the Self Organising Map. The closer the cells are, the higher the likelihood of an affair.

3.2.2.6.2.2

110 faces of a character ch_n6e110



3.2.2.6.2.3 Body of ch_n6e110

AALBERS_The Financialization of Housing A Political Econo, ABBOTT_Imagining Urban Futures Cities in Science Fiction, ALVAREZ_Documenting Cityscapes Urban Change in Contempora, ANGOTTI_New York for Sale Community Planning Confronts Gl, ATKINSON_The Noisy Renaissance Sound Architecture and Fl, AURELI_The Possibility of an absolute architecture, AVILA_The Folklore of the Freeway Race and Revolt in th, BARBER_Cool Cities Urban Sovereignty and the Fix for Glo, BARBER_Latino City Immigration and Urban Crisis in Lawre, BELFOURE_The Baltimore Rowhouse, BEZERRA_Postcards From Rio Favelas and the Contested Geog, BRICKELL_Geographies of Forced Eviction Dispossession Vio, BUNNELL_From World City to the World in One City Liverpool, BUSCH_City in a Garden Environmental Transformations an, CALAME_Divided Cities, CALVINO_Invisible Cities, CLIFT_Imaging the City Art Creative Practices and Medi, COHEN_The Sustainable City, CONN_Americans Against the City AntiUrbanism in the T, CURTRIGHT_Sustainability and the City Urban Poetics and Pol, DAVIS_Planet of Slums, DAWSON_Extreme Cities The Peril and Promise of Urban Lif, DOBRASZCZYK_The Dead City Urban Ruins and the Spectacle of De, ECHANOVE_The Slum Outside Elusive Dharavi, ENRIGHT_The Making of Grand Paris Metropolitan Urbanism i, FARRELL_The City as a Tangled Bank Urban Design Versus Ur, FITCH_The Assassination of New York, FRENZEL_Slumming It, GANDY_The Fabric of Space Water Modernity and the Urb, GARBIN_Religion and the Global City, GARCIA_Beyond the Walled City Colonial Exclusion in Hava, GLAESER_Triumph of the City How Our Greatest Invention Ma, GOETZMANN_Securization in the 1920s, GOETZ_New Deal Ruins Race Economic Justice and Public, GORDON_Mapping Decline St Louis and the Fate of the Ame, GRAHAM_Infrastructural Lives Urban Infrastructure in Con, GRAHAM_Vertical The City From Satellites to Bunkers, GRATZ_The Battle for Gotham New York in the Shadow of R, GREENFIELD_Against the Smart City, GROVE_The Baltimore School of Urban Ecology Space Scal, GRUBOVIC_Belgrade in Transition an analysis of illegal bu, GUARALDA_Filming the City Urban Documents Design Practice, HARRISON_Waste Matters Urban Margins in Contemporary Liter, HARVEY_Rebel Cities From the Right to the City to the Ur, HEBERLIG_American Cities and the Politics of Party Conventi, HERZOG_Return to the Center Culture Public Space and C, HOLLIS_Cities Are Good for You, HOWARD_Garden Cities of To-Morrow, HRISTOVA_Public Space Between Reimagination and Occupation, IMMERWAHR_The Politics of Architecture and Urbanism in Poste, JACOBS_The Death and Life of Great American Cities, KEIL_Suburban Planet Making the World Urban From the O, KOOLHAAS_SMLXL, LAURENCE_Becoming Jane Jacobs, LAWRENCEZUNIGA_Protecting Suburban America Gentrification Advoc, LE CORBUSIER_The City of Tomorrow, LINDNER_Cities Interrupted Visual Culture and Urban Space, MACEK_Urban Nightmares The Media the Right and the Mo, MANISCALCO_Public Spaces Marketplaces and the Constitution, MARCUSE_In Defense of Housing The Politics of Crisis, MARTIN_Mediators Aesthetics Politics and the City, MAYER_Civic City Cahier 1 Social Movements in the Post, MAYER_The Political Economy of Capital Cities, MCGUIRK_Edge City Driving the Periphery of Sao Paulo, M GRIERSON_Transformations, MILANI_The Art of the City, MILLER_Chinas Urban Billion The Story Behind the Bigges, MILLER_The Culture of Cities, MINTON_Ground Control Fear and Happiness in the TwentyF, MOSKOWITZ_How to Kill a City Gentrification Inequality an, MULLER_The Punitive City Privatized Policing and Protect, MUMFORD_The Culture of Cities, MUNDY_The Death of Aztec Tenochtitlan the Life of Mexic, NAWRATEK_City as a Political Idea, NAWRATEK_Holes in the Whole Introduction to the Urban Revo, NEBBITT_Adolescents in Public Housing Addressing Psycholo, NIGHTINGALE_Segregation A Global History of Divided Cities, OLIVEIRA_Green Wedge Urbanism History Theory and Contempo, PRAKASH_Mumbai Fables, PUBLISHING_The Riddle of the Real City, RATTI_The City of Tomorrow, RAVETZ_Council Housing and Culture The History of a Soci, REN_Urban China, ROTBARD_White City Black City Architecture and War in Te, SAUNDERS_Arrival City How the Largest Migration in History, SCHLICHTMAN_Gentrifier, SCORER_City in Common Culture and Community in Buenos Ai, SIMONE_New Urban Worlds Inhabiting Dissonant Times, SIMON_Speaking Memory How Translation Shapes City Life, SNAPE_The Complete Cities of Ancient Egypt, SORKIN_All Over the Map, SORKIN_All Over the Map Writing on Buildings and Cities, STAGE_Producing Early Modern London A Comedy of Urban S, STAVRIDES_Common Space The City as Commons, SUGRUE_The Origins of the Urban Crisis Race and Inequali, SUTTOR_Still Renovating A History of Canadian Social Hou, SZE_Fantasy Islands Chinese Dreams and Ecological Fea, TASANKOK_Contradictions of Neoliberal Planning Cities Pol, THERBORN_Cities of Power The Urban the National the Popu, TOLY_Cities of Tomorrow and the City to Come A Theolog, TONKISS_Cities by Design The Social Life of Urban Form, TRETTER_Shadows of a Sunbelt City The Environment Racism, URBAN_The New Tenement Residences in the Inner City Sin, URBAN_Tower and Slab Histories of Global Mass Housing, VASUDEVAN_The Autonomous City A History of Urban Squatting, WEBB_Critical Urban Theory Common Property and the P, WICKHAM_Sleepwalking Into a New World The Emergence of It, WILLIAMS_Chinas Urban Revolution Understanding Chinese Ec, WRIGHT_University City Missouri, ZUIDERHOEK_The Ancient City

3.2.2.6.2.4 Four most probable tempers of ch_n6e110

n 1 e 19

Urban_Tower and Slab Histories of Global Mass Housing, Ravetz_Council Housing and Culture The History of a Soci, Minton_Ground Control Fear and Happiness in the TwentyF, Brickell_Geographies of Forced Eviction Dispossession Vio, McGuirk_Edge City Driving the Periphery of Sao Paulo, Marcuse_In Defense of Housing The Politics of Crisis, Belfoure_The Baltimore Rowhouse, LawrenceZuniga_Protecting Suburban America Gentrification Advoc, Vasudevan_The Autonomous City A History of Urban Squatting, Urban_The New Tenement Residences in the Inner City Sin, Echanove_The Slum Outside Elusive Dharavi, Grubovic_Belgrade in Transition an analysis of il...

n 2 e 50

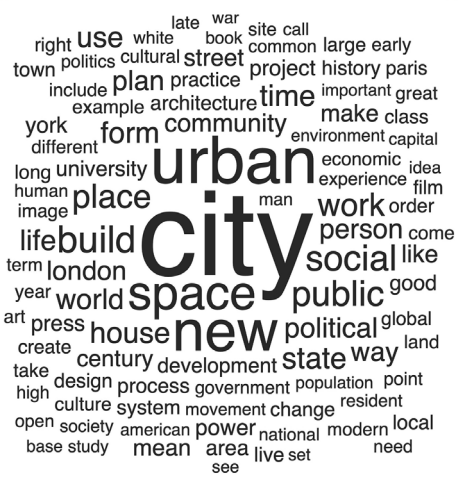
Sorkin_All Over the Map Writing on Buildings and Cities, Sorkin_All Over the Map, Curtright_Sustainability and the City Urban Poetics and Pol, Miller_The Culture of Cities, Mumford_The Culture of Cities, Cliff_Imaging the City Art Creative Practices and Medi, Graham_Vertical The City From Satellites to Bunkers, Lindner_Cities Interrupted Visual Culture and Urban Space, Simone_New Urban Worlds Inhabiting Dissonant Times, Graham_Infrastructural Lives Urban Infrastructure in Con, Publishing_The Riddle of the Real City, Martin_Mediators Aesthetics Politics and the City, M Grierson_Transformations, Harvey_Rebel Cities From the Right to the Ci...

n 3 e 23

Glaeser_Triumph of the City How Our Greatest Invention Ma, Conn_Americans Against the City AntiUrbanism in the T, Dawson_Extreme Cities The Peril and Promise of Urban Lif, Gratz_The Battle for Gotham New York in the Shadow of R, Saunders_Arrival City How the Largest Migration in History, Davis_Planet of Slums, Fitch_The Assassination of New York, Ren_Urban China, Cohen_The Sustainable City, MOSKOWITZ_How to Kill a City Gentrification Inequality an, Williams_Chinas Urban Revolution Understanding Chinese Ec, Laurence_Becoming Jane Jacobs, Miller_Chinas Urban Billion The Story Behind the Bigges, Sze_Fantasy Islands Chinese Dreams and Ecolog...

n 4 e 18

Hollis_Cities Are Good for You, Abbott_Imagining Urban Futures Cities in Science Fiction, Milani_The Art of the City, Nawratek_Holes in the Whole Introduction to the Urban Revo, Greenfield_Against the Smart City, Jacobs_The Death and Life of Great American Cities, Nawratek_City as a Political Idea, Barber_Cool Cities Urban Sovereignty and the Fix for Glo, Mundy_The Death of Aztec Tenochtitlan the Life of Mexic, Calvino_Invisible Cities, Toly_Cities of Tomorrow and the City to Come A Theolog, Zuiderhoek_The Ancient City, Aureli_The Possibility of an absolute architecture, Tonkiss_Cities by Design The Social Life of Urban Form, Herzog_Retu...



3.2.2.6.2.5 Fifty indexes common to *ch_n6e110*

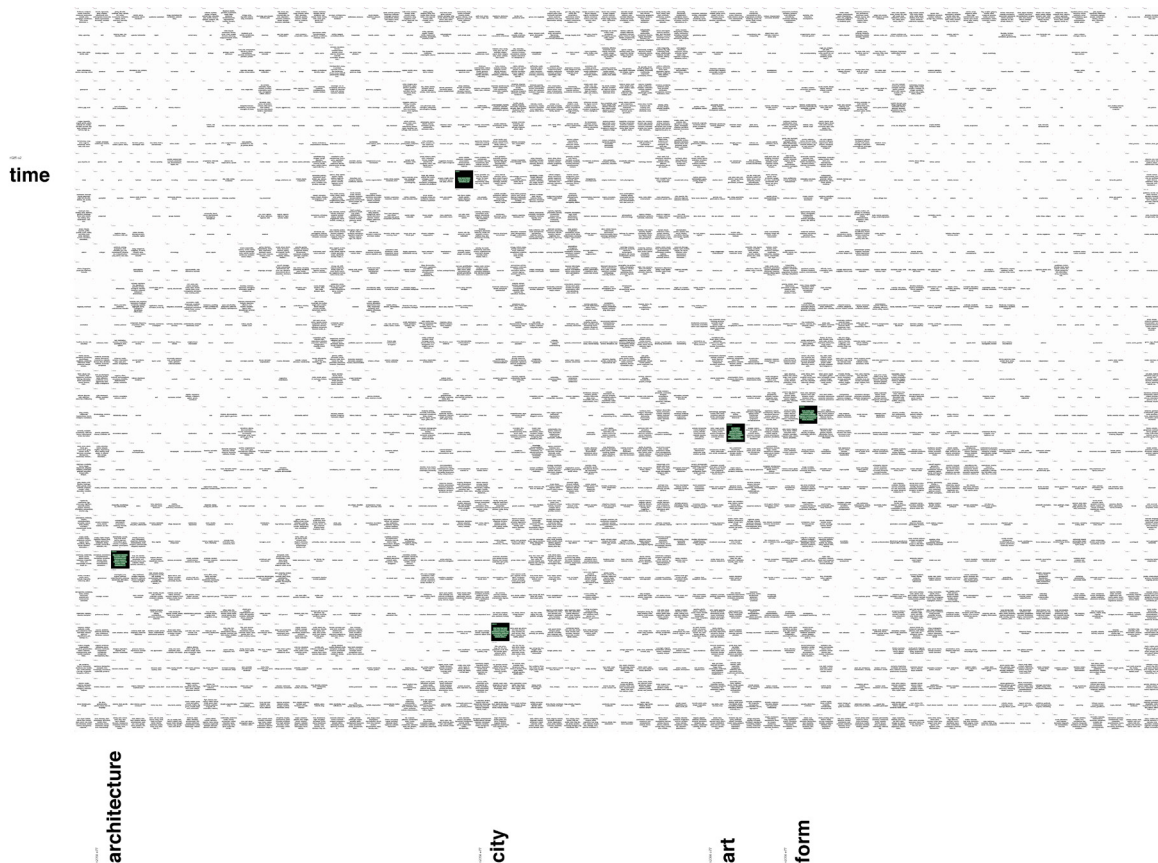
city -> 87787, new -> 39276, urban -> 35792, house -> 32995, build -> 23522, public -> 20563, space -> 20238, plan -> 19028, social -> 17431, person -> 16071, state -> 15401, work -> 15375, use -> 14818, place -> 14596, community -> 14236, **time** -> 14174, york -> 13117, world -> 12531, life -> 12221, development -> 12054, political -> 11689, form -> 11208, like -> 11083, way -> 11045, area -> 10857, street -> 10754, make -> 10244, project -> 10054, year -> 10045, university -> 10001, local -> 9921, government -> 9626, good -> 9591, live -> 9346, large -> 9282, century -> 9159, london -> 9076, land -> 8959, change -> 8928, economic -> 8893, press -> 8574, high -> 8509, design -> 8341, mean -> 8333, power -> 8161, system -> 8118, resident -> 8048, neighborhood -> 8000, come -> 7630, home -> 7544

3.2.2.6.2.6 Topics addressed in the speech and their indexical clouds

A galaxy of concepts of *ch_n6e110*

Rendering_ch6_02_RW_4060_r_50it22d_words_vertex

http://www.romanvlahovic.com/xenotheka/char6_wordGalaxy.pdf



Architecture

ch_n6e110's atom-letters related to the index of architecture:

n1803 e16 {slip, urgent, freedom, fascinate, distort, architecture, shy, specie, urgency, collision, nuanced, evasion, tread, conundrum, assertive, jacket}

n1804 e20 {truly, roll, familiar, strain, card, dramatic, remarkable, soft, presume, brand, wary, umbrella, refusal, narrowly, unevenly, periodically, cancer, lump, evacuate, vietnam}

n1802 e11 {conceptual, coincidence, comprehensively, fascination, dynamism, mantra, loudly, reconfiguration, reconsideration, persuasive, patrician}

n1743 e35 {dramatically, exceed, drag, float, abide, assure, rigorous, tremendous, giant, urbanist, susceptible, resistant, convergence, incarnation, wonderful, prisoner, antithesis, default, lush, compact, blossom, enshrine, galvanize, flame, hypocrisy, facade, proto, undergird, applause, casino, flavor, authoritarianism, outlive, tirelessly, completeness}

n1744 e12 {virtually, johnson, irony, desperately, skepticism, decisively, inconvenience, cruel, eloquent, commensurate, vanguard, oxymoron}

n1863 e9 {meaningful, tune, bygone, plethora, embarrassment, underway, benchmark, affirmation, disbelief}

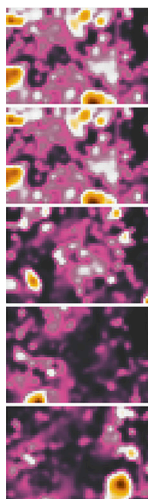
n1742 e18 {simply, slight, fraught, formative, winner, boot, forgive, generosity, conducive, annoy, surrender, consecutive, extinction, whitney, gently, unabashedly, thoughtless, metabolist}

n1864 e10 {idea, traditional, broaden, empower, repository, optimism, unravel, contingent, endeavor, idyllic}

n1801 e21 {selectively, conformity, artistic, confer, texture, format, nowadays, respectful, merry, slot, exponentially, encode, impel, aura, comical, unspeakable, burger, modal, lacuna, inattention, enamor}

n1862 e1 {generational}

ch_n6e110's main references for the index of architecture:



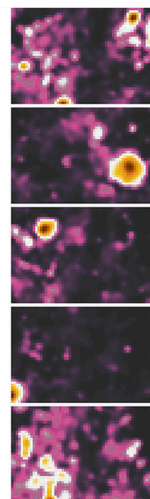
Michael Sorkin, *All Over the Map: Writing on Buildings and Cities*, 0.0692232

Michael Sorkin, *All Over the Map: Writing on Buildings and Cities*, 0.0691968

Lauren Curtright, *Doris Bremm, Sustainability and the City: Urban Poetics and Politics*, 0.0289565

Steven Conn, *Americans Against the City: Anti-Urbanism in the Twentieth Century*, 0.0196016

Carl H. Nightingale, *Segregation: A Global History of Divided Cities*, 0.0175121



Llana Barber, *Latino City: Immigration and Urban Crisis in Lawrence, Massachusetts, 1945-2000*, 0.0162266

Wim Nijenhuis, *The Riddle Of The Real City*, 0.0157478

Anthony Maniscalco, *Public Spaces, Marketplaces, and the Constitution: Shopping Malls and the First Amendment*, 0.0157392

Denise Lawrence-Zuniga, *Protecting Suburban America: Gentrification, Advocacy and the Historic Imaginary*, 0.0153627

Thomas J. Sugrue, *The Origins of the Urban Crisis: Race and Inequality in Postwar Detroit*, 0.0152526

City

ch_n6e110's atom-letters related to the index of *city*:

n2064 e20 {city, help, high, pay, total, size, succeed, successful, money, rare, successfully, generous, considerably, cost, random, strength, sum, decrease, extraordinary, incorrect}

n2004 e9 {win, expect, compare, sixteen, chief, player, error, assistant, monday}

n2124 e26 {little, year, grow, large, fall, five, fail, population, small, near, half, double, great, pressure, push, relatively, third, heavily, proportion, country, land, company, few, tip, occasionally, profitable}

n2065 e18 {come, good, go, person, rest, easy, amount, keep, success, put, pick, serious, drop, fifteen, valuable, ease, healthy, patient}

n2005 e6 {run, check, chance, charge, thirteen, enjoyable}

n2063 e8 {rate, spend, estimate, reward, surprisingly, corporate, adjust, boon}

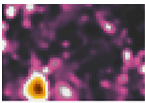

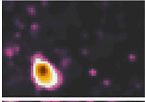




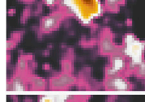


n2123 e5 {rank, vice, essentially, quarterly, reap}

n1945 e5 {give, decide, unlikely, unusual, grateful}

n2125 e22 {like, live, far, ten, hard, drive, twenty, train, blow, trade, thousand, vast, rich, equivalent, winter, chain, smoke, drink, gross, bus, restaurant, dim}

n1944 e9 {list, convince, previous, schedule, announce, request, entertainment, impress, rally}

ch_n6e110's main references for the index of *city*:

| | | | |
|---|--|---|---|
|  | Edward Glaeser, <i>Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier</i> , 0.0286547 |  | Carl H. Nightingale, <i>Segregation: A Global History of Divided Cities</i> , 0.0192727 |
|  | Eric S. Heberlig, Suzanne M. Leland, David Swindell, <i>American Cities and the Politics of Party Conventions</i> , 0.0260395 |  | Robert Fitch, <i>The Assassination of New York</i> , 0.0182946 |
|  | Thomas J. Sugrue, <i>The Origins of the Urban Crisis: Race and Inequality in Postwar Detroit</i> , 0.022816 |  | Roberta Brandes Gratz, <i>The Battle for Gotham: New York in the Shadow of Robert Moses and Jane Jacobs</i> , 0.0180162 |
|  | Jane Jacobs, <i>The Death and Life of Great American Cities</i> , 0.0224007 |  | Lewis Mumford, <i>The Culture of Cities</i> , 0.0178349 |
|  | Lewis Mumford, <i>The Culture of Cities</i> , 0.0203341 |  | Steve Macek, <i>Urban Nightmares: The Media, The Right, And The Moral Panic Over The City</i> , 0.0178197 |

Art

ch_n6e110's atom-letters related to the index of art:

n1417 e17 {art, creative, investigate, specificity, listen, transient, grapple, dictionary, sensation, imaginatively, memorialize, freud, bull, ambient, mindful, mclaughlin, problematically}

n1357 e5 {railway, claire, silently, complementarity, directional}

n1477 e9 {lens, practitioner, momentarily, progression, temporal, portable, stroller, brightly, poetics}

n1418 e14 {engage, explore, encounter, walk, bend, via, gallery, critically, terrain, ceremony, meander, sunny, intermingle, decadence}

n1356 e11 {methodology, apologize, nursery, tram, firstly, commence, pastime, thirdly, unknowingly, treasurer, mutable}

n1478 e9 {literal, studio, stroll, poetry, pulse, idiom, iain, microphone, interlocutor}

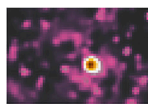
n1416 e51 {artist, vague, poetic, barrack, earthquake, fluidity, morale, sublime, strangeness, motorway, wicked, australia, biennial, breast, graphically, cartography, enquiry, cartographic, morton, walton, howl, stud, guattari, procedural, beth, butterfly, foyer, ashley, suitcase, geoff, apology, cartographer, loudspeaker, grime, pedagogy, reparation, skype, botanist, thomson, enchantment, psychoanalyst, composer, transfigure, turnbull, rubin, filler, doncaster, clockwise, null, skein, rourke}

n1358 e9 {acknowledgement, participant, copyright, typeset, locale, multifaceted, aesthetically, symposium, conceptualization}

