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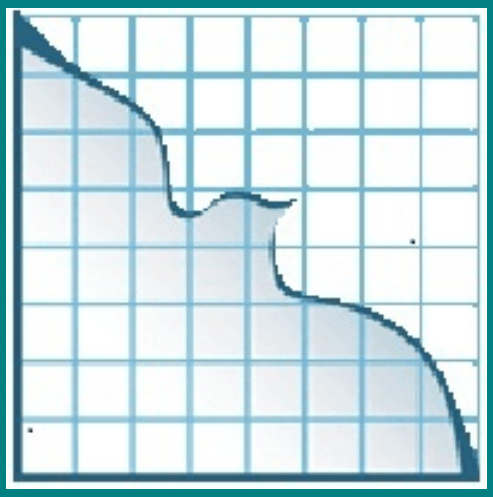

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The Managing Editor
c/o Levy Institute, Box 5000
Annandale-on-Hudson, NY 12504, USA
Email: ManagingEditor@epsjournal.org.uk

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THE SOCIAL EVOLUTION OF GENOCIDE ACROSS TIME AND GEOGRAPHIC SPACE: PERSPECTIVES FROM EVOLUTIONARY GAME THEORY

CHARLES H. ANDERTON

Charles H. Anderton is W. Arthur Garrity, Sr. Professor in Human Nature, Ethics and Society and Professor of Economics, Department of Economics and Accounting, College of the Holy Cross, Worcester, MA, USA. A former co-editor of *Defence and Peace Economics*, he may be reached at canderto@holycross.edu.

Abstract

A standard evolutionary game theory model is used to reveal the interpersonal and geographic characteristics of a population that make it vulnerable to accepting the genocidal aims of political leaders. Under conditions identified in the space-less version of the model, genocide architects can engineer the social metamorphosis of a peaceful people-group into one that supports, or does not resist, the architects' atrocity goals. The model reveals policy interventions that prevent the social evolution of genocide among the population. The model is then extended into geographic space by analyzing interactions among peaceful and aggressive phenotypes in a Moore neighborhood. Key concepts of the analyses are applied to the onset and spread of genocide during the Holocaust (1933-1945) and to the prevention of genocide in Côte d'Ivoire (2011).

Breeders artificially select animal qualities by manipulating the animals' DNA, interactions with other animals (e.g., mating, artificial insemination), and environment (e.g., diet, healthcare). In so doing, the breeders create animal phenotypes (traits) that they deem desirable. The evolution of the animals is relatively quick, brought about as it is, not by natural selection, but by artificial selection. Metaphorically, the architects of genocide and other forms of mass atrocity seek to create (or in a sense "breed") certain types of social outcomes by refashioning how people interact with each other in society and by artificially manipulating peoples' perceptions of themselves, others (including the genocidal architects and people targeted for extermination), and the environments (institutions, perceptions of history, cultural norms, etc.) in which they live. The social outcomes the genocide architects seek to engineer are those that advance their tactical and strategic objectives. For example, at the time of this writing, the Islamic State in Iraq and Syria (ISIS) has unleashed brutalities on civilians in parts of Syria and Iraq including coercive roundups, forced relocations, mass executions, torture, and beheadings. These actions often are on public display, which serves to indoctrinate and/or intimidate locals into supporting, or not resisting, ISIS's objectives of conquering territory and looting assets. Moreover, such brutalities serve to demean those designated by the atrocity architects as the out-group, which can facilitate the recruitment of people willing to perpetrate genocidal acts and even turn "ordinary people" into participants in genocide. Such elements are observed in virtually all genocides including Rwanda (1994), Bosnia (1992-1995), Cambodia (1975-1979), and the Holocaust (1933-1945), to name just a few.[1]

Those wishing to instill peace also seek to engineer social outcomes. Regarding ISIS advances in summer 2014 and early 2015, for example, Iraqi and Kurdish soldiers (among others) fought ISIS on the ground while the U.S., Jordan, Iran, and other states attacked ISIS from the air with such stated objectives as peace enforcement and protection of vulnerable civilian groups (e.g., the Yazidis). Furthermore, Muslim leaders denounced ISIS and pledged to dissuade Muslim youth from joining the organization.[2]

Strategic interactions between genocidal architects and potential third-party violence preventers occur in the context of a malleable social context in which the people within such systems also act according to their interests. Given the metaphor between animal breeding and social system breeding, many of the mathematical tools and concepts of evolutionary theory can be adapted to the study of the social evolution of violence and peace. In this article, I take selected aspects of evolutionary game theory to model how genocide architects can artificially manipulate a social environment so that it advances their objectives of isolating and destroying people from an out-group. I also consider how those seeking peace can apply their own techniques to prevent the onset and spread of genocide.

The objective of this article is *not* to do what is often done in research on evolutionary game theory, namely, to prove the existence of evolutionarily stable strategies or states under various conditions within a new model. Rather, I apply a

standard model of evolutionary game theory, in which evolutionary stability conditions are already well known, to a topic in which there has been little application, specifically, the social evolution of genocide across time and geographic space. I consider how genocide architects and third-party genocide suppressors can attempt to manipulate parameters in the standard model to change social environments in ways that are favorable to them. My focus is on social evolution *within the in-group*. Most formal models and many case studies of genocide emphasize interactions between a genocidal in-group and a victim group (and third-party interveners, if present), which represents *inter*-group behavior. Such an emphasis is, of course, important. But equally important, and perhaps more so in some cases, are *social dynamics within an in-group* that cause the in-group to become acceptant of genocide. This article applies evolutionary game theory tools to better understand the emergence of a preference for genocide within an in-group. I also consider how policy interventions can either prevent such a preference from emerging in the first place or how a genocidal preference that has socially evolved can be thwarted.

The article is organized as follows. I offer a brief literature review of evolutionary game theory (first section) and then use a standard evolutionary game theory model to identify characteristics that make an in-group vulnerable to the social evolution of a genocidal preference against an out-group (second section). Under certain conditions, genocide architects can create the social metamorphosis of a peaceful in-group into one that accepts, or does not resist, aggression against an out-group. I refer to this as the social evolution of aggression. Next, I extend the analysis into geographic space by modeling interactions among peaceful and aggressive phenotypes in a geographic area known as a Moore neighborhood (third section). In both the second and third sections I analyze policy interventions in which the social evolution of aggression never gets started or comes to a halt if already underway. I then present two brief cases to illustrate key concepts: the Holocaust (1933-1945) and Côte d'Ivoire (2011) (fourth section). The Holocaust is a "positive" case of genocide in that it occurred, while Côte d'Ivoire is a "negative" case, i.e., one in which genocide seemed likely but did not occur. I conclude with a summary of future research possibilities, key ideas regarding the social evolution of genocide, and policy prescriptions for preventing its onset and spread.[3]

Brief literature review

Evolutionary game theory models are available in most game theory textbooks and in biology books that contain mathematical methods (e.g., Harrington, 2008; Dixit, *et al*., 2013; Nowak, 2006). Literature on evolutionary game theory and social networks is vast and has been applied in many contexts including economic development (Munshi, 2014), financial contagion (Jackson, 2014), spread of obesity, depression, and drug use (Christakis and Fowler, 2012), social media (Harrigan, *et al*., 2012; Hodas and Lerman, 2014), and social behavior over geographic space (Ellison, 2000; Galeotti, *et al*., 2010; Hauert, 2002; Killingback and Doebeli, 1996; Morris, 2000; Ille, 2014). In the terrorism literature, Arce and Sandler (2003; 2009) use evolutionary game theory to model social interactions between fundamentalists and nonfundamentalists within a population.

This article applies evolutionary game theory tools to better understand the emergence of a preference for genocide within an in-group. It also considers how policy interventions can either prevent such a preference from emerging in the first place or how a genocidal preference that has socially evolved can be thwarted. Models are applied to the cases of the Holocaust and, in terms of prevention, to Côte d'Ivoire.

Many genocide case studies describe the onset and spread of atrocity in terms of "evolution" or "social engineering"; some scholars even note such ideas in their titles (e.g., Messall, 2000; Smith, 2009; Vági, *et al*., 2013; Verwimp, 2011). Nevertheless, formal evolutionary game theory applications to genocide are rare. In one such application, Gangopadhyay (in Anderton and Brauer, 2016) models the contagion (or acceptance) of genocide among ordinary people. In another, Anderton (2010) models the social evolution of genocide-supporting and genocide-resisting phenotypes in a society populated by hardliners, bystanders, and resisters. This article extends Anderton (2010) here by considering a wider range of parameter possibilities in the space-less model (but with two rather than three phenotypes) and by considering the social evolution of genocide and peace across geographic space.

An evolutionary game theory model of the social evolution of aggression

For the analyses that follow, it is important to understand that a key focus of the article is on the social evolution of genocide acceptance (aggression) or resistance (peace) for people within the in-group. The people from the in-group constitute what I call the population. The potential victim group is the out-group, which is treated as given and is not part of the population. For understanding genocide risk and prevention, group dynamics within the in-group between aggressive and peaceful people-types is potentially just as important as, and at times maybe even more important than, group dynamics between the

in-group and the out-group. Hence, the modeling exercises that follow focus on dynamic and spatial aspects of the social evolution of people-types within the in-group and, specifically, on the "drama" of whether the in-group will tend to become acceptant of genocide against the out-group or whether it will tend to resist such atrocity.

I take as given a regime's objective to target a people-group for destruction. Except for weapons of mass destruction, atrocity entrepreneurs cannot accomplish the large-scale destruction of an out-group on their own. Hence, they need to enlist a relatively large number of "willing executioners," which in turn requires social settings wherein such recruitment can succeed. The focus of the model that follows is upon such social settings. Using a standard evolutionary game theory model, I identify conditions that give rise to atrocity-supporting social environments and show how the genocide architects can attempt to foster such communities.[4]

Stage game and fitness equations

Imagine a village with a population of 10,000 people. Assume that an authority group seeks to perpetrate atrocity against an out-group and would like the village to be supportive of its aggression. Assume the potentially targeted out-group encompasses people who are not part of the 10,000 in the village. Some villagers may already have a latent desire for aggression against the out-group; say, there are 1,000 such people (10 percent). Assume the other 9,000 (90 percent) would resist aggression against the out-group under current social conditions. As the village is characterized now, it would not be useful for atrocity architects to perpetrate aggression against the out-group. But can the authority group engineer a social metamorphosis of the village such that it becomes supportive of, or at least not resistant to, their aims? Under certain conditions, the answer is "yes."

Assume each person in the village has one of two dispositions toward people from the out-group: peaceful (*P*) or aggressive (*A*). The villagers are not genetically hardwired to one disposition or the other; people have free will, so each is free to choose the trait that s/he prefers. Humans are social creatures, so there is a lot of interaction among the people in the village day-by-day. People work with others, buy and sell in the marketplace with others, attend charitable causes and political rallies with others, and recreate with others (e.g., sporting events, picnics). Assume the matrix in Figure 1 represents the payoffs to any two individuals, say Bob (the row player) and Sally (the column player), when they socially interact in the village. Assume Bob and Sally each choose the aggressive trait (*A*) and they socially interact. Based on Figure 1, their interaction leads to payoff *a* for each person. If both

		Sally	
		Aggression (*A*)	Peacefulness (*P*)
Bob	Aggression (*A*)	*a*, *a*	*b*, *c*
	Peacefulness (*P*)	*c*, *b*	*d*, *d*

Figure 1: Payoffs in pairwise encounters in the evolutionary game theory model

display the peaceful (*P*) trait, each would receive payoff *d* from their encounter. If Bob is peaceful and Sally aggressive, Bob would receive *c* and Sally *b* as shown in the lower left cell of the matrix. The obverse interaction is shown in the upper right cell in which Bob receives *b* and Sally *c*.

In evolutionary game theory, Figure 1 is the stage game. It is the matrix that governs the payoffs to individuals in all pairwise social interactions in the village. The payoffs reflect the institutions, history, culture, language, and interpersonal norms of people in the village. Although highly simplified, the matrix in Figure 1 is a type of social genome for the village. Other villages will have different social genomes, and more complex genomes can be represented by more complex stage games. The village's stage game will determine its traits or phenotypes, i.e., the number of people that are aggressive (*A*) and peaceful (*P*) toward an out-group. Moreover, the atrocity entrepreneurs can attempt to engineer the traits of people in the village so that a greater number adopt aggressiveness. In short, the stage game is amenable to manipulation.

In social evolutionary terms, the traits of people—aggressive (*A*) and peaceful (*P*)—can be thought of as strategies that they display in their social interactions with others. Assume for simplicity that people cannot play a mixed strategy in which they choose *A* or *P* with a random device. Assume two people are randomly drawn from the village and paired with one another. The pairing represents a social encounter in the village and the payoff to each individual in the pair is governed by Figure 1. Many such social encounters occur in the village throughout the day and one can construct the expected payoff for each strategy from such an encounter. Let N represent the number of people in the village (say N=10,000) and n_A the number who initially choose the aggressive trait (say n_A=1,000). It follows that the number of people in the village initially choosing peacefulness, n_P, is equal to $N–n_A$, so that n_P=9,000. Given these initial conditions and assuming an individual can be randomly paired with itself (self-play), the probability that a randomly drawn individual from the village would be paired with an aggressive type is

(n_A/N) and with a peaceful type it is $[(N–n_A)/N] \equiv (n_P/N)$.[5]

Based on Figure 1 and the foregoing assumptions, the expected payoff to a villager who adopts the aggressive strategy, F_A, in a random pairwise social encounter is:

$$(1)\quad F_A = a\left(\frac{n_A}{N}\right) + b\left(\frac{N-n_A}{N}\right) = a(r_A) + b(1-r_A),$$

where r_A is the ratio of the number of *A*-types to the total number in the village ($r_A \equiv n_A/N$). The expected payoff to a villager adopting peace, F_P, in a random pairwise social encounter is:

$$(2)\quad F_P = c\left(\frac{n_A}{N}\right) + d\left(\frac{N-n_A}{N}\right) = c(r_A) + d(1-r_A).$$

In evolutionary game theory, F_A and F_P are the respective fitness of the *A* and *P* traits in the village. If aggressiveness is rewarded through, say, advancement in the atrocity leaders' organization, self-preservation, family preservation, or loot, then the *A* trait would be relatively fit. If, however, aggressiveness is shunned and the peaceful trait is held in high esteem, then the *P* strategy would be relatively fit. Equations (1) and (2) show that each strategy's fitness depends on the proportion of the villagers playing each strategy and the payoffs generated from the various pairwise social encounters. The average fitness in the village, $\overline{F}$, is:

$$(3)\quad \overline{F} = F_A\left(\frac{n_A}{N}\right) + F_P\left(\frac{N-n_A}{N}\right) = F_A(r_A) + F_P(1-r_A),$$

where F_i (i=*A*,*P*) are given in equations (1) and (2).

Replicator dynamics

In social environments, humans look around and learn from the behavior of others. They observe which traits are rewarded and which are penalized, and they tend to choose or mimic traits that are successful. In certain atrocity contexts, people who refuse to support aggression toward an out-group (and thus adopt peacefulness in our model) can be subject to dire penalties including incarceration or execution. In this way, such people are "weeded out" of the population.[6] To save their lives or careers or the lives of family members and friends, others may act "as if" they support aggression. In the model, I treat such people as adopting the aggressive trait.[7] It is important to keep in mind in the analyses that follow that the fitness of traits, specifically the incentives people have to adopt fitter traits and shun less fit traits, drives social evolution in the village.

The replicator or selection dynamics in evolutionary game theory are equations that describe how fitter strategies are adopted and less fit strategies fall out of favor over time. Following Nowak, the selection dynamics in the village is governed by the following difference equations:

$$(4)\quad r_A^{t+1} - r_A^t = r_A^t(F_A - \overline{F}) \text{ and}$$

$$(5)\quad r_P^{t+1} - r_P^t = r_P^t(F_P - \overline{F}),$$

where r_i^j is the ratio of i-types (i=*A*, *P*) in the village at time j (j=t+1, t) and F_A, F_P, and $\overline{F}$ are given by equations (1) to (3), respectively.[8] Note in equation (4) that if $F_A > \overline{F}$, aggression (*A*) will be fitter than average and thus fitter than peacefulness (*P*). Moreover, if $F_A > \overline{F}$ it necessarily follows that peacefulness will be less fit than average (i.e., $F_P < \overline{F}$ in equation 5) and thus less fit than aggression. As such, the number and ratio of people adopting aggression will rise over time and the number and ratio displaying peacefulness will correspondingly decline. It is this dynamic the atrocity entrepreneurs wish to generate. To complete the formal model, let the initial ratio of villagers adopting aggression be r_A^0 and peacefulness $r_P^0 \equiv (1 - r_A^0)$. In the numerical example given earlier, the initial number of aggressors from the N=10,000 population was $n_A^0 = 1{,}000$ and $n_P^0 = 9{,}000$; hence, the initial ratios are $r_A^0 = 0.1$ and $r_P^0 = 0.9$.

Based on the payoff values *a*, *b*, *c*, and *d* in the stage game in Figure 1, and assuming no payoff ties for *a* and *c* as well as for *b* and *d*, there then are four possible cases in which the ratio of aggressive types, r_A, is determined as summarized in Table 1.[9] In Case 1, the payoffs to aggressive types are low relative to the corresponding payoffs to peaceful types: $a<c$ and $b<d$. The case depicts a simplified social environment in which the village's history, culture, religion, and so forth imply that aggressiveness is unrewarded relative to peacefulness in pairwise social encounters. For Case 2, $a<c$ and $b>d$. Now the payoff for an aggressive type in a "cross encounter" with a peaceful type is more rewarding to the aggressor relative to what s/he would have achieved had s/he been peaceful ($b>d$). In Case 3, $a>c$ and $b<d$. Relative to Case 1, the payoff to an aggressive type in a "same encounter" with an aggressive type is more rewarding to the aggressor relative to what s/he would have achieved had s/he been peaceful ($a>c$). Finally, in Case 4, $a>c$ and $b>d$, the aggressive trait is rewarded relative to peacefulness in pairwise encounters. Such a society would be one in which compliance with the atrocity entrepreneurs would

lead to survival, career advancement, and/or material rewards while noncompliance would correspond to the absence of such benefits.[10]

A numerical example: Engineering the social evolution of aggression

As a numerical example of how an atrocity entrepreneur can engineer the social acceptance of aggression against an out-group, assume parameter values consistent with a Case 3 bi-stable outcome: a=2, b=1.5, c=1, d=2, and r_A^0=0.20 (20 percent). Panel (A) in Figure 2 plots the fitness equations (1) and (2) for these parameters and shows that $r_A^{critical}$=0.33. Since $r_A^0 < r_A^{critical}$, peacefulness is more rewarding (fitter) than aggression and thus more rewarding than average, which leads more people to choose peace over time. Hence, r_A declines over time in Panel (A) until arriving at an evolutionarily stable state in which all villagers adopt peace (r_A^*=0).[11] Suppose that from the Figure 2, Panel (A) starting point of r_A^0=0.20, the atrocity entrepreneurs now insert enough aggressive types from the outside so that r_A^0 rises to 0.25. Such a policy is insufficient to turn the social evolution away from peace because r_A^0=0.25 is less than $r_A^{critical}$=0.33. But suppose this effort is coupled with policies that increase payoffs in aggressive/aggressive encounters and reduce payoffs in peaceful/peaceful encounters. Specifically, assume a rises from 2 to 2.2 and d falls from 2 to 1.8. As shown in Panel (B) of Figure 2, the relatively small 10 percent changes in each of a and d cause $r_A^{critical}$ to fall to 0.20. Coupled with the increase in r_A^0 to 0.25 from the "invasion" of aggressive types, r_A^0 is now greater than $r_A^{critical}$. Hence, in Panel (B), the aggressive trait is more rewarding (fitter) than peace, leading more people to choose aggressiveness over time. As such, r_A^0 increases over time in Panel (B) until arriving at an evolutionarily stable state in which all villagers are aggressive types (r_A^*=1).

Policy interventions that foster the social evolution of peace

Third-party suppressors of genocide can attempt to implement policies in Figure 2 that will offset the social evolution of aggression. Beginning in Panel (B) of Figure 2, one such policy would be to insert peacekeepers into the village. A sufficiently large number of peacekeepers would reduce the initial proportion of aggressors below the critical value ($r_A^0 < r_A^{critical}$). By becoming part of the peaceful subpopulation of the village, the peacekeepers could tip the village toward the social evolution of peace. But suppose that owing to budget constraints and political realities only a few peacekeepers, or none at all, are inserted into the village. Another policy channel is to manipulate the various payoffs from social encounters in the village in Figure 1 (i.e., the a, b, c, and d values) such that

Table 1: Four possible cases of the social evolution of aggression

Case 1: *a*<*c* and *b*<*d* => Peace dominates
Parameters imply aggressiveness unrewarded relative to peacefulness in social encounters

Case 2: *a*<*c* and *b*>*d* => Peace and Aggression coexist
Parameters imply aggressors relatively well rewarded in social encounters with peaceful types

Case 3: *a*>*c* and *b*<*d* => Peace and Aggression bistable
Parameters imply aggressors relatively well rewarded in social encounters with other aggressors

Case 4: *a*>*c* and *b*>*d* => Aggression dominates
Parameters imply aggressiveness rewarded relative to peacefulness in social encounters

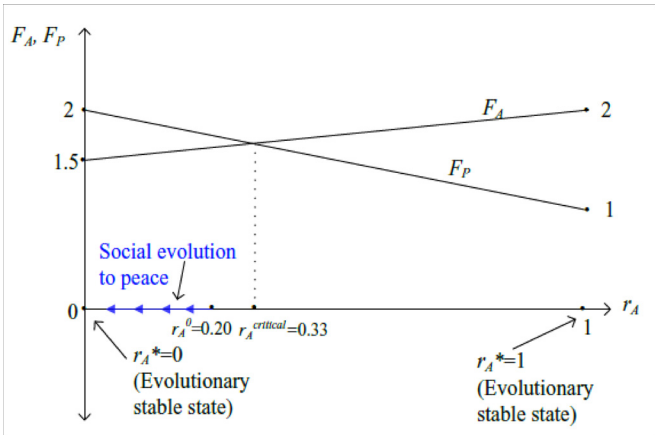

Figure 2(A): Initially r_A^0=0.20 < $r_A^{critical}$=0.33 => peacefulness is fitter than aggression (F_P>F_A) => social evolution over time to evolutionarily stable state at r_A=0, which is complete peacefulness.

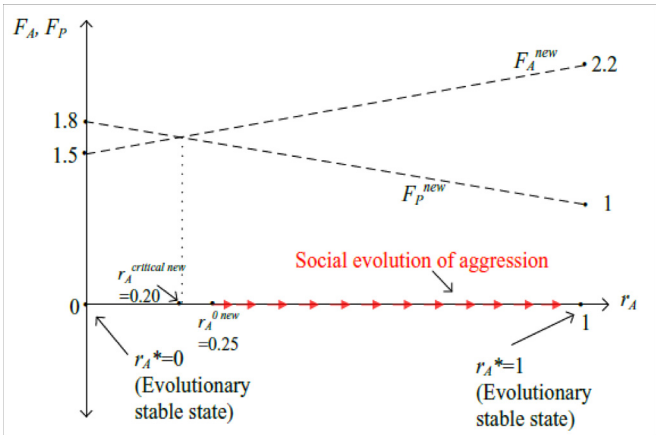

Figure 2(B): An increase in r_A^0 to 0.25, coupled with an increase in a to 2.2 and a decrease in d to 1.8 cause $r_A^{critical}$ to fall to 0.20. Since 0.25 > 0.20, aggression is fitter than peacefulness (F_A>F_P) => social evolution over time to evolutionarily stable state at r_A=1, which is complete aggression.

the critical value rises to the point that $r_A^0 < r_A^{critical}$. For example, by reducing payoffs to aggressors in social encounters (the *a* and *b* payoffs), the F_A^{new} line in Panel (B) of Figure 2 shifts down, which represents a lower expected payoff to the aggressive phenotype for any given r_A. Furthermore, to the extent that peaceful types in the village can achieve greater rewards in social encounters (higher *c* and *d* payoffs), the F_P^{new} line in Panel (B) of Figure 2 shifts up, which represents greater expected payoff to the peaceful phenotype. Such line shifts serve to increase the value of $r_A^{critical}$ which, if large enough, will achieve $r_A^0 < r_A^{critical}$ and thus the social evolution of peace. Numerous policies could alter payoffs from interpersonal encounters in the village toward peace, including video surveillance designed to shine a light on those fostering aggression and protect those working for peace, widespread presence of journalists, well-trained police forces, truly robust and expanding safe havens, embassy sheltering for at-risk proponents of peace, threatened or actual sanctions against aggressive types, counter-propaganda through media channels, threats of prosecution against aggressors, and so on.

The model represented in Figure 2 suggests many possible actions that could foster peace, but it also points to a fundamentally important principle regarding the timing of such policies. To the extent that anti-aggression policies are implemented with a lag (policy "dithers"), any given policy efforts become increasingly ineffective. If the social evolution of aggression in Panel (B) of Figure 2 has been going on for some time, then the proportion of people in the village of the aggressive type, r_A, will be relatively high and rising toward r_A=1. At this point, bringing in peacekeepers and/or implementing policies to alter the payoffs from social encounters will need to occur at substantially higher levels than otherwise to achieve $r_A < r_A^{critical}$ because r_A is so high. Thus villages can hang on a "knife's edge" where they are about to tip into a social evolution that will support aggression. On such a knife's edge, relatively small policy efforts can potentially make a substantial difference for peace, whereas delayed policies will risk becoming increasingly unlikely to alter the aggressive dynamic.[12]

A second, perhaps obvious, fundamental policy principle is implied by Figure 2 and more generally by the analyses in this article: While genocide prevention policy must pay careful attention to *inter*group dynamics, i.e., protecting the vulnerable out-group from the potentially aggressive in-group, *intra*group dynamics may be an equally or even more important domain for genocide prevention. By the time the in-group has become acceptant of genocide, prevention policy requires the political will and realization of third-party support to protect the vulnerable out-group from such a dangerous preference. History has repeatedly shown the fragility of such policy support, with Rwanda 1994 serving as a classic, but certainly not the only, example of such failure. To the extent that third-party support can detect the warning signs of an impending social evolution of aggression and help to prevent the emergence of such a preference within the in-group, a formidable source of genocide can be prevented.

The social evolution of aggression and peace over geographic space

In this section I extend the evolutionary game model of the previous section into geographic space. The introduction of geographic space into the analysis shows, among other things, how the social evolution of aggression and the effectiveness of third-party efforts to suppress aggression are sensitive to population density and other geographic considerations.

Payoffs from social encounters in a Moore neighborhood

Following Nowak, assume each individual in the village is situated on a two-dimensional square lattice in which s/he socially interacts with each immediate neighbor.[13] In each time period, each individual receives a payoff based on the interactions with the various neighbors. Moreover, each individual observes the payoffs accruing to each neighbor and then adopts in the next period the trait or strategy yielding the highest payoff in the neighborhood. Figure 3 is an example of such characteristics and is known as a Moore neighborhood. In Panel (A) of Figure 3, assume Sally (in the middle of the lattice) initially selects the peacefulness trait (*P*) and her eight immediate neighbors in the lattice also choose peacefulness. According to the stage game in Figure 1, the payoff to a peaceful individual in a social encounter with another peaceful type is *d*. In Panel (A) of Figure 3, Sally socially interacts with eight peaceful types in her neighborhood, so she receives a payoff of 8*d*. Assuming there is no payoff higher than 8*d* in Sally's neighborhood, she will choose peacefulness in the next period; otherwise she will switch to the aggressive trait. Panel (B) of Figure 3 presents a different situation for Sally. She is now surrounded by five aggressive and three peaceful neighbors. Based on the stage game of Figure 1, Sally receives a payoff of *c* from each of the five encounters with an aggressive neighbor and *d* from each of the three encounters with a peaceful neighbor. Hence, her payoff from the eight encounters in Panel (B) is 5*c*+3*d*. In a case in which *c* and *d* are low relative to *a* and *b*, respectively, some of Sally's aggressive-displaying neighbors will have a greater payoff than does Sally. In the next round, Sally thus will have an incentive to switch to the aggressive trait (perhaps for sake of self-preservation, career advancement, etc.).[14]

Social evolution of aggression in a Moore neighborhood

I present several dynamic and spatial simulations of the social evolution of aggression to show how an atrocity entrepreneur can engineer outcomes that promote the social acceptance of aggression toward an out-group. I begin with parameter values that align with Case 2 in Table 1 (i.e., $a<c$ and $b>d$) in which there was a coexistence outcome. Although I tether the spatial model here to parameters associated with the space-less model of the previous section, Moore social encounters and payoff generations are not the same as the random pairwise encounters of the space-less model. Hence, the results of the space-less and Moore models will differ.

Assume a=1, c=2, b=1.5, and d=1 in the stage game of Figure 1 and the initial proportion of aggressors is r_A^0=0.20. Assume the village is made up of N=10,000 people. Based on simulation techniques available from EvoLudo, Panel (A) of Figure 4 shows a 100x100 square lattice in which 20 percent of the village's inhabitants are initially aggressive types (shown by the red cells) and 80 percent are peaceful types (blue) [see evoludo.org]. The initial distribution of types is randomly assigned across space by EvoLudo. Panel (B) of Figure 4 shows the result by period 25 of the social evolution of phenotypes in the Moore village. The blue cells represent peaceful types who were peaceful in the previous period and the red cells aggressive types who were aggressive in the previous period. The green cells show peaceful types who were aggressive in the previous period. The yellow cells show aggressive types who were peaceful in the previous period. Figure 4 shows the social evolution to a coexistence outcome in which the proportion of people adopting the aggressive trait will oscillate between about 27 and 41 percent even out to thousands of periods. Particular individuals in the village will switch their strategies over time, depending on relative fitness in sub-neighborhoods, but the proportionate outcome remains in the range of about 27 to 41 percent aggressiveness.

