Disaggregating Conflict by Actors, Time, and Location

Karsten Donnay
Sociology, Modeling and Simulation
ETH Zurich
Clausiusstrasse 50
8092 Zürich
Switzerland
kdonnay@ethz.ch

Elena Gadjanova
Max Planck Institute for the Study of Religious and Ethnic Diversity
Hermann-Föge-Weg 11
37073 Göttingen
Germany
gadjanova@mmg.mpg.de

Ravi Bhavnani
International Relations/Political Science Department
Graduate Institute of International and Development Studies
Avenue de la Paix 11A
1211 Geneva 21
Switzerland
ravi.bhavnani@graduateinstitute.ch

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Disaggregated studies of conflict, which are increasingly common, provide fine-grained renderings of the relevant actors, timing, and location of events. These studies look beyond the country-year as the unit of analysis, in lieu of research designs that focus on individuals, households, or groups, the heterogeneous characteristics, beliefs, and interests of these actors, and resulting variation in attitudes, decision making, and behavior. The shift toward the micro level also permits a more nuanced analysis of conflicts, with explanations that account for changes over time and across spatial units—spanning the range from villages, neighborhoods, cities, subnational administrative units, states, and regions—in the incidence, intensity, and duration of events. The ability to specify and test causal mechanisms, and thereby address a characteristic limitation of more highly aggregated large-N studies, constitutes a noteworthy advancement in conflict research.

Yet disaggregated approaches are not without limitations. One involves the trade-off in sacrificing greater external validity for internal validity—when variation is explored at the subnational level, within a single country or even several countries, as opposed to cross-national studies that yield broadly applicable findings. Also, there are uncertainties about design, measurement, and analysis: What is the appropriate level of disaggregation? What should be measured? What is observable in practice? How can studies that select different units of analysis be compared, given the known problems with changing the number of units under study and the shape and size of those units? In what ways can different datasets on conflict be linked to each other and to data on other factors? How can challenges associated with analyzing disaggregated data be addressed? In particular, what are the strengths and
This chapter takes stock of the emerging research track by providing an overview of notable recent work that disaggregates conflict by its constitutive actors and the timing and location of events. We discuss select insights from these examples, why they challenge results from prior research or the conventional wisdom, and the associated implications for policy. Our concise review reveals a surge of rich context-specific research, which represents welcome progress, despite the rather limited communication across studies, the absence of data pooling, and the plethora of mixed findings.

1 Disaggregation by Actors

Micro-level research on conflict draws attention to actors who feature less prominently, if at all, in state-centered analyses that rely on country-year research designs (see Buhaug & Rød 2006; Humphreys & Weinstein 2006; Salehyan et al. 2011). By disaggregating agency, these studies explicitly take individuals (Annan et al. 2011; Bhavnani & Backer 2000; Bosi & Della Porta 2012; Florez-Morris 2010), households (Bozzoli & Brück 2009; Justino 2009; Justino et al. 2013), and groups (Buhaug et al. 2009; Cederman et al. 2011; Gubler & Selway 2012; McCauley 2013; Staniland 2012) as units of analysis.

Representative studies account for actors’ heterogeneous characteristics, beliefs, and interests, underscoring variation in their propensity to engage in violence (Bhavnani & Backer 2000; Humphreys & Weinstein 2008; Verwimp 2006), join paramilitary groups (Bosi
& Della Porta 2012; Muldoon et al. 2008), and stay put or flee (Czaika & Kis-Katos 2009; Steele 2009). An added benefit is the impetus to identify mechanisms and emergent structures that shape the attitudes, decision making, and behavior of actors. Influences include: the link between ethnicity and conflict during counter-insurgency operations, due to the identity of soldiers conducting sweeps and their prior experience as insurgents (Lyall 2010); individual decisions to migrate as a function of security considerations, police presence, and intimidation by rebels (Czaika & Kis-Katos 2009); flight patterns determined by community characteristics and the salience of ascriptive cleavages during a war (Steele 2009); and levels of violence against adversaries and civilians as determined by rewards and punishments used to foster intragroup cohesion (Bhavnani 2006; Humphreys & Weinstein 2006; Staniland 2012). The remainder of this section provides three detailed examples of sets of research on conflict that disaggregate by actors.