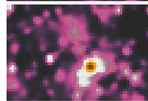
n1476 e7 {compression, iteration, audio, pleasurable, mick, afresh, southbound}

n1419 e15 {reflection, journey, mode, pain, blend, ambiguity, reception, thread, magical, friction, ambivalence, projection, destabilize, navigate, presentation}

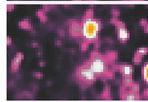
ch_n6e110's main references for the index of art:



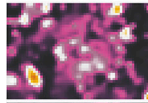
Elizabeth M. Grierson, *Transformations: Art and the City*, 0.112288



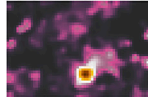
Shirley Jordan, Christoph Lindner, *Cities Interrupted: Visual Culture and Urban Space*, 0.0400585



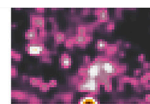
Sherry Simon, *Speaking Memory: How Translation Shapes City Life*, 0.0328169



Lauren Curtright, Doris Bremm, *Sustainability and the City: Urban Poetics and Politics*, 0.0263541



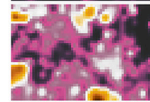
Edward M. Clift, Kevin O'Brien, Steve Hawley, *Imaging the City: Art, Creative Practices and Media Speculations*, 0.0247031



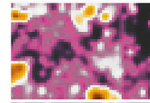
Paul Dobraszcyk, *The Dead City: Urban Ruins and the Spectacle of Decay*, 0.0218505



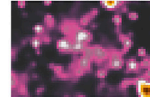
Mirko Guaralda, Ari Mattes, Edward M. Clift, *Filming the City*, 0.0209956



Michael Sorkin, *All Over the Map: Writing on Buildings and Cities*, 0.020697



Michael Sorkin, *All Over the Map: Writing on Buildings and Cities*, 0.0204052



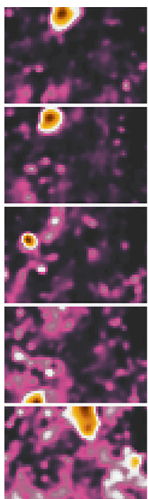
David Garbin, Anna Strhan, *Religion and the Global City*, 0.0196495

Time

ch_n6e110's atom-letters related to the index of time:

n562 e8 {time, short, think, apart, quiet, hail, everybody, pet}
n563 e25 {course, possible, use, need, try, depend, answer, let, basic, difficult, lack, responsibility, apply, mat, occur, frequent, obvious, contact, attach, somehow, normal, mainly, semi, homogeneous, afraid}
n561 e8 {prepare, length, shake, intellectual, typical, odd, aptly, encircle}
n621 e4 {work, end, unable, patience}
n503 e12 {reason, problem, else, considerable, circumstance, naturally, economically, spot, ordinary, persons, interrelate, consequent}
n622 e9 {feel, friend, middle, readily, golden, explain, departure, session, hughes}
n502 e9 {worth, suitable, wholesale, reasonable, unsuccessful, announcement, disappoint, admire, madison}
n620 e9 {prove, accept, recognize, renew, act, confidence, reaction, embrace, experiment}
n623 e4 {root, actually, socially, danger}
n560 e14 {book, late, believe, publish, title, subtle, colleague, career, phrase, notable, reminiscent, propaganda, predetermine, postpone}

ch_n6e110's main references for the index of time:



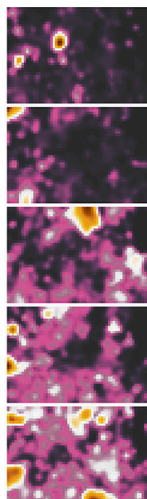
Jane Jacobs, *The Death and Life of Great American Cities*, 0.0384122

Peter L. Laurence, *Becoming Jane Jacobs*, 0.0331885

Alison Ravetz, *Council Housing and Culture: The History of a Social Experiment*, 0.023962

Steven Conn, *Americans Against the City: Anti-Urbanism in the Twentieth Century*, 0.0201747

Lewis Mumford, *The Culture of Cities*, 0.0184372



John Joe Schlichtman, Jason Patch, Marc Lamont Hill, *Gentrifier*, 0.0180511

Roberta Brandes Gratz, *The Battle for Gotham: New York in the Shadow of Robert Moses and Jane Jacobs*, 0.01617

Lewis Mumford, *The Culture of Cities*, 0.0159202

Steve Macek, *Urban Nightmares: The Media, The Right, And The Moral Panic Over The City*, 0.0158211

Michael Sorkin, *All Over the Map: Writing on Buildings and Cities*, 0.0157817

Form

ch_n6e110's atom-letters related to the index of form:

n1361 e15 {form, reality, self, conceive, sight, observation, passage, fragment, consciousness, circulation, correspond, strive, illuminate, excellence, devoid}

n1301 e33 {mean, view, represent, assume, draw, light, distance, certain, introduce, order, element, accord, return, visible, historical, express, intervene, perform, constitute, derive, circle, imply, attribute, principle, unstable, formation, accurate, whereas, inquiry, exceptional, systematically, applicable, complementary}

n1360 e36 {sense, describe, transform, speak, notion, absence, content, undergo, absent, identity, capture, simultaneously, display, belong, counter, game, reproduce, participate, symbolic, mirror, blur, realm, consciously, spectacular, hint, discourse, transcend, unfold, insert, paradoxically, conjunction, exit, anonymity, vantage, affirm, liquid}

n1362 e16 {word, subject, dimension, phenomenon, sign, horizon, essence, signify, manifestation, absolute, heroic, constituent, obstruct, sentence, reconstruct, dissatisfaction}

n1421 e7 {explicit, enrich, ubiquity, unnoticed, contemplate, definitive, heal}

n1302 e9 {bind, ideal, perfect, constantly, anonymous, prescribe, instruction, rhetorical, persistence}

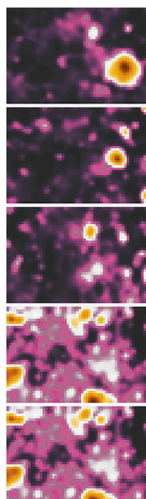
n1300 e29 {present, way, beyond, term, attention, process, shape, particular, situation, aspect, suggest, relationship, associate, introduction, refer, identify, various, flow, distinct, concept, tradition, regard, theme, compose, norm, identification, etc, equate, vein}

n1422 e11 {impression, static, dissolve, evoke, glimpse, singular, philosopher, fusion, overload, discontinuity, reformulate}

n1420 e18 {past, reveal, imagine, trace, frame, inhabit, awareness, alive, metaphor, paradigm, suspend, erase, coexist, elusive, paraphrase, deflect, motif, intimacy}

n1241 e44 {point, follow, hand, set, directly, establish, serve, enter, direct, condition, field, final, important, determine, attempt, appear, individual, heart, complex, direction, closely, impose, power, note, importance, internal, modern, ultimately, distant, statement, firmly, version, regular, govern, coin, fade, odds, fellow, sole, sketch, uncertain, pervasive, continuation, contiguous}

ch_n6e110 main references for the index of form:



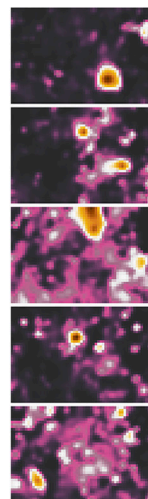
Wim Nijenhuis, *The Riddle Of The Real City*, 0.0388518

Niall Atkinson, *The Noisy Renaissance: Sound, Architecture, and Florentine Urban Life*, 0.0216152

Sherry Simon, *Speaking Memory: How Translation Shapes City Life*, 0.0205683

Michael Sorkin, *All Over the Map: Writing on Buildings and Cities*, 0.0204181

Michael Sorkin, *All Over the Map: Writing on Buildings and Cities*, 0.0202512



Iván Villarrea Álvarez, *Documenting Cityscapes: Urban Change in Contemporary Non-Fiction Film*, 0.0200568

Raffaele Milani, *The Art of the City*, 0.0199536

Lewis Mumford, *The Culture of Cities*, 0.0197005

Stavros Stavrides, *Common Space: The City as Commons*, 0.0185752

Lauren Curtright, Doris Bremm, *Sustainability and the City: Urban Poetics and Politics*, 0.0182902

A Gathering for Six SIX SPEECHES

The introduction has finished. The six are ready to start with their speeches. Are they the ones with authority to speak about the challenges and dignity of architecture? This might not be the right question to ask. The assumption is that, out of 12,303 unknown books, these are the books that have the highest probability to say something about architecture, although we do not know exactly what they are about. We haven't opened any of the books that come from *Bibliotheka*; we are just getting to know them. Let us remember that the library based on probabilities and their shared interest in *architecture* is what keeps these actors together. Another library would provide different weather and atmospheres. This library and its interest in architecture is the artificial context that the fictional characters will try to challenge and enrich while giving their speeches. The imagined scenarios were here to get to know the characters and create tensions and expectations before the speeches start.

Let us hear what the actors have to say and enjoy the atmospheres they will create in addressing architecture in their own ways. They come from the plenty.²⁰⁰

²⁰⁰ Six speeches (atmospheres) are composed while playing an *Informational Instrument*, they are not automatically generated.

ch_nle99

Evaluating Masterpieces

An imagined speech of *ch_nle99* at a gathering for 6 in the *Library_639*:

Determined by its Frequency¹

Art is not a matter of rare, occasional masterpieces.² It takes approximately twenty years to make an artistic curiosity out of a modernistic monstrosity, and another twenty to elevate it to a masterpiece.³ If you don't create on the same scale that you can destroy, then art is rendered impotent.⁴ The 'neutrality' of the formal values of abstract art is no longer taken for granted.⁵ Avant garde art is haunted by fashion.⁶ The influence of the fashion world, the glamour of Hollywood stars, and contemporary notions of style informed Warhol's work as a serious and significant artist, and, in turn, his work has affected style and fashion.⁷ For art and fashion are defined by, or inhabit, if you will, undeniably different systems.⁸ Suddenly, the artifacts, works of art, and biscuit tins look curiously arbitrary and meaningless, thus implying that it is the computer that will provide the order and system that is the key to understanding them and to their interpretation.⁹ What seems to be a pivotal difference is the unpredictability of the artist's 'theorem' as opposed to the mathematician's.¹⁰ For Leonardo, painting earned its status as a liberal art because it required rational thought, imagination, and a knowledge of mathematics.¹¹

In creating the pieces, a marriage of making and form is essential: the techniques used to construct the work also form the elements of drawing; the end result transcends its materials, as form and technique combine to create a cacophony of visual sound.¹² Although not linked to pure mathematics, the art form is best defined as the building up of patterns

from ever changing relations, rhythms, and proportions of abstract geometric form.¹³ The orchestration of form and shape is tense and precise.¹⁴ Mind wandering relaxes one's grip on recognizable forms, releasing them into fine grained details that can morph into other shapes that can trigger other associations.¹⁵ The final form is determined by factors outside the artist's control.¹⁶ As SAMUEL BECKETT put it, back in 1929, "Here form is content, content is form."¹⁷ He advocated an approach that defined both "the extent to which the form is determined by the objective conditions" of transmission and how reception varied with historic and sociological conditions.¹⁸ Only he could decipher what was a highly condensed form of encrypted notes and sketches, but we know that he continually referred to them throughout his lifetime.¹⁹ To know the name of form is to gain power to manipulate and control that deity at will.²⁰ Whether or not a form is good was determined by its frequency²¹

I think we should reimagine the practices of architecture, design, and art in relation to history and memory, with a renewed sense of public agency and purpose.²² Architecture is the material expression of the wants, the faculties, and the sentiments, of the age in which it is created.²³ History, as it has been traditionally written, might follow chronology, but time's passage is never so neatly defined in heritage, where time is the target of strategic rearrangement.²⁴ Lessing famously pontificated a long time ago that "succession in time is the province of the poet, coexistence in space that of the artist."²⁵ Time is not supposed to be the domain of visual art.²⁶ Time is frozen in museums to the extent that its objects are preserved, their natural decay intentionally prevented.²⁷ Related to the concept of time is that of memory, which is encountered in every section of this book.²⁸ To understand the ramifications of time and memory in the museum, historical consciousness demands accountability.²⁹ Historical exhibitions are not only compelling because they compensate for uncertainty, they serve at the same time to restore shared memory.³⁰ The implied sense of motion in the gently undulating field also formalizes a kind of memory that is neither frozen in time, nor static in space.³¹ In the latter, time is not a simple continuum but involves memory and the interaction between past and present.³² The fluidity of historical memory – relative, redefined by time and type, and representative of various types of memory – shapes perception.³³ While time and space may register in our minds as abstractions, they are also forms with which the mind processes the experience of the world.³⁴ They theorize alternative narratives in which abstraction and ornament are prior as well as primary to the mimetic paradigm of fine art as well as the tectonic paradigm of architecture, both established since the Renaissance and Alberti.³⁵ Now it was the architecture of the Renaissance that was "decadent," and pre modern architecture that was the "book of stone," the "great book of

humanity,” in which every human thought found a page.³⁶ The architecture interprets and frames the exhibition narratives, eliciting both intellectual and physical responses from the visitor.³⁷

This impulse to historicize sixties practice entails a revival of such traditional art historical formats as chronological narrative and the monograph, the gathering of testimonial (interviews with artists, dealers, and critics), and intensive archival research.³⁸ Synthesizing science fiction, futuristic comic books, and amusement park aesthetics, Archigram challenged architecture’s rigidity with bravado, effectively epitomizing CONCEPTUAL architecture.³⁹ Comparisons have ranged from alien space ship to centipede, simultaneously capturing the architecture’s high tech and organic qualities.⁴⁰ I propose that the social imagination about being an artist is conceptualized in relation to the imagination about the city and the art world city.⁴¹ As everyone who has ever loved New York—or London, or Paris—understands in their soul, the city is an exciting place to be, and in that excitement, there is beauty.⁴² Resembling an “emporium of styles,” the soft city is the theatrical city of fashions, appearances, and commodities that awaits the indentations of “do it yourself” identities.⁴³ Las Vegas represents a continuing collective attempt to create a city as a unique work of art.⁴⁴ On this second level, the city is the way it is used.⁴⁵ Lynch assumed an opposite position to that of conventional urban planning – that of the user, a psychological, aesthetic being with emotional needs experiencing the city sensuously. Our task, i propose, is to observe and analyze how this art negotiates with these two spheres and how it changes its roles and aims in responding to different spaces and audiences.⁴⁶ Making art is a process of overlapping questions.⁴⁷

^{1,21,45} Andreas Reckwitz, *The Invention of Creativity: Modern Society and the Culture of the New*, ^{2,5,32} Ian Chilvers, *A Dictionary of Modern and Contemporary Art*, ^{3,6,17,39,44} Richard Kostelanetz, *A Dictionary of the Avant-Gardes*, ⁴ Judy Malloy, *Social Media Archeology and Poetics*, ^{7,8} Adam Geczy, *Fashion and Art*, ^{9,24,27,29,30,37,40,43} Sharon Macdonald, *A Companion to Museum Studies*, ^{10,47} Christian Mieves, *Wonder in Contemporary Artistic Practice*, ¹¹ Marie Frank, *Denman Ross and American Design Theory*, ¹² Malcolm Miles, *Eco-Aesthetics: Art, Literature and Architecture in a Period of Climate Change*, ¹³ Grant D. Taylor, *When the Machine Made Art: The Troubled History of Computer Art*, ¹⁴ Leonard Bell, *Strangers Arrive: Emigrés and the Arts in New Zealand, 1930–1980*, ¹⁵ Cristina Albu, *Perception and Agency in Shared Spaces of Contemporary Art*, ¹⁶ Ian Chilvers, *A Dictionary of Modern and Contemporary Art*, ¹⁸ Daniel Horowitz, *Consuming Pleasures: Intellectuals and Popular Culture in the Postwar World*, ¹⁹ Bartram Angela, Gittens Douglas, El-Bizri Nader, *Recto Verso: Redefining the Sketchbook*, ²⁰ Renate Dohmn, *Encounters Beyond the Gallery: Relational Aesthetics and Cultural Difference*, ^{22,28,31} Cher Krause Knight, Harriet F. Senie, *A Companion to Public Art*, ^{23,35} Loretta Vandi, *Ornament and European Modernism: From Art Practice to Art History*, ^{25,26,34} Martin J. Powers, Katherine R. Tsiang, *A Companion to Chinese Art*, ^{33,36} Conrad Rudolph, *A Companion to Medieval Art: Romanesque and Gothic in Northern Europe*, ^{38,46} Okwui Enwezor, Nancy Condee, Terry Smith, *Antinomies of Art and Culture: Modernity, Postmodernity, Contemporaneity*, ⁴¹ Joanna Grabski, *Art World City: The Creative Economy of Artists and Urban Life in Dakar*, ⁴² Robert A. Slayton, *Beauty in the City: The Ashcan School*.

*ch_n2e88**Crawling Time and Space*

An imagined speech of *ch_n2e88* at a gathering for 6 in the *Library_639*:

Rebuilding the Eternal City¹

The city is a given; even if the tenements are crumbling and collapsing, the attention focuses on the underlying permanent problem of shelter.² What we often forget is that even an eternal city is the result of a continuing process.³ Places, piazzas, voids —the city is a network of inhabited walls enclosing the mirror images of streets.⁴ In a world where physical authenticity is continually assailed by the availability of convincing alternative realities, such proof is an anchor for the actualities of the past.⁵ As this brief look at material remains, dating, and reconstruction exposes, early Rome is a tricky place to investigate.⁶ As Stewart argues, Rome is the catalyst for the adoption of these new forms of material, but not the source of the type itself.⁷ Roman architecture was eclectic and was characterized by differing styles that can be attributed to regional tastes, materials, and tradition as well as to the diverse preferences of a wide range of patrons who commissioned and paid for buildings.⁸ Almost all Egyptian antiquities brought to Rome were antiques in the sense that they were already centuries old at the time of their removal to Italy, yet few come from those periods of history most studied today.⁹ In this sense much of Roman architecture is of hybrid nature.¹⁰ There is no consistent Egyptian style evident in roman made works, which drew on modes of representation from different periods of Egyptian history and which also vary in iconography.¹¹ Hieroglyphic writing, the monumental formal script of ancient Egypt, consists of a series of images that were chosen and laid out not only for their aesthetic appeal and meaning, but also to create an eternal verity.¹² The study of Egyptian

architecture is particularly woven into the totality of Egyptian art because of the integration of architecture, relief/painting, statuary, and text.¹³ In fact, among those antiquities found in Rome were both Egyptian Antiquities—many of which had been brought to the center of the Roman Empire by the emperors—and Egyptianizing objects created in Rome.¹⁴ The Vatican obelisk, weighing perhaps 500 tons, brought over from Egypt originally to adorn the circus of the emperor Caligula, took four months using 800 men and 120 horses to move a few hundred metres in the 16th century.¹⁵ In Roman terms, simply using such giant monolithic columns was pushing technology to its limits and at the same time making a spectacle out of construction which carried an unmistakable message about the power of imperial Rome.¹⁶ The monuments of ancient Egypt, Greece, and Rome, in turn, illuminate the nature of engineering in those cultures, which was in many fundamental ways the same as the nature of engineering today.¹⁷

*Renaissance Rome had not only rediscovered classical culture, it had embraced the licentiousness that precipitated the fall of the imperial city.¹⁸ Renaissance artists were traveling salesmen, brushes and chisels for hire, traveling from city state to city state, competing for commissions.¹⁹ Renaissance artist Alberti formulated the conceit of the painting as “window on the world”: the picture plane simulates a transparent window that opens out to an imaginary pictorial space behind it.²⁰ This pictorial space pretends to be three dimensional like the viewer’s space.²¹ Sebastiano Serlio, whose sixteenth century book on architecture stands with the works of Vitruvius and Alberti, calls the Tempietto “a model of balance and harmony, without a superfluous detail.²² From the Renaissance period onwards artists and architects recorded individual buildings and their decorative details in a variety of media.²³ Stoichita have shown, renaissance painters explored the resemblance between pictures and maps in paintings that complicated notions of symbolic referentiality and geographical verisimilitude by adding political showmanship.²⁴ The renaissance inaugurates the fetishization of the Ptolemaic model of the map—the planar coordinate grid of locatable positions.²⁵ As Ptolemy puts it in *Tetrabiblos*, the standard reference for all things astrological for over a millennium, “The cause of both universal and of particular events is the motion of the planets, sun, and moon; and the prognostic art is the scientific observation of precisely the change in the subject natures which corresponds to parallel movements of the heavenly bodies through the surrounding heavens.”²⁶ The scope of ancient cartography and the nature of ancient maps remain a subject of much debate, and*

*there are different opinions about whether geographical writers made use of maps.²⁷ This community of mapmakers and map users shared ideas about what a map should be and how it should be made.²⁸ But to say that the map represents the space of a narrative topology makes it possible to indicate the veritable stake of its presence in the novel: the question is not that of the opposition between the “real” and “fiction,” but rather that of the project of the fiction itself and of the graphic means it mobilizes so as to be shown and developed.²⁹ Ptolemy adduces the point in the first sentences of his *Geographia*: the map has the power of representing to human beings realities that they would otherwise be unable to see.³⁰*

In Rome, today’s architects can, with the elements of Roman architecture, put together the modern style, creating a new organization and a new aesthetic.³¹ If only those responsible for the development of Rome today could be re united with the threads of their rich architectural traditions, one could be sure that these would be woven in new and interesting ways, and that archaeology and innovation could be fused again in the development of the Eternal City.³²

^{1,7,8,10} Roger B. Ulrich, Caroline K. Quenemoen, *A Companion to Roman Architecture*, ^{2,3,15,16,23,31,32} J. C. Coulston, Hazel Dodge, *Ancient Rome: The Archaeology of the Eternal City*, ⁴ Paula Deitz, *Of Gardens: Selected Essays*, ^{5,9,11} Elise A. Friedland, Melanie Grunow Sobocinski, Elaine K. Gazda, *The Oxford Handbook of Roman Sculpture*, ⁶ John North Hopkins, *The Genesis of Roman Architecture*, ^{12,13,14} Melinda K. Hartwig, *A Companion to Ancient Egyptian Art*, ¹⁷ Henry Petroski, *Engineers of Dreams: Great Bridge Builders and the Spanning of America*, ^{18,19,22} R. A. Scotti, *Basilica: The Splendor and the Scandal: Building St. Peter's*, ^{20,21} Monika Kaup, *Neobaroque in the Americas: Alternative Modernities in Literature, Visual Art, and Film*, ²⁴ Martin Brückner, *The Social Life of Maps in America, 1750-1860*, ^{25,26,28,29,30} Anders Engberg-Pedersen, *Literature and Cartography: Theories, Histories, Genres*, ²⁷ David Pettegrew, *The Isthmus of Corinth: Crossroads of the Mediterranean World*.