Assume now that a=2, c=1, b=1, and d=2 in the stage game of Figure 1 and the initial proportion of aggressors is r_A^0=0.20. These parameter values correspond to Case 3 in Table 1 and Figure 2 in the space-less model in which there was a bi-stable outcome. Panel (A) of the previous figure (Figure 4) represents EvoLudo's random distribution of the initial 20 percent aggressive types in the village. Panel (A) of Figure A1, which is placed in the appendix, shows a quick social evolution to peace in the village by period 2 under our new parameters (r_A^*=0). Starting from Panel (A), assume now that the atrocity entrepreneurs can increase the payoff in aggressive/aggressive encounters by 25 percent from a=2 to a=2.5. Figure A1, Panel (B) shows the implications of the parameter change in the village at period 75. Permanent blocks (sub-neighborhoods) of aggressive types emerge in the village encompassing about 2.8 percent of the population. This may seem relatively benign, but the village is close to a tipping point in which it could evolve to complete aggression. To illustrate, Panel (C) of Figure A1 retains c=1, b=1, d=2, and r_A^0=0.20 but increases parameter a to 2.7. By period 10, aggression has seriously metastasized in the village. By period 23, the village has socially evolved to

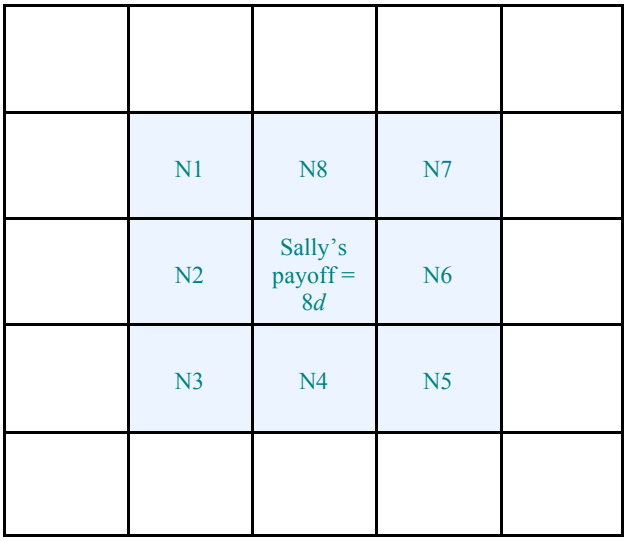

Figure 3(A): Sally chooses peacefulness and has 8 peaceful neighbors (N1 to N8; shaded blue) => Sally's payoff = 8*d*

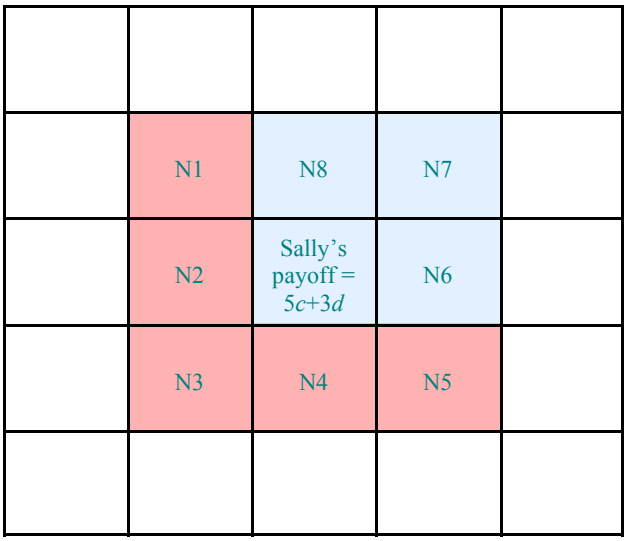

Figure 3(B): Sally chooses peacefulness and has 5 aggressive neighbors (N1 to N5; shaded red) and 3 peaceful neighbors => Sally's payoff = 5*c* + 3*d*

Note: When choosing peacefulness, Sally's payoff from each peaceful neighbor is *d* and from each aggressive neighbor is *c* based on the stage game in Figure 1.

complete aggression (not shown).[15]

Manipulating *a* is not the only tool available to atrocity entrepreneurs; parameters *b*, *c*, and *d* can also be manipulated. Assume now that *a* is back to the value of 2.5 in which blocks of aggressive types occur for 2.8 percent of the population as in Panel (B) of Figure A1. Let *b* increase by 20 percent from 1 to 1.2 and *c* fall by 20 percent from 1 to 0.8. Recall that parameter *b* is the payoff to an aggressive type in a cross encounter with a peaceful type and *c* is the payoff to a peaceful type in a cross encounter with an aggressive type. These parameter changes tilt the game in favor of aggressors and against peaceful types in cross encounters, everything else the same. Begin from EvoLudo's random distribution of the initial 20 percent aggressive types in the village, such as Panel (A) in Figure 4. In Panel (D) of Figure A1, many concentrations of aggressive types socially evolve by period 5. By period 18, the whole village evolves to the aggressive phenotype such that $r_A^*=1$ (not shown). Figure A1 shows how relatively easy it is for atrocity entrepreneurs to put the village on the path toward the social evolution of complete aggression. All that was required was a 35 percent favorable change in payoffs to aggressive types in same encounters (increase a from 2 to 2.7) or a 25 percent favorable change in same encounters (increase *a* from 2 to 2.5) coupled with a 20 percent favorable change in cross encounters (increase *b* from 1 to 1.2 and decrease *c* from 1 to 0.8).

Policy interventions for peace in a Moore neighborhood

In the space-less model in the previous section, peacemakers would like to manipulate the village's social genome so that the peaceful trait is rewarded and aggressiveness is unrewarded in pairwise encounters. Hence, if parameters *a* and *b* are relatively low and *c* and *d* relatively high, Case 1 emerges in Table 1 such that peace dominates everywhere in the village. For less sanguine parameter values, for example those corresponding to the Case 3 bi-stable outcome in Table 1 and Figure 2, the initial number of peaceful types in the village can be critical to insuring that peace rather than aggression evolves. Hence, timely insertion of peacekeepers can be decisive in insuring peace under certain conditions. When considering geographic space in evolutionary dynamics, additional issues come to the fore for peacekeeping consideration, to which I now turn.

Assume a=2.7, b=1, c=1, d=2, and r_A^0=0.10 in a Moore village. Figure A2, Panel (A), also in the appendix, shows a metastasizing lump of aggressive types by period 3. Left unchecked the lump will grow until the whole village is of the aggressive type (not shown). In Panel (B), 15 peacekeepers are inserted into the lump. Panel (C) shows that the peacekeeping effort is too little, too late. By period 15, the lump aggressively metastasizes and, left unchecked, will evolve until the whole village is aggressive (not shown). Panel (D) shows at period 3 a lump that is the same size as that in Panel (C). Similar to the

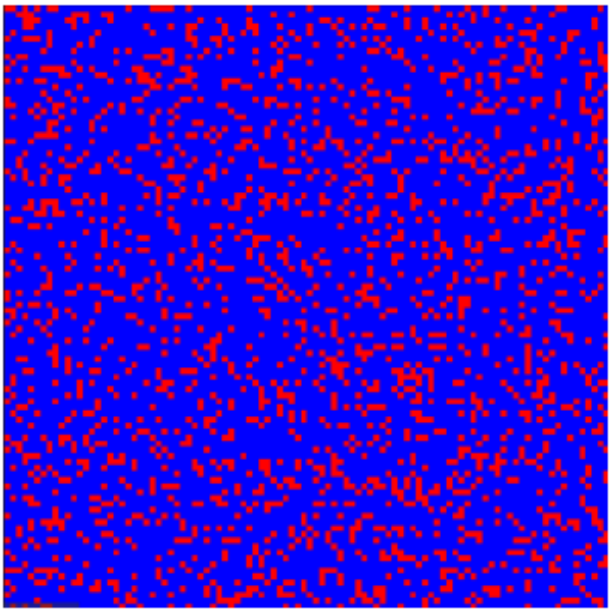

Figure 4(A): Social evolution in the Moore village (for a=1, b=1.5, c=2, d=1, r_A^0=0.20, N=10,000). Time period 0, in which 20 percent of village is aggressive type.

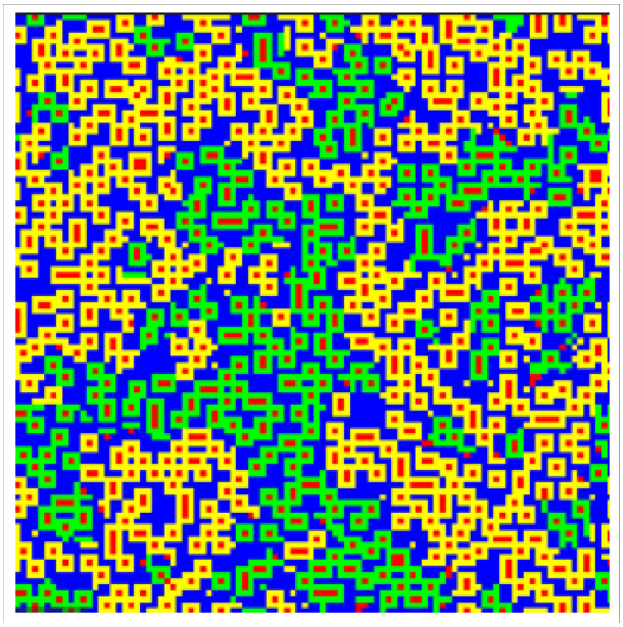

Figure 4(B): Social evolution in the Moore village (for a=1, b=1.5, c=2, d=1, r_A^0=0.20, N=10,000). Time period 25, in which about 40 percent of the village is aggressive type.

lump in Panel (A), insertion of 15 peacekeepers is insufficient to stem the growth of aggression (not shown). Hence, insert 20 peacekeepers into the lump in Panel (E). Panel (F) shows that by period 4 aggression is contained and the village only constitutes peaceful types. What is striking about Figure A2 is how the fate of the village hangs on a "knife's edge." With 20 rather than 15 peacekeepers, complete peacefulness is sustained in the village rather than the emergence of complete aggression. Furthermore, the spatial location of the peacekeepers is critical. In Figure A2, the peacekeepers needed to be inserted in a concentrated manner into the lump, otherwise the effort would have been completely ineffective.

Again following Nowak, I now consider the role of "walkers" in creating a "big bang" of peace.[16] A walker is a concentrated unit of 10 peaceful types that operates in a world of aggressive types. In Panel (A) of Figure A3, two walker teams are inserted at time 0 into an otherwise completely aggressive Moore village under parameter assumptions that favor peaceful types in same encounters (d=1), aggressive types even more in cross encounters (b=1.51), but otherwise are not favorable (a=0, c=0). The village's population is N=4,761, so the 20 peacekeepers imply r_A^0=0.996.[17] In 100 simulations, not presented in this article, in which the initial proportion of randomly distributed aggressors was 90 percent, social evolution always converged to complete aggression. But the "walker intervention policy" in Panel (A) leads to a decidedly different outcome. By period 6 the walker teams are close to connecting as shown in Panel (B). Panel (C) shows the early stage of a "big bang" of peace in period 8. By period 15, the social evolution of peace continues to grow (Panel D). Panel (E) shows that by period 60 peace has become dominant in the village, and by period 150, pockets of aggressive types are relatively small and contained as shown in Panel (F). Similar to Figure A2, the message of Figure A3 is that the insertion of peacekeepers in both timely and geographically concentrated manners is critical for fostering the social evolution of peace.

The Holocaust and Côte d'Ivoire

In this section I apply several key ideas of the evolutionary game theory model to two cases. The first, the Holocaust, is a "positive" case of genocide in that genocide occurred. The case is also notable in that little effort was made by possible third-party suppressors to stop the genocide. The second, Côte d'Ivoire, is a "negative" case of genocide in that the risk of genocide seemed high but full-blown genocide did not occur. This case is also notable owing to relatively substantial and early third-party efforts to suppress genocide.

The Nazi example: Engineering the social evolution of aggression in occupied Europe

The payoffs a, b, c, and d in the stage game in Figure 1 are the outcomes from social interactions in the village, which are rooted in the village's institutions, culture, and history. The payoffs can be thought of as the village's heritage or social genomic endowment. I do not model the origins of the payoffs, but take them as given. In villages influenced or controlled by genocide architects, the social genome is subject to social engineering in which violence entrepreneurs attempt to foster a social metamorphosis to aggression. The previous analyses, summarized in Table 1, show that increases in a and b and decreases in c and d move the village from Case 1 in which peace dominates toward Case 4 in which aggression dominates. In moving toward Case 4, the intermediate Case 3 (with high a and low c) could also be amenable to the social evolution of aggression provided a sufficiently large invasion of aggressors came into the village (see Figure 2). Hence, the violence entrepreneurs would like to increase a and b, decrease c and d, and/or insert an outside gang of aggressors into the village. What do these constructs represent in a real-world setting of potential social evolution of aggression? I address this question by presenting selected social evolutionary techniques deployed by Nazi officials in the occupied territories of Europe during world war two.

In the foundational book in the field of genocide studies, *Axis Rule in Occupied Europe*, Raphael Lemkin (1944, pp. xi, 79) described genocide as a "synchronized attack" designed to destroy the existence of a victim group and replace it with the national pattern of the oppressor. Lemkin (1944, pp. xiii-xiv) identified eight dimensions or "fields" of group destruction:

> [I]n the political field (by destroying institutions of self-government and imposing a German pattern of administration, and through colonization by Germans); in the social field (by disrupting the social cohesion of the nation involved and killing or removing elements such as the intelligentsia, which provide spiritual leadership ...); in the cultural field (by prohibiting or destroying cultural institutions and cultural activities; by substituting vocational education for education in the liberal arts, in order to prevent humanistic thinking ...); in the economic field (by shifting wealth to Germans and by prohibiting the exercise of trades and occupations by people who do not promote Germanism "without reservations"); in the biological field (by a policy of depopulation and by promoting procreation by Germans in occupied countries); in the field of physical existence (by introducing a starvation rationing system for non-Germans and by mass

killings, mainly Jews, Poles, Slovenes, and Russians); in the religious field (by interfering with the activities of the Church, which in many countries provides not only spiritual but national leadership); in the field of morality (by attempts to create an atmosphere of moral debasement through promoting pornographic publications and motion pictures, and the excessive consumption of alcohol).

What occurred in each of these eight fields was a social advancement of people who supported, or did not resist, the Nazi program and a social degradation of those who did resist. In the context of the simplified stage game in Figure 1, the Nazis implemented policies that increased payoffs to supporters of aggression when aggressive phenotypes interacted (increase *a*) and when aggressive and peaceful types interacted (increase *b*). On the flip side, peaceful types were harmed through policies that decreased payoffs to supporters of peace when peaceful and aggressive types interacted (decrease *c*) and when peaceful types interacted (decrease *d*). Furthermore, the Nazis implemented invasions of aggressive types into locales (increase r_A^0) to foster the social evolution of aggression. Table 2 presents selected Nazi techniques that promoted the social evolution of aggression categorized according to the parameters of the evolutionary game model.

Côte d'Ivoire 2011: Genocide averted?

Acts of "lower-level" intentional violence against civilians and an elevated risk of mass atrocities emerged in Côte d'Ivoire in the context of the disputed presidential election of 28 November 2010 between incumbent Laurent Gbagbo and challenger Alassane Ouattara. Gbagbo claimed victory in the election, but the U.N. Secretary General and the Economic Community of West African States (ECOWAS) maintained that Ouattara was the winner. In the period during and immediately after the election, the Gbagbo regime instituted a curfew, prevented the dissemination of election results, canceled 660,000 votes for Ouattara, and carried out repressive violence against civilians. By early 2011, reports emerged of patterns of civilian killings across the country and suspected mass graves. According to Human Rights Watch, supporters of the Gbagbo regime carried out executions, rapes, and immolations against northern Ivoirians, West African immigrants, and political supporters of Ouattara. Civilian abuses were also carried out by the pro-Ouattara Republican Forces, although on a comparatively smaller scale. Estimates of civilians intentionally killed in Côte d'Ivoire in 2011 range from several hundred to at least 3,000. On 19 January 2011, the Special Advisors to the Secretary General on the Prevention of Genocide and R2P communicated their grave concerns about civilian violence in Côte d'Ivoire including a statement that clashes "*if not checked*, could culminate in *mass atrocities*." In the Holocaust, the Nazi regime's social engineering of atrocity acceptance by the in-group against Jews and other groups was essentially uncountered by possible third-party suppressors of genocide. In Côte d'Ivoire, however, attempts by Gbagbo and his supporters to retain political power by whatever means necessary, including atrocity, were met with significant counter-efforts by the U.N., ECOWAS, and other organizations.[18]

In the context of the evolutionary game model developed in this article, I treat the Gbagbo regime of leaders, civil servants, and supporters as the in-group over which an intragroup social evolution of aggression or peace will play out. If this in-group socially evolves to acceptance of aggression, then the risk of atrocities against those designated as outsiders will be high. In the context of the model, the payoffs to those in the in-group supporting the aggressive stance of the Gbagbo regime could be high relative to those resisting owing to (1) serious ramifications from not going along with those in power and/or (2) potentially harsh reprisals for Gbagbo supporters given previous repression should power be lost. This suggests in Figure 1 and in Table 1, $a>c$ and $b>d$ such that aggression dominates peace. If not checked, such a setting would be one in which atrocities against out-groups would become socially acceptable to those within the in-group.

The checks, which I characterize as third-party efforts to foster the social evolution of peace in the model, were several and ultimately significant in reducing the risk of mass atrocity. For example, on 20 December 2010, U.N. Security Council Resolution 1962 was unanimously adopted in which Ouattara was recognized as the winner of the election. The resolution also extended the United Nations Operation in Côte d'Ivoire (UNOCI) including requests to strengthen the mission with deployment of Ukrainian helicopters. Meanwhile, the African Union, ECOWAS, France, and the U.S. recognized Ouattara as the president-elect. These actions, alone, were insufficient to lead Gbagbo to step down, but additional policies followed. For example, ECOWAS "moved to suspend the government's access to banking services, undercutting Gbagbo's ability to pay civil servants and soldiers and thereby reducing his allies to a small coterie of dedicated followers." In the context of the evolutionary game model, such actions reduced the payoffs to supporters of aggression against out-groups leading to reductions in *a* and *b* in Figure 1 and Table 1. This, in turn, tilts the evolutionary outcome away from the dominance of aggression to improved prospects for peace. Perhaps most significant in reducing the expected payoff to aggression occurred when the Gbagbo regime appeared ready to deploy

heavy weapons against civilians in early April 2011. The threat was countered by U.N. peacekeepers and the French *Force Licorne*, which attacked Gbagbo's military assets in Abidjan. Gbagbo's arrest followed on 11 April 2011.[19]

Conclusions

People-groups are amenable to forms of social engineering in which their interpersonal interactions and population mixes are manipulated to support the aims of a small group of social engineers. In this article, the social engineers are the genocide architects who seek to socially transform people-groups away from peacefulness to an aggressive posture toward out-groups. Using evolutionary game theory tools, I analyzed how people socially interact with others to highlight conditions under which atrocity engineers can transform a village into supporting, or not resisting, aggression against an out-group. I also analyzed conditions under which peacemakers could prevent the social evolution of aggression through various policy efforts.

The key policy messages of the article are several. First, under a fairly wide range of conditions, people-groups can socially exist on a "knife's edge" in which small social engineering efforts toward aggression or peace can have dramatic effects. Several of the model simulations showed that a small effort to foster aggression by the atrocity entrepreneurs could tip an otherwise peaceful village into a social metamorphosis in which the whole village comes to support aggression. The tipping can go the other way. Relatively small but well-timed and well-located peacekeeping efforts can neutralize the social evolution of aggression and allow peace to persist in a village. The fate of a village can truly hang in the balance between the social engineering efforts of atrocity entrepreneurs and peacemakers. Second, geographic space matters in understanding the social evolution of aggression. In extended simulations, not presented in this article, I found that social evolution in the moderately dense Moore village can play out very differently over time and space relative to villages with higher or lower population densities. For example, "walker" peacekeeping interventions in a Moore village can lead to a "big bang" of peace, but the same conditions in a village with lower population density can lead to a muted outcome for peace. I also found that the deterministic space-less model leads to definitive outcomes whereas the outcomes in models with geographic space can be sensitive to the initial random spatial distribution of the population mix. Third, under conditions in which the social evolution of aggression can metastasize within a village, early and geographically well-located interventions for peace are

Table 2: Manipulating the social genome: Selected Nazi techniques that foster the social evolution of aggression in the evolutionary game model

1. Increase payoffs to aggressive phenotypes in same encounters (increase *a*)
   - Mass changes in law that favor the occupiers and disfavor the occupied (p. 25)
   - Support of Germanism rewarded in economic life (pp. 195, 206, 224)

2. Increase payoffs to aggressive phenotypes in cross encounters (increase *b*)
   - Mass changes in law that favor the occupiers and disfavor the occupied (p. 25)
   - Appropriation of property from occupied groups (pp. 37-40, 144)
   - Legal rights of occupied replaced by "grace" of occupant (p. 71)
   - Support of Germanism rewarded in economic life (pp. 195, 206, 224)

3. Decrease payoffs to peaceful phenotypes in cross encounters (decrease *c*)
   - Mass changes in law that favor the occupiers and disfavor the occupied (p. 25)
   - Appropriation of property from occupied groups (pp. 37-40)
   - Refuse unemployment relief to those unwilling to work for Germany (p. 69)
   - Legal rights of occupied replaced by "grace" of occupant (p. 71)
   - Severe penalties to those who help victim groups (p. 77)
   - Resistance to Germanism penalized in economic life (pp. 195, 206, 224)

4. Decrease payoffs to peaceful phenotypes in same encounters (decrease *d*)
   - Mass changes in law that favor the occupiers and disfavor the occupied (p. 25)
   - Disrupt centers of political resistance (p. 67)
   - Separate families (p. 67)
   - Exclude people from liberal arts education (pp. 84, 229)
   - Undermine religious affiliations and leadership in occupied territories (p. 89)
   - Create an atmosphere of moral debasement (pp. 89-90)
   - Appropriation of the gains from trade within occupied territories (pp. 127, 229)
   - Imprisonment or liquidation of key leaders (p. 139)
   - Resistance to Germanism penalized in economic life (pp. 195, 206, 224)
   - Assembly restricted (p. 231)

5. Increase initial ratio of aggressive phenotype in locales (increase r_A^0)
   - Ideological penetration and fifth column support of Nazism (pp. 19, 83, 137, 237)
   - Mass deportations of native populations (pp. 21, 67)
   - Subsidies and tax breaks for German settlers in occupied territories (pp. 21, 63, 225)
   - Insertion of "colonization staffs" into occupied territories (p. 21)
   - Currency manipulation to finance insertion of aggressive types into areas (pp. 51-53)

Notes: Parameters *a*, *b*, *c*, *d*, and r_A^0 are parameters of the stage game of the basic model in Figure 1. Page numbers in the table refer to pages in Lemkin (1944).

essential to stop aggressiveness in its tracks. Fourth, any general claims about the ability or inability of peacekeepers to prevent the social evolution of aggression should be looked at with doubt. Social context is immensely important for understanding how people relate or misrelate to one another and such contexts vary widely across the world and within states, cities, towns, rural areas, and neighborhoods. In some social settings, a small peacekeeping effort can have dramatic effects in fostering a more peaceful social context among people from an in-group. In other settings, the aggressive fate of the village may be sealed and scarce peacekeeping resources might be better deployed elsewhere. Finally, it is clear that genocide prevention policy must be concerned with protecting a vulnerable out-group from a potentially aggressive in-group; this is the domain of intergroup dynamics. But perhaps of equal or even greater importance is a policy focus on dynamics within the in-group, for it is here that a social evolution toward aggression can occur and a preference for genocide can arise. Stopping the emergence of such a preference in the first place will be better for a potential victim group, and probably much cheaper too, than trying to thwart such a preference after it has become actualized.

Although the article is not focused on empirical hypothesis testing, an emphasis on evolutionary social dynamics within an in-group suggests bottom-up or micro-oriented risk factors for genocide including certain historical, cultural, psychological, leadership, and village-specific characteristics. The empirical literature on genocide is dominated by work in which the characteristics of states and/or rebel groups drive the formulation of hypotheses and the data sources used. This, of course, is valuable research, but it can be complemented by theoretically informed empirical research on in-group characteristics that foster or inhibit genocide.

Future research on theoretical modeling of the social evolution of aggression and peace should consider neighborhood assumptions beyond Moore. For example, individuals in a village could be treated as triangular (having three direct neighbors), quadrangle (four direct neighbors, which is known as a von Neumann village), pentagonal (having five direct neighbors), and so forth such that a wide range of population densities could be modeled. EvoLudo's simulation techniques already allow very dense neighborhoods of 24, 48, 80, and even higher levels, with results that can vary significantly from Moore geography (8 direct neighbors). Furthermore, there are alternative methods for modeling replicator dynamics including variations in the degree to which payoffs translate into fitness, potential for subgroups of the population to only interact with those they desire, migrations to and from the population (e.g., births, deaths, refugees), and stochastic elements. In addition, the spatial social evolution of aggression and peace can consider three or more phenotypes and apply such models to genocide prevention. Potentially important geographic elements such as forests, mountain ranges, borders, waterways, safe havens, and urban/rural population density variations in sub-neighborhoods could also be incorporated into such models. Furthermore, the standard evolutionary game theory model opens the door to possible new research including constrained optimization modeling in which a third party seeks to maximize prospects for the social evolution of peace by choosing various policies (e.g., insertion of peacekeepers, policies to reduce a and b, geographic locations of such efforts) subject to a resource and/or time constraint. Additionally, one could use game theory to model the strategic contest between the atrocity entrepreneurs and third parties over the social evolution of the village. Another potentially productive research avenue is to use analytical functions in the stage game of Figure 1 rather than exogenous parameters. Such functions would allow one to explicitly model various elements that determine the payoff values that individuals receive in social encounters such as historical conditions, cultural norms, and social-psychological perceptions of people. For example, explicitly modeling the social-psychological perceptions that people have of themselves and their environment and how these perceptions affect payoffs would allow one to study how people from the in-group can rationalize their support of genocide and how this can reinforce the social evolution of aggression. We see a potentially rich future of policy-relevant interdisciplinary research based on evolutionary game theory in which new insights into the social evolution of genocide and other forms of civilian violence are revealed and the prevention of such atrocities is promoted.[20]

Notes

I am grateful to Daniel Arce, Jurgen Brauer, J. Paul Dunne, and several anonymous referees for helpful comments on earlier versions of this article. I alone am responsible for any errors and omissions and for the views expressed.

1. Ordinary people: See Waller (2007).

2. BBC (2014); Constable (2014).

3. The 1948 United Nations Convention on the Prevention and Punishment of the Crime of Genocide defines *genocide* as "any of the following acts committed with intent to destroy, in whole or in part, a national, ethnical, racial or religious group, as such: (a) Killing members of the group; (b) Causing serious bodily or mental harm to members of the group; (c) Deliberately inflicting on the group conditions of life calculated to bring about its physical destruction in whole or in

part; (d) Imposing measures intended to prevent births within the group; (e) Forcibly transferring children of the group to another group" (United Nations, 1948). *Mass killing* involves intentional killing of civilians, but the perpetrators do not seek to destroy a group as such (Waller, 2007, p. 14). Other atrocities include *war crimes*, *crimes against humanity*, and *ethnic cleansing*. I use the term *mass atrocity* to encompass genocide, mass killing, and other atrocity crimes carried out at a large scale. For further definitional issues, as well as controversies, see Curthoys and Docker (2008), Moses (2010), and Anderton and Brauer (2015). Although the social evolutionary modeling in this article focuses on genocide, the models and results can be applied to other mass atrocity contexts and to other forms of violence (e.g., nation-state war, civil war, terrorism) in which a social group might come to support, or to resist, those wishing to initiate violence.

4. Willing executioners: Goldhagen (1996).

5. Self-play is an assumption that simplifies the probability calculations for random draws without substantially affecting the results. Specifically, without self-play, the probability that an A-type individual would be paired in a random draw with another A-type is $[(n_A–1)/(N–1)]$ and with a P-type $[(N–n_A)/(N–1)]$. Self-play allows one to treat these probabilities as (n_A/N) and $[(N–n_A)/N]$, respectively.

6. I do not model the weeding out of resisters from the population.

7. A model with more than two phenotypes could treat feigning aggressiveness as a third phenotype, as in Arce and Sandler (2009).

8. Nowak (2006, p. 47).

9. Four possible cases: (Nowak, 2006, p. 50; Weibull, 1995, pp. 40-41). Not allowing for payoff ties for a and c and for b and d eliminates special cases that are not essential to the article's main points.

10. Since $r_A+r_P=1$ at all times, the replicator dynamics in equations (4) and (5) can be represented by one difference equation: $r_A^{t+1} - r_A^t = r_A^t(1-r_A^t)(F_A - \overline{F})$ (see Nowak, 2006, pp. 47-48). Plugging F_A and F_P from equations (1) and (2) into this difference equation leads to $r_A^{t+1} - r_A^t = r_A^t(1-r_A^t)[(a-b-c+d)r_A^t + b - d]$ (see Nowak 2006, p. 50). This equation can be used to derive the four cases in Table 1. For Case 1 ($a<c$ and $b<d$), $r_A^{t+1} - r_A^t < 0$ and r_A falls to zero (peace dominates). For Case 2 ($a<c$ and $b>d$), $r_A^{t+1} - r_A^t$ reaches zero for an interior value of r_A (aggression and peace coexist). In Case 3 ($a>c$ and $b<d$), $r_A^{t+1} - r_A^t$ reaches zero at an interior value of r_A, but it is unstable. From this point onward, a small random increase in r_A will cause social evolution to complete aggression or a small random decrease in r_A will cause social evolution to complete peacefulness (aggression and peace bi-stable). In Case 4 ($a>c$ and $b>d$), $r_A^{t+1} - r_A^t > 0$ and r_A rises to 1 (aggression dominates).