1.1 Targeting of Civilians

One focus of disaggregated analyses has been variation in the extent to which civilians are targeted, most notably within the same civil war. This topic has been examined with respect to violence committed by both state and non-state actors, differentiated into factions and even assessed at an individual level.

Kalyvas (2006) emphasizes the distinction between selective and indiscriminate violence during civil war as a function of territorial control. Selective violence against civilians is predicted to be highest where control is hegemonic but incomplete, whereas the use of
indiscriminate violence is greatest in zones completely under rival control. Building on this distinction, Herreros & Criado (2009) use the case of the Spanish Civil War to advance two separate logics to account for civilian victimization during civil war. One is strategic violence targeting potential political entrepreneurs. The other is indiscriminate violence as a consequence of the breakdown of the state. While the link between state collapse and the onset of civil war is well established in the literature, Herreros & Criado (2009) demonstrate that temporal variation in the recovery of public services better accounts for patterns of abuse against civilians.

Humphreys & Weinstein (2006) focus instead on warring factions, hypothesizing that internal structures and oversight of members are critical factors in determining whether civilians are abused during civil wars. The authors use data from a novel survey of ex-combatants to show that the absence of in-group policing within rebel groups leads to indiscriminate violence against civilians. Similarly, Balcells (2010) finds, based on the analysis of municipal-level data on violent events during the Spanish Civil War, that pre-war political competition between rival political factions is a factor in the degree of violence committed against civilians. Subsequently, Balcells (2011) shows that varying levels of violence against civilians within the same conflict are affected by prewar political support for enemy groups and wartime political parity within a locality.

All of this research highlights the advantages of not analyzing conflict as an aggregate, generic event. Taking the specific nature of violence seriously—and seeking to explain variation in type and severity, in this case with respect to the targeting of civilians—has
prompted scholars to look more carefully at different actors. The findings demonstrate that the characteristics of those actors and how they are constituted and operate matters greatly for inferences regarding conflict. In addition, there is strong evidence to suggest that treating groups as monolithic and unified tends to be a poor assumption, since myriad interests, cleavages, and disputes are evident in conflicts. It is clear that the historical context and current environment exert influence, but also that both of these effects are not constants, as they depend on the specific situations of actors.

1.2 Rebel Group Dynamics

Another line of research seeks to understand the capabilities and actions of rebel groups, which affect the duration and severity of civil wars. Studies have yielded crucial awareness of conflict as typically comprised of complex interactions among a number of separate groups, rather than merely a dyadic interaction between a government and challenger.

Of particular importance is the finding that rebel in-fighting and side-switching may result in the proliferation of numerous local disputes, prolong the tenure of weak governments, and complicate settlement in the face of conflicting allegiances and grievances. Staniland (2012) demonstrates that lethal competition among insurgent factions can result in ethnic defection, with some groups joining the government. This mechanism is used to explain the rise of pro-state paramilitaries in Kashmir and Sri Lanka. Bakke et al. (2012) draw attention to rebel group fragmentation as a function of the degree of internal institutionalization, the number of organizations within a movement, and the internal power structures. These
factors determine the cohesion of rebel movements and affect the duration and intensity of fighting.

Recent studies also delve into rebel motivations. A noteworthy example is Lyall (2013), which employs a novel geocoded dataset of 23,000 air strikes and shows of force in Afghanistan between 2006 and 2011. The analysis demonstrates that shows of force are associated with more insurgent violence, insofar as they create incentives for insurgents to establish and maintain their reputations with the local population. Lyall’s finding provides unusual insight into the relative effectiveness of different counter-insurgency tactics, with a degree of rigor and precision that is facilitated specifically by the disaggregated nature of the data and the ability to examine events and their consequences in proximity.

Clearly, overlooking the full extent of what happens among and within rebel groups risks a mischaracterization of conflict, by oversimplifying what are actually complex dynamics. The latest research tackles those dynamics head on, capitalizing on new data, and provides a more nuanced understanding about how conflict unfolds.