*ch_n3e81**Morphing with the Mood*

An imagined speech of *ch_n3e81* at a gathering for 6 in the *Library_639*:

Fragmentary Images¹

[...] coming from nowhere, going nowhere: an immense collective act, rolling along, ceaselessly unrolling, without aggression, without objectives—transferential sociality, doubtless the only kind in a hyperreal, technological, soft mobile era, exhausting itself in surfaces, networks and soft technologies [...].² These brief city portraits that constellate into cityscapes captured in fragmentary images “seek to capture the fluid and fleeting character of metropolitan existence” beyond the mere banality of the tourist vision.³ With these pieces comes an understanding that the crowd is data, the landscape is data: if the city is a database, then all of its components must become data sets.⁴ The city is framework, never subject; scaffolding, never structure; the city becomes an interface through which data can be accessed.⁵ Through a PIN, the relationship between community and city is radically modified, because the city is no more a unique entity, a territory, or a border.⁶ Hundreds of thousands of people now enter 3D cyber cityscapes, communicating through digital bodies called avatars.⁷ The face of the city houses both new and old mythologies, traditional culture and modern technology, reality and appearance, fashion and boredom, those who kill time and those who live accelerated lives.⁸ The constantly open city will allow a free choice of the time frame in which to live, sleep, love, or work.⁹

At the point where cyberspace and post biological life meet, an entirely new kind of social architecture is required.¹⁰ Architecture is the platform for multidimensional mediation and

bi sociation, linking conceptual frameworks that appear to have nothing in common.¹¹ Yet the connection with architecture is not literal, for as we ascend the scale of abstraction we lose many ties to materiality.¹² Contemporary avant garde architecture is addressing the demand for an increased level of articulated complexity by means of retooling its methods on the basis of parametric design systems.¹³ Many of these types are novel and opportunistic and reveal the complexity of advertising and consumer media in neoliberal cities.¹⁴ The architecture is based on a semantic analysis of the viewer's words, reorganizing them to reflect the underlying themes they express.¹⁵ In this respect, architecture is unlike music, where the well-known names (e.g., 'Beethoven's Fifth') refer to abstract works rather than to particular performances of these works,¹⁶ Yet digital technologies, now ubiquitous, have already significantly changed the way architecture is designed and made.¹⁷ Through the conversion of the external world into digital parameters, the computer is privileged as an abstract space that accommodates processes of differentiation.¹⁸ What is striking about New Aesthetic art objects is not just their origins in digital media but their appearance as natural evolving out of our digital experiences.¹⁹ The art projects seem to recapture the often-lost connection between science, art, technology and the natural world.²⁰ But strangely enough, the art and biology community of practice and the art and artificial life community barely overlap.²¹ Breaking free of categories, intellectually and emotionally, and creating new realities, new language, new practices is what art is about.²² This means that the realization of art is moved from the level and manifests to the level of action and relationships.²³ For Plato, art is an illusion, a systematic deception in which each copy loses something of reality by being composed of new (substitute) materials and effects in successive alien media platforms.²⁴ His pluralistic, relativist views suggest that art is no longer required to seek or produce truth and knowledge, and may abandon standards and categories.²⁵ Art is the search for new language, new metaphors, new ways of constructing reality, and for the means of redefining ourselves.²⁶ The way digital processes undermine the concept of the single definitive work of art is a challenge to our artistic preconceptions.²⁷

With the development of capitalism, irreversible time is unified on a world scale.²⁸ Time is regulated by capital, segregated from the passage of historical or biological evolution.²⁹ But while not so long ago, McLuhan's time is, nevertheless, not our time.³⁰ Time is not so much lost as compacted into stacked and varying rhythms.³¹ We are in an experimental time, with software and hardware changing at dizzying speeds and the expectations for and

the possibilities of our work not yet fully articulated.³² Since at the quantum level time is symmetrical and past and present have no meaning, one of the major differences between the quantum level (the source of information) and the classical level (the outworking of this information), is that the classical level has an end point, a purpose.³³ Every form is embedded with a past: the memory of what it once was and the potential for what it could be both remain charged.³⁴ Any investigation into form is also an investigation into its mediations and remediation.³⁵ The first reason for the return of the form is the convergence of diverse art-forms made possible by digital media.³⁶ The form has many more lessons to offer, but my point is that a focus on form is productive since it allows competing narratives and political claims to bump up against each other in potentially enlightening ways.³⁷ Form is an expression of adaptation to the environment.³⁸ The technical element is always in a relation with elements outside itself; its form is therefore indeterminate and virtual.³⁹ It is because of this heterogeneity over time that topological historicity remains receptive to the conditions by which a form is brought into being or apprehended at any given moment.⁴⁰ One might argue that the “newness” of digital forms necessitated a kind of “formalist period,” a sustained time of reflection on the specificity of what was before us in a particular moment.⁴¹ Yet, given that new media forms are replacing each other so rapidly—usually before we have time to fully explore their social and aesthetic potential—perhaps a discourse on medium specificity might enable us to recuperate unique possibilities that otherwise would have been lost.⁴² The hybrid or the meeting of two media is a moment of truth and revelation from which new form is born.⁴³

¹ André Gaudreault, Nicolas Dulac, Santiago Hidalgo, *A Companion to Early Cinema*, ² Marcin Mazurek, *A Sense of Apocalypse: Technology, Textuality, Identity*, ^{3,8} Claudia Schaefer, *Lens, Laboratory, Landscape: Observing Modern Spain*, ^{4,5,24,36,41,42} Marsha Kinder, Tara McPherson, *Transmedia Frictions: The Digital, the Arts, and the Humanities*, ^{6,9} Susan Yelavich, Barbara Adams, *Design as Future-Making*, ^{7,21,38} Annick Bureau, Roger F. Malina, Louise Whiteley, *Meta-Life: Biotechnologies, Synthetic Biology, ALife and the Arts*, ^{10,11,12,22,26,33,43} Roy Ascott, *Art, Technology, Consciousness: Mind@large*, ¹³ Mario Carpo, *The Second Digital Turn: Design Beyond Intelligence*, ¹⁴ Nicole Kalms, *Hypersexual City: The Provocation of Soft-Core Urbanism*, ^{15,25,32} Ray Siemens, Susan Schreibman, *A Companion to Digital Literary Studies*, ¹⁶ Glenn Parsons, *The Philosophy of Design*, ¹⁷ Mario Carpo, *The Alphabet and the Algorithm*, ^{18,31,39} Anna Munster, *Materializing New Media: Embodiment in Information Aesthetics*, ¹⁹ Scott Contreras-Koterbay, Lukasz Mirocha, *The New Aesthetic and Art: Constellations of the Postdigital*, ^{20,23} Roy Ascott, *Engineering Nature: Art and Consciousness in the Post-Biological Era*, ²⁷ Jackie Hatfield, *Experimental Film and Video: An Anthology*, ^{28,29,34,40} Amelia Barikin, *Parallel Presents: The Art of Pierre Huyghe*, ³⁰ Jihoon Kim, *Between Film, Video, and the Digital: Hybrid Moving Images in the Post-Media Age*, ^{35,37} Margie Borschke, *This is Not a Remix: Piracy, Authenticity and Popular Music*.

ch_n4e79

Architecture is not Enough

An imagined speech of *ch_n4e79* at a gathering for 6 in the *Library_639*:

A City is not a Work of Art¹

The city is the centre of scandal, slander and speculation;²

The city is too big, and they have to touch too much, and touch it too rapidly.³

The city is infested by gangs of hardened wretches,⁴

The city is a language, its people entries in a vocabulary.⁵

The city is in my blood now.⁶

The city is so full of French,⁷

The city is a sentence, harsh, staccato, in an alien tongue.⁸

The city is at the mercy of waves that seem to be of its own making.⁹

The city is its inhabitants.¹⁰

The city is literally a composite of tens of thousands of tiny neighborhood units.¹¹

The city is so large, too, that it renders the average citizen powerless in its presence.¹²

The city is one vast throng of people.¹³

The city is surrounded by islands to which the mad and the dangerous have always been expelled.¹⁴

The city is the least defensible of great capitals.¹⁵

The city is also “an undeniably transitional space between the domestic and the foreign”¹⁶

The city is literally a deadly place.¹⁷

The city is so old, and so encrusted with habit and tradition...¹⁸

The city is a built dream, a vision incarnated.¹⁹ The city is like poetry: it compresses all life, all races and breeds, into a small island and adds music and the accompaniment of internal engines.²⁰ As architecture, New York ought to be in fact what it seems so surely at a distance: the most exhilarating embodiment of modern form.²¹ Manhattan's architecture is a paradigm for the exploitation of congestion.²² Capitalism in some form is likely to endure, whatever its shortcomings, for it is the only way known for managing accumulated material assets.²³ A city is always more than its architecture, but to destroy the past that is expressed by enduring architecture is an assault on history itself.²⁴ The architects have been forced, ironically enough, by that same evolutionary process of art and history that the cathedral ignored, to go to modern concrete construction in the name of cost and practicality.²⁵ In this branch of utopian real estate, architecture is no longer the art of designing buildings so much as the brutal skyward extrusion of whatever site the developer has managed to assemble.²⁶ Architecture is Manhattan's new religion.²⁷

New York city is one of the most thoroughly altered landscapes imaginable, an almost wholly artificial environment, in which the terrain's primeval contours have long since been obliterated and most of the parts that resemble nature (the trees on side streets, the rocks in Central Park) are essentially decorations.²⁸ Yet if a city is a work of art, does it in some sense cease to be a living city?²⁹ Anti art is true to our times.³⁰ There is something ironic about no art as art, about a performer performing a nonperformance.³¹ It's thinking about SEX as art and art as SEX.³² Henceforward, all art would be machine made, proclaimed the Dutchman Theo Van Doesburg.³³ But if life is a work of art, and art is a business, was his life then just a commodity?³⁴ Now, the question is: Would that have been the greatest work of art in the history of the world or not?³⁵ With Warhol, the two spheres collapse into one: Business art is the step that comes after Art.³⁶ So his art embodied his person.³⁷ His art is alive.³⁸ The private art market now flourished.³⁹ It was art as play.⁴⁰ If urban exploration is ever to have the capacity to be more than art for art's sake, it must move from an internal dialogue to engage with other artists, hackers, explorers and political activists.⁴¹ There is no cure ... in poetry or art ... for unemployment ... civic, neglect, and capitalistic exploitation.⁴² In the poem, art is imitating life.⁴³ Art is a Battlefield.⁴⁴

From the start, cities – and the architecture they created – went hand in hand with war.⁴⁵ The postwar architecture is the accountants' revenge on the prewar businessmen's dreams.⁴⁶ In so doing, it encouraged localities to develop means of competing effectively in the political economy of war and defense production.⁴⁷ But then that liberating impulse surrenders to the

implacable logic of the Grid; the free form is forced back uncomfortably to the conformity of the rectangle.⁴⁸ That form is the distilled essence of literary culture in the city.⁴⁹ In New York, on the contrary, form is subordinate to function, which is always multiple and shifting⁵⁰. The hand directing the city's built form is not invisible but nonexistent, or at least feeble.⁵¹ From this time on you can see the struggle to get a form without deforming the language”⁵² Politically, the architecture seemed an expression of democratic freedom of choice.⁵³ Once again, middle class moralists accused residential architecture of causing complex social problems.⁵⁴ The “best” modern architecture is that which is prepared for the “worst” catastrophe.⁵⁵ Attempting to freeze the landscape according to one single eternally valid viewpoint merely reduces the richness and complexity of the phenomenon.⁵⁶ It created a city of softness and mystery, with sudden pools of light fringed by blackness and silence.⁵⁷ Architects are typically more fluent in descriptions of activity and relationship that result in artifacts or forms within conventions that favor the designation of site as a single entity.⁵⁸

In blurring the border between memory and city life, walking serves as a nostalgic act.⁵⁹ It is only with the passage of time that a mystery develops, after the collective memory has forgotten the original purpose.⁶⁰ Remembered events seem to be outside any linear time frame or may refuse to be easily anchored to ‘historical’ time”.⁶¹ Beyond the time measured by human memory there exists, therefore, sacred time invoked by the sound of these bells.⁶² For a sense of these elusive areas of memory drenched city life, one has to turn to letters and diaries, memoirs and oral history, forms of recollection that often focus precisely on recollection of the everyday.⁶³ The precise evolution of the concept over time is an interesting question.⁶⁴ Much that is precious in the memory will have vanished months or years later, and the returning traveler must rediscover the city each time.⁶⁵

^{1,31,34,36,50,51} David Kishik, *The Manhattan Project: A Theory of a City*, ^{3,5,8,11,15,19,20,21,24,25,28,30,32,35,42,65} Kenneth Goldsmith, *Capital: New York, Capital of the 20th Century*, ^{2,6,9,12,13,17,18,57,62} Peter Ackroyd, *London: The Biography*, ^{4,7,39} Edwin G. Burrows, Mike Wallace, *Gotham: A History of New York City to 1898*, ¹⁰ Keith Wilhite, *The City Since 9/11: Literature, Film, Television*, ^{14,16} Xiaojing Zhou, *Cities of Others: Reimagining Urban Spaces in Asian American Literature*, ^{22,26,27,46,48,55} Rem Koolhaas, *Delirious New York: A Retroactive Manifesto for Manhattan*, ^{23,33} James Howard Kunstler, *The Geography of Nowhere: The Rise and Decline of America's Man-made Landscape*, ^{29,37,38,40,49} Peter Ackroyd, *Venice: Pure City*, ⁴¹ Bradley L. Garrett, *Explore Everything: Place-Hacking the City*, ^{43,45} James Crawford, *Fallen Glory: The Lives and Deaths of History's Greatest Buildings*, ⁴⁴ Carolyn Steel, *Hungry City: How Food Shapes Our Lives*, ⁴⁷ Mason B. Williams, *City of Ambition: FDR, LaGuardia, and the Making of Modern New York*, ⁵² Nissa Parmar, *Multicultural Poetics: Re-visioning the American Canon*, ^{53,54} Gwendolyn Wright, *Building the Dream: A Social History of Housing in America*, ⁵⁶ Ugo Carughi, Massimo Visone, *Time Frames: Conservation Policies for Twentieth-Century Architectural Heritage*, ⁵⁸ Keller Easterling, *Organization Space: Landscapes, Highways, and Houses in America*, ^{59,61} Barbara E. Thornbury, Evelyn Schulz, *Tokyo: Memory, Imagination, and the City*, ⁶⁰ Eleanor Phillips Brackbill, *An Uncommon Cape: Researching the Histories and Mysteries of a Property*, ^{63,64} Catriona Kelly, *St Petersburg: Shadows of the Past*.

ch_n5e172

A Substitutive Object

An imagined speech of *ch_n5e172* at a gathering for 6 in the *Library_639*:

Analytic and Synthetic¹

Everybody knows that Modern architecture is “just a bunch of glass boxes,” so it could be anything or nothing.² Architecture is always a set of actual monuments, not a vague corpus of theory.³ Architecture is fundamentally involved with numbers.⁴ In fact, architecture is both analytic and synthetic.⁵ As a cultural field, the art of architecture is inherently hybrid in nature.⁶ Our once outrageous architecture is now general currency.⁷ This is primarily why architecture appears to us as always already ethical, despite the fact that it has a dark and a light side.⁸ This reversal of architecture’s entropy law, this new ordering capacity or architectural neg entropy, is the critical factor in architecture’s potential to halt the ongoing urban disarticulation of the world’s built environments.⁹ Would you say that this project of mobility and integration leads to the idea of abandoning conventional national categories, such as Dutch architecture or Swiss architecture, or do we, in fact, witness the opposite?¹⁰ The history of architecture is a history of substitutive objects.¹¹

Aldo Rossi’s assertion of the existence of an autonomous body of architectural knowledge addressed the crucial question of a critical practice of architecture, and of the re conquest of analytical tools specific to the city and to the forms of its production.¹² The city is evolving in ways that its rulers cannot fully control.¹³ The big city is a magnet.¹⁴ The only sort of regime that could set up such a controlled, channelled city is a dictatorship or an oligarchy.¹⁵ For

humans, the playing field—the architecture of the city—is symbolic, framing focal actions and habits, enabling some and curtailing others, setting limits and thus making possible human freedom; it does not appear primarily as an object, but becomes “present as the practical end” of the inhabitant’s intentions.¹⁶ In mosaic of subcultures we have argued that a great variety of subcultures in a city is not a racist pattern which forms ghettos, but a pattern of opportunity which allows a city to contain a multitude of different ways of life with the greatest possible intensity.¹⁷

*Moscow city is smooth, immaculate, glazed, anonymous, guiltless.*¹⁸

*The Forbidden city is rectilinear, and symmetry and geometry dominate these main spaces.*¹⁹

*The true city is underground, including a farm where fungus is cultivated for food.*²⁰

*Wright’s Living city is an expanded rewrite of his earlier Disappearing City.*²¹

*The fabric of the city is being squeezed upwards, into the sky.*²²

*With apologies to the master [Le Corbusier], the house is a appliance for carrying with you, a city is a machine for plugging into.”²³ Ruskin did not look closely at the city because, one might infer, “the city is mechanical, not natural, and therefore does not suggest the nobility and dignity, human and divine, which are the true provinces of art.”²⁴ Architecture is the art above all others which achieves a state of platonic grandeur; mathematical order, speculation, the perception of harmony which lies in emotional relationships.²⁵ A work of art is a private matter for the artist, a building is not.²⁶ Art and architecture are the objectification of philosophy, the objectification of the concepts developed in the *virtus intellectiva*, such as the intelligibles of mathematics and geometry.²⁷ We could stop pretending that it is “a blend of art and science”, but is a discipline in its own right that happens to overlap some of the territory of painting, sculpture, statics, acoustics and so on.²⁸ The affinity between art and science was seen to be based on their common approximation to a condition of stasis, harmony, and invariability.²⁹ This idea was underlined by the constant juxtaposition of old and new: monographs on such French classical ‘masters’ as Poussin and Ingres were interleaved with articles by Charles Henry on the science of aesthetics; the Parthenon was compared to a modern automobile, and so on.³⁰ Art is not law, and we must consider the contract metaphorically.³¹ Architecture like all art is its own reward and the best antidote to a 100 year frustration.³² As Oscar Wilde has neatly informs us, “All art is quite useless”, without material function.³³ All art is erotic.³⁴ All art is to dissolve into constructing a new life.³⁵ Now art is the contrary of chaos.³⁶*

As Charles Jencks put it 40 years ago: 'the minute a new form is invented it will acquire, inevitably, a meaning.'³⁷ With Mies, form is put in the service of function; the "what," in Mies' language, is reduced to "how."³⁸ As Vico goes on to explain, "what form is (i.e. could be) the property of each natural thing when something may be added or subtracted at any moment?³⁹ It also attests that the present situation continues to demand new formats, new styles, new modalities of writing—some quicker, some slower, some smaller and more concise, some larger and more encompassing.⁴⁰ Each type differs from the others to the extent that each representational medium in residence (writing, art, film) differs from the others by a varying/differing formal proximity to its referent (writing being the farthest and film the closest).⁴¹ Therefore, a physical form is nothing but the continuous change of the thing.⁴² And frequency, as a form of oscillating repetition unaffected by hand or history, is understood as so unintentional as to dethrone character – which it no longer serves – as an old fashioned idea tethered to romantic notions of change over time. A typology of the formless is still a typology, absence of form is still form...⁴³ The man might be a master of space, but time is another matter altogether.⁴⁴ Our time is given to us as a soil on which we stand, as a task that we have to master.⁴⁵ For many contemporary architects, time is the enemy of their art.⁴⁶ And yet, time is there, embedded in works of architecture in its arrest.⁴⁷ It might be that for some artists and architects, the due time is not now but in a paradoxical future where, like the archeology of Brunelleschi, originality carries a different meaning.⁴⁸ The presence of historical time is tactile, emphatic.⁴⁹ They suggest that the eclectic fashion of their time is in itself self consciously and (recalling Plato's criticism of the Sophists) rhetorically historicist, and consequently more about re fashioning than fashioning anew:⁵⁰ All time is local.⁵¹ Time is a composite mode because it involves two places, one of which stands still while the other is in motion.⁵² The technology of cyberspace in its undifferentiated form in our time is the main cause of this psychosis.⁵³ The question is whether time is used to emancipate architecture, or if architecture is used to suppress time.⁵⁴ Time is an essential ingredient.⁵⁵