11. According to Maynard Smith (1982, p. 204), a "population is said to be in an 'evolutionarily stable state' if its genetic composition is restored by selection after a disturbance, provided the disturbance is not too large. Such a population can be genetically monomorphic [one phenotype] or polymorphic [more than one phenotype]." In our context of social evolution, possible genetic compositions are aggression and peacefulness. In Panel (A) of Figure 2, random generation of a small number of aggressive types (i.e., a small disturbance) would cause r_A to rise slightly above $r_A^*=0$. Since peace would be fitter than aggression following this disturbance, ($F_P > F_A$ at small r_A), selection would reduce the ratio of aggressive types and restore $r_A^*=0$.

12. Although not part of this article, the evolutionary game model can be used to calculate (within the model) the precise number of peacekeepers and/or new social encounter payoff values necessary to initiate the social evolution of peace at any given point on the village's social evolutionary time-line.

13. Nowak (2006, ch. 9).

14. Although the boundaries of the lattices in Figure 3 would appear to imply that individuals on the edges do not have eight neighbors, simulations of spatial evolution in a Moore neighborhood can wrap such edges around the square to generate a torus. Toroidal geometry implies that each cell in the grid is equivalent to each other cell and each individual has eight neighbors (Nowak, 2006, p. 148).

15. The time period of convergence and, for some parameter sets, the proportion of phenotypes that persist over time, depend on EvoLudo's random spatial distribution of initial phenotypes.

16. Nowak (2006, pp. 159-160).

17. N=4,761 was Nowak's (2006) assumption in his walker analysis, which I follow here.

18. Reports of mass killings and mass graves: Bellamy and Williams (2011, p. 832). Human Rights Watch: HRW (2011, pp. 4-6). Estimates of civilians killed: Pettersson (2014); Eck and Hultman (2007); HRW (2011). Special Advisors quote: Quoted in Bellamy and Williams (2011, p. 833; my emphases).

19. Helicopters: Bellamy and Williams (2011, p. 832). Quote: Bellamy and Williams (2011, p. 833). *Force Licorne*: HRW (2011, pp. 6-7).

20. More phenotypes and genocide prevention: See, e.g., Killingback and Doebeli (1996). Analytical functions: As just one example, Galeotti, *et al*. (2010) consider payoff functions that exhibit strategic complementarity or strategic substitutability across neighbors, positive and negative externalities across neighbors, public goods technologies among neighbors such as best shot and aggregate effort, incomplete information, etc. Social-psychological perspectives: Such elements include obedience to authority, moral disengagement, blaming people from the out-group, escalating commitments, ritualistic treatment of people from the out-group, diffusion of responsibility, conformity to peer

pressure, repression of conscience, and a reordering of one's being into acceptance of aggression (see Waller, 2007, chs. 6-8).

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Appendix

This Appendix contains Figures A1 (this page), and A2 and A3 (next page).

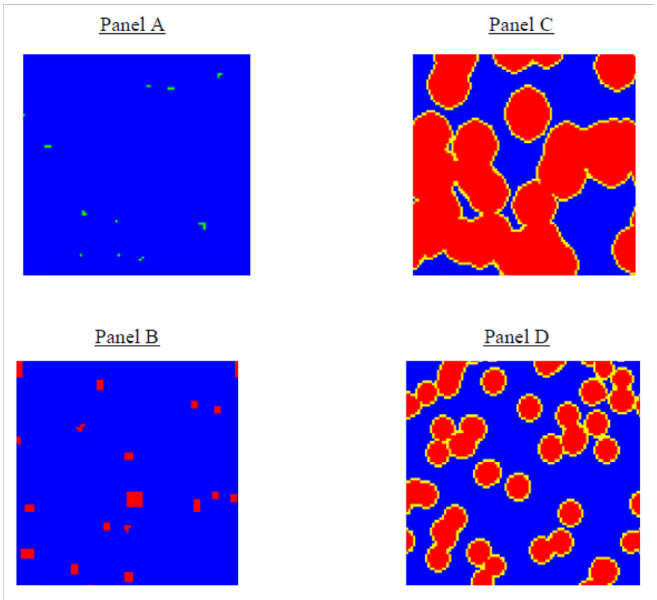

Figure A1: Social evolution in the Moore village for various parameters. In Panel A, social evolution is to complete peacefulness by period 2 for a=2, b=1, c=1, d=2, r_A^0=0.20, N=10,000. In Panel B, the payoff in aggressive/aggressive encounters rises to a=2.5, leading to convergence to 2.8% aggressive types in blocks by period 75. In Panel C, the payoff in aggressive/aggressive encounters rises to a=2.7, leading to a tipping point for the social evolution of aggression and a substantial proportion of aggressive types by period 10. In Panel D, the social evolution toward aggression is shown at period 5 for a=2.5, b=1.2, c=0.8, d=2, r_A^0=0.20, N=10,000.

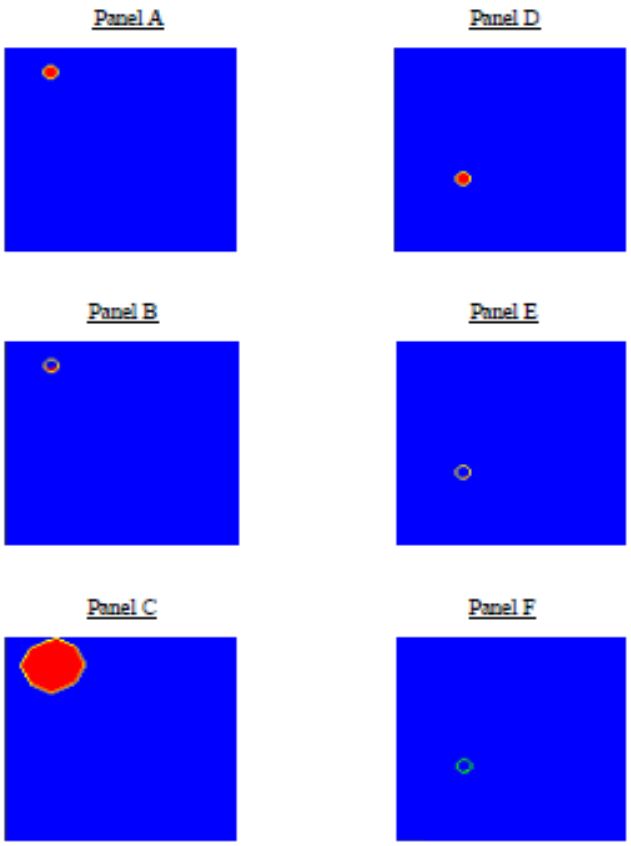

Figure A2: Peacekeeping and the fate of the Moore village for various parameters. In Panel A, a lump of aggressive types emerges by period 3 for a=2.7, b=1, c=1, d=2, r_A^0=0.10, N=10,000. In Panel B, 15 peacekeepers are inserted into the period 3 aggressive lump. The peacekeepers are too little, too late as shown in Panel C by the seriously metastasizing lump at period 15. In Panel D, a period 3 lump of aggressive types emerges similar to Panel A. In Panel E, 20 peacekeepers are inserted into the period 3 aggressive lump. The aggressive lump is contained by period 4 in Panel F.

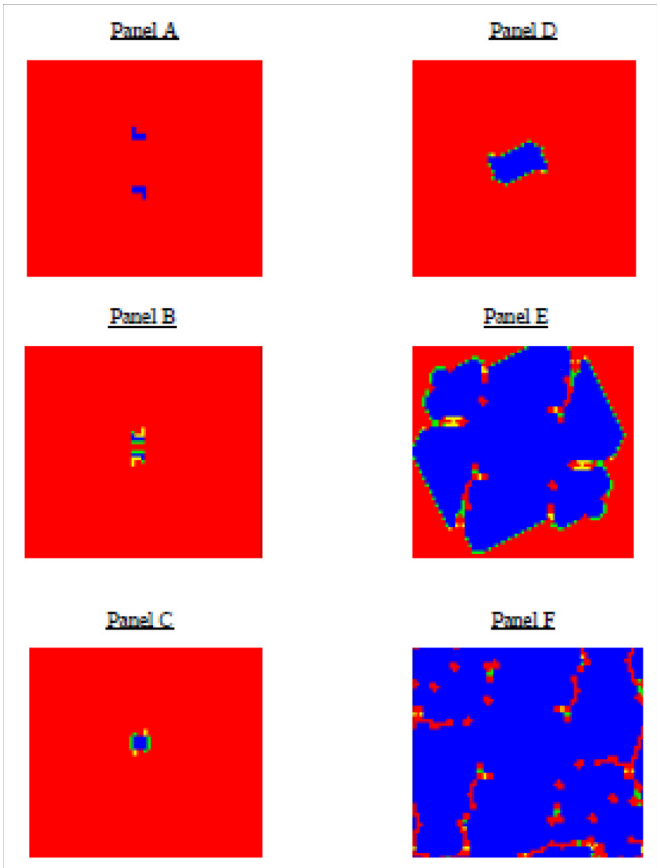

Figure A3: "Walkers" and the "big bang" of peace in the Moore village. In Panel A, 2 walker teams of 10 peaceful types are inserted at time 0 for a=0, b=1.51, c=0, d=1, r_A^0=0.996, N=4,761. In Panel B, the walker teams are close to concentrating by period 6. In Panel C, the walkers connect and the big bang of peace begins at period 8. In Panel D, the big bang of peace continues to grow at period 15. In Panel E, peace is becoming dominant at period 60. In Panel F, the village is made up of mostly peaceful types by period 150. *Source*: Adapted from Nowak (2006).

RATIONAL ATROCITIES AND STATE FORMATION: A GAME THEORETIC APPROACH TO THE CASE OF ISIS

SEBASTIAN ILLE and DINA MANSOUR

Sebastian Ille is Assistant Professor at the Lebanese American University, Beirut, Lebanon. The corresponding author, he can be reached at sebastian.ille@lau.edu.lb. Dina Mansour is Research Fellow at the Orient-Institut Beirut, Beirut, Lebanon, and can be reached at dmansour@aucegypt.edu.

Abstract

Since Abu Bakr al-Baghdadi announced in April 2013 the formation of the new Islamic polity, the Islamic State of Iraq and Syria (ISIS), it has slowly become the epitome of terror. Certain acts of violence and atrocities committed by ISIS create the impression that it is acting out of blind, destructive religious fanaticism. In contrast, this article argues that this perception is but media-driven speculation. Instead of being religious zealots, ordering the purposeless killing of infidels, ISIS' actions are governed by a strong rationale and a clear aim, namely the creation of a state, moreover one that extends beyond the traditional constitutive elements of statehood. In particular, ISIS' rationality serves the purpose of consolidating an Islamic State in the Middle Eastern region, and beyond, under a Caliphate with a claim to universal governance and jurisdiction. This article illustrates the mechanisms which ISIS uses to achieve its aim of establishing an extended state, and it elaborates on the impact of actions and policies against ISIS on the basis of an evolutionary game theoretic model.

In April 2013, Abu Bakr al-Baghdadi announced the formation of an Islamic polity, the Islamic State of Iraq and Syria (ISIS). Since then, it has slowly become the epitome of terror.[1] Starting with the beheading of a large number of Syrian soldiers in mid-2014 and proclaiming itself on 29 June 2014 as a Caliphate (under a new name: IS, or Islamic State), ISIS has made headlines with numerous similar incidences since then. It seems no day has passed that atrocities committed by ISIS were not part of everyday news worldwide.

As portrayed in the media, "shocking" acts of violence and atrocities committed by ISIS create the impression that it is acting out of blind, destructive religious fanaticism. This article argues that this is a mistaken perception, due to media-driven speculation. Instead of being religious zealots, ISIS' actions are governed by a strong rationale and a clear aim. Its rationality serves the purpose of consolidating, under a Caliphate with universal jurisdiction and entitlement, an Islamic State in the local region, and beyond, whose elements are defined by the Montevideo Convention of 1933 on the Rights and Duties of the State.[2] ISIS' communications strategy, and especially its use of news and social media, has enabled it to gain worldwide recognition. By posting official videos on YouTube and other social media networks, often uploaded by ISIS members, as well as by releasing statements and posts in at least a dozen languages that can reach up to 90,000 tweets each day, ISIS has achieved unprecedented reach, which also helps with recruitment. More importantly, ISIS' media strategy enabled it to instigate fear in populations inhabiting areas of potential interest to ISIS' expansion strategies. Posting gruesome images and videos of torturing and executing opposing members of local populations as well as of Western journalists and aid workers temporarily paralyzes those populations and makes them easy prey for control and domination.[3]

The growing divide between 6 million Sunnis under a Shi'ia-led government in Iraq, on the one hand, and the Sunni uprising in Syria, on the other, has allowed ISIS to exploit the vacuum of power in these countries. Since Syrian opposition forces are dominated by Jihadi militants, a large portion of the support by Western allies, Saudi Arabia, Jordan, and Qatar was intentionally or unintentionally misdirected into ISIS. In addition, Turkey still opens its borders to allow the flow of weaponry as well as European Jihadi volunteers to enter Syria uncontrolled. By mid-2014, ISIS outflanked al-Qaeda as the most powerful Jihadist/terrorist organization.[4]

To appreciate the dynamics of the model presented in the following section, it is essential to understand that ISIS rationally uses atrocities for two reasons: First, to establish legitimacy as a state with ever-expanding borders and, second, to maintain a situation of strife and conflict so as to assure its grip on and control over local populations. Much like pre-modern modes of state formation, ISIS uses war to carve its imagined state onto the world map. To establish legitimate statehood, ISIS requires both recognition and sovereignty. Recognition of ISIS as an entity is obtained by international

media coverage and the international community. Atrocities have led the media to create awareness of ISIS' existence and to recurrently portray the Islamic State as a sovereign entity. As a consequence, public opinion is slowly moving in the direction of perceiving ISIS not as a rogue occupying entity of parts of Syria and Iraq, but as a state in its own right. In addition, atrocities help ISIS to appropriate land and impose control over local populations, both vital for its claim to sovereignty. By killing the predominant group in power in each territory that falls into its grip, ISIS is able to create a sectarian regime and to instate its followers as the dominant group in power. In this way, it ensures access to essential sources of capital (e.g., petroleum resources, personal property, and infrastructure) by expropriation and compulsory levy and also establishes a unique identity. This identity is formed out of restructuring the existing culture and integrating it into a fundamentalist, Islamic lifestyle.[5]

In addition, ISIS extends its atrocities to abducting and enslaving women of ethnic and religious minorities. These women represent an alternative to pecuniary remuneration of long-serving fighters and serve as a bait for new recruits. Terror and sexual assault allow ISIS to further tighten its control over seized territory, and instate its own rule and government (U.N. News Centre, 2015). Through atrocities, ISIS thus establishes a pre-modern preliminary governmental structure—a Caliphate—with its own territory, people, legal code, and government, which are the constitutive elements of a full-fledged state. As such, ISIS fulfills the requirements for a sovereign state and, more so, represents itself as a righteous and powerful state.[6]

The establishment of an Islamic State appeals to some Muslims' dream of a Caliphate and represents to many a revival of the Islamic Golden Age. ISIS glorifies itself as a sanctuary for those who feel marginalized in the societies in which they presently live. Thus, ISIS obtains recruits not only by force through conflict, but also from those who live at the margins of other societies. Moreover, ISIS presents itself as the only Islamic entity willing to spread "God's will," by force if necessary. Only a follower of its path can be a "true believer" by fulfilling "God's duty" through *jihad*. In this way, it affirms its strife for world dominance and for an Islam beyond nation-state borders. Atrocities thereby allow for a reversal of cause and consequence. Instead of seeing foreign intervention as a reaction to the atrocities committed, ISIS presents the conflict as a war between the righteous and true state of God on the one hand, and infidel governments on the other; a fight in the name of God against all worldly evils. Initial victories served as a most welcome proof. In this way, ISIS attracts those who fight in the name of God's will, and punishes those in its path, and additionally those who wish to defend (even if with a distorted perception of humanitarian help) God's state against foreign, infidel attacks.

As portrayed in the media, "shocking" acts of violence and atrocities committed by ISIS create the impression that it is acting out of blind, destructive religious fanaticism. The article argues that this is a mistaken perception, due to media-driven speculation. Instead of being religious zealots, ISIS' actions are governed by a strong rationale and a clear aim, namely to establish statehood. An evolutionary game theory model is constructed to study limits and opportunities of opposing ISIS. Special emphasis is given to the role of news and social media.

Consequently, we observe that the committing of atrocities are a rational means for ISIS' establishment of a recognized and sovereign state, and also for its consolidation. Atrocities are both a practical and a spiritual necessity. The graver and more abhorrent the atrocities committed, the more ISIS is able to make front-page headlines and force itself onto the foreign policy agendas of governments worldwide. Atrocities are, however, a double-edged sword: Grave human rights violations could trigger military reactions by foreign governments that could potentially destroy ISIS' infant infrastructure, thus hindering its expansion. In addition, an overly drastic or frequent sequence of atrocities increases the probability of a joint, large-scale intervention that may lead to the end of ISIS. As such, ISIS' atrocities are carefully planned, i.e., media-targeted and constructed. In this sense, ISIS follows the idealized *homo economicus*: Purely self-regarding and self-interested, it creates and uses strife to establish dominion over territory and people to, eventually, become a powerful and recognized state.

To illustrate the rationality behind ISIS' atrocities, we model them as a self-reinforcing mechanism. Atrocities trigger interventions by external governments which weakens ISIS in the short run, but they also lead to an influx of new followers and resources which increases the balance of power in ISIS' favor. Thus strengthened, ISIS then responds with new atrocities and demonstrations of power that enable it to take over new territories, control local populations, and make more headlines worldwide. A level of atrocities that is "too low" as well as a level that is "too high" harms ISIS's interests. Thus, atrocities need to be attuned to domestic political conditions in foreign countries. The model illustrates the dynamic interplay between ISIS and external governments.

The model

We construct here an evolutionary game theory model that captures the dynamics outlined in the previous section. To keep

the results tractable, the nonsymmetric game is defined by two player populations. The first is composed of the various factions of ISIS (indicated by subscript *i*), and the second is constituted by opponent states (subscript *o*), including the U.S., Europe, Saudi Arabia, Egypt, Lebanon, and others.[7] Let there be two pure strategies for each player. For a faction *i* of ISIS assume pure strategy set $S_i = \{s_{ia}, s_{in}\}$, i.e., either commit or refrain from committing atrocities. Each faction of ISIS plays a pure strategy, yet ISIS as an entity plays a convex combination of the pure strategies of its factions, defined by mixed strategy σ_i. Similarly, we assume the pure strategy set $S_o = \{s_{oi}, s_{on}\}$ for each member state of the opposition, i.e., either to intervene or to refrain from intervention. In this case, a mixed strategy σ_o defines the severity of intervention of the opponents as an aggregate entity. A payoff function $\pi_k(s_k, \sigma_j) \in R$ with $j,k = \{i,o\}$ and $k \neq j$ defines the expected payoff of each state or faction *k* given its own strategy and the mixed strategy of the other population.

First, we define the expected payoffs for the pure strategy sets of each player (i.e., faction or member). Define $x \in (0,1)$ as the share of factions of ISIS which choose to commit an atrocity and $y \in (0,1)$ as the share of intervening member states of the opposition. Consider the following two payoff functions of an ISIS faction when playing, respectively, one of its pure strategies.

(1a) $\pi_{ia} = ax + b(\bar{y} - y)$ if $s_i = s_{ia}$

(1b) $\pi_{in} = -c$ if $s_i = s_{in}$

with *a*, *b*, and *c* being positive constants. The first part on the right-hand side (RHS) of equation (1a) states that the more frequently and gruesome are the committed atrocities, the higher is the direct return indicated by payoff *a*. Constant *a* refers to the tighter control of territory, land, resources, and finances that each new atrocity yields, but also to the disruption of incumbent institutions and social structures. The second part of (1a) takes account of the ambivalent effect of committing an atrocity with respect to the opponents' reaction. The value of $\bar{y}$ indicates the threshold below which the faction of ISIS can exploit an intervention. If intervention is half-hearted ($y < \bar{y}$), the faction can present itself as a winner—able to withstand infidel governments—thereby attracting new recruits and sympathy from other countries.[8] Military intervention on a larger scale ($y > \bar{y}$), however, can damage ISIS' structure and facilities. Parameters *a* and *b* also describe the degree to which actions can be exploited in the media, *a* referring to the shock and awe of decapitations for instance, and *b* referring to the image of the Islamic State as a refuge for Sunnis and a stronghold against Western immoral societies and Israel. Equation (1b) illustrates that completely refraining from atrocities bears the cost of renouncing the caliphate's universal entitlement which requires continuous expansion in territory and influence, as well as a show of force. The subsequent lack of deterrence and control over its members and finances will cost an ISIS faction an amount of *c*.[9]

Similarly, the payoff for each of the opposition states' pure strategies are defined by

(2a) $\pi_{oi} = d(x - \bar{x}) - ey$ if $s_o = s_{oi}$

(2b) $\pi_{on} = -fx$ if $s_o = s_{on}$

with *d*, *e*, and *f* defining positive constants. The second part of equation (2a) represents the growing financial cost of repeated intervention and also the growing likelihood of terrorist attacks that may occur in retaliation. The parameter in the first part, $\bar{x}$, indicates the level of atrocities committed by ISIS below which an intervention is considered detrimental. This is based on two reasons: First, the common suspicion against Western intervention following the Arab Spring events of 2011 requires that ISIS' actions are sufficiently present in the news media to induce Western electorates to support foreign intervention. Second, so long as no clear humanitarian need exists, countries in the Middle Eastern and North African (MENA) region generally disapprove of any interference in their neighbors' internal affairs. Levels of atrocities below a certain threshold ($x < \bar{x}$) make the RHS of (2a) negative, and so would any payoff from intervention. Even at levels of atrocities above the threshold ($x > \bar{x}$), one would need to overcome the cost of intervention ($-ey$) to make the payoffs positive. (Of course, very low levels of atrocities may occur wholly unperceived, and public opinion may suppose reasons different from humanitarian help as a motivation for intervention.) Equation (2b) states that as the number (or frequency) of atrocities increases, it becomes more costly not to intervene. Nonintervention is considered as a sign of weakness, inviting terror attacks and increasing public disapproval.

We assume repeated interaction between members of both populations, with no specific first nor second mover. We do not assume a random matching of a pair of players from each population, e.g., the U.S. against the faction of al-Qaryatayn, only that opposition forces focus interventions more on territories with a higher level of committed atrocities, and that ISIS conditions its actions on the previous strategy of each state.[10] Members of each population perceive the actions and outcomes of previous games, but are limited in their cognitive abilities (i.e., memory, degree of rationality, perception).

Within this context of social interaction, the following type of replicator dynamics offers an adequate approximation of the general decisionmaking process in a social environment. Given any pure strategy k and its frequency γ_k, we define

(3) $\gamma_k = \gamma_k(\pi_k(\gamma) - \Phi)$

with $\gamma = (\gamma_1, ..., \gamma_n)$ and $\pi_k(\gamma)$ defining the expected payoff of a player choosing strategy k and Φ defining the average payoff in the population, given by $\Phi = \Sigma_j \pi_j \gamma_j$. In our case, with two strategies, equation 3 simplifies to

(4a) $\dot{x} = x(1-x)(\pi_{ia} - \pi_{in})$ for ISIS and

(4b) $\dot{y} = y(1-y)(\pi_{oi} - \pi_{on})$ for the opponents.

The replicator dynamics thereby reproduce the effect of social learning. This has a number of advantages over a classic best response play. Players do not choose an optimal strategy immediately, which would require a high degree of rationality and knowledge; instead, players learn how to react over time. Factions and states tend to imitate successful behavior of other factions and states. As a consequence, a payoff maximizing action will diffuse among the leaders of each faction of ISIS and each of the opposition states. The replicator dynamics allow for feedbacks and dynamic adaptation. In addition, the identification of evolutionary stable equilibria imposes an additional refinement criterion, ruling out unlikely Nash equilibria. Equation (4a) states that ISIS will increase its level of atrocities committed whenever doing so grants it a higher payoff than not doing so. For the opponents, equation (4b) states the equivalent with respect to the level of intervention.[11]

Substituting equations (1) and (2) into (4), and simplifying gives

(5a) $\dot{x} = x(1-x)(ax + c - b(y - \bar{y})$ [ISIS]

(5b) $\dot{y} = y(1-y)((d+f)x - (d\bar{x} + ey))$ [opponents].

From equations (5), we observe that equilibria occur whenever all members of ISIS and the opponents adhere to a pure strategy, i.e., $x, y = \{0,1\}$. This is a direct consequence of the replicator dynamics and the underlying logic of imitation (i.e., social learning). However, the mixed equilibria are of greater interest. The frequency of atrocities in equation (5a) is stable if $ax+c = b(y-\bar{y})$, i.e., when the gains from committing and increasing the level of atrocities is offset by the cost of intervention of the opponents. Clearly, as long as $y < \bar{y}$, x converges to 1. Similarly, for equation (5b) it must hold that $(d+f)x = (d\bar{x} + ey)$, i.e., the benefit of an intervention is exactly offset by its cost.

Solving equations (5) simultaneously, we obtain the following conditions for the interior equilibrium for $x,y \in (0,1)$.

(6a) $x_1^* = 1, \quad y_1^* = (d(1-\bar{x}) + f)/e$

(6b) $x_2^* = \dfrac{bd\bar{x} + be\bar{y} + ce}{b(d+f) - ae}, y_2^* = \dfrac{ad\bar{x} + (b\bar{y} + c)(d+f)}{b(d+f) - ae}$

(6c) $x_3^* = \dfrac{b(1-\bar{y}) - c}{a}, \quad y_1^* = 1$

Consider, first, equation (6a). It states that the equilibrium level of intervention y_1^* increases in the impact and degree of public support of interventions and the cost of staying out of conflict, and decreases in the maximum cost of intervention.[12] For this equilibrium to occur on the long run, the maximum costs of intervention need to be higher than the incentives to intervene (i.e., $e > d(1-\bar{x}) + f$). In addition, the equilibrium needs to be evolutionarily stable, i.e., small fluctuation (e.g., due to some trial and error by ISIS and its opponents) do not cause players to shift away from their equilibrium play. The eigenvalues of the Jacobian at (x_1^*, y_1^*) are:[13]

(7a) $$\lambda_{11} = \frac{(d(1-\bar{x}) + f)(d(1-\bar{x}) + f - e)}{e} = y_1^*(y_1^* - 1)e$$

(7b) $$\lambda_{21} = \frac{b(d(1-\bar{x}) - e\bar{y} + f) - e(a+c)}{e} = b(y_1^* - \bar{y}) - (a+c)$$

The first eigenvalue is strictly negative. For the second to be negative, either $\bar{y}$ has to be sufficiently large or b sufficiently small, i.e., interventions need to reach high levels before they harm ISIS or generally have only a minimal effect.

Equation (6c) states that the equilibrium level of atrocities x_3^* falls as the benefit of atrocities for ISIS increases, the cost of committing no atrocities increases, or the possibility of exploiting interventions increases.[14] We have the following eigenvalues

(8a) $$\lambda_{13} = \frac{(b(1-\bar{y}) - c)(a + b(\bar{y} - 1) + c)}{a} = x_3^*(1 - x_3^*)a$$

$$\lambda_{23} = \frac{a(d\bar{x}+e)+(c-b(1-\bar{y}))(d+f)}{a} = (e+d\bar{x})-(x_3^*(d+f)) \quad (8b)$$

Here, the first eigenvalue is strictly positive for $x < 1$, thus the fixed point is unstable and no evolutionarily stable equilibrium exists.[15] A similar analysis of the remaining fixed points reveals that the cases (x=0, y=0), (x=1, y=0), and (x=0, y=1) are unstable fixed points as well. This is intuitive when looking at equations (5). In the absence of any intervention, it is not a best response by all ISIS factions to abstain from atrocities. Similarly, it is not a best response of the opponents to intervene at full scale in the absence of atrocities, nor to intervene if the level of atrocities is high.

The escalation case (x_4^*=1, y_4^*=1) is, however, only a stable attractor if

$$e < f + d(1-\bar{x}) \quad (9a)$$

$$b(1-\bar{y}) < a+c. \quad (9b)$$

Inequality (9a) states that the maximum cost of intervention must be smaller than the maximum net cost of nonintervention; equivalently, inequality (9b) states that the cost of a full-scale intervention for ISIS must be less than the net benefit of committing the highest level of atrocity. In the case in which (x_4^*, y_4^*) is stable, the mixed equilibrium defined by equation (6a) does not exist.

The eigenvalues of the completely mixed equilibrium defined by equation (6b) are too complex to be studied in this general manner. Instead, Figure 1 illustrates the eigenvalues with respect to the direct benefits from atrocities a and the impact of external intervention on ISIS' payoff indicated by b.

We observe a similar pattern for different values of i. The eigenvalues strictly increase in a and have a negative real part for small values. At larger values of a, the real part turns positive, and the discriminant eventually becomes positive.[16] Thus, at small values of a (or at large values of b) the system spirals toward the interior equilibrium. As the returns of atrocities for ISIS increase (at larger values of a or smaller values of b) the system spirals away from the equilibrium. For even larger values of a, the discriminant is strictly positive (indicated by the splits in the graphs). At this point, the system will noncyclically diverge from the equilibrium. A similar analysis for c reveals that a rise in the cost of committing no atrocity decreases the maximum a for which the interior equilibrium is an attractor. Hence, the strictly mixed equilibrium is stable if either the benefits from atrocities or the costs of refraining from atrocities are small, or if the impact of foreign intervention is high.

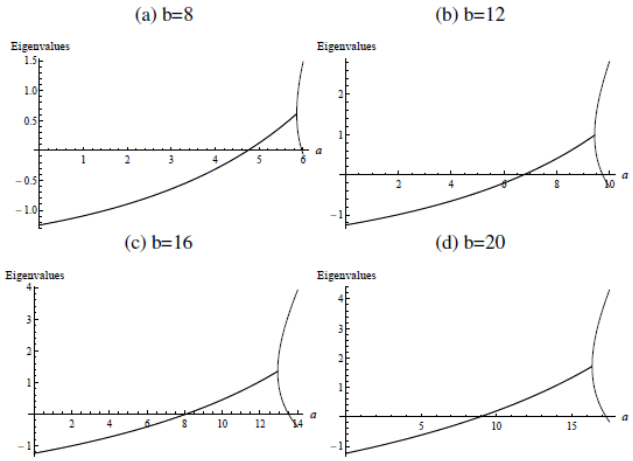

Figure 1: Real parts of the eigenvalues of equation (6b) for various values of b and a as defined by the unit interval of (x, y), given c = 1, d = 20, e = 10, f = 2, $\bar{y}$ = 0.4 and $\bar{x}$ = 0.2.