1.3 Inequality and Violence

A further theoretical advance made possible by disaggregating agency in conflict pertains to the relationship between inequality and civil war. A decade ago, Fearon & Laitin (2003:85) remarked that: “The poor quality of the inequality data, available for only 108 countries, does not allow us to go beyond the claim that there appears to be no powerful cross-national relationship between inequality and onset.” The constraint they identified has, to a large
extent, been relaxed with the availability of detailed subnational data on inequality across countries.

Buhaug et al. (2011) find that civil wars are more likely to break out in areas with low absolute income or high deviations from the national average, regardless of a country’s aggregate level of economic development. Further research in this vein indicates that one of the principal drivers of violence is grievances arising from the unequal distribution of resources and resulting in resentment along group lines. Cederman et al. (2011) use geocoded data on ethnic group settlement patterns and income to show that relatively richer or poorer groups fight more compared to those with incomes near the country mean (see also Chapter 9 of Backer et al. 2014). McCauley (2013) suggests that when economic inequalities overlap with ethnic identities and few provisions are made to include or compensate marginalized groups, the likelihood of violence increases. Sekulic et al. (2006) examine the causal link between ethnic intolerance and conflict, drawing attention to the importance of elite political mobilization. Pappas (2008) shows that elite exclusion from government creates incentives to capitalize on resentment and increases the salience of identity categories. Gubler & Selway (2012) find, however, that the likelihood of civil war decreases when ethnic cleavages crosscut class, regional, and religious ones.

Taken together, studies examining the ethnic bases of income inequality in a disaggregated fashion effectively challenge the notion that greed or opportunity override grievances as explanations for civil war, as has been claimed (Azam 2002; Collier & Hoeffler 1998; Fearon & Laitin 2003). The micro-level research underscores the intricate interactions be-
tween the behavior of key actors and broader social structures that can either enable or restrict such behavior.

2 Disaggregation by Time

The increasing availability of detailed information on the timing of conflict events enables analysis at monthly, weekly, daily, and even hourly time scales. From a theoretical standpoint, temporal disaggregation permits researchers to study mechanisms at more natural or appropriate time scales, thereby closing the gap between concepts and data (Kalyvas 2008). Consider, for instance, cycles of escalation and de-escalation in the Israeli-Palestinian conflict, which typically last for days or weeks and are obscured by data reporting violence for calendar years (Bhavnani & Donnay 2012; Haushofer et al. 2010; Jaeager & Paserman 2006; 2008). With the same logic, Strauss (2007) uses temporally disaggregated data to study the relationship between the broadcast of “hate radio” messages and the onset of genocidal violence in Rwanda during 1994. Because the violence was concentrated in a period of about 100 days, and its onset around the country varied by weeks, calendar-year data is again inadequate. Taking proper account of this compressed timing, with respect to the sequence of events, Strauss’ analysis rejects the popular narrative that hate radio was the primary driver of the genocide.

Temporal disaggregation also lends itself to addressing the endogeneity of conflict: the notion that previous conflict shapes factors such as actors’ preferences, which then influence
the potential for ongoing and future conflict (Kalyvas 2006; Voors et al. 2012). Bhavnani & Backer (2000), in a study of ethnic conflict and genocide in Rwanda and Burundi, show that temporal variation in the scale of violence is best explained by a combination of individual-level factors such as the propensity to engage in violence, form independent beliefs about others, and react to public messages about current levels of ethnic aggression, and genocidal norms enforced by group leaders. In their model, these factors both influence and are influenced by ensuing violence. Justino (2009) also highlights the self-reinforcing nature of endogenous dynamics. She suggests that poorer households in conflict areas support armed groups for protection and are in turn preyed upon, increasing the duration of conflicts independent of other explanatory factors.

Two examples that follow illustrate the utility of temporal disaggregation in studying civilian agency in conflict and the value of social media as a novel data source.