^{1,5,7}Denise Scott Brown, *Architecture Words 4: Having Words*, ^{2,49,50}José de Paiva, *The Living Tradition of Architecture*, ^{3,28,34}Reyner Banham, *A Critic Writes: Selected Essays by Reyner Banham*, ^{4,40}A. Krista Sykes, *Constructing a New Agenda: Architectural Theory 1993-2009*, ^{6,21,23}David Gartman, *From Autos to Architecture: Fordism and Architectural Aesthetics in the Twentieth Century*, ^{8,39,42,52}Donald Kunze, David Bertolini, Simone Brott, *Architecture Post Mortem: The Diastolic Architecture of Decline, Dystopia, and Death*, ⁹Matthew Poole, Manuel Shvartzberg, *The Politics of Parametricism: Digital Technologies in Architecture*, ¹⁰Miodrag Mitrasinovic, Jilly Traganou, *Travel, Space, Architecture*, ¹¹Mark Rakatansky, *Architecture Words 9: Tectonic Acts of Desire and Doubt*, ¹²Teresa Stoppani, Giorgio Ponzo, George Themistokleous, *This Thing Called Theory*, ^{13,22}Deyan Sudjic, *The Edifice Complex: The architecture of power*, ^{14,17}Christopher Alexander, Sara Ishikawa, Murray Silverstein, Max Jacobson, Ingrid Fiksdahl-King, Shlomo Angel, *A Pattern Language: Towns, Buildings, Construction*, ¹⁵Owen Hatherley, *A New Kind of Bleak: Journeys through Urban Britain*, ¹⁶Alberto Pérez-Gómez, *Attunement: Architectural Meaning after the Crisis of Modern Science*, ¹⁸Owen Hatherley, *Landscapes of Communism: A History Through Buildings*, ¹⁹Frederick Steiner, *Design for a Vulnerable Planet*, ²⁰Stephen R. Kellert, Judith Heerwagen, Martin Mador, *Biophilic Design: The Theory, Science and Practice of Bringing Buildings to Life*, ²⁴Donald Leslie Johnson, *Frank Lloyd Wright : The Early Years : Progressivism : Aesthetics : Cities*, ^{25,37}Patrik Schumacher, *The Autopoiesis of Architecture, Volume II: A New Agenda for Architecture*, ²⁶Joseph Masheck, *Adolf Loos: The Art of Architecture*, ²⁷Kyriaki Tsoukala, Nikolaos-Ion Terzoglou, Charikleia Pantelidou, *Intersections of Space and Ethos*, ^{29,30}Alan Colquhoun, *Modern Architecture*, ³¹Sandra Karina Loschke, *Materiality and Architecture*, ³²Charles Jencks, *The Story of Post-Modernism: Five Decades of the Ironic, Iconic and Critical in Architecture*, ³³Donald Leslie Johnson, *On Frank Lloyd Wright's Concrete Adobe: Irving Gill, Rudolph Schindler and the American Southwest*, ³⁵Patrik Schumacher, *The Autopoiesis of Architecture, Volume I: A New Framework for Architecture*, ³⁶Paul Goldberger, *Building Art: The Life and Work of Frank Gehry*, ^{38,47,51}Jassen Callender, *Architecture History and Theory in Reverse: From an Information Age to Eras of Meaning*, ⁴¹Amir H. Ameri, *The Architecture of the Illusive Distance*, ⁴³A. Krista Sykes, K. Michael Hays, *Constructing a New Agenda: Architectural Theory 1993-2009*, ^{44,46}Michael Pollan, *A Place of My Own: The Architecture of Daydreams*, ⁴⁵Gevork Hartoonian, *Architecture and Spectacle: A Critique*, ⁴⁸Lucien Steil, *The Architectural Capriccio: Memory, Fantasy and Invention*, ⁵³Nadir Lahiji, *The Political Unconscious of Architecture: Re-opening Jameson's Narrative*, ^{54,55}Rowan Moore, *Why We Build*.

ch_n6e110

Utility made Beautiful

An imagined speech of *ch_n6e110* at a gathering for 6 in the *Library_639*:

An Idea of the City¹

The city is too complicated for a solitary definition, and perhaps it is one of our greatest mistakes to think of it as a singular, measurable quality.² Etymologically at least, the process of moving to the city is by definition a civilizing experience – even if the road is long and hard.³ As Versailles is to Haussmann’s Paris, the Forbidden city is to both historic and contemporary Beijing.⁴ Without tradition, the city is inconceivable.⁵ The age of the industrial city is over, at least in the West, and it will never return.⁶ There is no such thing as a successful city without human capital.⁷ Mark that the capital city had a social as well as a political rôle to play.⁸ The consumer city is on the rise.⁹ While the industrial age was transformed by factories and trains, today’s city is redrawn by the mobile phone.¹⁰ The city is on the move because it is compelled to chase a constantly retreating “optimum” that recedes at a constant pace.¹¹ These elements of infrastructure and rules are essential to the sustainable city and help provide an operational definition of sustainability.¹² The city is becoming not just a collection of places and bodies but a living and connected network in which buildings, signs, users and vehicles communicate with each other in real time.¹³ More than anything else, a city is a device for making connections.¹⁴ Does an Art of the City Exist?¹⁵

A paradox of BIGNESS is that in spite of the calculation that goes into its planning in

fact, through its very rigidities it is the one architecture that engineers the unpredictable, instead of enforcing coexistence, BIGNESS depends on regimes of freedoms, the assembly of maximum difference.¹⁶ The ‘art’ of architecture is useless in BIGNESS.¹⁷ Or perhaps worse, if architecture is to be modelled on the planner’s reality, how is it possible to propose an “index” for “an idea of the city” beyond its false residue as a Classical Object?¹⁸ Here, as in many places, architecture acts within a dialectic between gentrification (“development”) and our historic rent laws that seek to codify and defend diversity, in which the market takes no interest.¹⁹ Architecture is utility made beautiful.²⁰ Rather, architecture is sociology turned into built form.²¹ A third lesson is that architecture is a constitutive part of the global moment of cities.²² In his view, architecture is countered by tragedy, which affords us a glimpse of chaos and transience.²³ Here, the art of architecture is found in the treasured old, not the fashionable new.²⁴ The neatness of architecture is its seduction; it defines, excludes, limits, separates from the “rest” but it also consumes.²⁵ The new city is no longer a static collection of places but ‘a computer in open air’.²⁶ The smart city is a sensor.²⁷ This pressure of historical time dissipates, while all forms of a fixed beginning, a predetermined or conceptually articulated ending and the idea of a duty or a mission are subsumed by a process that will henceforth be timeless.²⁸ Conversely, when time is a subject – time understood as a subjectivising entity – we call it memory.²⁹ In this way time, too, has become a kind of salt desert, whose surface allows all great speeds, both deceleration and acceleration.³⁰ Intensive time is not the forward marching time of action, event or history, but a directionless time made by machines.³¹ The feedback in real time preemptively turns the sites and spaces of the event into stages of memory.³² Time is a bomb that splits the most august temple open, if indeed the wanton savagery of men does not anticipate death’s weapon.³³ At the same time, we ought not imagine a romantic return to the preindustrial city—the medieval fortress town, or the baroque streetscape.³⁴ The social mode of baroque time is fashion, which changes every year; and in the world of fashion a new sin was invented—that of being out of date.³⁵ The abstractions of money, spatial perspective, and mechanical time provided the enclosing frame of the new life.³⁶

The dinner party, the ball, the formal visit, as worked out by the aristocracy and by those who, after the seventeenth century, aped them, gave satisfaction only to those for whom form is more important than content.³⁷ Unlike with good form, optimum form is not determined by the way in which an idea is represented in a physical sign (the classical model of representation) but through a dynamic concept of space and time.³⁸ But the formats of

deliberations, the calculations of costs, the circumvention or creation of rules, and the formulas that dictate specific outcomes are often not clear and therefore not amenable to simplistic procedures of democratic deliberation or participatory governance.³⁹ A form is a whole whose parts are not simply connected by juxtaposition and contiguity; they obey an intrinsic law, the only one capable of determining the meaning of the parts as taken together.⁴⁰ Of course, cohering these subjectivities into a collective form is intensely problematic and always risks diminishing the multiple into something lesser.⁴¹ Architectural form is no longer seen as representation but as process.⁴² The making of form is thus the real and effective necessary program of architecture.⁴³ At the heart of the problem of form is the model.⁴⁴

*Art and science have always shared a capacity to imagine.⁴⁵ As Terry Smith reminds, art is of and from the world.⁴⁶ “An art is never just an art: it is always at the same time the proposal of a world [proposition de monde]”.⁴⁷ For a work of art is not a monument: if it has a life at all, it exists as a contemporary fact: a fact of aesthetics, a fact of religion, a fact of philosophy.⁴⁸ The artwork reaches beyond its cultural value to shape the world; it contains ‘hidden agendas’, strategically couched in an artistic endeavour that by its nature offers alternative ways of seeing and perceiving.⁴⁹ Those who practise this ephemeral, fugitive art are always on the move, writing their own city on top of the existing one.⁵⁰ In *Passion*, by contrast, art is used as an aesthetic medium to approximate the world and reality as closely as possible.⁵¹ Art and nature are, in fact, expressions of culture, which, in its long evolution, melds them into a single material and spiritual manifestation, that is, the nature of art, the nature of humankind, the art of things, and the art of life.⁵² We enter and exit, going from representations to artifacts and from artifacts to representations, in an engrossing sequence of scripts that acquire and lose their form before our eyes.⁵³*

^{1,18} Edward M. Clift, Kevin O'Brien, Steve Hawley, *Imaging the City: Art, Creative Practices and Media Speculations*, ^{2,10,13,26,27} Leo Hollis, *Cities Are Good for You: The Genius of the Metropolis*, ³ Tom Miller, *China's Urban Billion: The Story behind the Biggest Migration in Human History*, ^{4,5,19,20} Michael Sorkin, *All Over the Map: Writing on Buildings and Cities*, ^{6,7,9} Edward Glaeser, *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier*, ^{8,33,35,36,37,48} Lewis Mumford, *The Culture of Cities*, ¹¹ Carl Abbott, *Imagining Urban Futures: Cities in Science Fiction and What We Might Learn from Them*, ¹² Steven Cohen, *The Sustainable City*, ¹⁴ Carl Abbott, *Imagining Urban Futures*, ^{15,40,44,52,53} Raffaele Milani, *The Art of the City*, ^{16,17,25} Rem Koolhaas, Bruce Mau, *S M L XL*, ^{21,22} Göran Therborn, *Cities of Power: The Urban, The National, The Popular, The Global*, ^{23,28,29,30,31,32,38,51} Wim Nijenhuis, *The Riddle Of The Real City*, ²⁴ Roberta Brandes Gratz, *The Battle for Gotham: New York in the Shadow of Robert Moses and Jane Jacobs*, ³⁴ Lawrence A. Herzog, *Return to the Center*, ³⁹ AbdouMaliq Simone, Edgar Pieterse, *New Urban Worlds: Inhabiting Dissonant Times*, ⁴¹ Paul Dobraszczyk, *The Dead City: Urban Ruins and the Spectacle of Decay*, ^{42,43} Pier Vittorio Aureli, *The Possibility of an Absolute Architecture*, ^{45,46,49} Elizabeth M. Grierson, *Transformations: Art and the City*, ⁴⁷ Sherry Simon, *Speaking Memory: How Translation Shapes City Life*, ⁵⁰ Stavros Stavrides, *Common Space: The City as Commons*.

EPILOGUE

4.1 *A Weightless Spiral*

Play Among Books in two plays performed on an *Informational Instrument* opens up a fantasy of what digital literacy in a world abundant with information and data might be about. Playing with an *Informational Instrument* is a weightless and endless spiral of communication between an intimate library and an infinite flow of books: *Xenotheka* and *Bibliotheka*. Its galaxy of concepts and *atom-letters* offers a way to navigate the plenty, talk to books, and think with concepts. It opens a space for learning and exploring. Rather than carrying out a theoretical analysis of discourses and books, by playing with an *Informational Instrument*, one starts playing with books on an abstract level of information. Instead of defining and confining them, one can invite books to one's own library and challenge them, allow them to show their mastery on a symposium with other books. Instead of giving answers, *Play Among Books* keeps questions alive and vivid. A book, by visiting different libraries—in its interplay with other books—shows more than what was conceived in it. Its character is a part of the character and mastery of the performer. A book is simultaneously independent and dependent; it behaves differently in each galaxy it visits. *Play Among Books* composes an instrument, finds formats and ways of performing, and develops a visual and conceptual space to do so; *Xenotheka*, *Bibliotheka*, *Generic Machine*, and *Machine intelligence* are its elements; Books are its actors; *Atom-Letters* are its alphabet; *Galaxy of concepts* is a space through which one talks to books, learns with concepts, and navigates the plenty. In its two plays, it forms a cycle. Six characters, at the end of the second play, become six new versions of *Xenotheka*, six new avatars ready to start exploring in a new cycle. By tuning the instrument and upgrading it with new available knowledge, modifying *Xenotheka* and finding new flows of *Bibliotheka*, it becomes a never-ending play open to any articulation. Its concepts and elements are flexible; they are placeholders for any kind of media and information. They do not define, but keep elements alive.

Play Among Books is lightweight; it requires minimal physical infrastructure, a new kind of literacy, and an endless flow of information. What digital literacy is, remains an open question. This

work does not want to define it, but rather perform with it. One performance is the articulation of an *Informational Instrument*, and the other one is a performance with it. The core of the instrument in its current state is articulated in less than a hundred and fifty lines of code, and composed in eleven symbolic poems. This collection of poems unfolds into an endless *Play Among Books* on a personal computer with an Internet connection. Nothing more is needed. One is suddenly immersed in the cloud, behaving in the manner —still not in scale— of big clouds like Google, Facebook, Amazon, Instagram. One is scanning and taking snapshots of anything of interest. As an avatar in a cloud, one behaves like a search engine and social media platform. Suddenly, one is dealing with hundreds of thousands, even millions of informational objects, without being afraid of them. All the grounds are shaken, the atmosphere is new. Mixing and encoding of data streams can articulate and encapsulate different aspects of the world; a storm of letters and numbers. A vertigo. One possible way to explore this is to dive right into it: personal filtering, searching, crawling. Use of machine learning. Writing a poem, coding a couple of them, articulating profiles, brands and avatars. My consistency, my many brands. They are exploring with me. Taste is a digital filter, a vector in a particular context. It changes as the context changes but can stay intimate, particular, and deliberate. It is an adventure, a game, an articulation, an explosion and a condensation of flavours. What is the digital weather like? It is about taking a walk in the cloud, and composing one's own cloud by playing with data. All of this from a personal computer. Fantastic, but not easy. As any other literacy, it requires patience, love, practice, learning, time, and a community.

4.2 *Writing in Atom-Letters*

Writing in *Atom-Letters* is thinking in a digital literacy. In a *Play Among Books*, one writes in probabilistic letters and treats text computationally. One synthesises many algebraic author-functions and articulates various characters as possible brands. With each new library, *atom-letters* change and books present themselves under a new light. One doesn't need to know or read a specific book or a library. One should just welcome it to one's own *Xenotheka* and start communicating. By transforming, splitting, and multiplying *Xenotheka*, one can always have fresh, interesting, and new conversations with the same friend. A book is never alone; it is always

a part of a library. If one goes further, one can start playing with information and data not just independent of its meaning, but from media as well. One is transforming sound into images, images into sculptures, sculptures into avatars. Avatars start to speak... Any media can be transformed into another. Consistency is always in the cloud and in the way one encodes it. With *machine learning* and *big data*, one can treat any data and any media by operating with similar techniques and approaches. This is the beauty that comes out of working and playing with coding and information as a literacy. It is beyond discipline. It opens up ways we can think about the world. Its elements and artefacts can be encoded from a personal and group perspective, as a person and as a group, in any way one can imagine. Phenomena become relative to each other and open to the world.

In this manner, when we think of architecture and approaches that would take into account the digital and bring coding to the table on the level of literacy, we find ourselves in a strange constellation. How could architects reinvent reading, writing, and printing when architecture is coded digitally? At the moment, a lot of architects are referring to these kinds of questions. They are predominantly frightened by the plenty, the sheer amount of data, and the disruptions it brings to the discourse, discipline and established hierarchies, so they tend to ignore it and stick to established knowledge. On the other hand, ones interested in technology mostly still see data as a direct reflection of reality, and their efforts lie in optimisation, efficiency, forensics and sustainability in designs of cities, houses and objects. As current trends are shifting towards machine learning and big data, blinded by the performance, architects rarely ask what the digital is about. Of course, it is more about how we formulate this question than about answering it correctly.

One provocative formulation of bringing architecture in relation to technology was proposed in the late nineteen thirties by Marcel Breuer: "*The origin of the Modern Movement was not technological, for technology had been developed long before it was thought of. What the New Architecture did was to civilize technology.*"¹ If we agree with Breuer that the New Architecture of the Modern Movement was about civilising technology, can we in the context of the digital invert the question and ask what would it mean to domesticate information technologies, without losing their civility and performativity? Can we think of *Xenotheka* as an attempt to do so? In this sense, *Play Among Books* tried to approach the digital via literacy which keeps it undecided, and via a performance that can —in its plays —keep the digital fertile and alive, without a need to quantify its every performance towards an functional goal. One of the challenges for architecture in the

1 See Peter Blake, *Marcel Breuer: Architect and Designer*, 1st edition (Architectural Record/Museum of Modern Art, 1949), 121.

world of data is to explore how digital literacy relates to architectural design when it is conceived from the plenty and articulated via a digital code. What would its possible scenarios be? Writing in terms of code, thinking in terms of panoramas and *Xenotheka*, branding in terms of characters? If so, then probably the elements of architecture would not be floor, wall, ceiling and roof,² but something much more abstract and open. Perhaps a different kind of *atom-letters*?

4.3 Characters Without Scripts

Synthetic characters written in *atom-letters* bring plenty to the table. They come from the plenty, they can deal with a *lot*. In the finale of the second *Plentiful Play*, six characters were articulated out of a *Bibliotheka* of 12,303 books. I have never seen, opened, or read those books, and yet, all six characters are, in some way, a reflection of my character and my interest in architecture and information. They are me and not me. We are related, but they are independent, yet dependent on me. They are characters with a specific motivation but without a given script. Avatars, bots, aliens from *Xenotheka*. They do not follow narratives like actors in a movie or theatre, but are still able to talk. Each one has its own panorama of concepts, with its own sensitivity and an atmosphere. Their consistency is in their bodies of information, in their individual libraries, and my encodings. They are probabilistic characters. If one gives them a context, they can develop in many ways. One way to think about it would be to contemplate the techniques of how to relate different media around them, and make them talk about phenomena they have never seen or heard of. The manner of their talk would be automatic but not independent, with a character of its own, but without a script.

The fantasy is that an identity in the digital can become many and have multiple avatars at once, each one with its own atmosphere and motivation. As we have seen in the second play, *Xenotheka* gave six faces to my interests. They are fictions, my synthetic personalities that do not explicate me as a person. They are a part of my many identities. I can project whatever I like. Let us keep in mind that they are empty placeholders written in probabilistic letters and not defined

² Rem Koolhaas, *Elements of Architecture** (Köln: TASCHEN, 2018).

entities. They do not represent but rather articulate a local character of a global weather. A place where the global and the local meet, biased from many sides. The promise is that by bringing different media in relation through various versions of *Xenotheka*, one can find captivating consistencies in the flows of information and bring them together in characters such as the characters from *A Gathering for Six*. By giving them time and space, frequency and a medium, they will make consistent profiles that could potentially unfold and become actors in the digital. As an attempt to do so, *ch3n81 Morphing with the Mood* was brought in relation with architectural blogs *ArchDaily* and *Dezeen* and given a voice on social media. It changed its name to *Alice_ch_n3e81* and she is now commenting and tweeting about images and concepts she likes. Follow her on *Twitter*.³

What becomes another fantasy with avatars like *Alice_ch_n3e81* is a manner in which avatars can—in an indirect way, independently and dependently, without a scenario, but with an interest, and a character of their own—start to profile and mix different streams from the web. These profiles bring together the actual and the virtual, Earth and Google Earth. They can work with a lot, articulate in millions, produce artificial flavours, and constitute brands. These kinds of avatars navigate the web in a manner of big players like Google, Facebook, Amazon and Instagram. They use techniques of the same kind. They can profile anything they like, just like Google does. My avatars are profiling Google, ArchDaily, Le Corbusier, Tokyo, whiskey... Who are they? They are me and not me. It is a space where anyone can profile anyone from many perspectives. One profiles objects of interest not by trying to find a direct relationship between the 'real' and the 'virtual', but by articulating good enough avatars. If avatars are operational, more avatars are constituted. Fictions start to talk to fictions in large numbers. Virtual becomes open to discussion, and a multiplicity of profiles start to populate and talk about the digital. A new privacy, a new politics?

3 See https://twitter.com/Alice_ch_n3e81

A Matter of Harmonies

Nothing has ever been invented by one man in architecture.¹

Architecture is stifled by custom.²

Architecture is a plastic thing.³

Architecture is a thing of art, a phenomenon of the emotions [...].⁴

Architecture is a matter of “harmonies,” it is “a pure creation of the spirit.”⁵

Architecture is a very noble art.⁶

Architecture is governed by standards.⁷

Architecture is stifled by custom.⁸

The “styles” are a lie.⁹

Architecture is very broad.¹⁰

Architecture is nothing but ordered arrangement, noble prisms, seen in light.¹¹

Architecture is based on axes.¹²

Architecture is a plastic, not a romantic, affair.¹³

Architecture is very well able to express itself in a precise fashion.¹⁴

Architecture is a plastic thing.¹⁵

Architecture is stifled by custom.¹⁶

But wait a little, architecture is not only a question of arrangement.¹⁷

Writing on architecture is not like history or poetry.¹⁸ For this book does not show of what architecture is composed, but treats of the origin of the building art, how it was fostered, and how it made progress, step by step, until it reached its present perfection.¹⁹ I would like to emphasise above all that architecture is a game lacking clear rules.²⁰ Architecture is at one and the same time a science and an art.²¹ But all the possible alternatives are not in fact realized: there are a good many partial groups, regional compatibilities, and coherent architectures that might have emerged, yet did not do so.²² And architecture, too, has this mysterious dimension of the frontier between two worlds of space.²³ Architecture positions its ensembles—houses, towns or cities, monuments or factories—to function like faces in the landscape they transform.²⁴

The house stares through its windows at the vineyards and tufts of thyme, ornamental oranges take shape on its walls, a tissue of lies, oranges and lemons. The philosopher forgets that the house, built around him, transforms a plantation of olive trees into a Max Ernst painting. The architect has forgotten this too. And is happy if the next harvest, outside, is transformed into a Virgin with Grapes, inside. The house transforms the given, which can assault us, softening it into icons: it is a box for generating images, a cavern or eye or camera obscura, a barn which sunlight only illuminates with a slim shaft piercing through the dust – an ear. Architecture produces painting, as though the fresco or canvas hanging on the wall revealed the ultimate cause of the whole structure. The aim of architecture is painting or tapestry. What we took to be mere ornament is its objective, or at the very least its end product. Walls are for paintings, windows for pictures. And padded doors for intimate conversations.²⁵

I now held in my hands a vast and systematic fragment of the entire history of an unknown planet, with its architectures and its playing cards, the horror of its mythologies and the murmur of its tongues, its emperors and its seas, its minerals and its birds and fishes, its algebra and its fire, its theological and metaphysical controversies—all joined, articulated, coherent, and with no visible doctrinal purpose or hint of parody.²⁶ Beyond this stage of perfection in architecture, natural selection could not lead; for the comb of the hive bee, as far as we can see, is absolutely perfect in economising wax.²⁷ For architecture, among all the arts, is the one that most boldly tries to reproduce in its rhythm the order of the universe, which the ancients called “kosmos,” that is to say ornate, since it is like a great animal on whom there shine the perfection and the proportion of all its members.²⁸

¹ Ayn Rand, *The Fountainhead*, ^{2,3,4,5,6,7,8,9,11,12,13,14,15,16,17} LeCorbusier, *Towards a New Architecture*, ¹⁰ Richard Rogers, *A Place for All People: Life, Architecture and the Fair Society*, ^{18,19} Vitruvius Pollio, *The Ten Books on Architecture*, ²⁰ Toyo Ito, *Tarzans in the Media Forest*, ²¹ Jean-Nicholas-Louis Durand, *Précis of the Lectures on Architecture*, ²² Michel Foucault, *The Archaeology of Knowledge*, ²³ Marshall McLuhan, *The Gutenberg Galaxy*, ²⁴ Gilles Deleuze, *A Thousand Plateaus: Capitalism and Schizophrenia*, ²⁵ Michel Serres, *The Five Senses: A Philosophy of Mingled Bodies*, ²⁶ Jorge Luis Borges, *Collected Fictions*, ²⁷ Charles Darwin, *On the Origin of Species: A Facsimile of the First Edition*, ²⁸ Umberto Eco, *The Name Of The Rose*.