Figure 2 illustrates the interplay of the opponents' parameters. Each row analyzes the relation between the impact of atrocities (i.e., on public opinion) and the costs of intervention, e, for one of the three cases (positive real part, negative real part, and positive discriminant). We generally observe that larger costs of intervention, e, support, whereas higher benefits from committing atrocities, a, impede the stabilizing effect of a higher impact of public opinion, d. Thus, for the interior equilibrium to be stable in the presence of high gains from atrocity, the cost of intervention and the impact of public opinion need to be high as well.

These results provide an indication of the parameters' effect on the stability and occurrence of the system's equilibria and thus on the long-run outcome. On this basis, the following section illustrates the expected effect of policies and changes to the environment in which both players interact.

Implications

The model presented in the prior section illustrates that the system can converge to one or two equilibria in the long run [i.e., either equilibrium (x_1^*, y_1^*), (x_2^*, y_2^*) or (x_4^*, y_4^*), and where the first and last cannot occur simultaneously]. Figure 3 exemplifies the equilibrium of complete escalation, fulfilling the conditions of equations (9).

The vector field in Figure (3a) illustrates the system's dynamics. The red line indicates all loci at which $\dot{x} = 0$, the green line all loci at which $\dot{y} = 0$. To the left of the red line, x decreases, to the right x increases; the same for y with respect to the green line. Starting out from the unstable interior

equilibrium defined by the intersection of both lines, the system cyclically converges to $x=1, y=1$.[17] No other point is stable. The dynamics are illustrated in Figures 3b and 3c. In this case, we observe that although each intervention reduces the level of atrocities in the short run, it sequentially causes new and stronger incidents of atrocity to which the opponents react with new interventions. In this case, any intervention will have an effect opposite to its intent. Further, note in Figures 3d and 3e that both players would be roughly equally well off at the unstable equilibrium ($x = 0$, $y = 0$). However, ISIS has an incentive to shift to a strategy of atrocities in the absence of any risk of intervention, which will affect the opponents' best response. However, in the case in which the opponents are able to credibly convince ISIS that they will react to any atrocity with a full intervention, then an outcome close to $x = 0, y = 0$ could be maintained.

The first row of Figure 4 illustrates the same case as before except for a larger impact of interventions on ISIS' payoff (a change from b=12 to b=20). We observe that now the completely mixed equilibrium is an attractor, and thus the system spirals into the interior. Note the shift in the red $\dot{x} = 0$ loci, which now intersects with the right ordinate. In this case, an intervention by the opponents will show an effect. However, the interior equilibrium is defined by a persistent average level of intervention and atrocities. We observe that the position of the interior equilibrium is essentially defined by the values of $\bar{x}$ and $\bar{y}$. A low benefit from intervention

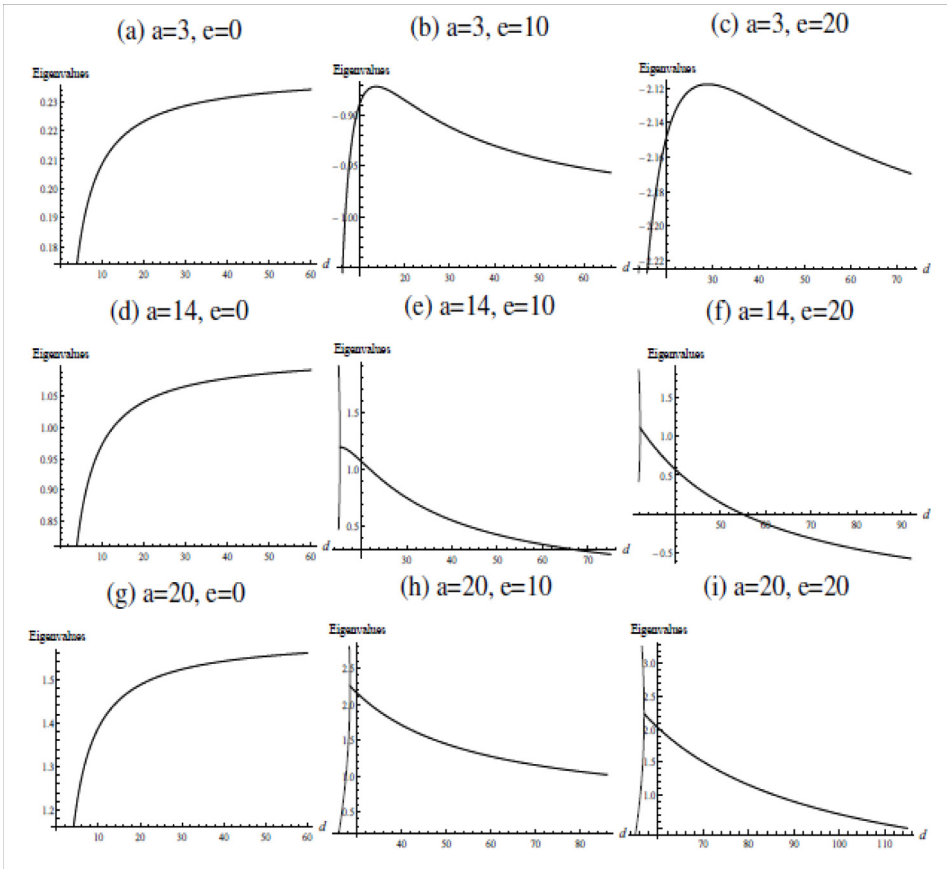

Figure 2: Real parts of the eigenvalues of equation (6b) for various values of a, d, and e as defined by the unit interval of (x, y), given $b = 20$, $c = 1$, $f = 2$, $\bar{y} = 0.4$ and $\bar{x} = 0.2$.

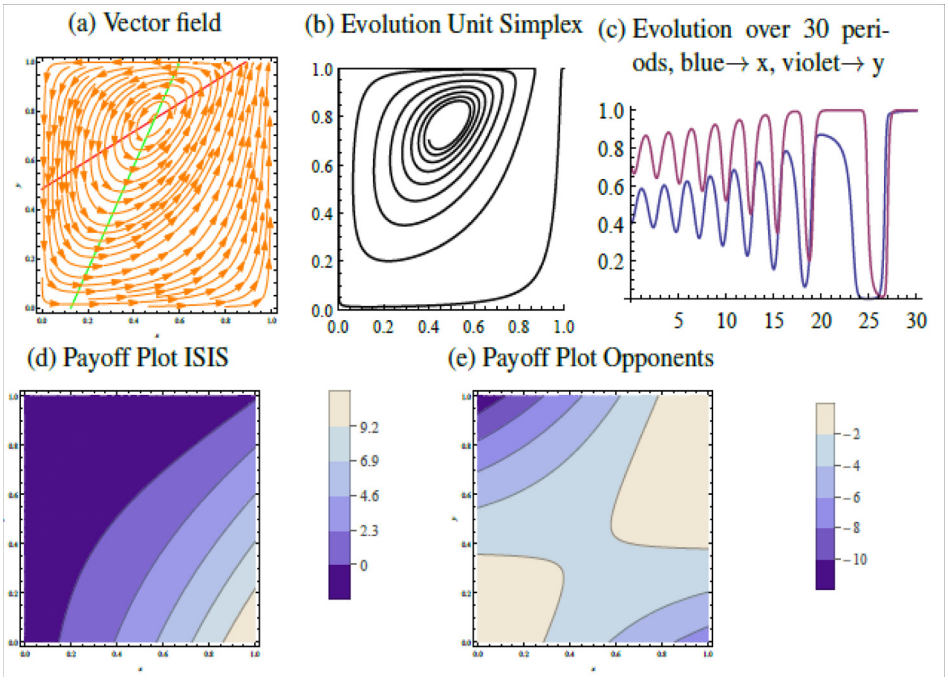

Figure 3: Escalation: $a = 7$, $b = 12$, $c = 1$, $d = 12$, $e = 9$, $f = 7$, $\bar{y} = 0.4$, $\bar{x} = 0.2$.

(e.g., by closing borders, changing public opinion, and limiting access to social media), as well as an increase in the support for interventions at lower levels of atrocities will bring down both values. This case is illustrated in the second row of Figure 4. Both interventions and atrocities shift down to very low levels within a short time. This result is interesting since we would assume that a higher acceptance of interventions (a lower $\bar{x}$) would cause the equilibrium to also shift up to higher levels of intervention. The high support for interventions serves as a credible threat which keeps atrocities low and therefore does not require further interventions. A lack of public support (an $\bar{x}$ close to 1), on the other hand, implies also a high acceptance for ISIS' atrocities, which shifts the latter's best response and will lead to higher levels of atrocities (see third row of Figure 4). Looking at the vector field shows that up to relatively high levels of atrocity no intervention is the best response. The change in the opponents' best response is illustrated by the movement of the green $\dot{y} = 0$ loci. Since ISIS experiences only little reaction by the opponents, it will commit an increasing number of atrocities. The fourth row illustrates the case in which public support is high, but ISIS is able to benefit from interventions. This situation leads to a destabilization of the interior equilibrium, and the system will escalate.[18]

Indeed, public opinion turns out to be a double-edged sword. Increasing the effect of public opinion on the intervention decision can render both the interior and the escalation equilibrium stable. Increasing impact d in the example in Figure 3 yields the situation illustrated in Figure 5. The long-run results depend on the initial values of x and y. The figure illustrates both cases with the same parameters but different initial values. By looking at the vector field, we observe that the basin of attraction of the interior equilibrium covers the northwestern part of the unit simplex; the basin of attraction of the escalation equilibrium covers the southeastern part. Consequently, if opponents initially underreact (y_0 is small), then the system will escalate. The escalation equilibrium is stable, whenever the red line (i.e., the $\dot{x} = 0$ loci) does not intersect with the ordinate on the right but with the abscissa on top (also observe that the loci are equivalent to Figure 3). Since the real part of its eigenvalues are negative (−0.1038), any point in the basin of attraction of the interior equilibrium spirals toward the point as defined by equation (6b). Thus at sufficiently high initial levels of interventions, a full escalation can be avoided and the frequency of atrocities be stabilized at lower levels. Equation (7b) tells us that the equilibrium on the right edge of the unit simplex is stable if $b(y_1^* - \bar{y}) < (a + c)$. Note that as long as $y_1^* < \bar{y}$, ISIS benefits from an intervention at the equilibrium level and the inequality is fulfilled. Even if ISIS loses by the opponents' intervention,

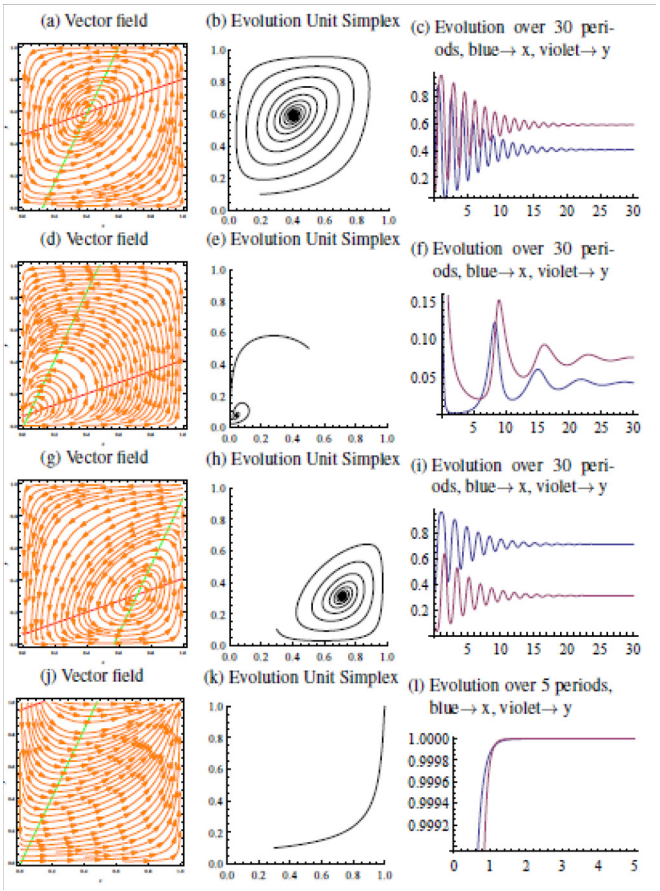

Figure 4: Interior equilibrium: $a = 7$, $b = 20$, $c = 1$, $d = 12$, $e = 9$, $f = 7$, first row $\bar{y} = 0.4$, $\bar{x} = 0.2$, second row $\bar{y} = 0.01$, $\bar{x} = 0.01$, third row $\bar{y} = 0.01$, $\bar{x} = 0.9$, fourth row $\bar{y} = 0.9$, $\bar{x} = 0.01$.

the condition holds as long as this loss is smaller than the net benefit from committing a maximum level of atrocities. In addition, we require by equation (6a) that $e > d(1 - \bar{x}) + f$. Both clearly hold for situations in which $\bar{x}$ and $\bar{y}$ are close to 1. Thus, if support for an intervention is low, but ISIS benefits from any action taken by the opponents, ISIS will choose a best response of $x^* = 1$, and the opponents some level of intervention arbitrarily close to f/e (the ratio of the cost of not intervening to the cost of intervention). The same result occurs if the public does not pay any attention to ISIS' actions ($d = 0$), and if the repercussions of not intervening (e.g., because of strong intelligence in these countries and low risk of suicide bombers) are negligible. In this case, the level of intervention is low and ISIS will find it best to maximize its level of atrocity. This situation is illustrated in Figure 6.

Reducing the opportunities to exploit the benefits from committing atrocities can stabilize the interior equilibrium as indicated by the results of Figure 2 and condition (9b). In this case, only the benefits derived from the oppositions' interventions offer an incentive for ISIS to commit atrocities,

and the system's dynamics are primarily defined by the values of $\bar{x}$ and $\bar{y}$ (as already implied by Figure 4). Figure 7 illustrates this case.

These results imply that curtailing the direct benefits does not necessarily imply that atrocities will cease. Additional conditions need to be met. For equation (7b) to be positive, and thus for inequality (9b) not to hold, it is required that the impact of interventions is effective and enduring. In addition, low levels of $\bar{x}$ and $\bar{y}$ imply that ISIS should have a limited capacity to exploit the opponents' actions in its favor, and that the opposition should have sufficient public support for eventual interventions.

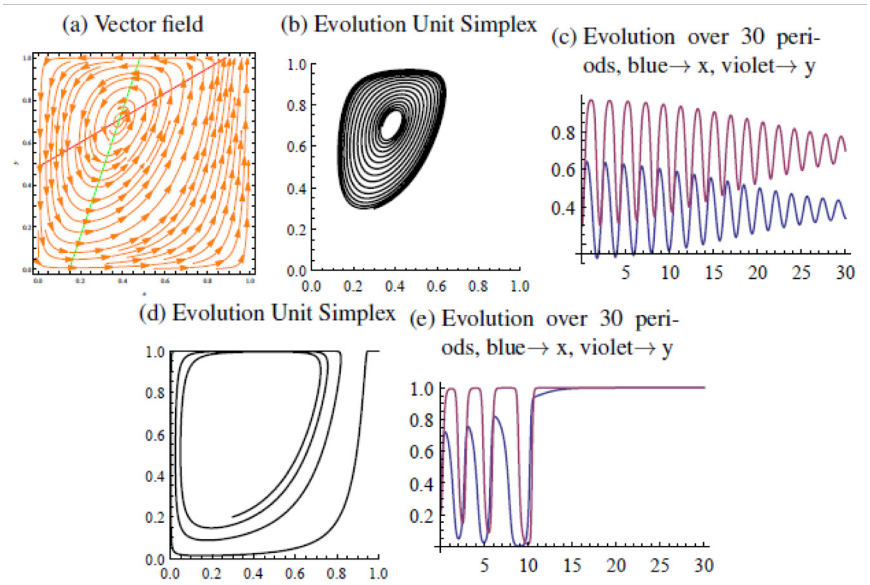

Figure 5: Public opinion: $a = 7$, $b = 12$, $c = 1$, $d = 20$, $e = 9$, $f = 7$, $\bar{y} = 0.4$, $\bar{x} = 0.2$, first row $y_0 = 0.3$, $x_0 = 0.3$, second row $y_0 = 0.2$, $x_0 = 0.3$.

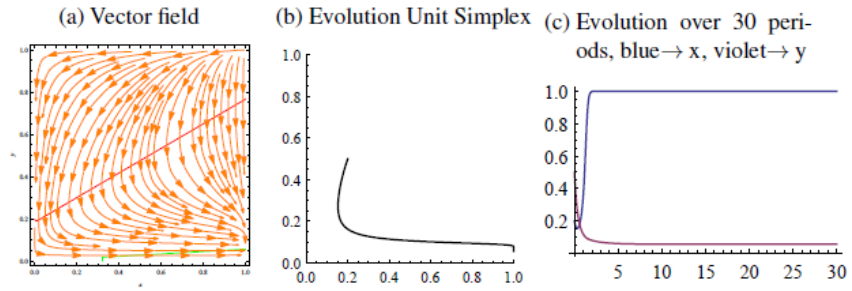

Figure 6: Low intervention: $a = 7$, $b = 12$, $c = 1$, $d = 0$, $e = 9$, $f = 0.5$, $\bar{y} = 0.1$, $\bar{x} = 0.3$.

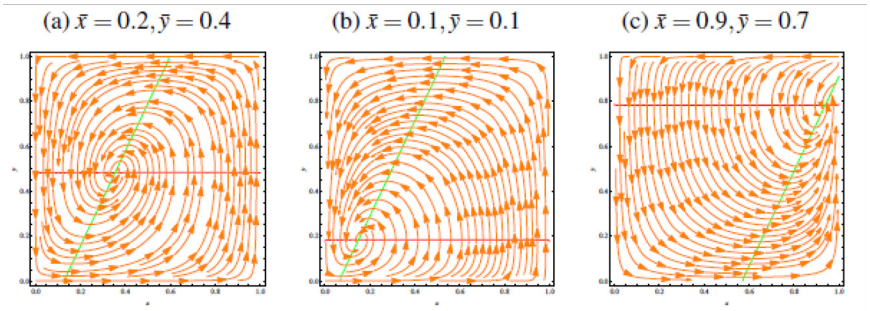

Figure 7: Low gains from atrocities: $a = 0.001$, $b = 12$, $c = 1$, $d = 0$, $e = 9$, $f = 0.5$.

Conclusion

That ISIS has been committing seemingly unjustified atrocities throughout the MENA region, and has done so continuously, has made it a frequent topic within foreign policy circles and on media platforms. This article examines the rationality and the ends behind the atrocities committed by ISIS as well as the means it has employed to justify them. The means in this case are the atrocities themselves, which we argue are strategically employed to enable ISIS to achieve its aim of acquiring land and legitimacy—two essential elements for the formation of a state. Based on this rationale, we argued and illustrated that an inadequate reaction of the opposition to ISIS' actions can lead to an escalation and a spiral of violence and terror.

The article has elaborated what we argue to be the most likely reasons behind ISIS' actions. On the basis of an evolutionary game theoretic model, we have studied the effect of changes to the conditions under which ISIS and its opponents interact. It turns out that reducing ISIS' ability to seize land, resources, and people is only a first step—and one that is not sufficient to reduce the level of atrocities committed. In order to minimize atrocities and conflict, the model's results translate into a set of actions that focus simultaneously on a number of variables. Most of these have already been debated as individual actions in the media. For example, the development of effective and well-targeted interventions that would severely harm ISIS' infrastructure, along with public awareness of the

necessity for such interventions, creates a credible threat to ISIS' very existence which, in turn, would discourage it from committing atrocities beyond a certain threshold. In this case, no strong intervention measures would be necessary. The most crucial element, however, regards ISIS' capacity to capitalize on interventions. To limit this capacity, we propose actions such as closure of the Turkish border, imposing an entry-exit tracking system, and limiting ISIS' access to public and online media. In fact, limiting access to the latter is a crucial element since ISIS uses social media networks and videos to attract followers, sympathizers, and, above all, unwarranted attention. Restricting media access would also derogate public awareness and support. True, low public awareness and exposure may give ISIS a "free hand" to escalate violence, but this would go largely unexposed and unremarked and hence be of limited use to ISIS.

As such, the role of the media turns into a doubled-edged sword. Strong media sensitivity to ISIS' actions may lead to either escalation or pacification. If the opposing states initially underreact to atrocities, ISIS will extend them, which leads to a spiral of violence, i.e., a cycle of more atrocities and stronger reactions. Conversely, an adequate initial intervention will cut short the cycle of conflict and will ease the situation.

Moreover, the direct acquisition of land, resources, and people may only be a temporary requirement for ISIS to establish its long-awaited universalist aspiration to form a recognized Caliphate. Following Sayyid Qutb's vision of what he termed the universal law, ISIS' current scale of recruitment and use of social media can be enough to create agents and supporters of its ideology lasting much longer than ISIS' own lifetime. Such agents and supporters within and outside the Middle East, if found in larger groups, may force a revival of ISIS literally anywhere and at any point in the future. This calls for setting immediate parameters of control to ISIS' outreach and influence sooner rather than later.[19]

Notes

1. The history and foundation of the group dates back to 1999 when Abu Mousab al-Zarqawi founded Jama'at al-Tawhid wa-al-Jihad. Its political and military characteristics, aims, and affiliations have changed over time, reflected in the frequent changes of its official name and references in the media (Zelin, 2014). In this article we refer to Islamic State by its most commonly used abbreviation in Arab-language media today: *Da'esh*, which translates to ISIS.

2. See al-Tamimi (2014). ISIS can be said to go as far as claiming jurisdiction over "true" Muslims worldwide, thereby forcing (at least) an ideological jurisdiction in other states.

3. Unprecedented reach: Schmid (2015). Easy prey: Coleman (2014); Shane and Hubbard (2014).

4. Zelin (2014).

5. Unique identity: This is also true for historic artifacts and artistic symbols in occupied territories that ISIS partly destroys and largely loots and sells on the black market, depending on their value. Artifacts of little value are destroyed as part of ISIS' creation of a new identity and those of significant value are sold to generate profit for the newly founded state (Caulderwood, 2014).

6. "[A] state consists of a territory with a significant and permanent population and with a government that has the capacity to conduct international relations" (Posner and Sykes, 2013, p. 39). Also see, Dorsey (2014).

7. An extension to a three populations scenario adds little to the qualitative results of the simpler case but excessively increases complexity. The three populations case can be made available to the interested reader.

8. The inefficiency of ISIS opponents' air strikes has been criticized. Further, air strikes are (ab)used by ISIS in that having contested a number of foreign armies, including some of the world's strongest, adds to ISIS' propaganda of fighting on "God's side."

9. Results remain unchanged if we assume that positive spillovers between and among groups exist, and that also a faction, which chooses strategy s_{in}, partially benefits from atrocities of other factions and repelling the opposition. We could write $\pi_{ia} = a_1x+b_1(\bar{y}-y)$ and $\pi_{in} = a_2x+b_2(\bar{y}-y)-c$. Since, however, the equilibria and dynamics are unaffected by a positive affine transformation of the payoffs, we can redefine $a = a_1-a_2$ and $b = b_1-b_2$ and obtain the original equations.

10. This does not imply that factions which refrain from atrocities are never attacked by the opposition. It is sufficient to see that such an attack is less likely in this case compared to the case in which the faction commits an atrocities. The argument is then equivalent to footnote 9.

11. Classical game theory assumes a high degree of rationality and knowledge, see Aumann and Brandenburger (1995). In the evolutionary approach, payoff maximizing actions will diffuse by imitation. In addition, the probabilistic definition of the replicator dynamics also takes account of the case in which players sometimes switch to a lower payoff strategy (see Boyd and Richerson, 2002, for a discrete example), and generalizes a number of other updating algorithms (see Weibull, 1995, Section 5.3). The replicator dynamics can also be interpreted as representing the internal decisionmaking process of a collective. It replicates the considerations of the pros and cons of an action based on past experiences, as well as a trial and error period, whereby a player gradually converges to a best response. Ruling out unlikely Nash equilibria: The evolutionary stable equilibrium is asymptotically stable, proper, and trembling-hand perfect.

12. $(1-\bar{x})$ is a measure of public support for intervention.

13. We linearize the dynamic system by splitting and adding the marginal effects of a change in x and y, i.e., $\dot{x} = a_{11}x+a_{12}y$ and $\dot{y} = a_{21}x+a_{22}y$, with a_{ij} being the appropriate elements of the Jacobian (i.e., for $\dot{x} = f(x)$, we have $a_{ij} = \delta f_i/\delta x_j$). Then any interior equilibrium (x^*, y^*) is stable if its linearization is asymptotically stable, thus if no eigenvalue of the Jacobian has a strictly positive real part. For a one-dimensional system with only one type of player, two strategies, and the frequency x of strategy 1, the intuition is straight forward: The Jacobian is a one-dimensional matrix with eigenvalue $f'(x)$. An interior equilibrium x^* is stable, if $f'(x) < 0$, i.e., a marginal increase in x will reduce the relative expected payoff for those players adhering to strategy 1. For example, a shift of one player from strategy 2 to strategy 1 reduces the payoff for all those who follow strategy 1, encouraging at least one player to switch to strategy 2. As a consequence, x will decrease again, and the equilibrium self-stabilizes.

14. This might sound counterintuitive for the reader. Consider that an unstable interior equilibrium defines the boundary of the basin of attraction of the adjacent equilibria, and thus their likelihood. If x_3^* and y_3^* define the basins of attraction of x, $y = 1$, an increase of the interior equilibrium implies that fewer points converge to x, $y = 1$, rendering the equilibrium less likely.

15. If $\lambda_{23} < 0$ then the point defined by equation (8) is a saddle point which will be upset by small random fluctuations.

16. Even though the graphs indicate a simple monotonic relationship between a, b and the eigenvalues' real part, a closed-form solution could not be derived. Extending the analysis beyond the unit interval reveals that the relationship is not monotonic.

17. For larger benefits from atrocities, the system directly converges to the escalation outcome.

18. This behavior can be inferred from the shift of the $\dot{x} = 0$ loci, which now intersect the abscissa.

19. Universal law: Qutb (1981).

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HYSTERESIS OF TARGETING CIVILIANS IN ARMED CONFLICT

UIH RAN LEE

Uih Ran Lee is Lecturer in Economics at the University of Bradford, Bradford, U.K. She may be reached at u.r.lee@bradford.ac.uk.

Abstract

This article explores warring groups' intentional targeting behavior against civilians, a strictly prohibited war strategy by international norms. Using dynamic panel regressions run on a comprehensive dataset of contemporary warfare which covers 22 years (1989-2010), I find that warring actors, both sovereign states and formally organized armed groups, behave systematically in terms of civilian targeting when they are involved in prolonged armed conflict (15-22 years). Warring actors' lethal behavior against civilians tends to be intensified if targeting is repeated in prolonged armed conflict although this hysteresis effect persists only for one year. It is hypothesized that the mounting war cost of prolonged conflict inclines warring groups toward the presumably cheaper targeting of noncombatant civilians rather than battling combatant military or other armed personnel.