2.1 Civilian Agency

During the ongoing conflicts in Iraq and Afghanistan, civilians are often caught in the line of fire. Recent research by Condra & Shapiro (2012) sheds light on how violence against civilians—perpetrated both by insurgent and coalition forces—shapes the dynamics of conflict. Using weekly time-series, district-level data from 2004–2009, the study finds that civilian casualties caused by coalition forces led to an increase in the level of insurgent attacks, whereas civilian casualties caused by insurgent attacks dampened insurgent violence. As the authors explain, support for coalition troops among civilians increases
when the latter are targeted by insurgents, and declines when targeted by coalition forces. Greater levels of civilian support for the coalition, in turn, tend to reduce insurgent violence. The study illustrates the value added of temporal disaggregation, given that Condra and Shapiro’s analysis requires a precise tracing of what transpires following incidents resulting in civilian casualties—something that is impossible with more aggregated data. The research bolsters a literature that highlights the role of individual civilian agency in civil war (see also Kalyvas 2006; Lyall & Wilson 2009). It also sheds light on how the interactions between civilians and military actors shape violence.

2.2 Using Crowdsourced Data

Understanding the dynamics of short-duration military conflicts, in which events unfold over a matter of days or even hours, has traditionally been a challenge because of a lack of data with sufficiently high temporal resolution. This constraint has recently been overcome, thanks in part to the advent of social media and its exploitation as an information resource, greatly improving the prospects for relevant analysis.

One of the earliest examples of such research focuses on the conflict in Gaza from late 2008 to early 2009, the most deadly escalation between Israelis and Palestinians following the second Intifada, which was both rapid and intense. Zeitzoff (2011) generated hourly, dyadic conflict-intensity scores from Twitter and a number of other social media sources. He then analyzed these detailed time series to find an endogenous relation between current and future levels of violence. The results revealed a tendency for violence to escalate
immediately after attacks by the rival side, as well as responses sensitive to international reactions. Zeitzoff’s work demonstrates how social media sources can be used creatively, with great depth and a relatively fast turnaround, to study political violence in ways that were normally infeasible in the past.

Other “crowdsourced” data collection efforts have attracted broad attention. One that stands out is the deployment of the online platform Ushahidi, which was first developed to track the violence that broke out after the disputed 2007 election in Kenya. This particular platform has since been used in numerous other conflict settings, as well as in response to natural disasters, such as with the coordination of humanitarian relief after the devastating 2010 earthquake in Haiti. Similar crowdsourcing initiatives related to conflicts and disasters have been implemented elsewhere (see also Chapter 11 of Backer et al. 2014).

Through the work of organizations such as ICT4Peace, crowdsourced “big data” tools have been readily embraced by various UN agencies. Their general utility for conflict research, however, remains to be established. In this respect, a key issue is data quality, which inevitably affects the confidence in the results that can be obtained. The underlying idea is simple: thousands of discrete, small pieces of information supplied by local witnesses more accurately reflect a situation on the ground than any expert observer possibly could. Nonetheless, there are valid concerns that these data have limitations (e.g., selective availability of geolocations) and even biases (e.g., those with the means to access technology and an inclination to report what they see are disproportionally represented). Of course, conventional datasets on conflict are hardly immune to analogous issues, especially given
their reliance on mainstream media as data sources.

3 Disaggregation by Location

The burgeoning micro-level approaches to the study of conflict have directed far greater attention to the location of violence. The use of geographic information systems (GIS) permits researchers to combine spatial and statistical data to examine existing problems in novel ways (Cederman & Gleditsch 2009). In particular, GIS simplifies integration of data from other existing sources, including covariates like GDP, elevation, and population.

Some conflict studies that use locations are based on data collection by individual scholars or small teams. These typically focus on a single case or a select number of cases. They may employ a combination of intensive field research (e.g., Ibáñez & Velasquez. 2009; Staniland 2012), existing surveys, data collected by NGOs, official statistics and/or newspaper reports (e.g., Bhavnani et al. 2011; Lyall 2010). Other studies draw upon large-scale institutional initiatives, such as the Uppsala Conflict Data Program’s Georeferenced Event Dataset (UCDP GED) (Sundberg et al. 2010) and the Armed Conflict Location and Event Dataset (ACLED) (Raleigh et al. 2010).\(^1\) Such initiatives generally involve more expansive data collection spanning many countries, with standardized coding procedures to maximize precision and minimize error.