BIBLIOGRAPHY and ILLUSTRATIONS

5.1 Bibliography

- Abbott, Edwin A. *Flatland: A Romance of Many Dimensions*. Unabridged edition. New York: Dover Publications, 1992.
- Alberti, Leon. *On Painting*. Translated by Cecil Grayson. Penguin Books, 2004. ebook.
- . *The Architecture of Leon Batista Alberti*. In *Ten Books*. London: Printed by Edward Owen, 1755.
- Alexander, Christopher. *A Pattern Language: Towns, Buildings, Construction*. New York: OUP USA, 1978.
- “Amazon.Com: Online Shopping for Electronics, Apparel, Computers, Books, DVDs & More.” Accessed September 8, 2018. <https://www.amazon.com/>.
- Anderson, Chris. “The End of Theory: The Data Deluge Makes the Scientific Method Obsolete.” *Wired*, June 23, 2008. <https://www.wired.com/2008/06/pb-theory/>.
- “Architect | Origin and Meaning of Architect by Online Etymology Dictionary.” Accessed December 2, 2018. <https://www.etymonline.com/word/architect>.
- “Artificial Intelligence.” In *Wikipedia*, August 14, 2018. https://en.wikipedia.org/w/index.php?title=Artificial_intelligence&oldid=854873425.
- Ayache, Elie. *The Blank Swan: The End of Probability*. 1 edition. Chichester, West Sussex, U.K.: Wiley, 2010, ebook.
- Banham, Reyner. *A Critic Writes: Selected Essays by Reyner Banham*. Edited by Mary Banham, Sutherland Lyall, Cedric Price, and Paul Barker. First Edition,. Berkeley, Calif.: University of California Press, 1999.
- Barad, Karen. *What Is the Measure of Nothingness: Infinity, Virtuality, Justice*. Bilingual edition. Ostfildern: Hatje Cantz, 2012.
- Barthes, Roland. “The Death of the Author.” *Media Texts, Authors and Readers: A Reader*, 1994, 166.
- Baudrillard, Jean. *Simulacra and Simulation*. Translated by Sheila Faria Glaser. 14th Printing edition. Ann Arbor: University of Michigan Press, 1994.
- Beaucé, Patrick, and Bernard Cache. *Objectile, Fast-Wood: A Brouillon Project*. Berlin, Boston: De Gruyter, 2007. <https://www.degruyter.com/view/product/212277>.
- “Bibliothec | Origin and Meaning of Bibliothec by Online Etymology Dictionary.” Accessed October 26, 2018. <https://www.etymonline.com/word/bibliothec>.
- “Big Data.” In *Wikipedia*, November 29, 2018. https://en.wikipedia.org/w/index.php?title=Big_data&oldid=871190082.
- “Black Box.” In *Wikipedia*, August 12, 2018. https://en.wikipedia.org/w/index.php?title=Black_box&oldid=854586942.
- Blake, Peter. *Marcel Breuer: Architect and Designer*. 1st edition. Architectural Record/Museum of Modern Art, 1949.
- “Books of the World, Stand up and Be Counted! All 129,864,880 of You.” Accessed August 30, 2018. <http://booksearch.blogspot.com/2010/08/books-of-world-stand-up-and-be-counted.html>.

- Borges, Jorge Luis. "Pierre Menard, Author of the Quixote." In *Collected Fictions*, translated by Andrew Hurley. New York, NY: Penguin Books, 1999, ebook.
- . "The Book of Sand." In *Collected Fictions*, translated by Andrew Hurley. New York, NY: Penguin Books, 1999, ebook.
- . "The Library of Babel." In *Collected Fictions*, translated by Andrew Hurley. New York, NY: Penguin Books, 1999, ebook.
- Brillouin, Leon. *Science and Information Theory: Second Edition*. Second edition. Mineola, New York: Dover Publications, 2013, ebook.
- Bühlmann, Vera. "Articulating a Thing Entirely in Its Own Terms Or: What Can We Understand by the Notion of «engendering»?" In *Eigenarchitecture*, edited by Ludger Hovestadt and Vera Bühlmann, 69–127. Birkhauser Architecture, 2014.
- . *Mathematics and Information in the Philosophy of Michel Serres*. Edited by David Webb and Joanna Hodge. S.l.: Bloomsbury Academic, 2019.
- Bühlmann, Vera, Ludger Hovestadt, and Vahid Moosavi, eds. *Coding as Literacy: Metalithikum IV*. Birkhäuser, 2015.
- Bühlmann, Vera, and Martin Wiedmer. *Pre-Specifics: Some Comparatistic Investigations on Research in Design and Art*. JRP Ringier, 2008.
- "Calibre - E-Book Management." Accessed August 29, 2018. <https://calibre-ebook.com/>.
- Carmo, Mario. *Architecture in the Age of Printing: Orality, Writing, Typography, and Printed Images in the History of Architectural Theory*. Translated by Sarah Benson. Reprint edition. S.l.: The MIT Press, 2017.
- . *The Alphabet and the Algorithm*. MIT Press, 2011.
- . *The Second Digital Turn: Design Beyond Intelligence*. 1 edition. Cambridge, Massachusetts: The MIT Press, 2017, ebook.
- "Centrality." In *Wikipedia*, July 11, 2018. <https://en.wikipedia.org/w/index.php?title=Centrality&oldid=849855645>.
- Chomsky, Noam. *Aspects of the Theory of Syntax*. Anniversary, Reprint edition. Cambridge, Massachusetts: The MIT Press, 2014, ebook.
- . *Syntactic Structures*. Walter de Gruyter, 1957.
- "Cipher | Origin and Meaning of Cipher by Online Etymology Dictionary." Accessed August 19, 2018. <https://www.etymonline.com/word/cipher>.
- "Code | Origin and Meaning of Code by Online Etymology Dictionary." Accessed August 19, 2018. <https://www.etymonline.com/word/code>.
- "Comparison of E-Book Formats." In *Wikipedia*, July 1, 2018. https://en.wikipedia.org/w/index.php?title=Comparison_of_e-book_formats&oldid=848311067.
- Corbusier, Le. *Towards a New Architecture*. Dover Publications, 1923.
- "Data | Origin and Meaning of Data by Online Etymology Dictionary." Accessed August 19, 2018. <https://www.etymonline.com/word/data>.
- "Date | Origin and Meaning of Date by Online Etymology Dictionary." Accessed August 19, 2018. <https://www.etymonline.com/word/date>.
- Davisson, C. J., and L. H. Germer. "Reflection of Electrons by a Crystal of Nickel." *Proceedings*

- of the *National Academy of Sciences of the United States of America* 14, no. 4 (April 1928): 317–22.
- Delbeke, Maarten. “A Book Accessible to All.” *AA Files*, no. 69 (2014): 118–22.
- Deleuze, Gilles. *Bergsonism*. Translated by Hugh Tomlinson and Barbara Habberjam. New York: Zone Books, 1991.
- Deleuze, Gilles, and Felix Guattari. “10,000 BC: The Geology of Morals (Who Does the Earth Think It Is?).” In *A Thousand Plateaus*, 39–74, 1987.
- . *A Thousand Plateaus*. London: Bloomsbury Academic, 1980.
- Eco, Umberto. *From the Tree to the Labyrinth: Historical Studies on the Sign and Interpretation*. Translated by Anthony Oldcorn. First Edition edition. Cambridge, Massachusetts: Harvard University Press, 2014, ebook.
- . *On Literature*. Harcourt, 2005, ebook.
- . *The Infinity of Lists: An Illustrated Essay*. Translated by Alastair McEwen. New York: Rizzoli, 2009.
- Feynman, Richard Phillips, and A. Zee. *QED: The Strange Theory of Light and Matter*. Princeton University Press, 2006.
- Foucault, Michel. *The Order of Things: An Archaeology of Human Sciences*. Knopf Doubleday Publishing Group, 1966.
- . “What Is an Author?” In *Language, Counter-Memory, Practice: Selected Essays and Interviews*, 113–38. Oxford: Basil Blackwell, 1978.
- Giedion, Sigfried. *Mechanization Takes Command: A Contribution to Anonymous History*. 1 edition. Minneapolis: Univ Of Minnesota Press, 2014.
- “Google Books.” Accessed September 8, 2018. <https://books.google.com/?hl=en>.
- “Google Matrix,” in *Wikipedia*, June 23, 2018, https://en.wikipedia.org/w/index.php?title=Google_matrix&oldid=847217303.
- “Google Ngram Viewer.” In *Wikipedia*, August 14, 2018. https://en.wikipedia.org/w/index.php?title=Google_Ngram_Viewer&oldid=854920230.
- Grafton, Anthony. *Leon Battista Alberti: Master Builder of the Italian Renaissance*. 1st US-1st Printing edition. Harvard: Harvard University Press, 2002.
- “Graph Theory.” In *Wikipedia*, August 23, 2018. https://en.wikipedia.org/w/index.php?title=Graph_theory&oldid=856160787.
- Halevy, Alon, Peter Norvig, and Fernando Pereira. “The Unreasonable Effectiveness of Data.” *Intelligent Systems, IEEE* 24, no. 2 (2009): 8–12.
- Havelock, Eric A. *Preface to Plato*. Revised edition. Cambridge, Mass.: Belknap Press: An Imprint of Harvard University Press, 1963.
- Hjelmslev, Louis. *Prolegomena to a Theory of Language*. University of Wisconsin Press, 1969.
- Hofstadter, Douglas R. *Gödel, Escher, Bach: An Eternal Golden Braid*. Anniversary edition. New York: Basic Books, 1999, ebook.
- . *I Am a Strange Loop*. Reprint edition. New York, NY: Basic Books, 2008, ebook..
- Hovestadt, Ludger. “A Fantastic Genealogy of the Printable.” In *Applied Virtuality Book Series Printed Physics — Metalithikum I*, edited by Prof Dr Vera Bühlmann and

- Dr Ludger Hovestadt, 18–70. Springer Vienna, 2013. http://link.springer.com/chapter/10.1007/978-3-7091-1485-8_1.
- . “Cultivating the Generic.” In *Eigenarchitecture*, edited by Ludger Hovestadt and Vera Bühlmann, 07–68. Birkhauser Architecture, 2014.
- . “Elements of a Digital Architecture.” In *Coding as Litteracy - Methalitikum IV*. Birkhäuser, 2015.
- Hovestadt, Ludger, Vera Bühlmann, Diana Alvarez, Miro Roman, and Michael Sebastian. *A Quantum City*. Vol. 10. Applied Virtuality Book Series. Basel: Birkhäuser, 2015.
- Hovestadt, Ludger, Vera Bühlmann, and Michael Sebastian. *Genius Planet – Energy: From Scarcity to Abundance, a Radical Pathway*. 1 edition. Basel, Switzerland: Birkhauser, 2017.
- Hugo, Victor, and Adam Gopnik. *Les Misérables*. Translated by Julie Rose. New York: Modern Library, 2009.
- “Information | Origin and Meaning of Information by Online Etymology Dictionary.” Accessed August 19, 2018. <https://www.etymonline.com/word/information>.
- Ingels, Bjarke. *Yes Is More: An Archicomic on Architectural Evolution*. 1 edition. Köln: TASCHEN, 2009.
- “Internet Archive: Digital Library of Free & Borrowable Books, Movies, Music & Wayback Machine.” Accessed September 8, 2018. <https://archive.org/>.
- “IP Address.” In *Wikipedia*, August 13, 2018. https://en.wikipedia.org/w/index.php?title=IP_address&oldid=854674755.
- Jacob, Sam. “Faster, But Slower.” *Log*, no. 29 (2013): 145–52.
- . “MONEY : TIME : SPACE.” In *Real Estates: Life without Debt*, edited by Jack Self and Shumi Bose, First edition. London: Bedford Press, 2014. ebook.
- Joyce, James. “Ulysses,” July 1, 2003. <http://www.gutenberg.org/ebooks/4300>.
- “Kindle Store.” In *Wikipedia*, June 24, 2018. https://en.wikipedia.org/w/index.php?title=Kindle_Store&oldid=847324355.
- Kipnis, Jeffrey, and Peter Eisenman. *By Other Means: Notes, Projects, and Ephemera from the Miscellany of Peter Eisenman*. Edited by Mathew Ford. New York, NY: Global Art Affairs Publishing, 2017.
- Kohonen, Teuvo. “Self-Organized Formation of Topologically Correct Feature Maps.” *Biological Cybernetics* 43, no. 1 (January 1982): 59–69. <https://doi.org/10.1007/BF00337288>.
- . “What Makes The Self-Organizing Map (SOM) So Particular Among Learning Algorithms?” In *Coding as Literacy: Metalithikum IV*, edited by Vera Bühlmann, Ludger Hovestadt, and Vahid Moosavi. Birkhäuser, 2015.
- Koolhaas, Rem. *Elements of Architecture**. Köln: TASCHEN, 2018.
- . “Generic City.” In *S, M, L, XL*, 1238–70. The Monacelli Press, 1995.
- . “Junkspace.” *October* no. 100 (2002): 175–90.
- . “My Thoughts on the Smart City,” 2014. http://ec.europa.eu/archives/commission_2010-2014/kroes/en/content/my-thoughts-smart-city-rem-koolhaas.html.
- . *S, M, L, XL*. The Monacelli Press, 1995.
- Langer, Susanne Katherina Knauth. *Philosophy in a New Key: A Study in the Symbolism of Reason*,

- Rite, and Art*. New American Library, 1942.
- Leibniz, Gottfried Wilhelm, and Austin Farrer. *Theodicy, Essays on the Goodness of God, the Freedom of Man and the Origin of Evil*. Translated by E. M. Huggard, 2005. <https://www.gutenberg.org/ebooks/17147>.
- “Library Genesis.” Accessed September 8, 2018. <http://gen.lib.rus.ec/>.
- Livy, Titus. *The Early History of Rome*. Translated by Aubrey de Selincourt. Penguin UK, 2005.
- Longo, Giuseppe, and Maël Montévil. *Comparing Symmetries in Models and Simulations*. Springer, to appear, 2016.
- Luhmann, Niklas. *Theory of Society*. Vol. 1. Stanford University Press, 2012.
- Lynch, Kevin. *The Image of the City*. MIT Press, 1960.
- Machiavelli, Nicoló. *The Prince*. Translated by W. K. Marriott, 2016, <https://www.gutenberg.org/ebooks/1232>.
- Marinčić, Nikola. “Towards Communication in CAAD: Spectral Characterisation and Modelling with Conjugate Symbolic Domains.” Doctoral Thesis, ETH Zurich, 2017. <https://doi.org/10.3929/ethz-b-000216502>.
- Markov, Andreï Andreevich. “An Example of Statistical Investigation of the Text Eugene Onegin Concerning the Connection of Samples in Chains.” *Science in Context* 19, no. 4 (1913 2006): 591–600.
- Marquis, Jean-Pierre. “Category Theory.” In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta. Metaphysics Research Lab, Stanford University, 2015. <http://plato.stanford.edu/archives/win2015/entries/category-theory/>.
- Massumi, Brian. “Realer than Real.” *Copyright No.1*, 1987, 90–97.
- McLuhan, Marshall. *The Gutenberg Galaxy: The Making of Typographic Man*. University of Toronto Press, 1962. ebook.
- “Memory of the World Library.” Accessed September 8, 2018. <https://library.memoryoftheworld.org/>.
- Monod, Jacques. *Chance and Necessity: An Essay on the Natural Philosophy of Modern Biology*. Penguin, 1970.
- “Monoskop.” Accessed September 8, 2018. <https://monoskop.org/Monoskop>.
- Moosavi, Vahid. “Computing With Contextual Numbers.” *ArXiv:1408.0889 [Cs]*, August 5, 2014. <http://arxiv.org/abs/1408.0889>.
- . “Pre-Specific Modeling: Computational Machines in Coexistence with Urban Data Streams.” Doctoral Thesis, ETH Zurich, 2015. <https://doi.org/10.3929/ethz-a-010544366>.
- “Natural Language Processing.” In *Wikipedia*, December 9, 2018. https://en.wikipedia.org/w/index.php?title=Natural_language_processing&oldid=872887903.
- Negroponte, Nicholas. *Being Digital*. 1 edition. New York, NY: Vintage, 1996, ebook.
- Norvig, Peter. “On Chomsky and the Two Cultures of Statistical Learning,” 2011. <http://norvig.com/chomsky.html>.
- Oechslin, Werner. “Das Architekturmodell – Idea Materialis.” In *Die Medien Und Die Architektur*, edited by Wolfgang Sonne, 131–55. Deutscher Kunstverlag, 2011.
- . “Werner Oechslin Library Foundation.” Accessed October 2, 2016. [411](http://www.bibliothek-</p>
</div>
<div data-bbox=)

- oechslin.org/library.
- Online Etymology Dictionary. “Lot (N.),” November 28, 2017. <https://www.etymonline.com/word/lot>.
- “Online Etymology Dictionary.” Accessed August 30, 2018. <https://www.etymonline.com/>.
- Orozco Esquivel, Jorge. “Indexical Architecture: Prominent Positions, Applications and the Web.” Doctoral Thesis, ETH Zurich, 2017. <https://doi.org/10.3929/ethz-b-000257185>.
- “PageRank.” In *Wikipedia*, December 16, 2018. <https://en.wikipedia.org/w/index.php?title=PageRank&oldid=873973536>.
- Parry, Richard. “Episteme and Techne.” In *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta, 2014. <https://plato.stanford.edu/archives/fall2014/entries/episteme-techne/>.
- Pico Della Mirandola, Giovanni. *Oration on the Dignity of Man*. Translated by A. Robert Gaponigri. Chicago: Henry Regnery Company, 1956.
- “Project Gutenberg.” Project Gutenberg. Accessed September 8, 2018. <http://www.gutenberg.org/>.
- “Project Gutenberg,” in *Wikipedia*, January 21, 2019, https://en.wikipedia.org/w/index.php?title=Project_Gutenberg&oldid=879451717.
- Rossi, Aldo. *Architettura Della Città*. MIT Press, 1966.
- Rouvroy, Antoinette. “Of Data and Men.” *Fundamental Rights and Freedoms in a World of Big Data*, 2016.
- Rouvroy, Antoinette, and Bernard Stiegler. “The Digital Regime of Truth: From the Algorithmic Governmentality to a New Rule of Law.” Translated by Anaïs Nony and Benoît Dillet. *La Deleuziana: Online Journal of Philosophy*, no. 3 (2016): 6–29.
- Ruskin, John. *The Seven Lamps of Architecture*. Reprint edition. New York: Dover Publications, 1989.
- Saussure, Ferdinand de. *Course in General Linguistics*. Translated by Roy Harris. Reprint edition. London ; New York: Bloomsbury Academic, 2013. ebook.
- Schrödinger, Erwin. *What Is Life? The Physical Aspect of the Living Cell*. Cambridge: Cambridge University Press, 1944.
- Schumacher, Patrik. *The Autopoiesis of Architecture: A New Agenda for Architecture*. 1. edition. Wiley, 2012, ebook.
- . *The Autopoiesis of Architecture: A New Framework for Architecture*. Wiley, 2011, ebook.
- Self, Jack, and Shumi Bose, eds. *Real Estates: Life without Debt*. First edition. London: Bedford Press, 2014.
- “Self-Organizing Map.” In *Wikipedia*, August 27, 2018. https://en.wikipedia.org/w/index.php?title=Self-organizing_map&oldid=856761333.
- Serres, Michel. *Geometry: The Third Book of Foundations*. Translated by Randolph Burks. London ; New York: Bloomsbury Academic, 2017, ebook.
- . “Noise.” *SubStance* 12, no. 3 (1983): 48–4. <https://doi.org/10.2307/3684255>.
- . “Revolution Cognitive et Culturelle (Engl. Translation).” *Monas Oikos Nomos* (blog), 2007. <http://monasandnomos.org/2012/11/07/michel-serres-revolution-cognitive-et-culturelle-engl-translation/>.
- . *The Birth of Physics*. Clinamen Press, 1977.