Even though international norms strictly prohibit the intentional targeting of civilians in any armed conflict, it is not an infrequent phenomenon. As an alternative war strategy to fighting armed combatants, civilian targeting has been carried out often in contemporary warfare. According to data compiled by the Uppsala Conflict Data Program (UCDP), from 1980 to 2010, nearly 700,000 noncombatant civilians were killed due to direct, intentional attacks by sovereign states or by formally organized nonstate groups in armed conflicts. The intentional targeting of civilians is regarded as a typologically important strategy for the stronger actor in asymmetric conflict in order to scale down opponents' military capacity. However, barbaric acts against civilians are not restricted to stronger actors, which commonly are sovereign states. Weaker actors, including nonstate armed groups, often deliberately target civilians to prevent them from cooperating with incumbent governments and/or to draw support toward rebel groups.[1]

The literature on the intentional targeting of civilians in armed conflict has focused on causes of civilian victimization or its correlation with war outcomes. In relation to the former, substantial variation in the causes of such targeting is found across political (regime types, ethnic differences), economic (resource mobilization, trade openness), and geographical circumstances under which warring actors operate. Warring actors motivated by these reasons choose civilian targeting, as opposed to engaging in battles with combatants, as this is an appealing and presumably cheaper strategy to attain victory in armed conflict.[2]

The persistence of the intentional targeting of civilians in prolonged armed conflict poses important policy questions due to its devastating consequences, which further jeopardize the safety of civilians in already shattering wartimes. Many have studied the persistence of armed conflict itself, but attempts to relate the duration of conflict to civilian victimization are few. Of those, Stathis Kalyvas posits that as war progresses over time, warring actors in civil war are likely to move from indiscriminate violence—a common form of civilian victimization—to selective violence since indiscriminate violence is cost-inefficient. Balcells and Kalyvas take this a step further by looking at warring actors' systematic behavior in different types of civil war. They find that civilian victimization is associated more with irregular wars, such as guerrilla wars, than with conventional wars as the former tend to last longer. Furthermore, another set of authors find that the longer the duration, the more likely it is that warring actors cross the line to civilian targeting at some point during conflict. These studies confirm that the duration of conflict interacts to some extent with civilian victimization, but they do not explain the temporal patterns of warring actors' behavior in terms of civilian targeting in prolonged conflict.[3]

This article therefore explores the persistence, or hysteresis, of warring actors' intentional targeting of civilians over prolonged armed conflict, defined as lasting 15-22 years. The longer the duration of armed conflict, the more resources are required to finance battles, and warring actors thus become more likely to concentrate lethal force on the targeting of civilians as this is cheaper than battling combatants. If warring actors are found to systematically increase the intentional targeting of civilians over time, it is necessary to eliminate incentives or factors that facilitate this behavior directed against civilians. Of particular interest in this regard is troop

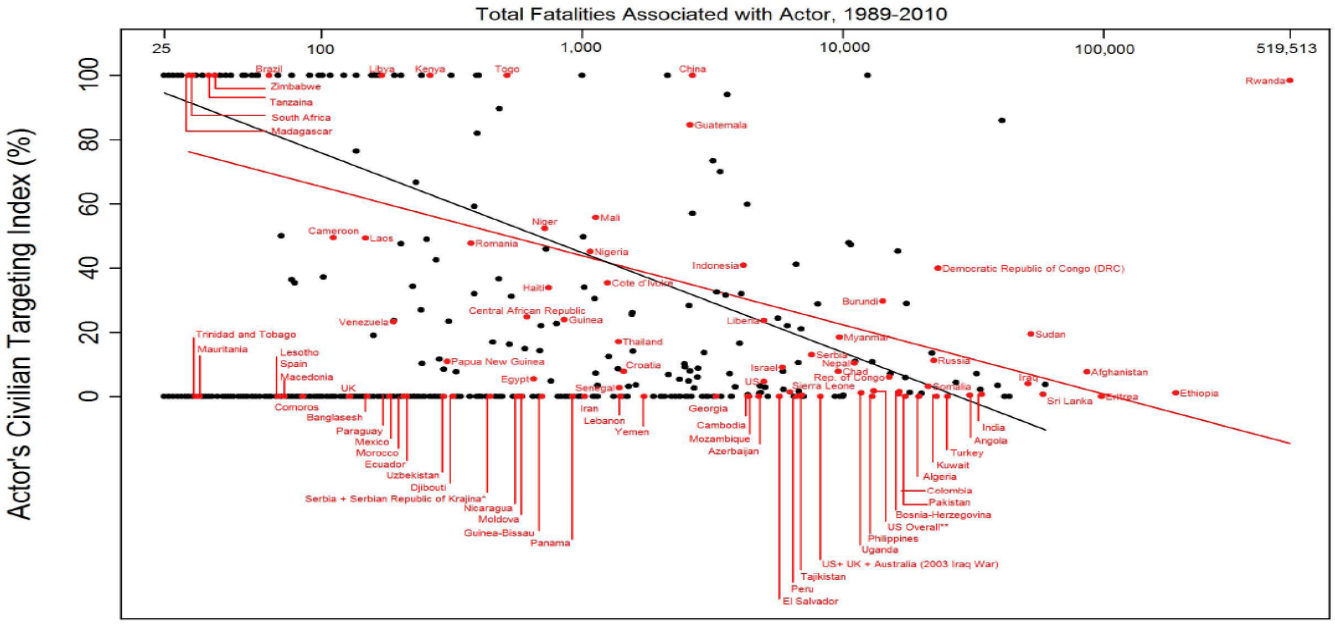

Figure 1A: Sovereign states. Global comparison of warring actors' war strategies between targeting civilians and battling combatants in armed conflict, 1989-2010. *Note*: Only state actors are labeled. The red and black lines are point estimates for state and nonstate actors, respectively, from a bivariate regression analysis when CIT values are regressed with total fatalities associated with actors. The estimates for both state and nonstate actors are statistically significant at the 1% level. * A state actor associated with a nonstate actor. ** Comprising the U.S. as a sole actor as well as a joint actor (i.e., U.S. associated with U.K. and Australia).

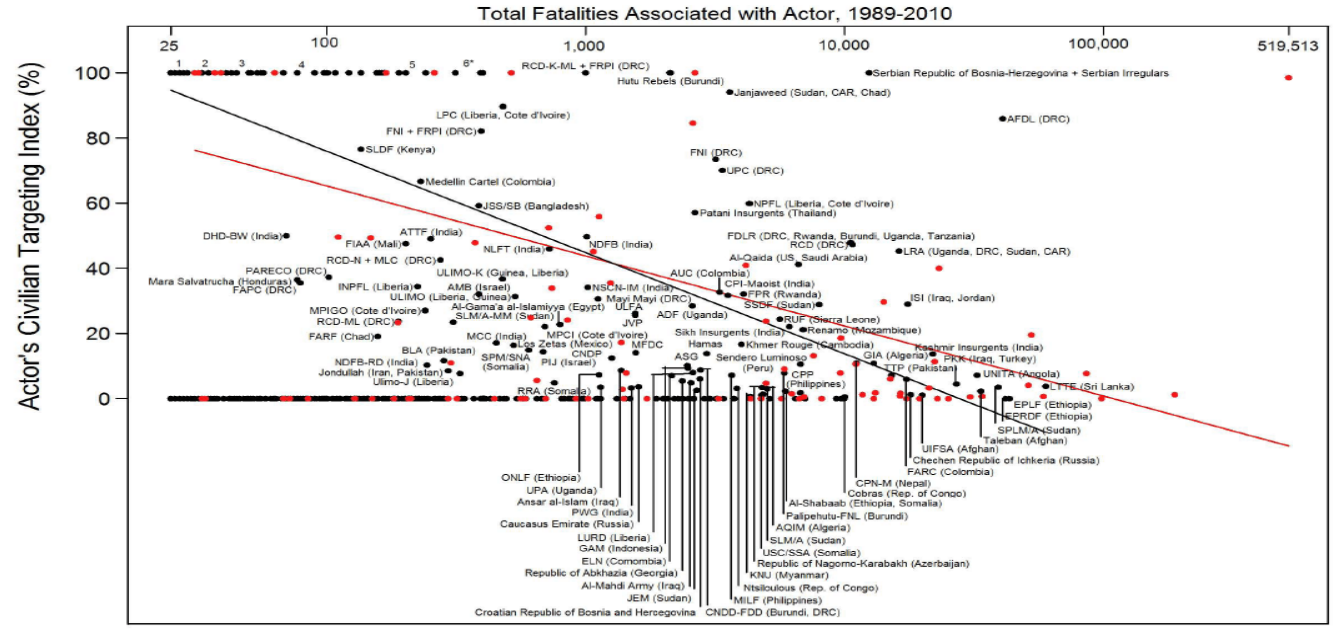

Figure 1B: Nonstate actors. Global comparison of warring actors' war strategies between targeting civilians and battling combatants in armed conflict, 1989-2010. *Note*: All nonstate actors with CTI > 0 are labeled. Among the actors with CTI=0, only those with >10,000 total fatalities are labeled. * Actors with CTI=100 are listed in the appendix.

Table 1: Descriptive statistics. Actors involved in prolonged armed conflict versus all actors

	CTI: Actors in prolonged conflict (15-22 years)			*CTI: All actors (all years)*		
	States	Nonstates	All	States	Nonstates	All
Mean	11.03	9.79	10.54	20.99	15.83	16.66
Confidence intervals (95%)	1.61–20.46	3.3–16.28	4.52–16.56	13.93–28.05	12.83–18.83	13.91–19.42
Standard deviation	21.79	11.72	18.29	33.12	32.32	32.48
Number of actors	23	15	38	87	449	536
	Total fatalities: Actors in prolonged conflict (15-22 years)			*Total fatalities: All actors (all years)*		
Mean	53,891 (25,209)	14,185	38,217 (25,209)	17,196 (11,355)	1,950	4,425 (3,462)
Confidence intervals (95%)	6,783–100,999 (14,776–50,676)	4,781–23,588	9,653–66,782 (13,886–36,533)	4,330–30,062 (5,748–16,962)	1,394–2,507	2,266–6,584 (2,418–4,506)
Standard deviation	108,936 (33,962)	16,980	86,903 (16,980)	60,366 (26,151)	6,003	25,448 (12,290)
Number of actors	23 (22)	15	38 (37)	87 (86)	449	536 (535)

Note: Statistics excluding Rwanda in parentheses.

size—or growth in troop size—on the notion that unless a warring actor has a strong culture of restraint, large numbers of military or paramilitary personnel increase the monitoring costs needed to prevent troops from targeting civilians.[4]

The Civilian Targeting Index

Prior work on civilian victimization in armed conflict typically reports findings in terms of the absolute number of war casualties, that is, death counts. However, since warring actors opt between targeting civilians and battling armed opponents, a proportional method might offer more insight into actors' behavioral options than would the analysis of total death counts alone. Toward this end, I use UCDP data to compute a Civilian Targeting Index (CTI), which is a proportional measure to quantify the degree to which warring actors intentionally employ lethal force against noncombatants as opposed to combatants.[5]

To compute CTI values for each warring actor, I aggregate three UCDP datasets: (1) the one-sided violence dataset, (2) the battle-related deaths dataset, and (3) the nonstate conflict dataset. The first includes only direct and intentional killing of civilians by warring actors, either by sovereign states or by formally organized nonstate armed groups. The second, battle-related deaths dataset contains numbers of both, civilians and combatants killed in battles involving at least one state actor. As this records deaths only if the intended targets are combatants, civilian deaths included here are collateral and not intentional. The third, nonstate conflict dataset includes deaths only from battles between organized nonstate actors. The deaths recorded in these three datasets therefore are independent of each other. All data encompass warring actors and associated fatalities when deaths were at a minimum of 25 per year. UCDP documents the data based on various sources, including the news media, governmental, and nongovernmental organizations.[6]

When combining the three datasets, loosely organized groups contained in the nonstate conflict dataset are excluded as the one-sided violence dataset does not include them. The combined dataset thus includes 536 warring actors—namely, 87 states, and 449 formally organized nonstate armed groups as well as fatalities associated with each actor during the overlapping periods of the three datasets. The combined dataset

covers the years 1989 to 2010. With this newly constructed dataset, one can compute each actor's CTI value, defined as the proportion of the number of civilian deaths caused by any actor's intentional and direct attacks (i.e., deaths recorded in one-sided violence dataset) to total fatalities associated with the actor (i.e., the sum of deaths recorded in the three datasets).

Table 2: Alternative estimates of the AR(1) specification for lagged CTI

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	OLS	*Within groups*	*GMM diff. One step*	*GMM diff. Two steps*	*GMM sys*	*Bias-corrected LSDV-AB*	*Bias-corrected LSDV-BB*
CTI_{it-1}	0.61**	0.33**	0.24*	0.25**	0.22**	0.39**	0.41**
	(0.06)	(0.07)	(0.11)	(0.00)	(0.04)	(0.05)	(0.05)
No. obs.	634	634	562	562	634	634	634
No. actors	38	38	38	38	38	38	38
Instruments			CTI_{t-2} ... CTI_1	CTI_{t-2} ... CTI_1	CTI_{t-2} ... CTI_1		
AR(1)			–3.12	–3.32	–2.98		
AR(2)			0.97	0.98	0.87		
Sargan			0.000	0.000	0.000		
Hansen			0.493	0.493	0.409		

Notes: ** p<0.01, *p<0.05. Year dummies included in all specifications. Robust standard errors in parentheses for the OLS, Within group, and GMM estimators. Bootstrapped standard errors in parentheses for the bias-corrected LSDV estimators. AR(1) and AR(2) indicate tests for first-order and second-order serial correlation, respectively. Sargan and Hansen are tests of the overidentifying restrictions for the GMM estimators. The p-value is reported. The number of instruments is restricted in a way to create one instrument for each variable and lag distance in consideration of the small sample size. Bias-corrected LSDV-AB: One-step Arellano-Bond estimators without intercept; bias-corrected LSDV-BB: Blundell-Bond estimators without intercept.

Panels (A) and (B) of Figure 1 display all 536 warring actors' CTI values (*y* axis) and, on a logarithmic scale (base 10), total fatalities associated with each actor (*x* axis). Panel (A) shows the labels of all 87 state actors, whereas Panel (B) shows all nonstate actors with positive CTI values. The plots elucidate which warring actors concentrate lethal force on noncombatant civilians. Most actors with CTI values of 100—meaning that they used civilian targeting as their sole form of lethal force—are found in the upper-left quadrant of the two plots. A very large number of these actors (51 of 56) are implicated in fewer than 500 total fatalities. In contrast, actors displayed in the upper-right quadrant of the plots are associated with the bloodiest conflicts as well as to the highest rates of civilian targeting during the period of interest. For instance, Rwanda is associated with the greatest number of violent deaths, of which 98 percent were intentionally targeted civilians (511,491 of 519,513) as shown in Panel (A). Actors with CTI values of 0 are located in the lower part of the two plots.[7]

Actors involved in prolonged armed conflict

While the duration of armed conflict in the dataset used for this study varies from 1 to 22 years, the majority of all actors (305 of 536) were involved in conflict lasting only one or two years. Relatively few, namely 23 state and 15 nonstate armed groups, were engaged in conflict lasting 15 years or more.[8] Although the number of these latter actors is not very large, it is worth exploring their CTI values to identify the hysteresis of civilian targeting in prolonged armed conflict. Considering the overlapping confidence interval shown in Table 1, the mean CTI value for these actors does not appear to be significantly different from that of all actors, whereas the mean total fatalities associated with these actors is substantially higher than that for all actors. Figures A1 and A2, placed in the Appendix, illustrate annual CTI values of each of the actors involved in prolonged armed . Seven of them refrained from intentional and direct targeting of civilians, maintaining a CTI of 0. The remaining actors carried out some degree of civilian targeting at some point during the armed conflict. In general, the annual CTI values of these actors display ups and downs rather than an increasing or decreasing trend.

Testing strategies

To capture any dynamic effects of CTI values, a dynamic panel approach is best suited to test for the persistence of warring actors' focus on civilian targeting, as opposed to battling combatants. Lagged CTI values are included as explanatory variables in the following regression model:

$$(1)\ CTI_{it} = \alpha CTI_{it-1} + \sum_{k=1} \beta_k X_{kit} + \eta_i + v_{it},$$

where the dependent variable, CTI_{it}, is the CTI value of actor i at time t. The explanatory variable of interest is the lagged dependent variable to explore the hysteresis, if any, of warring actors' lethal behavior directed against civilians. The inclusion of the control variables, X_{it}, is motivated by findings of earlier studies on war duration. Of particular interest here, to estimate any scale effect of troop size on the intensity of civilian targeting, is the annual growth rate in troop size of military or paramilitary members of each warring actor. In addition, annual GDP growth in a location of incompatibility is used to control for the economic circumstances under which warring actors face armed conflict. Also included is trade openness, which is the sum of exports and imports as a share of GDP. Openness is expected to proxy for economic interdependence with the rest of the world. Two binary variables are included as well. First, external support is coded as 1 if a warring actor received external support in a given year, and 0 otherwise. Second, sovereignty is coded as 0 for state actors, and 1 for nonstate armed groups. The latter variable is included to examine whether the groups behave differently in terms of civilian targeting. Finally, η_i is an unobserved, actor-specific time-invariant effect which may be correlated with other explanatory variables, and v_{it} is the disturbance term.[9]

Due to the endogeneity of the lag, the inclusion of the lagged dependent variable in the estimated model requires econometric methods that address the econometrics concerns arising from dynamic panel estimations. I employ GMM difference and system methods, which replace the lagged dependent variable with instruments. Also employed for robustness checks is the bias-corrected Least Squares Dummy Variable (LSDV) method as it often outperforms GMM estimators in dynamic unbalanced panels with a small sample size. This applies in this study since the number of warring actors involved in armed conflict for 15 or more years is not numerous in the dataset used for estimation.[10]

Regression analysis

Table 2 shows the results for simple AR(1) regressions of the lagged CTI variable and compares the estimates across the different estimation methods. Because lags of the dependent variable of an order higher than one are not significant in the GMM estimations, Table 2 presents the results for the different estimation methods for AR(1) only. As discussed by Bond, the OLS estimate is biased upward. The within-group estimate, however, is even greater than its counterpart in the GMM estimations, suggesting that the downward bias in the within-group estimators may be small due to the long time span in the dataset, which covers up to 22 years. The GMM and the bias-corrected LSDV estimators consistently yield positive and statistically significant coefficients of the lagged CTI values, varying from 0.2 to 0.4. Table 3 displays the GMM system estimates of the lagged CTI values with the different sets of instruments across the different time dimensions. The effect of the lagged CTI value remains largely statistically significant when considering warring actors involved in shorter periods of conflict (i.e., 5-9 years and 10-14 years), although the restriction on the number of instruments turn the hysteresis effect statistically insignificant for actors involved in conflict for 10-14 years. Overall, and consistent with Roodman (2009a;

Table 3: Hansen *J* tests in the GMM system estimations, varying *T*

	5-10 years	*10-14 years*	*15-22 years*
Full instrument set			
- CTI_{t-1}	0.83	0.40	0.48
	(0.06)	(0.15)	(0.07)
- No. of instruments	110	181	251
- Hansen *J* *p*-value	1.000	1.000	1.000
Lag 1 only			
- CTI_{t-1}	0.84	0.39	0.41
	(0.12)	(0.21)	(0.08)
- No. of instruments	60	61	61
- Hansen *J* *p*-value	0.720	1.000	0.974
Full instrument set, collapsed			
- CTI_{t-1}	0.81	0.03	0.22
	(0.25)	(0.18)	(0.10)
- No. of instruments	37	38	42
- Hansen *J* *p*-value	0.876	0.998	0.266
Lag 1 only, collapsed			
- CTI_{t-1}	0.73	–0.03	0.21
	(0.24)	(0.16)	(0.10)
- No. of instruments	23	23	23
- Hansen *J* *p*-value	0.943	0.463	0.749
Lag 1 to 2, collapsed			
- CTI_{t-1}	0.77	0.03	0.20
	(0.24)	(0.19)	(0.10)
- No. of instruments	24	24	24
- Hansen *J* *p*-value	0.349	0.368	0.940
No. of obs.	312	277	634
No. of groups	71	29	38

Notes: Constant is not included but year dummies included in all instrument sets. Robust standard errors in parentheses.

Table 4: Dynamic effects of civilian targeting in prolonged armed conflict (15-22 years)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	GMM diff. One step	*GMM diff. Two steps*	*GMM sys*	*GMM sys*	*GMM sys*	*Bias-corrected LSDV-AB*	*Bias-corrected LSDV-BB*
CTI_{t-1}	0.591**	0.566**	0.551**	0.543**	0.552**	0.392**	0.406**
	(0.190)	(0.189)	(0.098)	(0.099)	(0.098)	(0.065)	(0.063)
Troop size growth	0.004*	0.003	0.0008**	0.0007**	0.0007**	0.0007	0.0007
	(0.002)	(0.002)	(0.0002)	(0.0001)	(0.0001)	(0.014)	(0.013)
GDP growth	0.034	–0.073	–0.055	–0.71	–0.055	–0.177	–0.186
	(0.154)	(0.146)	(0.184)	(0.170)	(0.186)	(0.187)	(0.183)
External support	2.836	2.443	0.868	1.732	0.866	2.67	2.769
	(2.770)	(2.750)	(1.130)	(1.222)	(1.146)	(3.091)	(3.070)
Trade openness				–0.069**			
				(0.022)			
Sovereignty					0.787		
					(1.525))		
No. of obs.	364	364	427	425	427	427	427
No. of actors	32	32	35	35	35	35	35
Instruments	CTI_{t-2} CTI_{t-3}	CTI_{t-2} CTI_{t-3}	CTI_{t-2} CTI_{t-3}	CTI_{t-2} CTI_{t-3}	CTI_{t-2} CTI_{t-3}		
AR(1)	–2.36	–2.39	–2.67	–2.67	–2.69		
AR(2)	1.05	1.06	0.93	0.96	0.93		
Sargan	0.039	0.039	0.025	0.014	0.025		
Hansen	0.235	0.235	0.471	0.442	0.471		

Note: See notes to Table 2.

2009b), collapsing the number of instruments with the use of one or two lags only (i.e., CTI_{t-2} and CTI_{t-3}) appears to enhance the power of the Hansen test of the overidentifying restrictions in the GMM system estimations.[11]

Table 4 presents the results from dynamic panel regressions using GMM and bias-corrected LSDV estimation methods with the inclusion of the control variables. The preferred reference specification includes troop size growth, economic growth, and external support received by warring actors (specifications 1-3 and 6-7). The reference specification is obtained by running a series of iterations in which statistically insignificant economic, political, and demographic indices are largely eliminated from the analysis. Looking at the variable of interest in the reference specification (the lagged CTI value in specifications 1-3), we find that it is not just highly significant but also has a large effect size. Holding troop size growth, economic growth, and external support received by warring actors fixed, a one percentage point increase in the CTI value in the previous year increases the current year's CTI value by about 0.5 percentage points, meaning a 50 percent increase in magnitude. Of course, an individual warring actor is not expected to behave exactly as the estimates suggest because they refer to the average behavior of all actors in the sample. However, it is interesting that the Liberation Tigers of Tamil Eelam (LTTE), the rebel group that led a 25-year-long civil war against the government of Sri Lanka until 2009, approximates this predicted lethal behavior against civilians at some point in its war effort. The CTI value of LTTE increased from 0 to 2.3 between 1993 and 1994 and further increased by about 60 percent in 1995, recording a CTI value of 3.7 with the breakout of the Third Eelam War. Conversely, the CTI value decreased by about 60 percent in the following year, recording a CTI value of 1.2.

The effect of the lagged CTI value remains highly significant, and large, in specifications 4 and 5, which take two

more control variables into account, namely trade openness and sovereignty, a time-invariant binary variable indicating warring actors' sovereignty. Specifications 7 and 8 provide robustness tests based on the bias-corrected LSDV method. Here, the lagged CTI values are also highly significant and positive, although the magnitude is slightly smaller than in the GMM estimations. Overall, the GMM and the bias-corrected LSDV estimators consistently suggest that a one percentage point increase in a prior year's CTI value led approximately to a 0.4–0.5 percentage point increase in the current year's CTI value. This suggests the presence of a short-term (one-year-long) memory, persistence, or hysteresis effect: Warring actors' lethal behavior against civilians is likely to be intensified if they repeat the civilian targeting in prolonged armed conflict. These results substantiate the aforementioned conjecture that war tends to get dirtier over time by involving more civilian victimization since combatant groups, in the face of mounting war costs over prolonged conflict, are inclined to targeting civilians—a cheaper strategy than battling armed opponents. This behavioral pattern remains even when those actors that never targeted civilians while involved in prolonged armed conflict are excluded from the analysis.[12]

In addition to the lagged CTI value, the estimates obtained for the control variables also point to important policy implications. First, troop size growth appears to positively and significantly affect the intensity of civilian targeting. Although the magnitude is small, and its effect is not statistically different from zero in the bias-corrected LSDV estimations, this should not be considered as of little importance. Instead, it may substantiate the conjecture, stated earlier, that the enforcement of restraining growing troops from killing civilians may weaken over prolonged armed conflict since maintaining a CTI of 0 requires ongoing resource expenditure to monitor troops' behavior (unless a warring actor has a strong culture of restraint from killing civilians). Second, it is noteworthy that external support, a binary variable to indicate the presence of external aid including military intervention and financial aid, is not statistically significant in any of the specifications. This may suggest that external support received by warring actors does not contribute to reducing the intensity of civilian targeting over prolonged armed conflict. Third, as expected, the effects of GDP growth are negative in most specification but the estimates are not statistically different from 0. In contrast, trade openness, consistent with Harff (2003), does have a statistically significant negative effect (specification 4), implying that economic interdependence may contribute to reducing the intensity of civilian targeting over prolonged armed conflict. Finally, sovereignty, a variable to differentiate state from nonstate actors, indicates that being sovereign is not a significant factor influencing the intensity of civilian targeting (specification 5). This may imply that state and nonstate armed actors do not behave differently in terms of civilian targeting over prolonged armed conflict.

Concluding remarks

Covering 22 years of data (1989-2010), this article explores the persistence, or hysteresis, of actors' intentional targeting of civilians and its facilitating factors over prolonged armed conflict (15-22 years). The article yields three main findings. First, a dynamic panel data analysis identifies the presence of a short-term hysteresis effect according to which warring actors' lethal behavior against civilians tends to be intensified if they repeat civilian targeting over prolonged armed conflict. The effect persists for one year and suggests that mounting war costs in prolonged conflict may drive a warring actor toward targeting civilians rather than battling combatants, as the former is a cheaper war-fighting strategy. Second, growing troop size appears to positively affect the intensity of civilian targeting in prolonged armed conflict. Third, external support received by warring actors does not reduce the intensity of civilian targeting.

These findings carry important implications. First, warring actors—sovereign states or formally organized armed groups—engaged in prolonged armed conflict should be more carefully scrutinized by international civil society to prevent further violence against civilians and to avoid a conflict trap. Second, rapidly growing troop size should be considered as a signal that war may be about to become dirtier, involving more civilian victimization, and thus stimulate efforts directed at external intervention. Finally, external support given to warring actors may not be effectively directed toward reducing the intensity of civilian targeting.

Notes

1. Is regarded: Arreguin-Toft (2001). International norms strictly prohibit: ICRC (2010). 700,000 civilians: See the UCDP's one-sided violence dataset (http://www.pcr.uu.se/research/ucdp/datasets/). This includes civilian deaths only by intentional and direct attacks by warring actors. Intentional killings are defined as actions deliberately taken to kill civilians; direct killings refer to civilian deaths by actors' direct attacks such as bombings and gun shots. Stronger actors: Arreguín-Toft (2001); Valentino, Huth, and Balch-Lindsay (2004). Weaker actors: Wood (2010).

2. Substantial variation: Zahar (2000); Humphreys and Weinstein (2006); Vargas (2009); Wood (2010).

3. Persistence of armed conflict itself: See, e.g., Collier and Hoeffler (1998); Collier, *et al*. (2003); and Collier, Hoeffler, and Söderbom (2004). Kalyvas: Kalyvas (2006). Balcells and

Kalyvas: Balcells and Kalyvas (2014). Another set of authors: Hicks, *et al*. (2011).

4. The term hysteresis was coined by physicist James Alfred Ewing (1885) to denote the persistence of previous states over time in describing the magnetization of ferric materials. It has been used often in economics to explain the degree of persistence in unemployment rates. Resource required to finance battles: Collier, Hoeffler, and Söderbom (2004); Hicks, *et al*. (2011).

5. The CTI was initially developed by Hicks, *et al*. (2011).

6. UCDP data: http://www.pcr.uu.se/research/ucdp/datasets/. The nonstate dataset is included in this article since a third of formally organized armed groups contained in the dataset (71 out of 218) are also present in the battle-related deaths dataset. Twenty-five fatalities is the minimum required number for deaths to be captured in the three UCDP datasets. For the CTI computational details, refer to Hicks, *et al*. (2011). Note that the UCDP datasets present three different estimates of violent deaths: "best," "low," and "high." This article uses the "best" estimates, which are derived from the most reliable sources.

7. Most actors' CTI scores are distributed at the extremes: 63 percent of all actors (339 of 536) have values of CTI=0 (they refrained from intentional and direct targeting of civilians and concentrated lethal force solely on combatants). Yet about 10 percent of the actors (56 of 536) have values of CTI=100 (they used lethal force only against noncombatant civilians). Details are available from the author.

8. Prolonged conflict of 15 or more years: Given that the maximum duration of armed conflict covered by the dataset is 22 years, the duration of 15 years is an arbitrary choice to lessen the small sample problem (e.g., for a 20-years threshold) and to reduce the extent of unbalancedness in the panel data structure (e.g., with a 10-years threshold). For regression analyses with shorter time periods (i.e., 5-9, 10-14 years), see Table 3.

9. Earlier studies: Harff (2003); Collier, Hoeffler, and Söderbom (2004); Valentino, Huth, and Balch-Lindsay (2004). Troop size: Data from the aforemention UCDP website. When the range of the number of troops is given, the lower bound is selected for use in the regressions. GDP growth and trade openness: From the World Bank's *World Development Indicators*. External support: Includes various types such as military intervention and financial aid. See UCDP codebook for detailed types of external support received by warring actors (UCDP, 2011c).

10. Lagged dependent variables with instruments: Arellano and Bond (1991); Arellano and Bover (1995); Blundell and Bond (1998). Unbalanced panel with small sample size: Bruno (2005a; 2005b).

11. As discussed by Bond: Bond (2002).

12. Specifications 4 and 5: Trade openness and sovereignty are not included in the reference specification. As suggested by an anonymous reviewer, trade openness is not included to retain control variables measured as growth rates only (e.g., GDP growth). Sovereignty is not included since a time-invariant variable cannot be estimated with the GMM difference method. Excluded from the analysis: Results available upon request.

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Appendix

The following list of actors, marked 1 to 6 in the upper-left hand corner of Figure 1B, have a score of CTI=100. (1) MFDC-FN (Senegal); AWB (South Africa); KRA (India); Mayi Mayi Complet (DRC); PAC (South Africa); HPC (India); Buxton Gang (Guyana); SIMI (India). (2) Bakassi Boys (Nigeria); FAPC + FNI (DRC); AAH (Iraq); UPDS (India); (3) Gazotan Murdash (Russia); ACCU (Colombia); Paz y Justicia (Mexico); Salafia Jihadia (Morocco); Mayi Mayi-Ngilima (DRC); RCD-N + MLC + UPC (DRC); AFL (Liberia); Fedayeen Islam (Pakistan); Lashkar-e-Taiba (India); DHD (India); Ampatuan Militia (Philippines); (4) BLTF (India); Interahamwe, ex-FAR (Rwanda); RCD-CP (DRC); Laskar Jihad (Indonesia); RCD-LN (DRC); Mungiki (Kenya); Tawhid wal Jihad (Egypt); Indian Mujahideen (India); Jamaat Jund al-Sahaba (Iraq); FNI + FRPI + RCD-K-ML (DRC); Ranvir Sena (India); Laskar Jihad (Indonesia); FRPI (DRC); Mayi Mayi-Chinja Chinja (DRC); Rastas (Rwanda, DRC); RTC (Chad); (5) GICM (Spain); Jemaah Islamiya (Indonesia); MPGK (Mali); (6) MAGRIVI + Interahamwe (DRC); Lashkar-e-Jhangvi (Pakistan); VHP (India).