Among the research at the subnational level, some focuses on centers of population such as villages and cities and administrative units such as districts and regions (Balcells

\(^1\)For more details on ACLED, see Chapter 7 in Backer et al. (2014).
2011; Czaika & Kis-Katos 2009; Kalyvas 2006; Østby et al. 2009; Steele 2009), while others employ grids composed of cells of an equal predefined area (Hegre et al. 2009). The specific research question typically determines the choice of spatial unit for the analysis. Studies then seek to explain variation across or within units, controlling for variations in unit characteristics (Buhaug et al. 2009; Do & Iyer 2010; Lujala 2010). Examples include analyses of variation in civilian abuse (Humphreys & Weinstein 2006), the incidence of indiscriminate versus selective violence as a function of territorial control (Kalyvas 2006), the number and relative capacities of rivals in shaping the use of selective violence (Bhavnani et al. 2011), the role of in-group policing and segregation in reducing violence in civil wars (Weidmann & Salehyan 2013), and local wealth differentials as determinants of conflict onset (Buhaug et al. 2011).

We discuss two examples of research using spatially disaggregated units of analysis to study reactive dynamics and segregation. These examples further highlight the breadth of methodological approaches used in micro-level studies on conflict.

3.1 Reactive Violence Dynamics

The increased availability of disaggregated event data has renewed interest in the relationship between conflict events. Studies examine what is broadly referred to as “reactive” dynamics—the circumstances under which violence perpetrated by one group elicits a reaction from the targeted group, resulting in the escalation (or de-escalation) of the conflict. Locations and their characteristics are logically important factors when examining the re-
relationship between events. For instance, an attack in one ethnic enclave might be expected to generate a retaliatory attack on the rival group’s stronghold. Such topics can be studied properly only if the necessary details—such as where groups are based and commit acts of violence—are available. The latest research has made that leap, using data disaggregated by actor-group, as well as temporally and spatially. For instance, Linke et al. (2012) investigate the “tit-for-tat” dynamics between insurgent and coalition forces in Iraq. Applying autoregressive techniques, after aggregating event counts to small spatial grid cells, they find evidence for a “reactive” dimension to violence.

Of note, there are specific methodological challenges associated with disaggregating data spatially, in particular when conflict events are not confined to natural units of analysis, such as cities or villages. As in the study discussed earlier, researchers frequently aggregate data to arbitrary cells in order to apply standard econometric techniques to the resulting discrete spatio-temporal series (see also Buhaug et al. 2011; Raleigh & Hegre 2009). The resulting inferences may be biased, however, given the selection of artificial grid sizes. In the geography literature, this issue is referred to as the “modifiable areal unit problem” or “MAUP” (Openshaw & Taylor 1979). A number of disaggregated studies address this problem. Schutte & Weidmann (2011) introduce an innovative technique for the study of conflict diffusion processes in civil wars that overcomes the MAUP. Braithwaite & Johnson (2012), who examine the relationship between insurgent attacks and coalition counterinsurgency operations in Iraq, provide another example in which the inferences about spatial and temporal patterns are unaffected by the MAUP.
To achieve robust causal inferences, others prefer field experiments. For example, Lyall (2009) uses a natural quasi-experimental design to study reactive violence in Chechnya. Using shelled and unshelled villages as units of analysis and a statistical matching design for pseudo-random assignment, he demonstrates that indiscriminate violence produces a significant decrease in subsequent insurgent attacks. In this study and Linke et al. (2012), disaggregated data is essential for the detection of reactive dynamics, which are entirely obscured by data at higher levels of aggregation.

3.2 Segregation and Violence

The new data resources have also sparked interest in “bottom-up” agent-based modeling (ABM) techniques. This approach is well suited to studying dynamic interactions among agents on natural (i.e., realistic geographic) and artificial landscapes and to relating hypothesized micro-level processes to observed macro-level outcomes. Seeded with geographic and population data, ABM affords a high degree of empirical validity.