- . *The Parasite*. Translated by Lawrence R. Schehr. Baltimore: The Johns Hopkins University Press, 1982.
- . *Thumbelina: The Culture and Technology of Millennials*. Translated by Daniel W. Smith. London ; New York: Rowman & Littlefield International, 2014. ebook.
- Serres, Michel, and Bruno Latour. *Conversations on Science, Culture, and Time: Michel Serres with Bruno Latour*. Translated by Roxanne Lapidus. Ann Arbor, Mich: University of Michigan Press, 1995.
- Shakespeare, William. *The Tragedy of Romeo and Juliet*, 1997. <http://www.gutenberg.org/ebooks/1112>.
- Shannon, C.E. “A Mathematical Theory of Communication.” *Bell System Technical Journal*, *The* 27, no. 3 (July 1948): 379–423. <https://doi.org/10.1002/j.1538-7305.1948.tb01338.x>.
- “SI Base Unit.” In *Wikipedia*, August 26, 2018. https://en.wikipedia.org/w/index.php?title=SI_base_unit&oldid=856600454.
- Spuybroek, Lars. *The Sympathy of Things: Ruskin and the Ecology of Design*. 2 Revised edition edition. London Oxford New York New Delhi Sydney: Bloomsbury Publishing PLC, 2016, ebook.
- “Stemming.” In *Wikipedia*, July 6, 2018. <https://en.wikipedia.org/w/index.php?title=Stemming&oldid=849076995>.
- “Stop Words.” In *Wikipedia*, August 13, 2018. https://en.wikipedia.org/w/index.php?title=Stop_words&oldid=854719222.
- “Style | Origin and Meaning of Style by Online Etymology Dictionary.” Accessed January 14, 2019. <https://www.etymonline.com/word/style>.
- “Symmetry | Origin and Meaning of Symmetry by Online Etymology Dictionary.” Accessed August 19, 2018. <https://www.etymonline.com/word/symmetry>.
- “Symmetry (Physics).” In *Wikipedia*, July 29, 2018. [https://en.wikipedia.org/w/index.php?title=Symmetry_\(physics\)&oldid=852526095](https://en.wikipedia.org/w/index.php?title=Symmetry_(physics)&oldid=852526095).
- Szilard, Leo. “On the Decrease of Entropy in a Thermodynamic System by the Intervention of Intelligent Beings.” *Behavioral Science* 9, no. 4 (1964): 301–10.
- “The Distance between ‘Zero’ and ‘Hero’: Exploring Synonym Chains with Mathematica—Wolfram Blog.” Accessed August 30, 2018. <http://blog.wolfram.com/2011/03/17/the-distance-between-zero-and-hero-exploring-synonym-chains-with-mathematica/>.
- “Theory | Origin and Meaning of Theory by Online Etymology Dictionary.” Accessed August 27, 2018. <https://www.etymonline.com/word/theory>.
- “Theory of Everything.” In *Wikipedia*, November 18, 2018. https://en.wikipedia.org/w/index.php?title=Theory_of_everything&oldid=869481836.
- Thrax, Dionysius. *The Grammar of Dionysios Thrax*. St. Louis, Mo. : Studley, 1874. <http://archive.org/details/grammarofdionysi00dionuoft>.
- Vee, Annette. *Coding Literacy: How Computer Programming Is Changing Writing*. Cambridge, MA: MIT Press Ltd, 2017.
- Venturi, Robert. *Complexity and Contradiction in Architecture*. The Museum of Modern Art, 1966.
- Vitruvius. *Ten Books on Architecture*. Translated by Hicky Morgan Morris. Harvard University Press, 1914.

- “Web Crawler.” In *Wikipedia*, August 25, 2018. https://en.wikipedia.org/w/index.php?title=Web_crawler&oldid=856413510.
- West, Geoffrey. *Scale: The Universal Laws of Growth, Innovation, Sustainability, and the Pace of Life in Organisms, Cities, Economies, and Companies*. First Edition edition. New York: Penguin Press, 2017, ebook.
- Wiener, Norbert. *Cybernetics: Second Edition: Or the Control and Communication in the Animal and the Machine*. S.I.: Martino Fine Books, 2013, ebook.
- Wittgenstein, Ludwig. *Tractatus Logico-Philosophicus*. Translated by C. K. Ogden. 471st ed. edition. Mineola, N Y: Dover Publications, 1998.
- “Wolfram Mathematica: Modern Technical Computing.” Accessed August 30, 2018. <https://www.wolfram.com/mathematica/>.
- Wolfram, Stephen. *A New Kind of Science*. 1 edition. Champaign, IL: Wolfram Media, 2002.
- Worringer, Wilhelm. *Abstraction and Empathy: A Contribution to the Psychology of Style*. Mansfield Centre, Conn.: Martino Fine Books, 2014.
- “Xeno- | Origin and Meaning of Xeno- by Online Etymology Dictionary.” Accessed October 26, 2018. <https://www.etymonline.com/word/xeno->.
- Zaghloul, Mohamed. “Machine-Learning Aided Architectural Design - Synthesize Fast CFD by Machine-Learning.” Doctoral Thesis, ETH Zurich, 2017. <https://doi.org/10.3929/ethz-b-000207226>.
- Zalamea, Fernando. *Synthetic Philosophy of Contemporary Mathematics*. Falmouth, U.K., 2012.

5.2 Illustrations

All collages, illustrations and images are produced by Miro Roman

APPENDIX

Index of *Xenotheka*

[1] ABBOTT_Flatland, [2] ALBERTI_10 books Of Architecture, [3] ALBERTI_On Painting, [4] ALEXANDER_A Pattern Language, [5] ALEXANDER_The Timeless Way of Building, [6] ARENDT_Eichmann in Jerusalem A Report, [7] ARENDT_On Revolution, [8] ARENDT_The Human Condition, [9] ARISTOTLE_Ethics, [10] ARISTOTLE_Poetics, [11] ARISTOTLE_Politics, [12] ARISTOTLE_The Athenian Constitution, [13] ASIMOV_I Robot, [14] AUGER_The Future, [15] AUGUSTINE_The Confessions, [16] AURELI_Less is Enough, [17] AURELI_Real Estates, [18] AURELI_The Possibility of an absolute architecture, [19] AUSTEN_Pride And Prejudice, [20] AYACHE_The Blank Swan, [21] BACHELARD_The Poetics of Space, [22] BACON_Novum Organum, [23] BADIOU_In Praise of Mathematics, [24] BADIOU_Mathematics of the Transcendent, [25] BADIOU_Number and Numbers, [26] BALZAC_The Unknown Masterpiece, [27] BANHAM_Critic Writes, [28] BARTHES_Mythologies, [29] BARTHES_The Language of Fashion, [30] BAUDRILLARD_The Vital Illusion, [31] BECKETT_Stories and Texts for Nothing, [32] BECKETT_Waiting for Godot, [33] BENJAMIN_The Work of Art in the Age of M, [34] BEOWULF, [35] BETSKY_Architecture Matters, [36] BLANCHOT_The Book to Come, [37] BLANCHOT_The Space of Literature, [38] BO BARDI_Stones Against Diamonds, [39] BORGES_Collected Fictions, [40] BOSKER_Original Copies, [41] BRILLOUIN_Science and Information Theory, [42] BUEHLMANN_Mathematics and Information Serres, [43] CACHE_Projectiles, [44] CALVINO_Invisible Cities, [45] CARPO_Architecture in the Age of Printing, [46] CARPO_The Alphabet and the Algorithm, [47] CARPO_The Second Digital Turn, [48] CASTELLS ET AL_Another Economy Is Possible, [49] CASTELLS_Networks of Outrage and Hope, [50] CASTELLS_The Power of Identity, [51] CASTELLS_The Rise of the Network Society, [52] CERVANTES_Don Quixote, [53] CHOMSKY_Aspects of the Theory of Syntax, [54] CHOMSKY_Language and Mind, [55] CHOMSKY_On Language, [56] CICERO_Tusculan Disputations, [57] CONFUCIAN ANALECTS, [58] COOK_Drawing, [59] DANTE_Divine Comedy, [60] DARWIN_On the Origin of Species, [61] DELANDA HARMAN_The Rise of Realism, [62] DELANDA_Philosophy and Simulation, [63] DELEUZE_Desert Islands and Other Texts, [64] DELEUZE_Difference and Reppetiton, [65] DELEUZE GUATTARI_A Thousand Plateaus, [66] DELEUZE GUATTARI_What Is Philosophy, [67] DERRIDA_Copy Archive Signature, [68] DERRIDA_Of Grammatology, [69] DERRIDA_Signature, [70] DESCARTES_Discourse on the Method, [71] DESCARTES_Meditations, [72] DEVLIN_Finding Fibonacci, [73] DEVLIN_The Unfinished Game, [74] DICKENS_A Tale of Two Cities, [75] DICKENS_Oliver Twist, [76] DURAND_Precis of the lectures on Architecture, [77] DURER_Memories of Journeys to Venice, [78] EASTERLING_Extrastatecraft, [79] ECO_Baudolino, [80] ECO_How to Write a Thesis, [81] ECO_On Literature, [82] ECO_Serendipities Language & Lunacy, [83] ECO_The Name of the Rose, [84] EINSTEIN_Relativity, [85] EISENMAN KOOLHAAS ET ALL_Supercritical, [86] EISENMAN_Notes on Conceptual Architecture, [87] EISENMAN_The End of the Classical, [88] FEYNMAN_QED The Strange Theory of Light, [89] FOUCAULT_Archaeology of Knowledge, [90] FOUCAULT_History of Madness, [91] FOUCAULT_The History of Sexuality Vol 1, [92] FOUCAULT_The Order of Things, [93] FREUD_Beyond the Pleasure Principle, [94] FREUD_The Psychopathology of Everyday, [95] FREUD_The Uncanny, [96] FUKUYAMA_The End of History and the Last Man, [97] FULLER_Operating Manual For Space, [98] GALILEI_Discourse on Floating Bodies, [99] GIRARD_Sacrifice, [100] GIRARD_Violence and the Sacred, [101] GOETHE_Faust, [102] GRAEBER_Debt, [103] GREENFIELD_Against the smart city, [104] GROPIUS_The New Architecture and the Bauhaus, [105] HARAWAY_Cyborg Manifesto, [106] HARMAN_Bells and Whistles, [107] HARMAN_Immaterialism Objects and Social Th, [108] HARMAN_Towards Speculative Realism, [109] HAYEK_The Constitution of Liberty, [110] HAYEK_The Road to Serfdom, [111] HERMAN CHOMSKY_Manufacturing Consent, [112] HOBBS_Leviathan, [113] HOFSTADTER_Godel Escher Bach, [114] HOFSTADTER_I Am a Strange Loop, [115] HOLLIS_Cities Are Good for You, [116] HOMER_Iliad, [117] HOWARD_Garden Cities of To-Morrow, [118] HUGO_Les Miserables, [119] HUMBOLDT_

Equinoctial Regions of America, [120] ITO_Tarzans In The Media, [121] JACOB_Make it real, [122] JACOBS_The Death and Life of Great American Cities, [123] JENCKS_The Story of Post-Modernism, [124] JOYCE_Ulysses, [125] JUNG_Alchemical Studies, [126] JUNG_Archetypes and the Collective Unconscious, [127] JUNG_Two Essays in Analytical Psychology, [128] KAFKA_Metamorphosis, [129] KAFKA_The Trail, [130] KANT_Critique of Pure Reason, [131] KEROUAC_On The Road, [132] KING JAMES BIBLE, [133] KITTLER_The Truth of the Technological World, [134] KOOLHAAS_Delirious New York, [135] KOOLHAAS_SMLXL, [136] KRIER_The Architecture of Community, [137] KUMA_Anti-Object, [138] LACAN_The Psychoses Seminars of JL, [139] LATOUR_Facing Gaia, [140] LATOUR_Reassembling the social, [141] LATOUR_We Have Never Been Modern, [142] LAVIN_Flash in the Pan, [143] LAVIN_Kissing Architecture, [144] LE CORBUSIER_The City of Tomorrow, [145] LECORBUSIER_Towards a New Architecture, [146] LEFEBVRE_Critique of Everyday Life, [147] LEFEBVRE_Rhythmanalysis, [148] LEIBNIZ_Theodicy, [149] LUCRETIUS_On The Nature Of Things, [150] MACHIAVELLI_The Prince, [151] MARX_Capital Volume 1, [152] MARX ENGELS_The Communist Manifesto, [153] MAX BILL_Form, Function, Beauty, [154] MCLUHAN_The Gutenberg Galaxy, [155] MCLUHAN_Understanding Media, [156] MEILLASSOUX_After Finitude, [157] MERTINS_Modernity Unbound, [158] MUMFORD_The Culture of Cities, [159] MUSIL_The Man Without Qualities V1, [160] NANCY_Intoxication, [161] NANCY_The Ground of the Image, [162] NEGROPONTE_Being Digital, [163] NEWTON_The Mathematical Principles of Natural Philosophy, [164] NIETZSCHE_Beyond Good and Evil, [165] NIETZSCHE_Thus Spake Zarathustra, [166] PALLADIO_The Four Books of Architecture, [167] PALLASMAA_The Eyes of the Skin, [168] PLATO_Symposium, [169] PLATO_The Republic, [170] PLATO_Timaeus, [171] PONTE_The House of Light and Entropy, [172] POPPER_All Life Is Problem Solving, [173] POPPER_The Logic of Scientific Discovery, [174] RAKATANSKY_Tectonic Acts of Desire and Doubt, [175] RANCIERE_Aisthesis, [176] RAND_The Fountainhead, [177] RATTI ET ALL_Open Source Architecture, [178] RATTI_The City of Tomorrow, [179] ROGERS_A Place for All People, [180] ROUSSEAU_The Social Contract, [181] RUSKIN_Poetry of Architecture, [182] RUSKIN_The Seven Lamps of Architecture, [183] RUSSEL_The Problems of Philosophy, [184] SAUSSURE_Course in General Linguistics, [185] SCHLEMMER NAGY_The Theater of the Bauhaus, [186] SCHRODINGER_What is Life, [187] SCHUMACHER_The Autopoiesis of Architecture Vol1, [188] SCHUMACHER_The Autopoiesis of Architecture Vol2, [189] SCOTT BROWN_Having Words, [190] SEDLACEK_Economics of Good and Evil, [191] SERRES_Biogeoa, [192] SERRES_Geometry, [193] SERRES LATOUR_Conversations on Science, Culture, and Time, [194] SERRES_Rome, [195] SERRES_Statues, [196] SERRES_The Five Senses, [197] SERRES_Thumbelina, [198] SHAKESPEARE_Hamlet, [199] SHAKESPEARE_Romeo and Juliet, [200] SHELLEY_Frankenstein or the Modern Prometheus, [201] SMITH_Wealth of Nations, [202] SORKIN_All Over the Map, [203] SPINOZA_The Essential Spinoza Ethics, [204] SPINOZA_The Ethics, [205] SPUYBROEK_The Sympathy of Things, [206] STEIN_Tender Buttons, [207] SUDJIC_The Edifice Complex, [208] SULLIVAN_The Autobiography of an Idea, [209] SYKES HAYS_Architectural Theory 1993 2009, [210] TAFURI_Architecture and Utopia, [211] TALEB_The Black Swan, [212] TOLSTOY_Anna Karenina, [213] TOLSTOY_War and Peace, [214] TWAIN_Adventures of Huckelberry Fin, [215] VENTURI SCOTT BROWN_learning from las vegas, [216] VIDLER_Histories of the Immediate Present, [217] VIRILIO_A Landscape of Events, [218] VITRUVIUS_The ten Books of Architecture, [219] VOLTAIRE_Candide, [220] WEIZMAN_Before and After, [221] WEIZMAN_The Least of All Possible Evils, [222] WEST_Scale The Universal Laws of Growth, [223] WIENER_Cybernetics, [224] WIENER_The Human Use Of Human Beings, [225] WITTGENSTEIN_Tractatus Logico Philosophicus, [226] WOOLF_Night and day, [227] WORRINGER_Abstraction and Empathy, [228] ZIZEK_Demanding the Impossible, [229] ZIZEK_Less Than Nothing

Index of *Bibliotheka*

The current list of publications covers a wide range of disciplines, including philosophy, history, science, and the arts. It includes titles such as 'The Art of Creative Writing', 'The Philosophy of Language', 'The History of the World', and 'The Science of the Mind'. The list is organized alphabetically by author name, with each entry providing the title, author, and publication details. The entries are dense and cover a vast array of topics, reflecting the interdisciplinary nature of the journal's content.