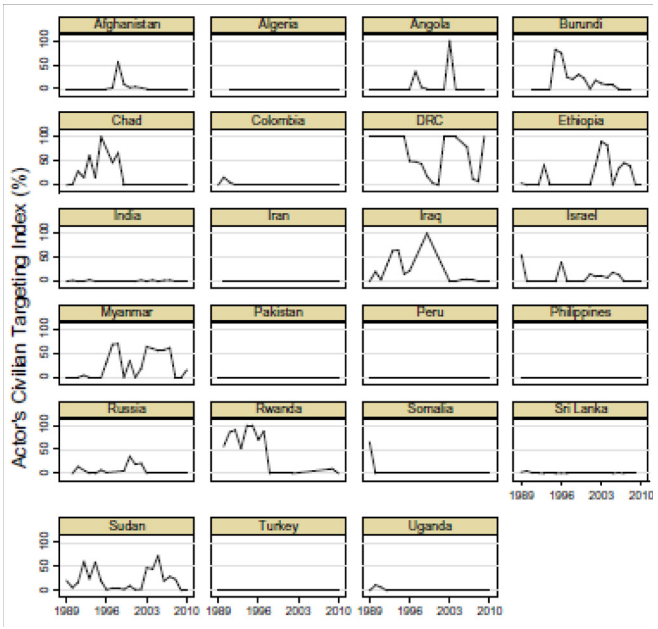

Figure A1: Annual CTI values for state actors involved in prolonged armed conflict (15-22 years).

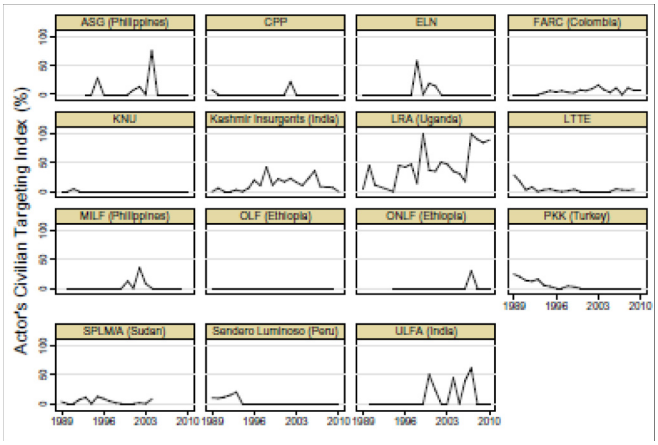

Figure A2: Annual CTI values for nonstate actors involved in prolonged armed conflict (15-22 years).

ON THE GROUND: FIELD RESEARCH FROM AFGHANISTAN

TRAVERS BARCLAY CHILD

Travers B. Child is affiliated with the Vrije Universiteit Amsterdam and the Tinbergen Institute, both in the Netherlands. He may be reached at t.b.child@vu.nl.

Abstract

This note introduces a four-article symposium on stability and reconstruction across Afghanistan. The contributors are experienced practitioners and/or field researchers drawn from a spectrum of the social sciences. Each of them has established a physical presence in Afghanistan for a significant period of time. Consequently, this symposium elucidates some critical aspects of the conflict and development phenomena which have thus far been overlooked.

This symposium release incidentally marks the two-year anniversary of my own fieldwork in Afghanistan. After having conducted research on the relationship between reconstruction and conflict for a number of years, I felt compelled to visit Afghanistan myself to better understand the issues which impassioned me. Within twenty-four hours of walking the streets of Kabul and conversing with locals and expatriates, my perspective had undergone a drastic transformation. My theoretical priors were humbled as I discussed my research with Afghans and foreigners who lived the issues around which I had developed academic expertise from a distance. Later on I left the country feeling infinitely better acquainted with the topic of my research than when I had arrived. Yet at once I understood full well that my familiarity and intuition was far weaker than that of the experts I had left behind in Kabul.

As economists, our practical knowledge may forever be subordinate to that of our counterpart practitioners. After all, modern training in economics prioritizes mastery of research design and method over intimate familiarity with select topics. High theory and data-driven empirical work certainly have a role to play in the quest for knowledge surrounding the complex issues facing Afghanistan and other conflict-afflicted regions. But we should never forget to incorporate real-world considerations into such policy-relevant work. As academics, we tend to ignore each other across disciplines, even while developing parallel veins of literature. Moreover, we collectively ignore the discourse of practitioners and field experts who have devoted their careers to substantive, rather than methodological, matters.

This symposium seeks to help remedy the above ailments. In this spirit, I invited a group of cross-disciplinary practitioners and/or policy-oriented researchers to contribute to this collection. On account of professional engagement with their subject matter and personal experience in Afghanistan, these authors are extremely well versed in their respective areas of research. The articles herein thus offer valuable additions to our empirical and practical knowledge. None of these contributions would have been possible had the authors not established a physical presence in the country and embodied an honest and profound passion for their work.

Daniel Karell, from a sociological perspective, undertakes in-depth interviews with locals while immersed in Helmand province. From his field work new theoretical insights arise in regard to how reconstruction funding can reshuffle local power structures and produce unintended consequences of post-conflict reconstruction. Greg Adams draws on inside knowledge, gained through deployment with the U.S. military in Afghanistan, to shed new light on an ongoing empirical debate regarding the relative merits of "large" versus "small" reconstruction project funding. He uses unique military-grade data to assess the effectiveness of reconstruction spending at reducing violence. Jan Koehler, Kristóf Gosztonyi, Basir Feda, and Keith Child exploit part of an extremely rich database of quantitative and qualitative household-, village-, district-, and province-level data collected in Northeast Afghanistan. Adopting a mixed-methods approach, they explore the relationship between a development intervention and stability. They focus less on objective measures of development and stability than on local perceptions of these phenomena. Lastly, in Herat and Helmand provinces, James Weir and Hekmatullah Azamy conduct interviews with a broad swath of actors in the conflict, including Taliban fighters (former and present), government officials, and community leaders. The obtained testimonies offer a tangible grip on some economic drivers for insurgency (in the midst of a largely theoretical, academic debate). The authors argue that for stability to take hold, illicit funding practices must be stymied.

This symposium incorporates various disciplinary approaches and reflects a range of professional experiences

across Afghanistan. This is true of the symposium as whole, but also of the coauthored work contained within. In addition to advancing knowledge for its own sake, we hope this symposium reminds readers of the diversity and flexibility of the social sciences. We hope it will inspire others to collaborate across disciplinary boundaries, as well as outside the academic sphere. By doing so, we can spark a broader dialogue around the substance of our research and, one hopes, influence policy accordingly.

AID, POWER, AND GRIEVANCES: LESSONS FOR WAR AND PEACE FROM RURAL AFGHANISTAN

DANIEL KARELL

Daniel Karell is Post-Doctoral Associate, Social Research and Public Policy, New York University Abu Dhabi. He may be reached at daniel.karell@nyu.edu.

Abstract

Recent studies present contrasting findings on how reconstruction and development aid affects security in wartime contexts. Some research has found that aid projects decrease violent incidences, while other work has found both no effect or even evidence of a positive relationship. Addressing this mixed empirical picture, this article examines the complex intra-communal dynamics spurred by the distribution of aid in rural Afghanistan. Drawing on original interviews conducted in a community of Marjah district, Helmand province, the analysis indicates that development aid helps to elevate previously relatively less powerful individuals into positions of community leadership. This newly generated class of local leadership subsequently develops relationships to the community that differ from their predecessors since their social position is rooted in new sources of power. As a result, intra-community tension increases. These findings help to specify the conditions under which the delivery of aid may not help to win "hearts and minds" of locals and may potentially promote conflict. In addition, the analysis underscores how consideration of antecedent social conditions and temporal processes can help to refine our understanding of the wartime relationship between aid and security.

Two of this century's most costly and long-lasting wars, NATO's intervention in Afghanistan and the American-led invasion of Iraq, have interwoven development with war-making, in part to win over the "hearts and minds" of the affected populace and help forestall insurgencies. This has given rise to novel instruments of wartime development such as military-civilian Provincial Reconstruction Teams, as well as massive budgets. After more than a decade of these programs, researchers have begun to examine their efficacy. The empirical results are inconclusive. For example, a widely cited paper on aid and conflict in *Iraq* found that the Commander's Emergency Response Program (CERP), which enabled U.S. military officers in the field to provide local-level public goods, reduced levels of violence there. Afghanistan's National Solidarity Program, a government-run endeavor that distributes grants to Community Development Councils, likewise was found to decrease violence, but only in areas where levels of violence were already relatively low. In contrast, one analysis of CERP in Afghanistan found a large inverse association of aid with violence, but reports that the finding nonetheless was not statistically significant. A recent re-analysis of Afghan data, over a longer time period and broader geographic area, concludes that CERP aid had no effect on violence at all, positive or negative. And fieldwork in Afghanistan suggests that development aid has generated social tension and conflict.[1]

These mixed findings cast doubt on current arguments that link the delivery of aid, winning hearts and minds, and the subsequent reduction of insurgent activity. In all, the evidence from Afghanistan suggests that development projects do not increase the benefit of participating in the formal labor market, which would in turn reduce the payoff of participating in rebellion. Moreover, the conditional implementation of these projects does not seem to incentivize the cooperation of the populace, a dynamic referred to in the literature as the information-sharing theory.[2]

To address the mixed empirical picture of development efforts and (violent) conflict, this article examines the effect of outsider-provided aid on a rural Afghan community at the local level. The focus is not on patterns of violence but on the complex intra-community dynamics unleashed by foreign actors' development activities. The ultimate goal of analyzing what happens as a result of development aid, and why, is to take steps toward constructing new theory that identifies the mechanisms by which reconstruction and development work affects insurgency—beyond rates of violence.

Drawing on original interviews with residents of one southern Afghan community, I find that foreigners' aid often flowed to community members with limited pre-aid access to communally accepted sources of power. This occurred for two related reasons. First, rather than the community's previously powerful residents, these individuals were involved in advising

outsiders during the planning and design stages of aid projects and, second, they then gained access to resources through the projects' implementation stages when outsiders collaborated with local vendors. Subsequently, the aid helped to elevate these residents into positions of leadership, thereby generating a new cadre of local leadership. This new leadership relates differently to their communal neighbors than do their predecessors, primarily because both their initial empowerment and their continued support relies more on external material resources than had been the case before. As a result, intra-community tension increased.

That outsiders collaborate with leaders of peripheral communities, and, through the provision of resources such as aid, affect how these leaders interact with their communities is not a new phenomenon, of course. For example, during the British conquest of southern and eastern Africa, their military and commercial leaders manipulated and allied with various local elites. During the Afghan *jihad* against the Soviets, some Afghan fighters used external resources to become warlords. More recently, local Afghan commanders were charging NATO forces USD10,000 per month for the collaboration of their militias. In various African states, foreign aid since the 1970s has induced elites and potential civil society actors to be more attentive to donors and to pursue rent-seeking rather than to be responsive to the concerns of their communities.[3]

Building on these experiences and findings, this article provides a novel formulation of how complex, local-level resource-based relationships between outsiders and peripheral communities, as well as among the community members themselves, connect to the general dynamics of aid provision, wartime development, and (violent) conflict. It does so by taking the rare step of examining the heterogeneity in power and influence within local peripheral groups and tracing how outside forces can first generate local elites and then come to believe that these actors are indeed the relevant indigenous local elites to work with. This social construction of new elites does not necessarily generate less responsive community leaders, I argue, but rather reshapes the community's social order, thereby affecting in ways in which leaders are attentive to their neighbors. These new manners of interaction between leaders and residents can, in some contexts, induce grievances within the community and increase the likelihood of conflict at the local, rather than regional or national, level.

Data and context: The case of Marjah

The analysis draws on 15 in-depth, semi-structured interviews conducted in one community in the Marjah district of Helmand province in November and December 2014. Due to constraints on discussing sensitive matters, such as the sources of power

To address the mixed empirical picture of the relation between economic development aid and violent conflict, this article examines the effect of outsider-provided aid on a rural Afghan community at the local level. Focusing on the complex intra-community dynamics unleashed by foreign actors' development activities, I find that foreigners' aid often flowed to community members with limited pre-aid access to communally accepted sources of power. Thus empowered, new community leadership emerged and intra-community tensions increased.

and the allocation of resources, the respondents comprise a convenience sample of the community. To identify potential respondents, the community's leaders were first contacted and asked to consent to the administration of the study. To minimize disruption to the community, the leaders were then asked to nominate possible respondents. If these nominees agreed to participate, a private meeting was arranged to conduct the interview. While this type of sample has obvious weaknesses, it generated data on social processes and previously unidentified (possible) causal relationships that can facilitate the conceptualization of new variables of interest, advancement in the design and implementation of future systematic studies, and the interpretation of existing findings.[4]

Concern regarding respondents' possible biases and the validity of their responses is mitigated by three considerations. First, I am in fact primarily interested in respondents' *subjective* understanding of what transpired in their community over the last several years. Personal perspectives on social dynamics carry crucial implications for various outcomes such as support for the central government and, as discussed later on, grievances and potential support for an insurgency. Second, the findings reveal that respondents were largely dissatisfied with the prevailing direction the community leadership took. This is opposite to biases that might be expected of individuals nominated by the leadership. Third, without being prompted, respondents independently recounted communal events in remarkably similar ways. For example, every respondent described a recent community-wide election and correctly reported the outcome. Additionally, two key respondents involved in a recent local scandal separately depicted the event in a similar manner. Such instances of overlapping narratives increase confidence that respondents are, first, aware of community events and issues, and, second, accurately report their understanding of the social dynamics to the researcher.[5]

Due to social restrictions, all interviewees were male. They ranged in age from about 20 to 60, with an average age of around 40. Most were farmers; one was a teacher and another was a police officer. Six used the honorific *haji*, taken after completing the *hajj*, which sometimes indicates that an

individual possesses a certain amount of resources, enabling him or her to complete the *hajj*, and often garners one greater respect in one's community. All interviewees were residents of one community in Marjah. Situated in central Helmand, Marjah was made a district in 2011/12 and had a recorded population of 27,000 in 2014. Once a sparsely populated area of clay desert, Marjah became more densely populated in the wake of the development of major irrigation infrastructure, such as the damming of the Helmand river and the construction of a series of canals, as well as government land (re)distribution schemes from the 1950s through the 1970s.[6]

Marjah's development into an agricultural region produced a complex and distinct social context. Most significantly, a tribally and ethnically heterogeneous community resulted from the arrival of several waves of settlers. Specific details of how this community experienced the 2001–2014 war are difficult to come by. For example, the Afghan Country Stability Picture (ACSP), a database on reconstruction and development projects funded by the U.S. military, USAID, Afghanistan's Ministry of Rural Rehabilitation and Development (MRRD), and other organizations from 2002 to 2009, records 54 projects in Marjah. Of these, all but one were funded by organizations labeled as "other," and only three were recorded with a project start or end date. Alternative databases of aid projects, such as those provided by the MRRD or the U.S. Special Inspector General for Afghanistan Reconstruction (SIGAR), only contain data aggregated at the national or provincial levels. An exception is a database from the Combined Information Data Network Exchange (CIDNE), which records 62 planned CERP projects completed in 2010, totaling USD2,778,267. The numbers suggest that Marjah received more CERP aid than did other districts in Helmand, primarily in regard to cost per project (see Table 1).[7]

While CERP projects were only one type of extra-local aid provided across Afghanistan, they have been of particular interest to scholars of aid and insurgency. Explicitly designed to enable external actors, in this case military commanders, to engage relatively rapidly in modest-sized projects tailored to local needs, and thereby to emphasize collaboration between outsiders and locals, it was at the same time hoped to decrease the appeal of insurgency. Specifically, the projects' effects on intra-community dynamics of interest here flowed through a range of interactions: Military units' identification of projects in collaboration with local government officials and community leaders (sometimes through *shuras*, or gatherings with civic notables); implementation of capacity-building workshops; competitive tendering processes with local actors; payment disbursement in installments; site visits for quality control; ceremonies at project completions; subcontracting by Afghan partners; and the influence of the financial capital by itself. A rival program, the National Solidarity Program, also emphasized links between external actors and local communities, albeit with less direct contact. Compelled to elect Community Development Councils, communities then planned projects and applied for grants from the government.[8]

Table 1: Summary statistics

	Mean (rounded)	*95% range*
CERP projects per district, Helmand, 2010	3	0–93.5
CERP projects in Marjah, 2010	62	–
Cost per CERP project (USD), Helmand, 2010	14,918	0–99,979
Cost per CERP project (USD), Marjah, 2010	25,000	0–104,975
Casualties per district-year, Helmand, 2003-2013	6	1–104
Casualties in Marjah per year, 2003-2013	0	0–22.5

Notes: Only districts with at least one casualty per year are included in the tally of casualties across Helmand, 2003-13. *Sources*: CIDNE; Global Terrorism Database.

While Marjah's distinctiveness cautions against applying the findings to Afghanistan as a whole, the district's economic and social conditions resemble those found in many rural conflict zones, as well as in most of Helmand—a pivotal province during the NATO war and a region of continued importance for the opium trade and stabilization efforts. For example, most of Marjah's residents, as Helmand's, engage in the agriculture economy. Additionally, the community's social heterogeneity mirrors the tribal fragmentation depicted in ethnographic accounts elsewhere in the province. Furthermore, over the course of the war, Marjah experienced levels of violence comparable to other districts in the province (Table 1). Its levels of CERP aid are greater than the median, but in a case study, high values of the primary independent variable of interest are useful for generating insights into underspecified processes and causal relationships. In turn, these can be used to construct variables and hypotheses in subsequent studies.[9]

Findings

Other than preceding instability, many recent economics and political science studies of aid and conflict in Afghanistan

overlook antecedent social conditions. In contrast, the analysis that follows shows that pre-existing social fundamentals and expressions of power play an important role in how aid delivery affects a community. In particular, the communal allocation of power among residents interacts with the methods of aid distribution, shifts sources of power within the community, and thereby changes who holds power and how the newly powerful use their newfound social positions.

Antecedent conditions of power

Interviewees recollected that before the influx of aid, power was typically based on familial lineage and inherited material and social resources. Not uncommon in rural Afghanistan, such sources of local power appear alongside positive reputation, reliable provision of goods and services to neighbors, and ability to protect the interests of the local community from the state and other interest groups—although, of course, these complementary sources of power are more easily achieved with material wealth, social rank based on lineage, and kinship networks.[10]

When outside actors distributed aid in Afghanistan, such antecedent conditions sometimes benefitted powerful individuals. Primarily these individuals gained from outsiders' relatively common practice of consulting with local leaders to identify and plan projects. Consultation was especially likely if powerful individuals had used their sources of power to gain government positions or to establish close ties with officials. Moreover, during the implementation phase of projects, when outside actors contracted with local vendors and disbursed funds in stages, powerful actors sometimes were able to use the advisory positions to steer aid to their own networks.[11]

In Marjah, however, pre-existing sources of power curbed powerful individuals. The interviews suggest three reasons for this. First, previous power holders often were targeted and killed by the Taliban or other armed groups, which sometimes saw members of leadership families as obstacles to their own goals. Nearly all respondents, for example, noted that in the mid-2000s, the Taliban had assassinated the most respected leader of their community. Second, access to existing sources of power appeared to weaken some powerful individuals' incentives to take the risk involved in accepting external aid since cooperating with outsiders, such as monetary payments for conducting a job, could potentially cause tension with neighbors and result in less respect for a power holder's existing sources of power. For example, one respondent recounted how in 2010 foreign forces

> "were pointing to some fields [of opium] and asking residents to go burn them, saying 'we will give you many dollars in return.' That person [who burned the fields] did not care about the owners of those fields nor whether they agreed to it or not. They were just doing that work and were getting money from [doing] it."[12]

Clearly, the community's established leaders would find it challenging to engage in such work: Doing so would have risked undercutting their own carefully cultivated positions. Thus, the process of aid distribution increased the possibility that powerful individuals might not gain from the actual provision of aid. Recall that outsiders often consulted with community leaders during planning and design stages but implemented projects with different local actors. In the case of CERP, for example, non-commanders, such as contracting officers and paying agents, dealt with vendors. This practice created an opportunity for community leaders to be left out of the actual acquisition of outside resources, even if they had chosen to take the risk of accessing the aid.[13]

Finally, pre-existing sources of power were unfamiliar to foreigners. Thus, resources were channeled to locals whom the foreigners could best, or most easily, understand and relate to. Those locals were not always the previously widely-acknowledged community leaders. That outsiders might misidentify community leaders in rural Afghanistan is not new. In the 1990s, after a U.N. directive had been issued specifying that aid would be delivered through *shuras*, local militia commanders staged such assemblies to portray themselves as community leaders. In some instances outsiders purposefully misidentified leaders if it served their interest to favor one faction over another. In Marjah, interviewees perceived that foreigners typically neglected to work with the respected leaders of their community, especially during the advisory stage of project design, and instead collaborated with residents who "introduced themselves as elders of the village to the foreigners," such as officers of the Afghan Local Police (ALP). Indeed, many such residents were previously farmers and far removed from established leadership roles. As one interviewee put it, "the unimaginable became reality because a person who could not handle a farmer's responsibilities became [a member of the] ALP."[14]

Antecedent conditions of power, combined with the practices of aid distribution, thus influenced who received aid. Residents of Marjah holding social positions based on established sources of power, such as lineage, were less likely to access aid. In contrast, residents without ties to the established sources of power were more likely both to work with foreigners as well as to hold positions that were more familiar to foreigners. Consequently, a cohort of relatively less powerful residents gained access to externally provided aid.

Gaining and leveraging of resources

Once relatively less powerful residents had gained access to resources from foreigners they worked to increase and consolidate their newfound social positions. The most successful of the newly empowered residents did so by nominating themselves during district council elections. All interviewees described the recent elections in similar terms: Two residents who had become wealthier through ties with foreigners nominated themselves, arguing that this indicated that they were able to continue bringing external aid to the community. To some residents, these attributes were vital skills for community representatives.[15]

These two men won the elections, even as this outcome proved unpopular among the interviewed respondents. One interviewee explained the result by saying, "most of our people are illiterate, so most of them accepted [the victorious candidates'] lies and trusted them."[16] Another emphasized how the victors' source of power decreased their legitimacy:

> "[The election winners] still do not deserve to be the people's representatives because they were peasants and farmers previously. They became the elders because of the assistance and money of the foreigners, and they got rich because of the foreigners."[17]

Of course, as the newly empowered residents used aid resources to strengthen their power—for example, by being elected to the district council or entrenching themselves further in the ALP—they appeared even more like legitimate leaders to the foreigner actors providing the aid. This generated a reinforcing process in which they received even more aid over time. As one respondent explained:

> "I can tell you that there is a factory producing elders, and every person tries to become an elder to earn money. They get the support of a few people and then present themselves to the foreigners as an elder, which then gets them projects from the foreigners."[18]

In other words, foreign aid helped to empower a group of once relatively less powerful residents, enabling them to occupy leadership positions. It did so by first providing them with resources and then enabling them to portray themselves as able to gain resources from outside the community, akin to community patrons. This resulted in a self-fulfilling prophecy: After gaining and consolidating the reputation, or even formalized positions, of community leadership, aid continued to flow to these residents precisely because foreigners believed them to be community's leaders.[19]

Emergent conditions of power and grievances

The generation of a new group of elites need not, in itself, be detrimental to a community or an obstacle to stability. In the community under study, however, the process produced social consequences that respondents widely saw as negative. The most significant consequence, besides the concentration of aid resources in the hands of a few, was the new elites' handling of intra-community dispute resolution.[20]

Nearly all respondents explained how community members historically relied on leaders to resolve especially contentious interpersonal disputes. This practice, in their view, had recently become unjust and less reliable with the new wave of leaders. Relative to the preceding leaders, the ascendants—with power rooted in foreign aid rather than in inherited deference and respect of their neighbors—showed little interest in dispute resolution. Because they did not rely on prestige and status gained from resolving intra-community strife, the emerging leaders no longer engaged in civic matters as their predecessors did.

Moreover, when the new leaders did become involved in dispute resolution, most respondents noted that they imposed fees. For example, one interviewee said that the current elders

> "... solve only disputes that will benefit them and in which they have some personal interest. They do not participate in the meetings (*shuras*) of the poor and the weak. If they do, they will not work honestly to solve the dispute [in *shuras* meant to resolve disputes]. [But the worst] thing is that elders are now asking for money to solve the disputes. Previous elders would not take money but the present elders receive money as if they are working on commission."[21]

Another interviewee said,

> "In regards to solving disputes, a very big difference has occurred [since the introduction of foreign aid]. Previously [leaders] were solving disputes for the sake of God but presently ... the decisionmakers ... are accustomed to having more money and the elder takes some money when solving disputes."[22]

One result of the shift in the sources of power, from lineage and inheritance to the ability to acquire material resources, is that the current leaders do not see much value in previous social practices because the old sources of power do not support their current social positions. Furthermore, when they do engage in these social practices, their behavior differs from their predecessors' so as to expand their current source of

power, the acquisition of wealth.

All respondents conveyed dissatisfaction with the perceived shift in leaders' behavior. In the majority of interviews, respondents repeatedly lamented how "honest elders have decreased enormously," and several respondents linked the change in their community's leadership to broader social issues in a negative manner. For example, one interviewee observed, "present elders do not think of the motherland, country, and people—they only think of their own pockets [to fill]." Another interviewee explained:

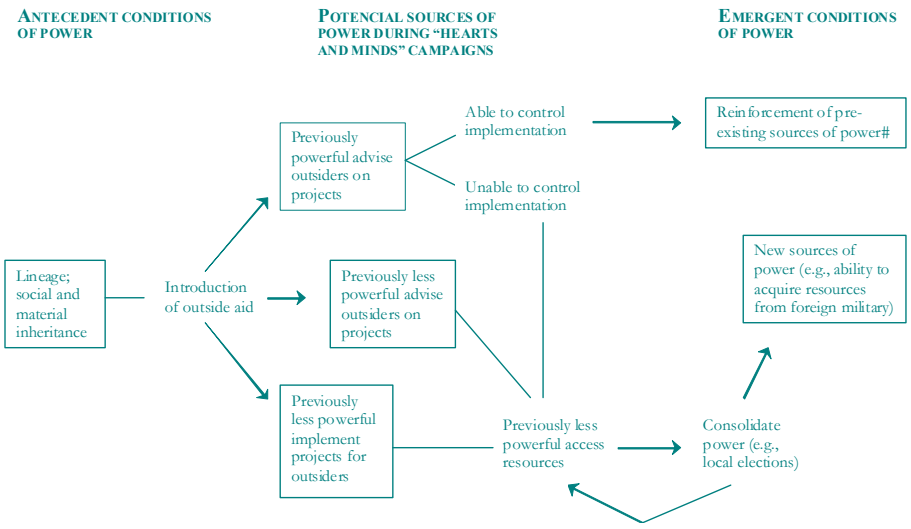

Figure 1: Changes in power and aid in a rural Afghan community.

> "Foreign aid has impacted the traditional justice system by appointing or creating careless and dishonest people as tribal elders and heads of villages. Instead of solving people's problems, these elders instead only see to their own pocket [to enrich themselves] and how to take away money from others. This is the reason that people no longer believe in the elders ... Previously, poor and rich people were equal to the elders, but now it is not like that. Elders now favor the rich people (*maleks*) [in dispute resolution] even if the poor people are not at fault at all. [The elders] put all the faults and mistakes on the poor people [to ensure the payment of greater fees from the rich]."[23]

The process is summarized in Figure 1. First, antecedent conditions that create, structure, and distribute power within a community. The introduction of outside aid then generates new potential sources of power. In one case, depicted in the upper path of the figure, previously powerful individuals are able to participate in one of these potential sources: They advise outsiders on projects. If they are also able to subsequently control the implementation of projects, the pre-existing sources of power will likely be reinforced.

In contrast, three other scenarios are possible, each resulting in previously less powerful community residents gaining power. These scenarios are depicted in the lower three paths of Figures 1. In the first scenario, previously powerful individuals advise on projects but are not able to control the implementation. In the second, it is the previously less powerful individuals who advise outsiders on projects. In this scenario, previously less powerful individuals have accessed the first new source of power—advising on projects—possibly because their social positions are more familiar to foreigners. In the third scenario, previously less powerful individual access a second new source power—the implementation of projects—by directly co-opting this process. In the case of Marjah, the second and third scenarios occurred.

After previously less powerful individuals gained access to new sources of power, acquired resources, and consolidated their power, outsiders perceived them as legitimate leaders even though it was the intervention of outsiders that helped to elevate these residents in the first place. Aid thus continued to flow to these new leaders. This is depicted in the lower-right of Figure 1 with the arrow pointed to the left.

In these latter scenarios, the conditions of power changed: The new leaders' power is based on accessing externally-sourced aid. At this point, respondents reported that the newly formed elites approached typical leadership roles differently than did their predecessors. The most frequently mentioned difference regarded how leaders handled intra-community dispute resolution. The new leaders were said to be less engaged and, when they were engaged, they were imposing fees for what previous leaders had treated as a community service. Rather than villagers being dependent on local elites for protection and public goods, aid fostered elites' dependency on external sources of revenue and perhaps even the resources of villagers.[24]

Discussion and conclusion

With an eye toward possible effects on peace and security, this article examines how reconstruction and development efforts in Afghanistan affected the internal social dynamics of rural communities. Drawing on original interviews conducted in one

community in central Helmand's Marjah district, potentially generalizable processes can be theorized to create testable hypotheses. Indeed, the broader goal of this article is to take initial steps toward developing new theoretical and empirical approaches to studying the relation between aid and security in wartime contexts.

The analysis highlights three stages of a process that unfolded in the community under study. First, aid flowed to specific residents depending on their pre-existing access to established sources of power and on aid distribution procedures. Specifically, residents with limited connections to locally distinct sources of power typically accessed externally provided aid to a greater degree than their more powerful neighbors. Second, this aid then helped to elevate residents into leadership positions. The emergent elites were subsequently seen by foreigners as the true community leaders and, as a result, even more aid flowed to them and their growing patronage networks. Third, this outcome increased social tension and grievances in the community. Of note is that the new elites' approach to typical leadership roles varied from their predecessors', most likely because their power was rooted in different sources.