Recent studies demonstrate the utility of empirically grounded ABMs for analyzing the relationship between individual-level interaction and violence. Weidmann & Salehyan (2013) analyze ethnic violence in Baghdad following the US troop surge in Iraq. Their ABM is seeded with detailed empirical data on the topology and ethnic geography of the city, as well as the location of violence. In a similar vein, Bhavnani et al. (2014) examine the case of Jerusalem between 2001 and 2009 using a realistic representation of the city based on the population structure and location of dwellings within each neighborhood.
The study aims to reconcile competing perspectives on the effect of intergroup contact on violence. The first assumes that intermixed group settlement patterns reduce violence, with more frequent interactions enabling rivals to overcome their prejudices towards each other and become more tolerant. The second suggests just the opposite: that group segregation more effectively reduces violence given less frequent contact and fewer possibilities for violent encounters to occur.

Both studies make significant methodological advances and contribute to the long-standing debate on the relationship between residential settlement patterns and violence. The combination of formal models with rich, spatially disaggregated data enables the systematic study of alternative scenarios, with possible implications for policy makers and practitioners.

4 Contributions to Policy and Practice

By employing a disaggregated, micro-level approach to study the roots of conflict, the research surveyed in this chapter has illuminated, with considerable rigor and precision, the assortment of factors that contribute to violence. In the past, many of these drivers were consigned to a black box, or rendered as rough assumptions or post-hoc explanations for conflict phenomena. In contrast, the latest empirical analyses tackle these factors head on as hypotheses and are better able to detect the presence and absence of correlations and even causal relationships down to the level of groups (and segments thereof), communities,
and individuals, accounting for spatial and temporal variation in dynamics. Next, we briefly consider the applications of this research to policy and practice, paying particular attention to several key issues: participation, victimization, migration, segregation, governance, and reconstruction.

4.1 Participation

The question of who participates in violence is complicated, given that violence lacks a single root cause and is driven by a mixture of grievance and opportunity. Individual studies point to a wide assortment of factors: the salience of religious and political identification, communal responsibility, patriotism, social status, reputation, and peer pressure (Muldoon et al. 2008); interactions between individual motivations, group networks, and state repression (Bosi & Della Porta 2012); poverty, a lack of access to education, and political alienation (Humphreys & Weinstein 2008); personal dependence on an organization, shared values with other recruits, the appeal of a clandestine lifestyle, and self-valuation (Florez-Morris 2010); and age, gender, the size of rented land, and household income and investment (Verwimp 2005).

What emerges from these studies is that the motives for participation in violence are heterogeneous, as are the characteristics of those who volunteer or are recruited for military and other armed groups. This insight may not be surprising, let alone revolutionary. The real contribution of the disaggregated approach has been to provide a growing accumulation of compelling evidence of the influences that matter, with ample room for exploring and
understanding nuances, conditions and contradictions. This work underscores the need for evidence-based policy measures that are tailored to address the local topography of conflict—i.e., the relevant actors and their motivations and behavior.

4.2 Victimization

A conventional approach to studying vulnerability to conflict at the macro level is to focus on structural variables, some of which exhibit strong correlations to outcomes. A natural question is whether parallel relationships are observed at the micro level—e.g., do individual manifestations of structural conditions, like poverty, have the same relationship to vulnerability?

From various studies, different conclusions emerge. Local conflict is positively correlated with unemployment, inequality, natural disasters, changes in sources of incomes, and clustering of ethnic groups within villages (Barron et al. 2004); with inequality and group polarization (Nepal et al. 2011); with poverty (Do & Iyer 2010); larger group shares and more densely populated locales (Dabalen et al. 2012); and wealth (Hegre et al. 2009). Such detailed awareness is crucial to devising and deploying targeted, effective measures of conflict prevention that identify those at maximal risk.