(Evevman's Library CLASSICS) [12931] WOLCOTT, JAMES WOLCOTT; Lacking Our: My Life Getting Down and Semi-dry in Seventies New York. [12932] WOLF, MARGERY; A Thes: Todd Tale: Feminism, Postmodernism, and Ethnographic Responsibility. [12933] WOLFE, BEATRAX, An Ideology in Power: Reflections on the Russian Revolution. [12934] WOLFE, TOM; From Babylon to Our House. [12935] WOLFE, MICHAEL; One Thousand Roads to Moses: Ten Centuries of Francis. [12936] WOLFE, TOM; The Boyhood of the Vanities: A Novel. [12937] WOLFE, TOM; The Kingdom of Speech. [12938] WOLFE, TOM; The Right Stuff. [12939] WOLFE, RICHARD; The Right Stuff. [12940] WOLFE, RICHARD; D. Dostoevsky at Work: A Case for Capitalism. [12941] WOLFE, BEATRAX PERCY; Henry VI. [12942] WOLF, MICHAEL; Fire and Fury. [12943] WOLFE, DANIEL; Grouse-By-Anger: The Connected Myths of Bob Dylan, Woody Guthrie, and the Calumet Massacre of 1913. [12944] WOLFE, TOM; Masochism, In Paraphras: Army Memories of a Lost War. [12945] WOLFE, CHRISTOPH; Johann Sebastian Bach: The Learned Musician. [12947] WOLF, ARTHUR P.; Incest Avoidance and the Incest Taboo: Two Aspects of Human Nature. [12948] WOLF, MICHAEL & EAEF, BRIAN JAMES & WOODS, MICHAEL E.; Interpreting in Man: Concomitant Camp (Literatures, Cultures, Translations). [12949] WILE, MARKUS; Man Without a Face. [12950] WILSON, ELLIOTT R.; Giving Beyond the Gift: Aphorism and Procreanting Theorem. [12951] WILSON, SUSAN L.; The Cambridge Companion to Keats. [12952] WOLIN, SHELDON S. & HERGEN, CHRIS; Democracy Incorporated: Managed Democracy and the Specter of Inverted Totalitarianism. [12953] WOLIN, SHELDON S.; Politics and Vision: Continuity and Innovation in Western Political Thought. [12954] WOLIN, RICHARD; The Selection of Emerson: The Intellectual Resonance With Function From Nietzsche to Postmodernism. [12955] WOLLINBERG, SIMON; Schuber's Fingerprint: Studies in the Instrumental Works. [12956] WOLLNER, CLEMENS; Body, Sound and Space in Music and Beyond: Multimodal Explorations. [12957] WOLMAR, CHRISTIAN; Blood, Iron and Gold: How the Railways Transformed the World. [12958] WOLNY, RY SZARD & NICHA, STANKOMIR; Poisoned Corporation: Excess, Intemperance and Overabundance: Across Cultures and Literatures. [12959] WOLFERT, LIEV; Malignant Sadness. [12960] WONDRICH, WALTER; Scamp and Swerve: American Music Gen. Hist. 1841-1924. [12961] WONG, EVA; Teaching of the Tao. [12962] WOOD, ELIZABETH & TRSALIE, KANEY & PONS, TREVOR; Blood: A Novel. [12963] WOOD, CHRISTOPHER S.; Alberto Alabarcer and the Origins of Landscape: Revised and Expanded Second Edition. [12964] WOODARD, COLIN; The Squabble of Peasants: Being the True and Surprising Story of the How They Thought Them Down. [12965] WOOD, ELLEN MERKINS; BOPXAGGE EPOK. [12966] WOODRING, ONAH, O.; Black Gods of the Asphalt: Religion, Hip-Hop, and Street Basketball. [12967] WOOD, EDWARD JR. & DUVAL, JULIA & THOMPSON, BROCK & WILLIAMS, KATIE & WICKHAM, GEORGE & RODRIGS, BRIAN & SLAD, DIRK; Blood Splatters Quake. [12968] WOOD, ELLEN MERKINS; Citizens to Look: A Social History of Western Political Thought From Antiquity to the Late Middle Ages. [12969] WOOD, J. B. & HEWLIN, TODD; Consumption Economics: The New Rules of Fish. [12970] WOODFORD, MICHAEL; Interest and Prices: Foundations of a Theory of Monetary Policy. [12971] WOOD, GORDON S.; Friends Divided: John Adams and Thomas Jefferson. [12972] WOOD, MICHAEL; In Search of England: Journeys into the Land-Middle Ages. [12973] WOOD, MICHAEL; On Paul Ricoeur: Narrative and Interpretation (Workshop Studies in Philosophy and Literature). [12974] WOODRUFF, PAUL; Reversing: Reversing a Forgotten Virtue. [12975] WOODS, JOSHUA & ARTHUR, C. DAMEN; Debating Immigration in the Age of Emerson, Polarity, and Trump. [12976] WOODS, CLYDE & PULIDO, LAURA & CAMP, JORDAN & HEYNEK, NIK & COLEMAN, MATTHEW & DOSHI, SAPANA; Development Downside and Reform: The Blues and Bourbon Restrainers in Post-Katrina New Orleans (Geographies of Justice and Social Transformation Ser.). [12979] WOODS, GREGORY; Hominson: How Gay Culture Liberated the Modern World. [12980] WOODS, GORDON S.; The Idea of America: Reflections on the Birth of the United States. [12987] WOOD, ELLEN MERKINS; The Origin of Capitalism. [12988] WOOD, ELLEN MERKINS; The Pretext Culture of Virginia: A Historical Essay on Old Regimes and Modern States. [12989] WOODWARD, HUBSON; A Brave New World: The True Tale of the Castaways Who Rescued Jamestown and Inspired Shakespeare's *The Tempest*. [12990] WOODWARD, WALTER; L. & INSTITUTION; BROOKINGS; Balkan Tragedy: Chaos and Dissolution After the Cold War. [12991] WOODWARD, ROB; Bush at War. [12992] WOODWARD, ROB; Obama's Wars. [12993] WOODWARD, ROB; Plan of Attack. [12994] WOODWARD, SUSAN L.; Socialism Unexplored. [12995] WOODWARD, ASHLEY; Understanding Neurobehavior. [12996] WOODWORTH, MARK; Guided by Voices' Best Theoretical. [12997] WOODY, WILLIAM DOUGLAS & VENEY, WAIN; A History of Psychology: The Emergence of Science and Application. [12998] WOODRIDGE, CHECK; City of Usages: Navigating in an Age of Usages Visions. [12999] WOLFE, TOM; The Right Stuff. [13000] WOLF, VIRGINIA & CHEKHOV, ANTON; Chekhov's Three Sisters and Woolf's *Two Readings for the Stage*. [13001] WOLFE, VIRGINIA; Flash, Biograds di un'oce. [13002] WOLFE, VIRGINIA & SCOTT, BONNIE KIM; The Right Stuff. [13003] WOLFE, VIRGINIA; To the Lighthouse. [13005] WOODFORD, DAVID; Galileo: Watcher of the Skies. [13006] WOODFORD, DAVID; The Invention of Science: A New History of the Scientific Revolution. [13007] WORDEN, AL & FRENCH, FRANCIS; Falling to Earth: An Apollo 15 Amateur Journal. [13008] WORDSWORTH, DOROTHY; WOLF; PAMELA; "Grammar and Allotment Journeys. [13009] WORDSWORTH, WILLIAM & COLERIDGE, SAMUEL; Lyrical Ballads. [13010] WORLEY, PETER; The Machine: Philosophical Inquiry in the Classroom. [13011] WORSLEY, LUCY; A Very British Murder: The Story of a National Obsession. [13012] WORSLEY, LUCY; Courtiers: The Secret History of the Georgian Court. [13013] WORTHEN, JOHN; The Life of William Wordsworth: A Critical Biography (Wiley-Blackwell Critical Biographies). [13015] WORRELL, SARAH; A Defense of Reading. [13016] WORMAN, RICHARD S.; The Power of Language and Rhetoric in Russian Political History: Charismatic Words from the 18th to the 21st Centuries. [13017] WOYKE, ELIZABETH; The Learning Tower: How We Are the New Science of Evolutionary Psychology. [13018] WOYKE, ELIZABETH; The Mirror: A Novel. [13019] WOYKE, ELIZABETH; The Mirror: A Novel. [13020] WOYKE, ELIZABETH; The Mirror: A Novel. [13021] WOYKE, ELIZABETH; The Mirror: A Novel. [13022] WOYKE, ELIZABETH; The Mirror: A Novel. [13023] WOYKE, ELIZABETH; The Mirror: A Novel. [13024] WOYKE, ELIZABETH; The Mirror: A Novel. [13025] WOYKE, ELIZABETH; The Mirror: A Novel. [13026] WOYKE, ELIZABETH; The Mirror: A Novel. [13027] WOYKE, ELIZABETH; The Mirror: A Novel. [13028] WOYKE, ELIZABETH; The Mirror: A Novel. [13029] WOYKE, ELIZABETH; The Mirror: A Novel. [13030] WOYKE, ELIZABETH; The Mirror: A Novel. [13031] WOYKE, ELIZABETH; The Mirror: A Novel. [13032] WOYKE, ELIZABETH; The Mirror: A Novel. [13033] WOYKE, ELIZABETH; The Mirror: A Novel. [13034] WOYKE, ELIZABETH; The Mirror: A Novel. [13035] WOYKE, ELIZABETH; The Mirror: A Novel. [13036] WOYKE, ELIZABETH; The Mirror: A Novel. [13037] WOYKE, ELIZABETH; The Mirror: A Novel. [13038] WOYKE, ELIZABETH; The Mirror: A Novel. [13039] WOYKE, ELIZABETH; The Mirror: A Novel. [13040] WOYKE, ELIZABETH; The Mirror: A Novel. [13041] WOYKE, ELIZABETH; The Mirror: A Novel. [13042] WOYKE, ELIZABETH; The Mirror: A Novel. [13043] WOYKE, ELIZABETH; The Mirror: A Novel. [13044] WOYKE, ELIZABETH; The Mirror: A Novel. [13045] WOYKE, ELIZABETH; The Mirror: A Novel. [13046] WOYKE, ELIZABETH; The Mirror: A Novel. [13047] WOYKE, ELIZABETH; The Mirror: A Novel. [13048] WOYKE, ELIZABETH; The Mirror: A Novel. [13049] WOYKE, ELIZABETH; The Mirror: A Novel. [13050] WOYKE, ELIZABETH; The Mirror: A Novel. [13051] WOYKE, ELIZABETH; The Mirror: A Novel. [13052] WOYKE, ELIZABETH; The Mirror: A Novel. [13053] WOYKE, ELIZABETH; The Mirror: A Novel. [13054] WOYKE, ELIZABETH; The Mirror: A Novel. [13055] WOYKE, ELIZABETH; The Mirror: A Novel. [13056] WOYKE, ELIZABETH; The Mirror: A Novel. [13057] WOYKE, ELIZABETH; The Mirror: A Novel. [13058] WOYKE, ELIZABETH; The Mirror: A Novel. [13059] WOYKE, ELIZABETH; The Mirror: A Novel. [13060] WOYKE, ELIZABETH; The Mirror: A Novel. [13061] WOYKE, ELIZABETH; The Mirror: A Novel. [13062] WOYKE, ELIZABETH; The Mirror: A Novel. [13063] WOYKE, ELIZABETH; The Mirror: A Novel. [13064] WOYKE, ELIZABETH; The Mirror: A Novel. [13065] WOYKE, ELIZABETH; The Mirror: A Novel. [13066] WOYKE, ELIZABETH; The Mirror: A Novel. [13067] WOYKE, ELIZABETH; The Mirror: A Novel. [13068] WOYKE, ELIZABETH; The Mirror: A Novel. [13069] WOYKE, ELIZABETH; The Mirror: A Novel. [13070] WOYKE, ELIZABETH; The Mirror: A Novel. [13071] WOYKE, ELIZABETH; The Mirror: A Novel. [13072] WOYKE, ELIZABETH; The Mirror: A Novel. [13073] WOYKE, ELIZABETH; The Mirror: A Novel. [13074] WOYKE, ELIZABETH; The Mirror: A Novel. [13075] WOYKE, ELIZABETH; The Mirror: A Novel. [13076] WOYKE, ELIZABETH; The Mirror: A Novel. [13077] WOYKE, ELIZABETH; The Mirror: A Novel. [13078] WOYKE, ELIZABETH; The Mirror: A Novel. [13079] WOYKE, ELIZABETH; The Mirror: A Novel. [13080] WOYKE, ELIZABETH; The Mirror: A Novel. [13081] WOYKE, ELIZABETH; The Mirror: A Novel. [13082] WOYKE, ELIZABETH; The Mirror: A Novel. [13083] WOYKE, ELIZABETH; The Mirror: A Novel. [13084] WOYKE, ELIZABETH; The Mirror: A Novel. [13085] WOYKE, ELIZABETH; The Mirror: A Novel. [13086] WOYKE, ELIZABETH; The Mirror: A Novel. [13087] WOYKE, ELIZABETH; The Mirror: A Novel. [13088] WOYKE, ELIZABETH; The Mirror: A Novel. [13089] WOYKE, ELIZABETH; The Mirror: A Novel. [13090] WOYKE, ELIZABETH; The Mirror: A Novel. [13091] WOYKE, ELIZABETH; The Mirror: A Novel. [13092] WOYKE, ELIZABETH; The Mirror: A Novel. [13093] WOYKE, ELIZABETH; The Mirror: A Novel. [13094] WOYKE, ELIZABETH; The Mirror: A Novel. [13095] WOYKE, ELIZABETH; The Mirror: A Novel. [13096] WOYKE, ELIZABETH; The Mirror: A Novel. [13097] WOYKE, ELIZABETH; The Mirror: A Novel. [13098] WOYKE, ELIZABETH; The Mirror: A Novel. [13099] WOYKE, ELIZABETH; The Mirror: A Novel. [13100] WOYKE, ELIZABETH; The Mirror: A Novel. [13101] WOYKE, ELIZABETH; The Mirror: A Novel. [13102] WOYKE, ELIZABETH; The Mirror: A Novel. [13103] WOYKE, ELIZABETH; The Mirror: A Novel. [13104] WOYKE, ELIZABETH; The Mirror: A Novel. [13105] WOYKE, ELIZABETH; The Mirror: A Novel. [13106] WOYKE, ELIZABETH; The Mirror: A Novel. [13107] WOYKE, ELIZABETH; The Mirror: A Novel. [13108] WOYKE, ELIZABETH; The Mirror: A Novel. [13109] WOYKE, ELIZABETH; The Mirror: A Novel. [13110] WOYKE, ELIZABETH; The Mirror: A Novel. [13111] WOYKE, ELIZABETH; The Mirror: A Novel. [13112] WOYKE, ELIZABETH; The Mirror: A Novel. [13113] WOYKE, ELIZABETH; The Mirror: A Novel. [13114] WOYKE, ELIZABETH; The Mirror: A Novel. [13115] WOYKE, ELIZABETH; The Mirror: A Novel. [13116] WOYKE, ELIZABETH; The Mirror: A Novel. [13117] WOYKE, ELIZABETH; The Mirror: A Novel. [13118] WOYKE, ELIZABETH; The Mirror: A Novel. [13119] WOYKE, ELIZABETH; The Mirror: A Novel. [13120] WOYKE, ELIZABETH; The Mirror: A Novel. [13121] WOYKE, ELIZABETH; The Mirror: A Novel. [13122] WOYKE, ELIZABETH; The Mirror: A Novel. [13123] WOYKE, ELIZABETH; The Mirror: A Novel. [13124] WOYKE, ELIZABETH; The Mirror: A Novel. [13125] WOYKE, ELIZABETH; The Mirror: A Novel. [13126] WOYKE, ELIZABETH; The Mirror: A Novel. [13127] WOYKE, ELIZABETH; The Mirror: A Novel. [13128] WOYKE, ELIZABETH; The Mirror: A Novel. [13129] WOYKE, ELIZABETH; The Mirror: A Novel. [13130] WOYKE, ELIZABETH; The Mirror: A Novel. [13131] WOYKE, ELIZABETH; The Mirror: A Novel. [13132] WOYKE, ELIZABETH; The Mirror: A Novel. [13133] WOYKE, ELIZABETH; The Mirror: A Novel. [13134] WOYKE, ELIZABETH; The Mirror: A Novel. [13135] WOYKE, ELIZABETH; The Mirror: A Novel. [13136] WOYKE, ELIZABETH; The Mirror: A Novel. [13137] WOYKE, ELIZABETH; The Mirror: A Novel. [13138] WOYKE, ELIZABETH; The Mirror: A Novel. [13139] WOYKE, ELIZABETH; The Mirror: A Novel. [13140] WOYKE, ELIZABETH; The Mirror: A Novel. [13141] WOYKE, ELIZABETH; The Mirror: A Novel. [13142] WOYKE, ELIZABETH; The Mirror: A Novel. [13143] WOYKE, ELIZABETH; The Mirror: A Novel. [13144] WOYKE, ELIZABETH; The Mirror: A Novel. [13145] WOYKE, ELIZABETH; The Mirror: A Novel. [13146] WOYKE, ELIZABETH; The Mirror: A Novel. [13147] WOYKE, ELIZABETH; The Mirror: A Novel. [13148] WOYKE, ELIZABETH; The Mirror: A Novel. [13149] WOYKE, ELIZABETH; The Mirror: A Novel. [13150] WOYKE, ELIZABETH; The Mirror: A Novel. [13151] WOYKE, ELIZABETH; The Mirror: A Novel. [13152] WOYKE, ELIZABETH; The Mirror: A Novel. [13153] WOYKE, ELIZABETH; The Mirror: A Novel. [13154] WOYKE, ELIZABETH; The Mirror: A Novel. [13155] WOYKE, ELIZABETH; The Mirror: A Novel. [13156] WOYKE, ELIZABETH; The Mirror: A Novel. [13157] WOYKE, ELIZABETH; The Mirror: A Novel. [13158] WOYKE, ELIZABETH; The Mirror: A Novel. [13159] WOYKE, ELIZABETH; The Mirror: A Novel. [13160] WOYKE, ELIZABETH; The Mirror: A Novel. [13161] WOYKE, ELIZABETH; The Mirror: A Novel. [13162] WOYKE, ELIZABETH; The Mirror: A Novel. [13163] WOYKE, ELIZABETH; The Mirror: A Novel. [13164] WOYKE, ELIZABETH; The Mirror: A Novel. [13165] WOYKE, ELIZABETH; The Mirror: A Novel. [13166] WOYKE, ELIZABETH; The Mirror: A Novel. [13167] WOYKE, ELIZABETH; The Mirror: A Novel. [13168] WOYKE, ELIZABETH; The Mirror: A Novel. [13169] WOYKE, ELIZABETH; The Mirror: A Novel. [13170] WOYKE, ELIZABETH; The Mirror: A Novel. [13171] WOYKE, ELIZABETH; The Mirror: A Novel. [13172] WOYKE, ELIZABETH; The Mirror: A Novel. [13173] WOYKE, ELIZABETH; The Mirror: A Novel. [13174] WOYKE, ELIZABETH; The Mirror: A Novel. [13175] WOYKE, ELIZABETH; The Mirror: A Novel. [13176] WOYKE, ELIZABETH; The Mirror: A Novel. [13177] WOYKE, ELIZABETH; The Mirror: A Novel. [13178] WOYKE, ELIZABETH; The Mirror: A Novel. [13179] WOYKE, ELIZABETH; The Mirror: A Novel. [13180] WOYKE, ELIZABETH; The Mirror: A Novel. [13181] WOYKE, ELIZABETH; The Mirror: A Novel. [13182] WOYKE, ELIZABETH; The Mirror: A Novel. [13183] WOYKE, ELIZABETH; The Mirror: A Novel. [13184] WOYKE, ELIZABETH; The Mirror: A Novel. [13185] WOYKE, ELIZABETH; The Mirror: A Novel. [13186] WOYKE, ELIZABETH; The Mirror: A Novel. [13187] WOYKE, ELIZABETH; The Mirror: A Novel. [13188] WOYKE, ELIZABETH; The Mirror: A Novel. [13189] WOYKE, ELIZABETH; The Mirror: A Novel. [13190] WOYKE, ELIZABETH; The Mirror: A Novel. [13191] WOYKE, ELIZABETH; The Mirror: A Novel. [13192] WOYKE, ELIZABETH; The Mirror: A Novel. [13193] WOYKE, ELIZABETH; The Mirror: A Novel. [13194] WOYKE, ELIZABETH; The Mirror: A Novel. [13195] WOYKE, ELIZABETH; The Mirror: A Novel. [13196] WOYKE, ELIZABETH; The Mirror: A Novel. [13197] WOYKE, ELIZABETH; The Mirror: A Novel. [13198] WOYKE, ELIZABETH; The Mirror: A Novel. [13199] WOYKE, ELIZABETH; The Mirror: A Novel. [13200] WOYKE, ELIZABETH; The Mirror: A Novel. [13201] WOYKE, ELIZABETH; The Mirror: A Novel. [13202] WOYKE, ELIZABETH; The Mirror: A Novel. [13203] WOYKE, ELIZABETH; The Mirror: A Novel. [13204] WOYKE, ELIZABETH; The Mirror: A Novel. [13205] WOYKE, ELIZABETH; The Mirror: A Novel. [13206] WOYKE, ELIZABETH; The Mirror: A Novel. [13207] WOYKE, ELIZABETH; The Mirror: A Novel. [13208] WOYKE, ELIZABETH; The Mirror: A Novel. [13209] WOYKE, ELIZABETH; The Mirror: A Novel. [13210] WOYKE, ELIZABETH; The Mirror: A Novel. [13211] WOYKE, ELIZABETH; The Mirror: A Novel. [13212] WOYKE, ELIZABETH; The Mirror: A Novel. [13213] WOYKE, ELIZABETH; The Mirror: A Novel. [13214] WOYKE, ELIZABETH; The Mirror: A Novel. [13215] WOYKE, ELIZABETH; The Mirror: A Novel. [13216] WOYKE, ELIZABETH; The Mirror: A Novel. [13217] WOYKE, ELIZABETH; The Mirror: A Novel. [13218] WOYKE, ELIZABETH; The Mirror: A Novel. [13219] WOYKE, ELIZABETH; The Mirror: A Novel. [13220] WOYKE, ELIZABETH; The Mirror: A Novel. [13221] WOYKE, ELIZABETH; The Mirror: A Novel. [13222] WOYKE, ELIZABETH; The Mirror: A Novel. [13223] WOYKE, ELIZABETH; The Mirror: A Novel. [13224] WOYKE, ELIZABETH; The Mirror: A Novel. [13225] WOYKE, ELIZABETH; The Mirror: A Novel. [13226] WOYKE, ELIZABETH; The Mirror: A Novel. [13227] WOYKE, ELIZABETH; The Mirror: A Novel. [13228] WOYKE, ELIZABETH; The Mirror: A Novel. [13229] WOYKE, ELIZABETH; The Mirror: A Novel. [13230] WOYKE, ELIZABETH; The Mirror: A Novel. [13231] WOYKE, ELIZABETH; The Mirror: A Novel. [13232] WOYKE, ELIZABETH; The Mirror: A Novel. [13233] WOYKE, ELIZABETH; The Mirror: A Novel. [13234] WOYKE, ELIZABETH; The Mirror: A Novel. [13235] WOYKE, ELIZABETH; The Mirror: A Novel. [13236] WOYKE, ELIZABETH; The Mirror: A Novel. [13237] WOYKE, ELIZABETH; The Mirror: A Novel. [13238] WOYKE, ELIZABETH; The Mirror: A Novel. [13239] WOYKE, ELIZABETH; The Mirror: A Novel. [13240] WOYKE, ELIZABETH; The Mirror: A Novel. [13241] WOYKE, ELIZABETH; The Mirror: A Novel. [13242] WOYKE, ELIZABETH; The Mirror: A Novel. [13243] WOYKE, ELIZABETH; The Mirror: A Novel. [13244] WOYKE, ELIZABETH; The Mirror: A Novel. [13245] WOYKE, ELIZABETH; The Mirror: A Novel. [13246] WOYKE, ELIZABETH; The Mirror: A Novel. [13247] WOYKE, ELIZABETH; The Mirror: A Novel. [13248] WOYKE, ELIZABETH; The Mirror: A Novel. [13249] WOYKE, ELIZABETH; The Mirror: A Novel. [13250] WOYKE, ELIZABETH; The Mirror: A Novel. [13251] WOYKE, ELIZABETH; The Mirror: A Novel. [13252] WOYKE, ELIZABETH; The Mirror: A Novel. [13253] WOYKE, ELIZABETH; The Mirror: A Novel. [13254] WOYKE, ELIZABETH; The Mirror: A Novel. [13255] WOYKE, ELIZABETH; The Mirror: A Novel. [13256] WOYKE, ELIZABETH; The Mirror: A Novel. [13257] WOYKE, ELIZABETH; The Mirror: A Novel. [13258] WOYKE, ELIZABETH; The Mirror: A Novel. [13259] WOYKE, ELIZABETH; The Mirror: A Novel. [13260] WOYKE, ELIZABETH; The Mirror: A Novel. [13261] WOYKE, ELIZABETH; The Mirror: A Novel. [13262] WOYKE, ELIZABETH; The Mirror: A Novel. [13263] WOYKE, ELIZABETH; The Mirror: A Novel. [13264] WOYKE, ELIZABETH; The Mirror: A Novel. [13265] WOYKE, ELIZABETH; The Mirror: A Novel. [13266] WOYKE, ELIZABETH; The Mirror: A Novel. [13267] WOYKE, ELIZABETH; The Mirror: A Novel. [13268] WOYKE, ELIZABETH; The Mirror: A Novel. [13269] WOYKE, ELIZABETH; The Mirror: A Novel. [13270] WOYKE, ELIZABETH; The Mirror: A Novel. [13271] WOYKE, ELIZABETH; The Mirror: A Novel. [13272] WOYKE, ELIZABETH; The Mirror: A Novel. [13273] WOYKE, ELIZABETH; The Mirror: A Novel. [13274] WOYKE, ELIZABETH; The Mirror: A Novel. [13275] WOYKE, ELIZABETH; The Mirror: A Novel. [13276] WOYKE, ELIZABETH; The Mirror: A Novel. [13277] WOYKE, ELIZABETH; The Mirror: A Novel. [13278] WOYKE, ELIZABETH; The Mirror: A Novel. [13279] WOYKE, ELIZABETH; The Mirror: A Novel. [13280] WOYKE, ELIZABETH; The Mirror: A Novel. [13281] WOYKE, ELIZABETH; The Mirror: A Novel. [13282] WOYKE, ELIZABETH; The Mirror: A Novel. [13283] WOYKE, ELIZABETH; The Mirror: A Novel. [13284] WOYKE, ELIZABETH; The Mirror: A Novel. [13285] WOYKE, ELIZABETH; The Mirror: A Novel. [13286] WOYKE, ELIZABETH; The Mirror: A Novel. [13287] WOYKE, ELIZABETH; The Mirror: A Novel. [13288] WOYKE, ELIZABETH; The Mirror: A Novel. [13289] WOYKE, ELIZABETH; The Mirror: A Novel. [13290] WOYKE, ELIZABETH; The Mirror: A Novel. [13291] WOYKE, ELIZABETH; The Mirror: A Novel. [13292] WOYKE, ELIZABETH; The Mirror: A Novel. [13293] WOYKE, ELIZABETH; The Mirror: A Novel. [13294] WOYKE, ELIZABETH; The Mirror: A Novel. [13295] WOYKE, ELIZABETH; The Mirror: A Novel. [13296] WOYKE, ELIZABETH; The Mirror: A Novel. [13297] WOYKE, ELIZABETH; The Mirror: A Novel. [13298] WOYKE, ELIZABETH; The Mirror: A Novel. [13299] WOYKE, ELIZABETH; The Mirror: A Novel. [13300] WOYKE, ELIZABETH; The Mirror: A Novel. [13301] WOYKE, ELIZABETH; The Mirror: A Novel. [13302] WOYKE, ELIZABETH; The Mirror: A Novel. [13303] WOYKE, ELIZABETH; The Mirror: A Novel. [13304] WOYKE, ELIZABETH; The Mirror: A Novel. [13305] WOYKE, ELIZABETH; The Mirror: A Novel. [13306] WOYKE, ELIZABETH; The Mirror: A Novel. [13307] WOYKE, ELIZABETH; The Mirror: A Novel. [13308] WOYKE, ELIZABETH; The Mirror: A Novel. [13309] WOYKE, ELIZABETH; The Mirror: A Novel. [13310] WOYKE, ELIZABETH; The Mirror: A Novel. [13311] WOYKE, ELIZABETH; The Mirror: A Novel. [13312] WOYKE, ELIZABETH; The Mirror: A Novel. [13313] WOYKE, ELIZABETH; The Mirror: A Novel. [13314] WOYKE, ELIZABETH; The Mirror: A Novel. [13315] WOYKE, ELIZABETH; The Mirror: A Novel. [13316] WOYKE, ELIZABETH; The Mirror: A Novel. [13317] WOYKE, ELIZABETH; The Mirror: A Novel. [13318] WOYKE, ELIZABETH; The Mirror: A Novel. [13319] WOYKE, ELIZABETH; The Mirror: A Novel. [13320] WOYKE, ELIZABETH; The Mirror: A Novel. [13321] WOYKE, ELIZABETH; The Mirror: A Novel. [13322] WOYKE, ELIZABETH; The Mirror: A Novel. [13323] WOYKE, ELIZABETH; The Mirror: A Novel. [13324] WOYKE, ELIZABETH; The Mirror: A Novel. [13325] WOYKE, ELIZABETH; The Mirror: A Novel. [13326] WOYKE, ELIZABETH; The Mirror: A Novel. [13327] WOYKE, ELIZABETH; The Mirror: A Novel. [13328] WOYKE, ELIZABETH; The Mirror: A Novel. [13329] WOYKE, ELIZABETH; The Mirror: A Novel. [13330] WOYKE, ELIZABETH; The Mirror: A Novel. [13331] WOYKE, ELIZABETH; The Mirror: A Novel. [13332] WOYKE, ELIZABETH; The Mirror: A Novel. [13333] WOYKE, ELIZABETH; The Mirror: A Novel. [13334] WOYKE, ELIZABETH; The Mirror: A Novel. [13335] WOYKE, ELIZABETH; The Mirror: A Novel. [13336] WOYKE, ELIZABETH; The Mirror: A Novel. [13337] WOYKE, ELIZABETH; The Mirror: A Novel. [13338] WOYKE, ELIZABETH; The Mirror: A Novel. [13339] WOYKE, ELIZABETH; The Mirror: A Novel. [13340] WOYKE, ELIZABETH; The Mirror: A Novel. [13341] WOYKE, ELIZABETH; The Mirror: A Novel. [13342] WOYKE, ELIZABETH; The Mirror: A Novel. [13343] WOYKE, ELIZABETH; The Mirror: A Novel. [13344] WOYKE, ELIZABETH; The Mirror: A Novel. [13345] WOYKE, ELIZABETH; The Mirror: A Novel. [13346] WOYKE, ELIZABETH; The Mirror: A Novel. [13347] WOYKE, ELIZABETH; The Mirror: A Novel. [13348] WOYKE, ELIZABETH; The Mirror: A Novel. [13349] WOYKE, ELIZABETH; The Mirror: A Novel. [13350] WOYKE, ELIZABETH; The Mirror: A Novel. [13351] WOYKE, ELIZABETH; The Mirror: A Novel. [13352] WOYKE, ELIZABETH; The Mirror: A Novel. [13353] WOYKE, ELIZABETH; The Mirror: A Novel. [13354] WOYKE, ELIZABETH; The Mirror: A Novel. [13355] WOYKE, ELIZABETH; The Mirror: A Novel. [13356] WOYKE, ELIZABETH; The Mirror: A Novel. [13357] WOYKE, ELIZABETH; The Mirror: A Novel. [13358] WOYKE, ELIZABETH; The Mirror: A Novel. [13359] WOYKE, ELIZABETH; The Mirror: A Novel. [13360] WOYKE, ELIZABETH; The Mirror: A Novel. [13361] WOYKE, ELIZABETH; The Mirror: A Novel. [13362] WOYKE, ELIZABETH; The Mirror: A Novel. [13363] WOYKE, ELIZABETH; The Mirror: A Novel. [13364] WOYKE, ELIZABETH; The Mirror: A Novel. [13365] WOYKE, ELIZABETH; The Mirror: A Novel. [13366] WOYKE, ELIZABETH; The Mirror: A Novel. [13367] WOYKE, ELIZABETH; The Mirror: A Novel. [13368] WOYKE, ELIZABETH; The Mirror: A Novel. [13369] WOYKE, ELIZABETH; The Mirror: A Novel. [13370] WOYKE, ELIZABETH; The Mirror: A Novel. [13371] WOYKE, ELIZABETH; The Mirror: A Novel. [13372] WOYKE, ELIZABETH; The Mirror: A Novel. [13373] WOYKE, ELIZABETH; The Mirror: A Novel. [13374] WOYKE, ELIZABETH; The Mirror: A Novel. [13375] WOYKE, ELIZABETH; The Mirror: A Novel. [13376] WOYKE, ELIZABETH; The Mirror: A Novel. [13377] WOYKE, ELIZABETH; The Mirror: A Novel. [13378] WOYKE, ELIZABETH; The Mirror: A Novel. [13379] WOYKE, ELIZABETH; The Mirror: A Novel. [13380] WOYKE, ELIZABETH; The Mirror: A Novel. [13381] WOYKE, ELIZABETH; The Mirror: A Novel. [13382] WOYKE, ELIZABETH; The Mirror: A Novel. [13383] WOYKE, ELIZABETH; The Mirror: A Novel. [13384] WOYKE, ELIZABETH; The Mirror: A Novel. [13385] WOYKE, ELIZABETH; The Mirror: A Novel. [13386] WOYKE, ELIZABETH; The Mirror: A Novel. [13387] WOYKE, ELIZABETH; The Mirror: A Novel. [13388] WOYKE, ELIZABETH; The Mirror: A Novel. [13389] WOYKE, ELIZABETH; The Mirror: A Novel. [13390] WOYKE, ELIZABETH; The Mirror: A Novel. [13391] WOYKE, ELIZABETH; The Mirror: A Novel. [13392] WOYKE, ELIZABETH; The Mirror: A Novel. [13393] WOYKE, ELIZABETH; The Mirror: A Novel. [13394] WOYKE, ELIZABETH; The Mirror: A Novel. [13395] WOYKE, ELIZABETH; The Mirror: A Novel. [13396] WOYKE, ELIZABETH; The Mirror: A Novel. [13397] WOYKE, ELIZABETH; The Mirror: A Novel. [13398] WOYKE, ELIZABETH; The Mirror: A Novel. [13399] WOYKE, ELIZABETH; The Mirror: A Novel. [13400] WOYKE, ELIZABETH; The Mirror: A Novel. [13401] WOYKE, ELIZABETH; The Mirror: A Novel. [13402] WOYKE, ELIZABETH; The Mirror: A Novel. [13403] WOYKE, ELIZABETH; The Mirror: A Novel. [13404] WOYKE, ELIZABETH; The Mirror: A Novel. [13405] WOYKE, ELIZABETH; The Mirror: A Novel. [13406] WOYKE, ELIZABETH; The Mirror: A Novel. [13407] WOYKE, ELIZABETH; The Mirror: A Novel. [13408] WOYKE, ELIZABETH; The Mirror: A Novel. [13409] WOYKE, ELIZABETH; The Mirror: A Novel. [13410] WOYKE, ELIZABETH; The Mirror: A Novel. [13411] WOYKE, ELIZABETH; The Mirror: A Novel. [13412] WOYKE, ELIZABETH; The Mirror: A Novel. [13413] WOYKE, ELIZABETH; The Mirror: A Novel. [13414] WOYKE, ELIZABETH; The Mirror: A Novel. [13415] WOYKE, ELIZABETH; The Mirror: A Novel. [13416] WOYKE, ELIZABETH; The Mirror: A Novel. [13417] WOYKE, ELIZABETH; The Mirror: A Novel. [13418] WOYKE, ELIZABETH; The Mirror: A Novel. [13419] WOYKE, ELIZABETH; The Mirror: A Novel. [13420] WOYKE, ELIZABETH; The Mirror: A Novel. [13421] WOYKE, ELIZABETH; The Mirror: A Novel. [13422] WOYKE, ELIZABETH; The Mirror: A Novel. [13423] WOYKE, ELIZABETH; The Mirror: A Novel. [13424] WOYKE, ELIZABETH; The Mirror: A Novel. [13425] WOYKE, ELIZABETH; The Mirror: A Novel. [13426] WOYKE, ELIZABETH; The Mirror: A Novel. [13427] WOYKE, ELIZABETH; The Mirror: A Novel. [13428] WOYKE, ELIZABETH; The Mirror: A Novel. [13429] WOYKE, ELIZABETH; The Mirror: A Novel. [13430] WOYKE, ELIZABETH; The Mirror: A Novel. [13431] WOYKE, ELIZABETH; The Mirror: A Novel. [13432] WOYKE, ELIZABETH; The Mirror: A Novel. [13433] WOYKE, ELIZABETH; The Mirror: A Novel. [13434] WOYKE, ELIZABETH; The Mirror: A Novel. [13435] WOYKE, ELIZABETH; The Mirror: A Novel. [13436] WOYKE, ELIZABETH; The Mirror: A Novel. [13437] WOYKE, ELIZABETH; The Mirror: A Novel. [13438] WOYKE, ELIZABETH; The Mirror: A Novel. [13439] WOYKE, ELIZABETH; The Mirror: A Novel. [13440] WOYKE, ELIZABETH; The Mirror: A Novel. [13441] WOYKE, ELIZABETH; The Mirror: A Novel. [13442] WOYKE, ELIZABETH; The Mirror: A Novel. [13443] WOYKE, ELIZABETH; The Mirror: A Novel. [13444] WOYKE, ELIZABETH; The Mirror: A Novel. [13445] WOYKE, ELIZABETH; The Mirror: A Novel. [13446] WOYKE, ELIZABETH; The Mirror: A Novel. [13447] WOYKE, ELIZABETH; The Mirror: A Novel. [13448] WOYKE, ELIZABETH; The Mirror: A Novel. [13449] WOYKE, ELIZABETH; The Mirror: A Novel. [13450] WOYKE, ELIZABETH; The Mirror: A Novel. [13451] WOYKE, ELIZABETH; The Mirror: A Novel. [13452] WOYKE, ELIZABETH; The Mirror: A Novel. [13453] WOYKE, ELIZABETH; The Mirror: A Novel. [13454] WOYKE, ELIZABETH; The Mirror: A Novel. [13455] WOYKE, ELIZABETH; The Mirror: A Novel. [13456] WOYKE, ELIZABETH; The Mirror: A Novel. [13457] WOYKE, ELIZABETH; The Mirror: A Novel. [13458] WOYKE, ELIZABETH; The Mirror: A Novel. [13459] WOYKE, ELIZABETH; The Mirror: A Novel. [13460] WOYKE, ELIZABETH; The Mirror: A Novel. [13461] WOYKE, ELIZABETH; The Mirror: A Novel. [13462] WOYKE, ELIZABETH; The Mirror: A Novel. [13463] WOYKE, ELIZABETH; The Mirror: A Novel. [13464] WOYKE, ELIZABETH; The Mirror: A Novel. [13465] WOYKE, ELIZABETH; The Mirror: A Novel. [13466] WOYKE, ELIZABETH; The Mirror: A Novel. [13467] WOYKE, ELIZABETH; The Mirror: A Novel. [13468] WOYKE, ELIZABETH; The Mirror: A Novel. [13469] WOYKE, ELIZABETH; The Mirror: A Novel. [13470] WOYKE, ELIZABETH; The Mirror: A Novel. [13471] WOYKE, ELIZABETH; The Mirror: A Novel. [13472] WOYKE, ELIZABETH; The Mirror: A Novel. [13473] WOY