Specifying the social process makes several contributions to the study of aid and security in Afghanistan and beyond. Regarding Afghanistan, it theorizes social dynamics that have remained implicit in existing qualitative research which finds that development efforts increase instability. In addition, the analysis illuminates the differential effects that externally provided aid can have across levels of social organization. For instance, the reforms and programs during the last decade have led to, among other things, the founding of provincial councils. These councils engendered increased trust between local communities and the government, primarily because local residents were selected to serve in these governmental bodies. In contrast, my research suggests that external aid, programs, and reforms aimed at the local level can carry adverse effects.[25]

Beyond Afghanistan, I take a constructionist perspective on how elite resource capture can contribute to violence. Rather than taking powerful actors as given, it accounts for the generation of such actors as well as for their role in promoting grievances and, potentially, conflict. Indeed, while instability is not the primary outcome of interest, the analysis links events in contemporary rural Afghanistan to recent findings on conflict between the central state and peripheral groups by developing an empirically based, potentially generalizable depiction of how centrally-condoned aid can generate grievances in a peripheral community. Grievances, in turn, are increasingly (re)credited with driving conflict over the last two and a half centuries. In brief, the relevant literature finds that when members of peripheral communities view themselves as excluded from a central, governing coalition, or when they perceive this coalition as illegitimate, they are more likely to organize along nonstate networks and to engage in antistate activities such as ethnic group-based civil war. Conflict has often resulted when centrally supported elites establish the political exclusion of peripheral communities. Returning to the case of Marjah, this article indicates that residents who did not access aid, as well as the preceding, and now declining, community leadership, both express grievances akin to political exclusion: They feel left out of the emergent elites' relationship with centrally-condoned aid.[26]

At the same time, the article indicates that the relationship between aid and security may be more complex than typically conceptualized. Aid can have a multi-directional effect on violence. By supporting less powerful individuals, aid may have successfully secured the compliance of residents who otherwise would have participated in potentially violent, but not antistate, activity, such as drug smuggling. As a result, one type of violence may have decreased while concurrently provoking an insurgent, antistate response. Alternatively, aid may have empowered residents who, through their newfound leadership positions, are able to become involved in drug smuggling and related violence, again increasing one type of violence while decreasing the populace's cooperation with insurgents and that type of violence. In a word, aid may enable some residents to become more violent while decreasing the violence committed by other residents.[27]

The article leads to several policy implications regarding the delivery of aid in contexts like contemporary rural Afghanistan. Most generally, expanding the reach of a central state by winning the "hearts and minds" of local elites may undermine local government: External support for local elites can inadvertently delegitimize them among their community members. In addition, if aid providers aim to deliver resources conditionally, careful consideration should be given to what type of behavioral return to make aid conditional on, as well as on whom to impose conditionality. For example, the analysis suggests that, first, the behavior of residents induced through the provision of aid increased intra-community tension and, second, that aid providers were imposing conditionality on actors they themselves elevated to positions of influence. A third policy implication regards the social level at which aid should be directed: Reforms at the provincial level (e.g., provincial councils), may provide the necessary independence between local communities and the state, whereas interventions at more local levels may detrimentally disrupt foundational intra-community relations. After all, Afghanistan was most peaceful during the Musahiban dynasty (1929-1973) when the

central state intervened only minimally in local affairs, and otherwise largely remained "over the horizon."[28]

Finally, the article addresses the study of aid and security in general. First, the processual model presented here can be refined and assessed for generalizability through research in other Afghan communities as well as in comparable contexts elsewhere. More directly applicable to empirical approaches, however, are the specific insights provided by the analysis. For example, it suggests that models of interactions between incumbents, populace, and insurgents may be improved by not assuming homogeneity in power, identity, and solidarity among and within the populace and perhaps endogenizing the population's formation of social boundaries and elites. In addition, future analyses of insurgency may better capture real-world processes by considering factors such as sources of power, the duration of time that leaders have been in power, leaders' background, residents' satisfaction with community leaders rather than with the state, and the effect of introducing and then withdrawing aid. More broadly, the analysis emphasizes how antecedent social conditions and time can shape the outcomes of interest. After all, it is in the nature of social processes that they produce different consequences as they unfold.[29]

Notes

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1. Provincial Reconstruction Teams: Piiparinen (2007); ISAF (2010). Massive budgets: SIGAR (2015); SIGIR (2013). On CERP in *Iraq*, see Berman, Shapiro, and Felter (2011); Berman, *et al*. (2013). For analyses of aid and conflict in *Afghanistan*, see Beath, Christia, and Enikolopov (2012); Chou (2012); Fishstein and Wilder (2012); and Child (2014).

2. The evidence: See also Berman, *et al*. (2011); Child (2014). Information-sharing theory: Berman, Shapiro, and Felter (2011) formally model the information-sharing theory.

3. British conquest: MacDonald (2014). Afghanistan: Rubin (2002); Goodhand and Sedra (2009). Africa: Colson (1971); Moyo (2009).

4. Interviews: The majority of interviews took place in a private room of a guesthouse. Data: For a discussion on how qualitative work can strengthen experimental design, see Burde (2012).

5. On the value of studying Afghans' subjective perceptions: Böhnke and Zürcher (2013). Recent scandal (a boy and girl from separate families ran away together for some time): Respondent 5 (45 years old; 2 December) and Respondent 7 (60 years old; 16 December).

6. Average age: It is not uncommon for Afghans to not know their precise age. One community in Marjah: To maintain privacy and confidentiality, I do not identify the community. Marjah population: Central Statistics Organization of the Islamic Republic of Afghanistan.

7. Waves of settlers: For detailed information on Marjah, see Gordan (2011). 54 projects: For more information on the ACSP, see Child (2014). 62 CERP projects: The jump in CERP aid surged after the Battle of Marjah, or Operation Moshtarak, in February 2010.

8. CERP design: Berman, Shapiro, and Felter (2011); Berman, *et al*. (2013); Child (2014). CERP aid: CALL (2009); USFOR-Afghanistan (2009); Horne (2012). National Solidarity Program: Beath, Christia, and Enikolopov (2013).

9. Ethnographic accounts: Malkasian (2013); Martin (2014). Subsequent studies: Gerring (2007).

10. Azoy (2013); Barfield (2013); Wilde (2013). On southern Afghanistan, specifically, see Martin (2014).

11. For U.S. military procedures for consulting with local leaders, see CALL (2009); USFOR-Afghanistan (2009). On local leaders co-opting aid, see Horne (2012).

12. Respondent 5 (45 years old; 2 December).

13. Non-commanders: USFOR-Afghanistan (2009).

14. Misidentified: For a general discussion on outsiders identifying local leaders, as well as details of the U.N. case, see Noelle-Karimi (2013). Regarding purposeful misidentification, I thank an anonymous reviewer, who mentioned this in relation to U.S. military practices in Afghanistan. Quotes: Respondent 4 (55 years old; 12 December).

15. The ability to deliver outside resources to a community has been a relatively common source of power across Afghanistan, evoking the roles of an *arbab*, although, as Barfield (2013) notes, in the past, these representatives of villages to the "outside" were often appointed by the government, corrupt, and widely seen as a necessary evil.

16. Respondent 3 (45 years old; 20 December).

17. Respondent 11 (50 years old; 3 December).

18. Respondent 4 (55 years old; 12 December).

19. For a specific biographical account of foreign aid generating a new elite and an affiliated patronage network in another southern Afghan province, see Gopal (2014).

20. Concentration of aid resources: According to one respondent, "foreign aid was good for some [residents] ... [But] the foreigners thought that the community and villages were just following a few people and they were mistaken. The villagers were not happy about the way the projects were given to the same people every time" (Respondent 1, 40 years old; 28 November).

21. Respondent 10 (25 years old; 2 December).

22. Respondent 8 (30 years old; 3 December).

23. First quote: Respondent 2 (35 years old; 2 December). Second quote: Respondent 3 (45 years old; 20 December). Long quote: Respondent 7 (60 years old; 16 December).

24. On elites gaining power by generating dependency among villagers, see Wilde (2013).

25. Qualitative research findings: Gordan (2011); Fishstein and Wilder (2012). Increased trust: Barfield (2013).

26. Constructivist perspective: On aid, powerful actors, and violence, see Crost, Felter, Johnston (2014). Political exclusion: Kroneberg and Wimmer (2012); Wimmer (2013).

27. See Martin (2014) for a detailed account of how some of Helmand's civic leaders perpetuate violence related to the drug trade.

28. This argument has been made in Barfield and Nojumi (2010); Barfield (2013).

29. On processual accounts of boundaries and social conflict: See McAdam, Tarrow and Tilly (2001); Tilly (2005). Homogeneity: Berman, Shapiro, and Felter (2011) and Lyall, Blair, and Imai (2013), for example, assume homogeneity.

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Honing the proper edge: CERP and the two-sided potential of military-led development in Afghanistan

GREG ADAMS

Greg Adams is the CEO of Stabilitas, a company that is developing a platform for crowd-sourcing global security information in order to help NGOs, companies, and governments better manage risk. He is a graduate of Harvard University's MPA-International Development and MBA programs. He is also a former U.S. Army Special Forces officer who has been deployed in Afghanistan and has seen CERP used in the field. He can be reached at greg.a.adams.ii@gmail.com.

Abstract

Using a newer and expanded dataset as well as a survey of practitioner perceptions, this article adds to a recent body of literature on reconstruction and violence in Afghanistan. Data are taken from military-led development projects by way of the United States military's Commander's Emergency Response Program (CERP) and, to measure violence, from U.S. military Significant Activities (SIGACTs) reports. The results suggest that, at great cost, large-budget CERP efforts (those in excess of USD50,000 per project) may be associated with an increase in violence and thus counter-productive to military stability goals. In contrast, small projects (below USD50,000), which comprise a smaller proportion of total CERP allocations, are associated in statistically significant ways with reductions in violence. To explore why CERP projects may have these effects, the article also examines administrative modalities for CERP spending. The results suggest that timely, flexible expenditure of CERP funds are most effective at reducing violence.

Influenced by the dubious outcome in Iraq and the ongoing difficulties in Afghanistan, a debate continues on the merits of counterinsurgency (COIN) and stability operations.[1] Diplomatic and military operations are characterized by their decentralized and somewhat chaotic nature, which makes it difficult to produce general principles that practitioners might apply beyond Afghanistan and Iraq. The debate reflects this and has largely been based on personal anecdotes or historical interpretations. It has thus been difficult to capture objective "lessons learned" to improve policy design and implementation for conflict zones. Even with the end of major combat operations in Afghanistan, the importance of the topic has not waned for the international community. The need for evidence-based insight continues as weak states provide fertile ground for extremist groups such as the so-called Islamic State of Iraq and Syria (ISIS).

According to instructions issued by the U.S. Department of Defense (DoD), all its military units must understand civil-military operations (CMO), the collective task of delivering on stability goals and facilitating nonmilitary aspects of national and international power. To support COIN and stability operations, the U.S. military developed the Commander's Emergency Response Program (CERP), a CMO resource allowing military commanders to foster local development. To win the support of the local population, a key objective in stability operations and COIN, CMO adds to a commander's ability to shape the combat environment, providing the option of offering "carrots" to accompany the "sticks" of military power. CMO is coordinated with other military operations such as raids or other offensive activities. While an offensive raid may result in a captured or destroyed enemy, it is often difficult to measure the effectiveness of the civil aspects of civil-military operations, such as the CERP program, which may also be a proxy for development aid at large.[2]

The question of whether military-led development aid reduces violence in the field is unsettled. In this article, I start to explore the question with an anecdotal response, namely, by asking a small group of Civil Affairs (CA) officers—the military's experts in development—for their perceptions of CERP's effectiveness. They report smaller CERP projects to be more effective than larger ones but are undecided on CERP's overall impact on stability. I also use a new, previously unexploited dataset that covers 32 months of time and comprises data across 398 Afghan districts. I find that small CERP projects (<USD50,000) are associated with a statistically significant reduction in violence and that large CERP projects have the opposite effect. Further, to explore why some CERP projects might have been effective, I examine different ways to distribute CERP-related aid and find that projects conducted with cash on hand were more effective than those that required the clearing of administrative hurdles.[3]

The following sections summarize prior research, discusses

the CA officers' survey, and describes the quantitative data, empirical methods, and findings. I conclude with some observations and recommendations for future work.

The question remains: Does development work?

Stereotypically reduced to, or otherwise cast in, terms of "grievance" versus "greed," few frameworks of studying the relation between violent conflict and economic development are empirically nuanced and many findings are inconsistent in their predictions. Military doctrine adds to this literature, informed primarily by counter-revolutionary thinking and more recent, post-9/11 counterinsurgency work. While generally taken as a step forward for the military, the newest doctrine has also been criticized for offering simplified vignettes and a lack of actionable recommendations. Only recently has the topic received the attention of skilled empiricists.[4]

Grievance theories suggest that violence is due to political discord, ethnic differences, or other issues of identity and comparison, while greed perspectives suggest that aid can create an opportunity cost when joining a violent conflict and subsequently not receiving the aid. Both views have drawn criticism. Grievance models have suffered at the theoretical level for neglecting collective action problems when it comes to motivating violence and, empirically, lack of punch once accounting for relative income. Greed models, in contrast, have generally been easier to evaluate empirically, but rigorous tests have found little support of its constructs, especially when accounting for within-country trends.[5]

The U.S. military's take on counterinsurgency, including CERP, has been labeled the "winning the hearts and minds" approach, formalized as an opportunity cost theory by Berman, Shapiro, and Felter (2011). The authors introduce the concept of conditionality, wherein aid is delivered subject to the provision of militarily relevant information to officials. Aid in exchange for information thus presumably allows improved targeting of insurgent forces. Indeed, the authors find that CERP spending in Iraq resulted in a statistically significant reduction in violence. Replicating this approach for the case of Afghanistan, neither Chou (2012) nor Child (2014) found effects significantly different from zero.

Beath, Christia, and Enikolopov (2012; 2013) examine the impact of the Afghan National Solidarity Program (NSP) to see if Afghan government-led development reduces violence, but likewise do not find significant results. Chou (2012) also examines the NSP as well as USAID's Local Governance and Community Development (LGCD) programs and again does not find results different from zero. Notably, Berman, Shapiro, and Felter (2011), Chou (2012), and Child (2014) all find a negative correlation between small CERP projects and violence, but only Berman, Shapiro, and Felter (2011) find it to be statistically significant.[6]

This article uses a new, previously unexploited dataset that covers 32 months of time and comprises data across some 398 Afghan districts. I find that small Commander's Emergency Response Program (CERP) aid spending (<USD50,000) led to statistically significant reductions in violence and that large CERP had the opposite effect. Further, to explore why some CERP projects were effective, I examine different ways to distribute the aid and find that projects conducted with cash on hand were more effective than projects that needed to clear administrative hurdles.

Conditionality is revisited by Berman, *et al*. (2013), and the additional concept of project expertise is introduced by way of Provincial Reconstruction Teams. Child (2014) questions conditionality as the mechanics of information sharing are not demonstrated. Berman, Shapiro, and Felter (2011) do use interviews in support of their conditionality concept, but no other work corroborates the empirical results by studying the perceptions of those who delivered the projects. In addition to standard quantitative work, this article therefore also reports results of a small survey of Civil Affairs officers.[7]

In the quantitative work I follow the model put forth by Berman, Shapiro, and Felter (2011), and revisited by Chou (2012) and Child (2014), but use a far more detailed dataset, explore the mode of CERP spending, and offer an interpretation from the perspective of military practitioners. I then go beyond the "Does development spending reduce violence?" question and add new insights as to "Why?"

Data and methods

Qualitative survey

As mentioned, Civil Affairs officers are the U.S. military's experts in civil-military operations. On 17 December 2013, I surveyed a small group of CA officers (n=9) who had utilized CERP funds. The survey was taken prior to obtaining my CERP and SIGACTs datasets so that any empirical results obtained would not influence the survey questions. Due to the small sample, the results cannot be said to be representative of the beliefs of all CA officers or military commanders that spent CERP funds in Afghanistan. The survey was not designed to focus on CERP *per se* and thus does not directly explore topics like conditionality directly.

All interviewed CA officers were part of an active duty Army Special Operations unit. Most Civil Affairs units belong to the Reserve component of the U.S. military, so the CA officers I interviewed stand out for their experience across multiple theaters and the consistent use of CERP and similar tools. All have undergraduate degrees, and four hold master's

degrees. In addition to deployments to Afghanistan, seven of the nine had previously been deployed to Iraq and in Africa as well. To gain an understanding of how CERP was employed in the field, and for observations regarding the program's efficacy, these officers thus constituted a suitable group of interviewees.

Table 1: CERP categorizations

Simple category	*Bulk category*	*Project limits (USD)*	*Bulk limits (USD)*	*Approval level*	*Documents required*	*Signatures required*
Small	Small	<50K	50K	Battalion	3–6	4
Large	BN	<100K	100K	Battalion	10–18	8
	BDE	<500K	150K	Brigade	18–24	9
	RCup	<1M	300K	Regional	18–24	10

Notes: For normal CERP, projects are identified and funds are requested. Details are provided here to give a sense of the bureaucracy involved in delivering CERP projects. The higher the monetary outlay, the less responsive the CERP project is likely to be due to required documents and signatures. There is also a "be prepared" case, called bulk CERP, where funds are drawn in advance of identifying needs and kept "on hand." The mechanism of spending changes as bureaucratic levels increase. At the small unit level, there is little contracting involved, and money goes directly to addressing local needs. As the level increases, contractors and bidders are required, which adds time to the allocation process and can create a zero-sum game for contract winners.

Quantitative data and methods

I use U.S. military data, built up from the Combined Information Data Network Exchange (CIDNE) and Significant Activities (SIGACTs) datasets from Afghanistan between 2011 and 2013. They are declassified, yet secure (not readily available), and assembled in a database called the International Distributed Unified Reporting Environment (INDURE).[8]

SIGACT data is collected directly from the field of operations, which results in increased granularity. While the dataset does not cover the same time period as Chou (2012) or Child (2014), the scale of increased observations is striking: Chou (2012) reports more than 60,000 insurgent-initiated events over nearly eight years and Child (2014) observes 3,599 events over a four-year period in the Worldwide Incidents Tracking System (WITS). For the two-and-a-half-year period covered in this article, the cleaned dataset contains more than 107,350 insurgent-initiated events, consistent with numbers reported by the International Security Assistance Force-Afghanistan. As Child (2014) notes, WITS could comprise a subset of CIDNE data (which, in turn, is part of INDURE). The magnitude of the difference in captured events may be responsible for diluting the regression results toward zero in previous work. While the SIGACTs data used here therefore should not cause attenuation bias, they do come with limitations. For example, while SIGACTs tends to include them, and with finer granularity, it sometimes does not include nonmilitary violent events. Other databases also suffer from this problem. Neither does SIGACTs include the magnitude of violence, so that a large battle that kills many combatants or civilians cannot be distinguished from a report of shots fired without injuries. In line with previous research, I limit SIGACTs to enemy-initiated events, which include enemy attacks and explosive hazards.

CERP data was ported directly from CIDNE to INDURE. The database contains detailed project information, including project start and end dates, location, and total monetary outlays. For the period of January 2011 through August 2013, I look at 4,148 CERP projects, often coded with an additional CERP category—comprising 2,003 projects known as "bulk" CERP—to which this article pays special attention. Initially covering CERP spending in excess of USD30 million per month, at the beginning of 2011, this declined to less than USD5 million per month by mid-2013, which is congruent with SIGAR-reporting for this the time period. As shown in Table 1, two bulk CERP categories were approved at the battalion level. This could result in some measurement error for projects considered small and large in past research, as bulk spending at the small and the battalion levels share many attributes. It may even mean that bulk is a more useful distinction than small or large, as the mechanism of spending may have been more important than the magnitude of the outlay. The CERP dataset misses some opportunities to understand the mechanics of development spending in its structure. For instance, there are codes for categories of projects, which provide a nuanced view of whether an outlay was for agriculture or for temporary guards. However, this information is inconsistently coded in the database, especially for bulk CERP: A single bulk draw resulted in a single project code, yet there could have been twenty USD2,500 projects in a single USD50,000 bulk CERP entry in the database. One is thus unable to explore the efficacy of the agriculture or temporary guards projects.[9]

The two INDURE datasets were merged, geographically

parsed to the district level, and adjusted to a per capita basis to support district fixed-effects analysis. I use the same model as previous researchers, with 398 districts and 34 provinces. As a balanced panel, there are accordingly 12,736 observations. CERP project spending is evenly distributed over a project period, consistent with the methods of Berman, Shapiro, and Felter (2011), Chou (2012), and Child (2014), as well as broken into administrative tranches of small and large based on whether projects exceeded a USD50,000 spending threshold. District population numbers are from 2010 and are used to normalize across districts by population. Events and spending are thus reported as SIGACTS per 1,000 and CERP spending per capita. Summary statistics are shown in Table 2.

Whereas Berman, Shapiro, and Felter (2011) examine half-years, and Chou (2012) and Child (2014) use one-month lags, I employ a series of lags, ranging from one to three months. A larger lag period allows time for "hearts and minds" to be won over by CERP delivery and for a population to update its priors. Because my specification uses lagging to infer the effects of CERP, if any, it could be that statistically significant results occur randomly over time. I thus run quarterly checks as well to ensure that my results are robust.

Table 2: Summary statistics

	Obs.	*Number of districts*	*Mean (st. dev.)*
Violent incidents per 1,000 pop.	12,736	398	0.1348 (0.3678)
CERP spending per capita (USD)	12,736	398	0.4494 (1.729)
– of which, small (<USD50,000)	12,736	398	0.0835 (0.3349)
– of which, large (>USD50,000)	12,736	398	0.3660 (1.581)

Notes: SIGACTS and CERP records come from the INDURE database, which is declassified CIDNE data. Observations are district-months from January 2011 through August 2013.

When might development be effective at reducing violence?

Qualitative results

As a group, Civil Affairs officers are uncertain about CERP's impact. Of the nine officers who disbursed CERP funds in Afghanistan, four did not believe that this increased effectiveness, while the remainder believed that CERP was "effective." None said that it increased "stability." Evidently, even the officers who judged development outcomes as effective saw stability, as a military goal, as not achieved. Regardless, all officers believed that small projects (<USD25,000) could be more effective than large ones. This is consistent with Berman, Shapiro, and Felter's (2011) findings and, as it turns out, accords with my own results as well.[10]

A significant critique of Berman, Shapiro, and Felter (2011) is that there is no direct evidence of information sharing. However, some survey results are telling. In response to, "How did you allocate your projects?" the CA officers responded with a range of answers that suggest negotiation and interaction with the local population:

> Response 1: Based on the deliberation of the valley-wide *shura*. [A *shura* is a *de facto* Afghan unit of governance and decisionmaking.]
> Response 2: Based on military objectives and local needs. What they needed wasn't always in line with what the local government would ask for. Civilian sampling and surveys with MISO personnel assisted in the decision.[11]
> Response 3: In support of mobilizing district governance and development seminar.

Clearly, some CERP projects were negotiated, and some information would presumably be shared. While this information may not have amounted to tips resulting in better insurgent targeting, it still represents a two-way information flow that could conceivably affect insurgent targeting as well as improve service delivery to Afghan communities.

Quantitative results

Table 3 shows the quantitative results of regressing SIGACTs on CERP, adding district-level fixed effects, accounting for previous violence trends, and adding a series of CERP lags to better understand the relation between CERP and SIGACTs. In running a basic OLS regression (col. 1), small CERP are strongly and positively correlated with violence. From col. 2 onward, district-level fixed effects and seasonal controls are added, and both small and large CERP are lagged. Signs change with lags, and the results become statistically significant at the 1% level for most of the small CERP results with three lags (col. 2). With a full series of lags, from 1 to 3 months, large CERP are positively associated with violence at the 1% level (col. 3). Following Berman, Shapiro, and Felter (2011), a variable for previous violence trends is added in regressions (2), (4), (5), and (7). With the preceding month's level of violence thus taken to account, the coefficient on small CERP then becomes significant at the 5% level with two lags (col. 4), and large CERP remain positively associated with violence after 3 lags. When violence outliers are removed in

Table 3: CERP spending and incidents of violence (per 1,000 pop.), January 2011 to August 2013

Variables	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*
small_CERPpc	0.0451		0.0315	0.0246		0.0115	0.0171
	(0.0375)		(0.0405)	(0.0514)		(0.0187)	(0.0210)
large CERPpc	-0.00676		-0.0165*	-0.0148		-0.00354	-0.000499
	(0.00530)		(0.00978)	(0.0114)		(0.00398)	(0.00436)
small, 1mo lag			0.0191	0.0275		-0.00281	-0.0186
			(0.0263)	(0.0391)		(0.0183)	(0.0209)
large, 1 mo lag			-0.00413	-0.00176		-0.00998	-0.00972
			(0.00844)	(0.0104)		(0.00652)	(0.00762)
small, 2 mo lag			-0.0395	-0.109**		-0.00520	-0.0256
			(0.0245)	(0.0506)		(0.0127)	(0.0195)
large, 2 mo lag			-0.0162	-0.0193		0.00667	0.00233
			(0.0104)	(0.0140)		(0.00882)	(0.00896)
small, 3 mo lag		-0.107***	-0.0511**	-0.0490	-0.103***	-0.0611***	-0.0813***
		(0.0340)	(0.0248)	(0.0419)	(0.0227)	(0.0170)	(0.0208)
large, 3 mo lag		-0.000925	0.0278***	0.0229**	0.00543	0.00790*	0.00996**
		(0.00594)	(0.0103)	(0.0108)	(0.00356)	(0.00459)	(0.00503)
previous violence trend		0.108**		0.108**	0.0416**		0.0420**
		(0.0489)		(0.0484)	(0.0163)		(0.0165)
Observations	12,736	10,348	11,144	10,348	5,325	5,774	5,325
R-squared	0.573	0.563	0.575	0.568	0.611	0.604	0.612
Seasonal controls	N	Y	Y	Y	Y	Y	Y
Violence trend controls	N	Y	N	Y	Y	N	Y
Fixed effects	N	Y	Y	Y	Y	Y	Y
Lag periods	0	3	1,2,3	1,2,3+1	3+1	1,2,3	1,2,3+1
Outliers dropped	N	N	N	N	Y	Y	Y

Notes: *** p<0.01, ** p<0.05, * p<0.1. Robust standard errors in parentheses. Seasonal controls are dummies created for each month to control for seasonal and monthly trends. Lag periods indicate months, where +1 indicates a control for violence trends in the previous month. Dropping violence outliers restrict regressions to the 1st to 99th percentiles of violence incidents. Fixed effects are to the district level.

regressions (5), (6), and (7), and every variable except the prior month's violence trend is taken to account, the small CERP variable is significant at the 1% level and the large CERP variable at the 10% level (col. 6). Adding violence trends, the coefficient on small CERP remains negative and significant at the 1% level and, for large CERP, is positively associated with violence at the 5% level (col. 7). Quarterly analysis adds to the robustness of the results, as shown in Figure 1 (on p. 58).[12]

One way to view the monthly results is to say that a one dollar increase in small CERP spending per capita is associated with the reduction of about 8 violent events per 100,000 people (col. 7). For context, recall from Table 2 that the mean level of violence is 13.4 violent events per 100,000 people. Thus, on average, each dollar of small CERP per capita spending is associated with a greater than 59 percent decrease in rebel-initiated violent events. In contrast, large CERP projects have a positive correlation with violence, an effect that is statistically significant at the 5% level, with a large number of controls and with violence outliers dropped (col. 7). Here, a one dollar per capita increase in large CERP spending is associated with an increase in violence of nearly one violent event per 100,000 people. Since large CERP spending exceeded small CERP by a factor of four on a per capita basis—and at times by an order of magnitude—large CERP projects were nonproductive, or even counter-productive, and at great cost.

Table 4: Bulk versus non-bulk CERP spending and incidents of violence (per 1,000 pop.), January 2011 to August 2013

Variables	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*
3 mo lag CERP (small)	-0.0305	-0.109***						
	(0.0316)	(0.0279)						
3 mo lag (BN level)			-0.0242	-0.106***				
			(0.0304)	(0.0387)				
3 mo lag (BDE level)					-0.00768	0.0191		
					(0.00977)	(0.0132)		
3 mo lag (Regiment)							0.0153***	9.594***
							(0.00555)	(1.025)
Observations	5,325	5,325	5,325	5,325	5,325	5,325	5,325	5,325
R-squared	0.611	0.611	0.609	0.609	0.604	0.604	0.603	0.603
Bulk	N	Y	N	Y	N	Y	N	Y
Seasonal, violence, and district fixed effects	Y	Y	Y	Y	Y	Y	Y	Y
Lag periods	0–3,+1	0–3,+1	0–3,+1	0–3,+1	0–3,+1	0–3,+1	0–3,+1	0–3,+1
Outliers dropped	Y	Y	Y	Y	Y	Y	Y	Y

Notes: *** p<0.01, ** p<0.05, * p<0.1. *** p<0.01, ** p<0.05, * p<0.1, Robust standard errors in parentheses. Bulk is consistently on the right in these observations. The data was coded "bulk" or "non-bulk." Missing observations were dropped. I interpret the results to suggest that bulk CERP was more effective than planned (non-bulk) CERP projects at some levels, perhaps to the USD100,000 level (BN in the table). There are only 19 projects for the regimental level for bulk, and so I do not focus on this result.

Other interactions?

Berman, *et al*. (2013) suggested complementarity between security efforts and development, a case that is similar to this article. Inherently, there is some level of security provision in conjunction with CERP, due to the military's presence. Prior research also separated CERP into two categories, small and large, with USD50,000 being the threshold. Recall from Table 2 that small projects could be approved by a battalion commander, with reduced administrative hurdles to clear. In contrast, large projects required additional paperwork and approvals, and may have involved contracting. These details mean that small CERP projects better fit the model specified by Berman, Shapiro, and Felter (2011).