4.3 Migration

A major consequence of violence is the movement of individuals, households, and groups to locations—including segregated enclaves—that ostensibly offer a greater degree of safety.
What drives individual flight, and who is most likely to flee? Compared to a cruder analysis of country-year data, such as on populations of refugees and IDPs, disaggregated research offers more revealing insights. Studies highlight the salience of conflict clashes, socio-economic factors, and local ethnic composition (Czaika & Kis-Katos 2009); violent events as drivers of increased migration, with political events displaying the opposite effect (Williams et al. 2012); and the type of community (urban or rural) and the characteristics of the conflict (the existence of some ascriptive cleavage) (Steele 2009). Improving the ability to anticipate flight—especially in large numbers—and understand the composition, motivations, and concerns of populations that flee are important for the planning and logistics of humanitarian relief efforts, the implementation of which can also have repercussions for the course of conflicts.

4.4 Segregation

A high-stakes consideration for policy makers is whether members of nominally rival social groups ought to be kept apart, more closely integrated, or at least encouraged to interact in various formal and informal settings. Conflicting arguments and evidence exist about which of these strategies achieves the best results in avoiding and mitigating conflict, as well as contributing to post-conflict peacebuilding. On the one hand, studies using disaggregated data suggest that ethnic avoidance and the establishment of relatively homogenous enclaves result in declining violence by reducing contact (Blair et al. 2012; Field et al. 2008; Weidmann & Salehyan 2013). On the other hand, the opposite conclusion—pointing to
a correlation between violence and ethnically segregated residential patterns—emerges in different contexts (Kasara 2013; Kingoriah 1980; K’Akumu & Olima 2007). While findings are mixed, the latest research also suggests that the effects of segregation and mixing on conflict are critically dependent on the nature of intergroup relations, as gauged by indicators such as social distance (Bhavnani et al. 2014). The implication is that more fine-grained empirical research can help to inform what approach ought to be favored, and when.

4.5 Governance

What effect do specific state policies have on violence? Of note, disaggregated studies have focused on spending priorities, land tenure, and access to state power. One set of findings indicates that increased government spending on education, health, and social security mitigates civil conflict, albeit with little or no effect attributed to non-targeted public spending and military expenditures (Taydas & Peksen 2012) or to the absolute level of state wealth (Bohlken & Sergenti 2010). Another study shows that absolute poverty and inequality increase conflict risk (Buhaug et al. 2011). Additional research reveals that secure property rights feature among the most significant drivers of long-term income (Voors & Bulte 2008) and by association, given the relationship between income and conflict, conflict mitigation (Butler & Gates 2012). These results suggest a number of policy goals that governments could emphasize, including to reduce violence in locations with certain contributing characteristics.
4.6 Reconstruction

Policy makers and practitioners often strive to successfully navigate the aftermath of conflict and maximize the potential for sustained peace. A portion of the recent literature has evaluated the effects of targeted reform efforts in post-conflict societies. Studies examine the impact of promoting the adoption of specific crops on household welfare per capita (Bozzoli & Brück 2009); the relation between subjective perceptions of violence, consumption expenditure, land use intensity, and the adoption of more risk-taking crop mixes (Badiuzzaman et al. 2011); individual exposure to violence, altruistic behavior, risk seeking, and high discount rates (Voors et al. 2012); the relationship between gender, reintegration and resilience (Annan et al. 2011); and the link between pre-conflict wealth and post-conflict economic growth at the provincial level (Justino & Verwimp 2013).

In contrast to more aggregate studies of outcomes like conflict recurrence and their relationship to structural political, economic, and social characteristics of countries, the fine-grained results of disaggregated and especially micro-level research provide detailed assessments of policy successes and failures from the perspective of individuals, households, and groups. These findings offer concrete guidance to development agencies and organizations that are seeking to allocate programs and resources in a more targeted, calibrated, and efficient manner.
5 Conclusion

The various theoretical, methodological, and policy contributions reviewed in this chapter follow a common logic: new, more rigorous, accurate, and subtle insights are generated and overall understanding is improved by studying conflict and violence at the level at which the hypothesized mechanisms actually operate. This means gathering the necessary data on (1) actors, including individuals, households, and groups; (2) the timing of events of different kinds; and (3) their location, including neighborhoods, cities, municipalities, and provinces, as well as exact geographic coordinates. Disaggregation has shed light on previously unexplained issues, clarified or rectified findings from previous analyses, and in the process, uncovered new considerations and questions.