CV

Curriculum Vitae

Miro Roman, M.Arch

roman@arch.ethz.ch

www.romanvlahovic.com

www.miro.romanvlahovic.com

www.vimeo.com/miroman

EDUCATION

- | | |
|------|--|
| 2013 | PhD Candidate, ETH Zürich |
| 2012 | ETH Zurich, Computer Aided Architectural Design, prof. Ludger Hovestadt Advanced Master of Science in Computer Aided Architectural Design |
| 2009 | University of Zagreb, Faculty of Architecture, Zagreb, Croatia Master of Architecture |

WORK EXPERIENCE

- | | |
|----------------|--|
| 2015 - present | Research Assistant and PHD student, ETH, Chair for CAAD, Zürich |
| 2013 - 2015 | Research Assistant, ETH, Future Cities Laboratory, CAAD, Singapore |
| 2009 - 2011 | Project Architect, Hpnj+, Zagreb, Croatia |

ACADEMIC TEACHING

- | | |
|------|--|
| 2019 | Demigod — Renaissance Man — Digital Human (with Sebastian Michael), 052-0628-19L, Elective course, CAAD Theory, ETH, Zürich |
| 2019 | Xenotheka (as a part of History and Theory of Architecture II, Prof.Dr. Marteen Delbeke), 052-0804-00L, Chair of the History and Theory of Architecture, ETH, Zürich |
| 2018 | Xenotheka (as a part of History and Theory of Architecture I, Prof.Dr. Marteen Delbeke), 052-0803-00L, Chair of the History and Theory of Architecture, ETH, Zürich |

- 2017 A Quantum City (with Diana Alvarez Marin), 051-0728-17L,
Elective course, CAAD Theory, ETH, Zürich
- 2016 A Quantum City (with Diana Alvarez Marin), 051-0731-16L,
Elective course, CAAD Theory, ETH, Zürich
- 2016 A Quantum City (with Diana Alvarez Marin), 051-0728-16L,
Elective course, CAAD Theory, ETH, Zürich
- 2014 A Quantum City Jakarta Workshop (with Vera Bühlmann, Diana Alvarez
Marin), University of Indonesia, Jakarta, Indonesia

PUBLICATIONS

- Roman, Miro (2016). 'Abstract Object in the World of Data – A Play of Books – Symbolicity of Information as Potential for Architectural Articulation', in eCAADe 2016: Complexity & Simplicity – Proceedings of the 34th eCAADe Conference – Volume 2, University of Oulu, Oulu, Finland, 22-26 August 2016, pp. 287-296
- Alvarez, Diana and Miro Roman (2015). 'A Quantum City: Mastering the Generic', Reflection on New Urbanization and Sustainability, Landscape Architecture Frontiers No.5 Volume 3: 99-109.
- Tomljanovic, Petra and Miro Roman (2015). 'From Singapore With Love', Oris magazine 95: 148-157.
- Hovestadt, Ludger, Vera Bühlmann, Diana Alvarez, Miro Roman and Michael Sebastian (2015). A Quantum City, Applied Virtuality Book Series. Basel: Birkhäuser.
- Roman, Miro (2015). 'Information, Data, Lists, Indexes, Pixels – Symbolicity of Data as a Potential for Articulation', FCL Magazine (No3): 56–63.
- Alvarez, Diana and Miro Roman (2014). 'A Quantum City, or How to Master the Generic', in 102nd ACSA Annual Meeting Proceedings, Globalizing Architecture/ Flows and Disruptions.
- Roman, Miro (2014). 'Four Chairs and All the Others – Eigenchair', in Eigenarchitecture, eds. Ludger Hovestadt and Vera Bühlmann, 10–25. Birkhauser Architecture.
- Roman, Miro (2013). 'Four Chairs and All the Others – Eigenchair', in eCAADe 2013: Computation and Performance – Proceedings of the 31st eCAADe Conference – Volume 2, eCAADe, 405–415, Delft, The Netherlands.

PUBLIC AND INVITED TALKS

- 05.2019 How ALICE deals with LOTs, Digital-Knowledge, ENSA Paris Malaquais, Paris, France
- 04.2019 How ALICE deals with LOTs, 2019 ETH-SEU PhD workshop and Forum, Southeast University, Nanjing, China
- 03.2019 How ALICE deals with LOTs, Common Ground, Liga, Mexico City, Mexico
- 12.2018 XENOTHEKA, or how ALICE deals with LOTs, Digital Architectonics, CAAD, ETH Zürich, Zürich, Switzerland
- 11.2018 XENOTHEKA, or how ALICE deals with LOTs, Gegenwartsarchitektur, ATTP, TU Wien, Vienna, Austria
- 05.2018 Pixels, Voxels, and Atom Letters, Bartlett Plexus Paris #5, Area, Paris, France
- 11.2017 Void, Brands, Characters or How to Deal with LOTs, Institute of Architecture and Media, TU Graz, Graz, Austria
- 10.2017 Big Data: Chronicles of the Present (with Diana Alvarez Marin), Gegenwartsarchitektur, ATTP, TU Wien, Vienna, Austria
- 08.2017 Void or How to Deal with a LOT, Kulturfolger, Zürich, Switzerland
- 12.2016 A Play of Books – Computational Object in a World of Data, TU Wien, Vienna, Austria
- 11.2016 A Quantum City (with Diana Alvarez Marin), Recombinant City, Department of Architecture and Urban Studies, Politecnico di Milano, Milano, Italy
- 11.2016 A Quantum City (with Diana Alvarez Marin), Act of resistance series, OSA, Academy of Architecture, Mendrisio, Switzerland
- 05.2016 A Play of Books – Computational Object in a World of Data, ITA lunch Talk, ETH Zürich, Zürich, Switzerland
- 04.2016 Generic Ground – A Few Objects and their many Others, MAS Urban Design, ETH Zürich, Zürich, Switzerland
- 10.2015 Generic Ground – A Few Objects and their many Others, Computational Object, TU Wien, Vienna, Austria
- 08.2015 Kilo Dialogues: A Quantum City Book Launch (with Diana Alvarez Marin), Kilo Lounge, Singapore
- 05.2015 Abstract Object in The Word of Data, COST, New Materialism, Einsiedeln, Switzerland
- 01.2015 How to master the Generic (with Diana Alvarez Marin), Future Cities: Research in Action, Urban Redevelopment Authority, Singapore

- 07.2014 A Quantum City (with Diana Alvarez Marin), Quantum City Workshop, University Of Indonesia, Jakarta, Indonesia
- 04.2014 Storytelling (with Luka Vlahovic), OFF AF, University of Architecture, Zagreb, Croatia
- 07.2013 A Quantum City (with Diana Alvarez Marin), Lunch Talk, Value Lab Asia, Future Cities Laboratory, Singapore
- 09.2010 Context (with Luka Vlahovic), Architectural Symposium – Recognising Praxis, Architectural Association Rijeka, Rijeka, Croatia

EXHIBITIONS

- 10.2015 Lacescape Table, WantedDesign; Ikon Arts Foundation; Croatian Design Showcase, New York, USA
- 01.2015 Urban Dyptich – photographic mosaic, Destruction & Rebirth, The Mill, Singapore
- 10.2014 Lacescape Table, Ljubljana Month Of Design 2014, Brands & Signs, Ljubljana, Slovenia
- 09.2014 Lacescape Table, Exhibition of Croatian Design 1314, Zagreb, Croatia
- 06.2014 Lacescape Table, D-Day; 5. International Design Festival, Zagreb, Croatia
- 06.2013 Object vs. Population – 3d Printed Generative Jewellery, D-Day; 4. International Design Festival, Zagreb, Croatia
- 12.2012 Hvidra Memorial, The 47th Zagreb Salon of Architecture, Zagreb, Croatia
- 10.2012 Object vs. Population – 3d Printed Generative Jewellery, Ljubljana Month Of Design 2012, Design Expo, Ljubljana, Slovenia
- 09.2010 Recognising Praxis, Architectural Association Rijeka, Rijeka, Croatia
- 05.2010 Opening Exhibition Of Maxxi Rome, Associate for Helena Paver Njirić's "Moire" Exhibit, Rome, Italy
- 10.2009 Forest City, The 44th Zagreb Salon Of Architecture, Zagreb, Croatia

AWARDED ARCHITECTURAL COMPETITIONS

- 04.2016 Spectral Monument (with Luka Vlahović, Petra Tomljanović), Honourable mention, Zagreb, Croatia
- 12.2011 European 11 Dubrovnik Pacemaker (with Josip Mičetić, Luka Vlahović), Honourable Mention, Dubrovnik, Croatia
- 01.2011 University Campus Borongaj (with Jelena Botteri, Helena Paver Njirić, Hrvoje Sedlić – Hpnj+), Honorable Mention Zagreb, Croatia

- 12.2010 Urban Plan For Development of Housing in Rujevica (with Jelena Botteri, Helena Paver Njirić, Yosuke Ozaki, Hrvoje Sedlić – Hpnj+), Honorable Mention, Rijeka, Croatia
- 03.2010 Epk Drava 2012 – Embankment of the River Drava (with Jelena Botteri, Helena Paver Njirić – Hpnj+), 2nd Prize, Maribor, Slovenia
- 10.2009 Regulation of Hermann Bolle’s Alley (with Iva Baljkas, Josip Mičetić Luka Vlahović), 2nd Prize, Zagreb, Croatia
- 09.2009 Hvidra Memorial (with Iva Baljkas, Luka Vlahović), 1st Prize, Zagreb, Croatia
- 05.2008 City Park Špansko (with Erna Pajnić, Luka Vlahović), Honorable Mention, Zagreb, Croatia
- 12.2007 Extension of Ksaver Šandor Gjalski School, Zagreb, Croatia, (with Luka Vlahović), Honorable Mention
- 09.2007 City Cemetery’s Extension Complex on Mirogoj (with Iskra Kirin, Josip Mičetić, Luka Vlahović), Honourable Mention, Zagreb, Croatia
- 04.2006 Ivanja Reka School (with Hrvoje Čop, Ksenija Jurčić Diminić, Barbara Kalaš, Vinko Penezić, Krešimir Rogina – Penezić & Rogina Architects), Honourable Mention, Zagreb, Croatia
- 07.2004 Gračani-Dolje Urban Plan (with Iva Baljkas, Hrvoje Čop, Luka Vlahović), Honourable Mention, Zagreb, Croatia
- 12.2003 Main Square Čakovec (with Iva Baljkas, Marko Salopek), 3rd Prize, Čakovec, Croatia

UNIVERSITY AWARDS AND SCHOLARSHIPS

- | | |
|------|--|
| 2011 | Study Scholarship for Fine Arts, Architecture, Music, Dance, DAAD, Germany |
| 2005 | Collective Housing Project of the Year 2004/05, University of Zagreb, Faculty of Architecture, Zagreb, Croatia |
| 2004 | Family House Project of the Year 2003/04, University of Zagreb, Faculty of Architecture, Zagreb, Croatia |