Moving to data with greater geographic and/or temporal resolution typically increases sample size, with obvious benefits for statistical inference. Shortcomings may arise, however, from inadequately disaggregated variables:

These practices lead to the reproduction of problems encountered in the macro-literature such as the absence of clear microfoundations, the distance gap between theoretical constructs and proxies, and the inability to adjudicate between observationally equivalent causal mechanisms. (Kalyvas 2008:398–399).

In particular, Shellman et al. (2010) show that inadequate actor disaggregation may affect inferences and lead researchers to commit both Type I (i.e., false positive) and Type II (i.e., false negative) errors. The problem of finding the “right” unit of actor aggregation is often
complicated by the fact that the coding or identification of actor groups varies over time and across regions—a long-standing challenge recognized in the literature on cross-national studies (see, for example, Hug 2003). Nonetheless, the ability to account for subnational variation, both over time and across space, has yielded important insights on the dynamics of violence, its reactive dimensions, and its relation to patterns of territorial control and ethnic settlement patterns, as was discussed with respect to the examples provided earlier. Designs that continue to use the country-year as their unit of analysis miss relevant action at finer temporal and geographic scales.

Meanwhile, the expansion of new media has been opening up productive avenues for policy-relevant analysis. Most notably, data collection relying on social media, including crowdsourcing and big-data approaches, is distinguished by the ability to cover conflict in close to real time. The opportunity for rapid, contemporaneous analysis represents a vast improvement relative to traditional approaches, which involve lags—often lengthy—between when conflict events occurred, information was collected from archives of mainstream media, datasets were made available, and studies were conducted. Now, up-to-date, detailed profiles and maps can be assembled on the course of conflicts all around the world in a matter of days or even hours, with information derived exclusively from new media sources.

Figure 1 presents the results of one such exercise, yielding visual timelines of the distribution, progression, and severity of violence during recent civil conflicts in Libya, Syria, Mali, and Niger. Different colors mark the areas affected in different phases of the con-
Figure 1: Sample Conflict Intensity Maps Based on New Media Sources. Source: Compiled by authors.
flicts in each of these countries; the darker the shading, the more intense the conflict. The conflicts and other aspects of these countries differ in consequential ways. Moreover, the settings present challenges to traditional data collection, such as difficult security environments and limited infrastructure, including low availability of technology and free media. Yet the patterns of violence in each country can be examined via content available on social media. Such capabilities, if employed effectively, enable more current, informed assessments of conflict risks and events, as well as faster, more targeted and otherwise better calibrated responses by a wide range of actors, including intergovernmental organizations, states, and civil society.

With respect to policy, research using disaggregated approaches highlights a need for systemic solutions to structural inequality, inclusion, and representation to dampen the incentives for conflict, among other things by paying greater attention to the security of land tenure and providing compensation to victims in the aftermath of violence. The findings also emphasize the importance of context and suggest that policy outcomes vary across conflict settings. It remains true that disaggregated research, based on reliable evidence, where available, is needed to ask the critical “what if” types of questions about addressing the causes, dynamics, and consequences of violence. Yet greater consistency and comparability across studies are required to facilitate the choice, design, and implementation of successful peacebuilding measures.

While the recent accumulation of literature reveals substantial theoretical and technical progress, the turn of research in this direction also presents significant obstacles. These
include the need for appropriate theorizing of causal mechanisms, issues of data collection and quality, and decisions about appropriate units and methods of analysis. The findings suggest that features of study design, including the specific questions and hypotheses that are addressed and the data that are gathered, could account for at least some of the variation in what is observed across the country contexts. Another issue is source bias. Studies have shown that this can arise as a function of differences in observer interest, the type of event observed, and the context in which the event occurred (e.g., Davenport & Ball 2002). Thus, disaggregation is not immune to the issues evident in other existing research, much less inherently superior to anything done at a more aggregate level. Instead, disaggregated analyses must still surmount significant hurdles—not least in the collection of data—to achieve greater rigor and yield better insight in the study of conflict.
References


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