Berman, Shapiro, and Felter (2011), Berman, *et al*. (2013), and Chou (2012) suggest that conditionality is important, and Child (2014) points out that the mechanics of conditionality need to be explored in more detail. The difference in the mechanics of bulk and non-bulk CERP offer one such opportunity. Table 4 shows a summary

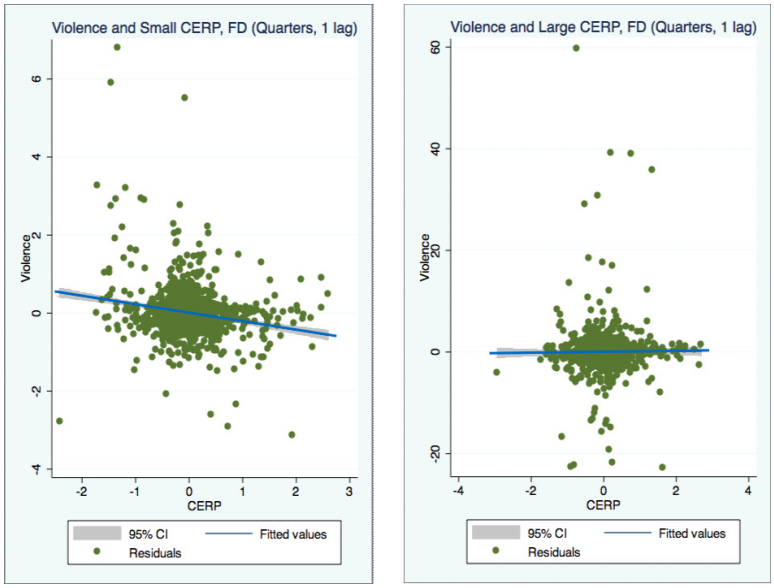

Figure 1: The effect of small or large CERP projects on incidents of violence (per 1,000 pop.), by quarter. The figure demonstrates that the results are robust to quarters. The scatter diagram on the left, for small CERP projects, shows a statistically significant and negative coefficient, similar to col. 5 in Table 3 but for a lag of one quarter. In contrast, large CERP projects, on the right, have a positive coefficient for the first quarter, although not statistically significant in this specification.

comparison of CERP on SIGACTs regressions, focusing on the three-months lag, but otherwise with a specification similar to that of col. 7 in Table 3. Non-bulk results are shown in the odd-numbered columns and bulk CERP results in the even-numbered ones. Rows reflect administrative levels corresponding to the bulk categories in Table 1. The findings suggest that bulk CERP projects were more effective as compared to non-bulk CERP projects (cols. 1 and 2). Spending above USD50,000 but below the USD100,000 approval threshold (BN level, col. 4) also appears to have been effective. The signs for all CERP are negative below the BN level, but once the BDE level is reached, non-bulk CERP has a negative coefficient, and bulk CERP has a positive coefficient, although neither is statistically different from zero. The Regimental results are discomforting—the coefficients are positive and statistically significant—but then there were few Regimental Bulk CERP projects in the database. In all, it appears that the subcategory of bulk CERP projects warrants further investigation. Since bulk funds are on hand when projects are allocated, this could mean that the speed with which projects were allocated is important to their success in reducing violence, although this hardly demonstrates conditionality as described by Berman, Shapiro, and Felter (2011). However, once one considers the interactions of CA officers with the local population and governments when allocating CERP, it is not a stretch to imagine that the ability to deliver projects quickly could make those CA officers more credible in the eyes of the local population or government, which could, in turn, make the opportunity cost of a project more tangible.

Conclusions

This article empirically tests the hypothesis that militarily-led development aid may have reduced violence in the Afghan context. I find that small CERP projects reduced violence, in line with the findings Berman, Shapiro, and Felter (2011) for Iraq. However, without a clear mechanism to explore the information-sharing theory, I focus—in the Afghan case—on the reduced administrative process required, and add the observations of CA officers for context and corroboration of the empirical results. It seems that the mechanism by which development money is spent is a critical factor, and that the timeliness of CERP delivery may have made a difference. Focus on small projects, as opposed to large-scale undertakings seems appropriate, at least when it comes to delivering reduced violence in the short term.

More attention should be paid to the mechanism of CERP project spending and perhaps to development aid in general. Due to the structure of current datasets, this will be difficult to do. The U.S. military, other militaries, and aid organizations could add more detail to their datasets to facilitate empirical work. Moving away from paper and email record-keeping methods toward database records for the purpose of monitoring aid or CERP projects will be key to make this happen. Future qualitative surveys should explore the conditionality of aid, and more empirical work should focus on the degree of flexibility in allocated development projects.

Future research should also examine whether aid's "carrots" need to be paired with "sticks" of other military operations, or whether aid can be deployed on its own when attempting to reduce violence. Meanwhile, for policymakers as well as commanders who may be uncertain of CERP's utility, it appears that programs like CERP should continue to have a place in military operations, perhaps more so than hitherto. But this resource appears to be a double-edged sword, with the ability to both help or harm stability operations, depending on how the sword is wielded.

Notes

1. Both Col. Gian Gentile's (2013) and USAID employee Peter van Buren's (2011) books are examples of this debate. See also Fischerkeller (2011, p. 139) who notes the general lack of understanding of the U.S. military's Commander's Emergency Response Program.

2. CMO: The instructions are in U.S. DoD (2009). Elsewhere, civil-military operations are defined as "[a]ctivities of a commander performed by designated civil affairs or other military forces that establish, maintain, influence, or exploit relations between military forces, indigenous populations, and institutions, by directly supporting the attainment of objectives relating to the reestablishment or maintenance of stability within a region or host nation" (U.S. DoD, 2013, p. GL-6). In a similar vein, the Foreword to Field Manual FM 3-24 (Counterinsurgency) contains the statement that "Soldiers and Marines are expected to be nation builders as well as warriors" (See HQ, U.S. Army, 2006a). In military jargon, CMO is used in the singular and this practice is followed here. To support COIN: See CALL (2008; 2009).

3. Unsettled: Chou (2012); Child (2014). I refer to CMO and CERP as both development and as military-led development; the latter could be a subset of a range of development aid. Both are arguably intended to exert influence and to improve development outcomes. CA officers: HQ, U.S. Army (2006b) (*FM 3-05.40 Civil Affairs Operations*) explains Civil Affairs soldiers' roles. They are the military's experts in civil-military operations, but commanders are responsible for accomplishing successful COIN or stability missions and achieving the end goal of a stable state. Additional context is provided in HQ, U.S. Army (2008) [*FM 3-07 Stability Operations*], HQ, U.S. Army (2006a) [*FM 3-24 Counterinsurgency*], and U.S. DoD (2013) [*Joint Publication 3-57 Civil Military Operations*].

4. Few frameworks: For a sample of this literature, see, e.g., Collier, *et al*. (2006); Blattman and Miguel (2010); Beath, Christia, and Enikolopov (2013); Berman, Shapiro, and Felter (2011); Chou (2012). Counter-revolutionary: Galula (1964). Counterinsurgency: Nagl (2002); U.S. Army Field Manual FM 3-24 (HQ, U.S. Army, 2006a). Empiricists: Blattman and Miguel (2010).

5. See Blattman and Miguel (2010).

6. NSP: The specification in Beath, Christia, and Enikolopov (2012; 2013) is based on proximity to development aid. The mid-line survey, published in 2012, suggests that NSP may have had a significant impact on reducing violence, but the end-line survey of 2013 does not confirm this. Any violence-reducing impact of NSP may have worn off, or there may have been other exogenous effects. LGCD/NSP: Chou (2012) uses district-based specifications similar to those she uses for CERP, rather than the proximity-based specifications of Beath, Christia, and Enikolopov (2012; 2013). Notably: In the Berman, Shapiro, and Felter (2011) specification, first differences are over 6 months periods, a specification I modify in my work as reported later on in this article.

7. Nonetheless, the survey did not ask questions about conditionality or an increase in tips from locals that could lead to improved targeting of insurgent forces.

8. INDURE includes Significant Activities (SIGACTs) as well as CERP spending information, all geolocated and time-stamped. The data was cleaned using basic qualitative checks, code books, interviews and the sharing of project files with others who also have used these databases. See Lyall (2010).

9. SIGAR-reporting: See SIGAR (2014).

10. Survey details available from the author upon request.

11. MISO: Military Information-Support Operations; formerly Psychological Operations.

12. Quarterly numerical results are available from the author upon request.

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TOWARD MIXED-METHODS IMPACT EVALUATION: MAKING STABILIZATION ASSESSMENTS WORK FOR DEVELOPMENT COOPERATION

JAN KOEHLER, KRISTÓF GOSZTONYI, BASIR FEDA, and **KEITH CHILD**

Jan Koehler is a Senior Researcher at the Collaborative Research Centre "Governance" of the Free University of Berlin. The corresponding author, he may be reached at jkoehler@zedat.fu-berlin.de. Kristóf Gosztonyi is a Senior Researcher at the Berghof Foundation, Berlin, Germany, and may be reached at K.Gosztonyi@berghof-foundation.org. Basir Feda is a Researcher at the Berghof Foundation, Berlin, Germany, and may be reached at B.Feda@berghof-foundation.org. Keith Child, in Ottawa, Canada, is an independent consultant specializing on impact evaluation and learning. He may be reached at kchild@outlook.com.

Abstract

We introduce a mixed-methods approach to assess the impact of a complex development program on stability and present a selection of relevant results on stabilization dynamics and possible program-related impacts. The program is implemented by an international nongovernmental organization and combines capacity building with infrastructure development at the district level in North Afghanistan. We develop a working definition of stability and define context-relevant stabilization indicators. We then analyze how various stabilization indicators relate to each other and observe how they change over time. Finally, we analyze how proxies for program activity relate to the stabilization dynamics observed. At this stage, the data analysis is exploratory, and the results are illustrative rather than definite in regard to the success or failure of the stabilization program.

Following the toppling of the Taliban in 2001, insurgent groups reorganized for a drawn-out campaign to oust foreign troops and topple what they perceived as the Western-supported, puppet government of then-President Hamid Karzai. The insurgency gained strength, and by 2009 warnings mounted that if things did not change the Taliban would overrun the country. The increasingly dire situation led to a shift in strategy from an enemy-centered "war on terror" rationale to a population-centered counterinsurgency strategy (COIN). This shift in strategy was flanked by a United States-led military surge, announced in 2009, and complemented by a civilian surge to strengthen Afghan government structures and to prepare them for taking over responsibility for the country once foreign troops were to be withdrawn in 2014.[1]

Within this context, an international nongovernmental organization launched a wide-ranging program of activities in 2010 in North Afghanistan, intended to help improve overall stability in the region.[2] This program provides infrastructure financing and associated capacity-building training in the fields of administration, monitoring and quality control, maintenance, environmental and disaster protection, conflict management, gender balance, and institutional development. The initiation and objective of the NGO's stabilization program—henceforth simply referred to as "the program"—fit within the wider international effort to turn the tide in Afghanistan and to support an Afghan state which, with continued, albeit reduced, support from the international community would be able to stand its ground against insurgent forces. In spring 2010, the NGO's evaluation unit teamed up with researchers from Berlin, Germany, to develop a robust longitudinal research strategy to measure the program's impact on stabilization.

This article introduces the impact assessment, discusses its methodology, and presents a selection of relevant results on stabilization dynamics and possible program-related effects. The analysis builds on the impact hypothesis identified in the program's theory of change, introduced in the next section. Based on the impact model of the program, we then define context-relevant stabilization indicators in four fields, namely, security, governance, development, and adaptation. We then analyze how stabilization indicators relate to each other and observe how they change over time. Finally, we define proxies for program activities and analyze how these relate to the stabilization indicators of the four fields of stabilization.

Our data analysis is exploratory. Under the circumstances, research by way of a proper population-based experiment with randomly sampled treatment (or program exposure) and control groups could not be set up. Even as we control for a wide range of factors that we consider causally relevant for the observed stabilization dynamics, we interpret our empirical findings regarding measures of program activities and stabilization dynamics as correlations rather than as causal

effects. This caveat has to do with the complex and multi-causal nature of stabilization dynamics; a wide range of known as well as potentially unknown factors may affect relevant stabilization indicators that, according to the impact model, should be influenced by program activities. Hence, omitted variable bias could not be ruled out. Furthermore, feedback effects, or even reverse causality, between our proxy variables for program activities and some of the variables measuring stabilization dynamics cannot be statistically excluded and are verified only against qualitative observations and arguments of plausibility. A case in point is the strong positive relation we found between infrastructure implementation and respondents' subjective district-security assessment. Since at least minimal security in terms of site access was a selection criterion for infrastructure development, reverse causality would be likely in this case. Whenever possible we draw on qualitative data to critically assess if a case for partial causation can be made. A follow-up survey is ongoing and, in time, we will revisit the models in light of new quantitative data and updated qualitative information on the target region.

Stabilization program strategy

To foster district-level stabilization, the NGO's program focuses on infrastructure financing and strengthening the capacity of selected subnational governance institutions to deliver locally adapted development activities and results via transparent procedures. The key governance institution targeted by the program is the District Development Assembly (DDA). DDAs are *district-level* councils composed of representatives from Cluster Level Development Councils (CLDCs) which, in turn, are composed of representatives from elected Community Development Councils (CDCs). The latter were established as part of a donor-funded National Solidarity Program (NSP), and they fall under the responsibility of the Ministry of Rural Rehabilitation and Development (MRRD). Since their launch in 2003, CDCs have become important *village-level* governance institutions in many parts of Afghanistan.

The program follows the same approach and implements the same modules in all target districts. As mentioned, it trains DDAs in the fields of administration, monitoring and quality control, maintenance, environmental and disaster protection, conflict management, gender balance, and institutional development. Training should enhance their capacity to competently prioritize the development needs of their district, monitor the implementation of development projects, strengthen cooperation between societal and government administration actors at the district level, and provide governance services in areas not adequately covered by the

In 2010, an international nongovernmental organization introduced a stabilization program in North Afghanistan, tasking researchers with program evaluation. We provide an introduction to the impact assessment, discuss its methodology, and present a selection of relevant results on stabilization dynamics and possible program-related effects.

state (e.g., conflict resolution). This capacity-building component is incentivized by providing block grants and technical expertise for the implementation of infrastructure projects as prioritized by the capacitated DDAs.

The program assumes that by strengthening DDAs in this way—i.e., by financing infrastructure projects and providing capacity-building training to them—stability within the target districts can be increased. These activities are thought to lead to two key outcomes: (1) increasing access to development and (2) making DDA planning more relevant, implementation more effective, and district-level governance more responsive to people's needs. In turn, these outcomes should lead to the overall, aggregate goal of stabilization—securing peace—by establishing reliable governance institutions that promote democracy, equity, justice, and the fair allocation of resources.

Assessment strategy

How can one assess district-level stabilization dynamics and examine the impact of capacity building and infrastructure provision on those dynamics? First, we capture stabilization dynamics by establishing and analyzing variables adapted to the local context. Second, we adopt proxies for program activities while controlling for potentially confounding factors. Third, through appropriate statistical methods, we test for partial effects of program activity on stabilization, while interpreting the results in light of extensive qualitative knowledge of the target region. In the following sections we explain this approach in detail.[3]

Taking into consideration both the program's own concept of stability and theoretical ideas on the dynamic stability of social order, we arrived at a working definition of stability that comprises four fields. In terms of *physical security*, stability is defined by low levels of socially unacceptable violence. (Some forms of violence may be socially accepted and therefore are not detrimental to stability.) The program's intended effect on security is explicit, although indirect, in that it intends to add to sustainable improvements of security via more effective and legitimate local governance as well as via more inclusive and fair access to development resources.[4]

Stability is also defined by *institutionalized forms of legitimate governance*, i.e., well-functioning governance institutions. The more complex society and its segments, the

more important are the reliable and legitimate regulation of collective tasks, issues, and conflicts. Thus, to foster district-level stabilization, improving local development governance is the core building block of the program. Better access to reliable services to solve inter-communal development problems, among other issues, is thought to increase the acceptance of the state and reduce the influence of insurgent groups or the legitimacy of violent resistance.

Social stability is further defined by the ability of various segments of society to materially sustain themselves. *Economic reproduction and development* is therefore the third defining aspect of stability. The program's capacity building activities in terms of development governance and investments in district-level infrastructure projects hope to have a knock-on effect on economic development, raising the opportunity cost of engaging in destructive and violent life strategies and increasing long-term planning security for households.

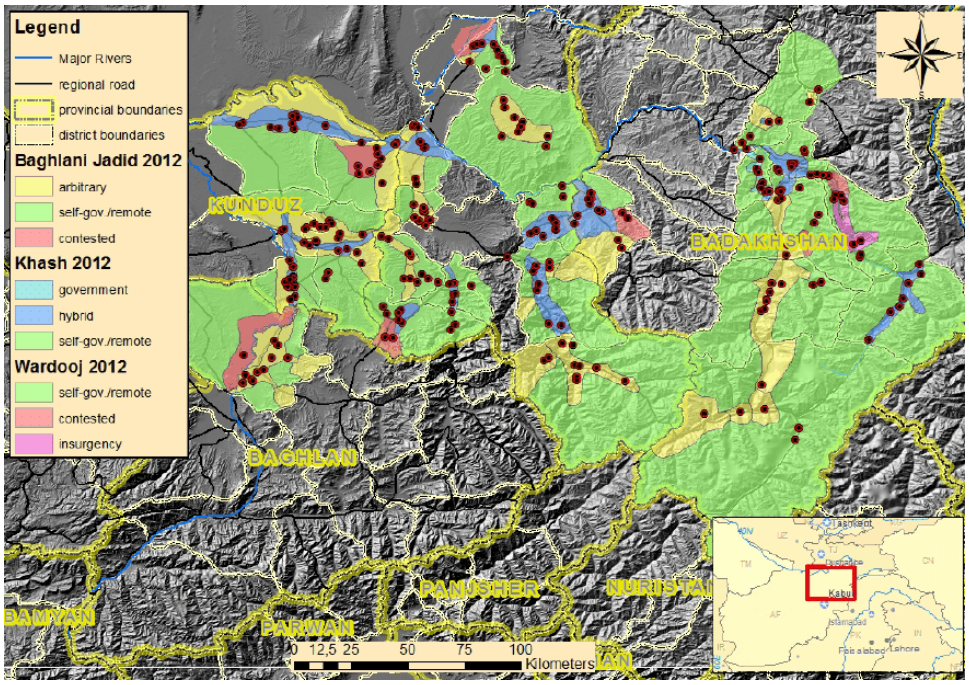

Figure 1: Governance zones in the research area, 2012. *Note*: The three districts named in the legend show the colors used to represent all six zones. The dots represent villages in which research was conducted.

Finally, another vital component of social stability is related to *adaptive change to modernization*, the ability to adapt to changing environments via innovation and development. The program's activities introduce new approaches in a number of respects: development governance, infrastructure maintenance, project management, monitoring, gender mainstreaming, and conflict resolution. These may challenge traditional values and the way things were done in the past. The program's participatory and context-sensitive implementation strategy is thought to mitigate potentially disruptive or destabilizing aspects of these modernizing interventions. At the same time, the inclusive nature of the participatory approach may empower groups that hitherto have been disadvantaged (e.g., villages vs. state administration), once again challenging the adaptive capacity of local society.

To assess the dynamics in these four fields of stability over time, and the program's possible partial impact on them, we opted for a mixed-methods survey approach that combines quantitative data with qualitative research. Survey development was preceded by extensive regional qualitative and quantitative research, which was essential to identifying context-sensitive and locally meaningful indicators for stability (see below). The quantitative survey forms the backbone of the assessment, complemented by comprehensive qualitative research focusing on the same districts and communities. The qualitative research serves two main purposes. We used its results to develop quantifiable indicators which we then integrated into the statistical analysis (e.g., data pertaining to the village economy), and we used the qualitative research to interpret and explain our statistical findings within the local context.[5]

Our quantitative data consists of two successive baseline household (Wave 1) surveys in North-East Afghanistan in 2010 and 2011 with a follow-up (Wave 2) survey conducted in the same villages in 2012 (see Figure 1). The primary sampling unit for the survey is the village represented by the CDC. We interviewed representative samples of randomly selected households proportionate to the number of households within each CDC. We selected 253 out of a total of 2,048 CDCs in 25 target districts, conducting 4,959 interviews in Wave 1 and 5,219 interviews in Wave 2.[6]

In addition to the quantitative survey component, especially trained profile teams collected structured information on the political, economic, social, and demographic situation and history of each target village/CDC. Similar profiles were compiled for CLDCs and districts. Our teams also conducted

some 250 guideline interviews at the district level.[7] Furthermore, research supervisors conducted interviews in-field in all target provinces and all survey teams were debriefed in an intensive week-long session.

Developing context-sensitive stabilization indicators[8]

Security

The research region's security context is influenced most strongly by the presence and conduct of Afghan and foreign security forces, including more or less formalized pro-government militias, on the one hand, and various groups of insurgents, on the other. The most important dynamic for the assessed period relates to the U.S. surge to push insurgents back and create space for the Afghan National Security Forces (ANSF) and the Afghan government to re-establish themselves in the cleared areas. The anti-Taliban offensive was at its peak during the Wave 1 baseline survey in 2010–11. By the time of the follow-up, Wave 2, survey in 2012 significant areas had been taken back from insurgents and the handover of security responsibilities to the ANSF was well under way.[9]

We use four kinds of indicators to depict the fluid security context. First, from the household survey, we built a combined index for household and district-level subjectively perceived security. Second, using Latent Class Analysis, we calculate a number of clustered categorical indicators derived from a question that asks respondents to rate their fear of different armed and violent actors present in the region. Third, we built additional variables from questions on future perspectives on security, on fear of foreign forces (ISAF), and on fear of insurgents (Taliban). And, fourth, we used expert-coded incident counts pertaining to predefined impact areas around the village clusters we assessed.[10]

Governance

State formation in a society fragmented by decades of civil war is primarily a governance challenge. The Afghan constitution sets up a highly centralized state, with five tiers of governance at the national, provincial, district, municipal, and village levels, and a wide range of actors in Afghanistan affect the political and social regulation of collective tasks and problems. At present, the main grassroots representative structure is the complex of CDCs, CLDCs, and DDAs.[11]

We focus on district and village-level governance. At these levels, the constitutionally mandated, elected representative institutions—District Councils—have not yet been established. Meanwhile, the DDAs, which also form the central target institution of the NGO's program, fill the gap. Patronage networks influence appointments to virtually all subnational administrative positions. As a result, successful local administrators and functionaries need to have good relations with local strongmen as well as political protection from Kabul-based patrons.[12]

The most relevant recent dynamics relate to the unfinished process of subnational governance formation, on the one hand, and the security dynamics described previously, on the other. The relation between the central state and local communities has been a long-standing, problematic issue for the formation of an effective Afghan state. Even as a persistent demand for legitimate state services and interventions exists when local institutions are unable to solve governance problems, the state never fully penetrated society with its institutions, and rural communities have a history of challenging state rule if they considered state intervention illegitimate. To address and solve problems, rural communities rely on their local institutions whenever possible. Hence, the elected development councils with a formal role vis-à-vis the state administration started playing an important role as intermediaries between state and society at village and district-levels.[13]

The changing and patchy security environment affects the physical reach of the state in some districts, especially when insurgents or other armed actors prevent government access. Here, the elected councils (CDCs/*shuras*) of community representatives play a critical role in facilitating selective state access to areas otherwise inaccessible to government officials. In yet other areas local strongmen (mostly former *jihadi* commanders) play important roles in governance provision.

Our indicators reflect this fluid and fragmented governance landscape (Figure 1). Based on this patchwork, we built coded governance categories, called governance zones, with different actors providing different services to different recipients and at different levels of quality. For our target districts, we identify six typical and recurring zones that define local governance: (1) governance by government, (2) hybrid governance, (3) arbitrary rule, (4) self-governance, (5) contested governance, and (6) insurgency governance.[14]

Further survey-based indicators focus on the provision of different governance functions by different actors, and on the quality of services provided (e.g., security, administrative or community care, fairness or corruption in dealing with conflicts). We also constructed a 1–10 scaled variable based on who is perceived to be the most powerful person at village and district-levels, with the highest scores for elected or appointed official positions and the lowest scores for informal "men of the gun." Finally, we used additional indicators based on district profiles that assess the level of education and presence-at-work of six predefined leading government officials such as the district governor or the chief of police.

Economy and development

According to most of the established development indices, Afghanistan has been and still is one of the poorest countries on earth. One principal goal of development interventions in Afghanistan is poverty relief and improvement of the economic situation of households and communities. This goal connects to the NGO's aforementioned stabilization goals. Agriculture dominates the economic life of rural households in the target region and access to agricultural land is of paramount importance, both for subsistence and cash generation. Trade in agricultural products, livestock, and related goods plays an important role as does open access to inter-communal bazaars. Less important than in the urban centers, although relevant, are wage labor and income opportunities from jobs provided by the government or owing to development activities.[15]

The most important recent events have been the intensification of development initiatives alongside the military surge and COIN strategy beginning in 2010. The German and the U.S. governments increased their spending significantly and put greater focus on rural development as well as on capacity building and training for subnational governance institutions. In terms of the "real" economy, different local opportunities and dynamics play a role. In parts of the research area the illicit drug economy is a dominant economic force while, in other parts, the local economy is strongly influenced by licit and illicit mining. Revenues from cash-generating activities are increasingly invested in construction businesses, particularly in the rapidly growing urban centers.[16]

We relied on survey-based indicators to measure general subjective development exposure and satisfaction with development-induced changes at the village level across different sectors (drinking water, agricultural production, roads, jobs, electricity, medical facilities, and schooling).[17] Additionally, we use survey questions to assess the material status of respondent households as well as an aggregated indicator reflecting the equality of access to land within the community. Indicators based on village profiles focus on mobility (cars), agricultural mechanization (tractors), and the number of implemented projects per village over a two-year period. Finally, we use district profiles to create an index showing the size of the inter-communal bazaars relative to the estimated district populations.

Modernization and adaptation

Historically, various domestic and alien powers imposed on Afghan society a top-down attempt at modernization. In the 1920s, Amanullah Khan mimicked Mustafa Kemal Atatürk's state-imposed reform of Turkey. Daud Khan introduced authoritarian republicanism in the 1970s. Replaced by a communist coup, an imposed socialism followed under Soviet occupation. All these attempts at top-down reforms and modernization encountered various levels of social resistance. In contrast, the Taliban enforced their regime with reference to an explicitly anti-modern religious ideology in terms of the social order it promotes.[18]

Society's willingness and ability to adapt is an important variable for its dynamic stability. State formation and the international development intervention after the ousting of the Taliban regime are modernizing challenges for rural Afghan society in particular. Historically, the most sensitive issues have been religion, family, and gender relations. Some of the changes that came with foreign intervention affected these issues ideologically, like the foundational notion of gender equality and human rights (instead of a reference to a universal religious code). Widespread access to public schools for both sexes, and especially the education of girls after reaching puberty, can be economic and value challenges for households, and they loosen the traditional control of parents over their children. Other challenges are more technological, like mobile phones which enable women and teenagers to engage in forms of communication that were unthinkable only a few years ago. For many people, relatively recent access to electricity and passable roads (even in remote areas) are an additional means to new sources of information.[19]

We use survey-based indicators to assess openness, or reservation, toward public school curricula and a composite 1–10 indicator consisting of respondents' evaluation of four value statements regarding girls' and boys' education, off-farm work for women and men, and the impact of public schooling on community norms. We also ask directly if development is a threat to Islamic norms and local values. Regarding access to modern information technology, we ask for the number of bank accounts and mobile phones per household and for the main sources of information accessed by respondents. Indicators derived from qualitatively gathered data are the ratio of public to religious schools per village and the district-level gender ratio of school enrollment.

Stabilization dynamics: Descriptive statistics and Principal Component Analysis

We first describe the main changes observed in the four fields of stabilization between the baseline (2010–11) and follow-up (2012) surveys. For each field, we then use Principal Component Analysis (PCA) to analyze how the variables relate to each other. Given the high dimensionality of our data, the PCAs build optimal composite indices of the indicators chosen to measure stability per field. This is geared at testing whether the indicators assess similar or different aspects of stability,

and hence help to possibly reduce the number of dimensions. Indicators from the same field relating more closely to each other should be explained by the same component and be as independent as possible from any other extracted component. The tables that follow show how the indicators load on the different components identified by PCA per field. Whether positive or negative, indicators loading on the same component are statistically closely related to each other.[20]

The key development in the field of *physical security* is an overall improvement as a result of the military surge and the build-up of the ANSF. This is visible in the average decline of incidents counted per district and within our target CLDCs. The most dramatic change relates, however, to fear perceptions. The number of respondents who were not afraid of any armed actor increased nearly twofold while fear of the Taliban dropped by almost half. Interestingly, average subjective assessments of district and household security remained unchanged but showed strong variation and shifts between districts, coinciding with objective security trends in those districts.

The PCA of the follow-up survey (Table 1) shows that subjective perception of security, general fear, and incidents correlate and pull in the same direction (Comp2). They are unrelated to being afraid of specific groups (i.e., Taliban, ISAF), which are in Comp1. Fear of Taliban, ISAF, and of informal armed groups ("fear some") are fairly undifferentiated: People are either afraid or not afraid of all (Comp1). For Comp2, "fear some" points in the opposite direction: People are less afraid of militias where the other security indicators are worse, indicating that informal security actors are more acceptable where the general security environment is bad. The PCA also indicates that respondents who are unhappy with the COIN-driven security situation in 2012 expect improved security from ISAF's pending withdrawal (Comp3).

The field of *governance* presents a mixed picture. (As before, we first present a summary of changes between baseline and follow-up; the related PCA, in Table 2, is discussed afterward.) The government administration clearly has gained ground in terms of objective and subjective indicators. Regarding the latter, by the time of the Wave 2 survey, appointed district managers, who are the main representatives of the central government in the districts, were generally perceived as the most powerful actors within a district. The perceived fairness of conflict resolution and the responsiveness of the district administration also improved, albeit marginally. Objective indicators of district administration capacity, presence-at-work, and the level of education of key government officials also visibly changed for the better. However, indicators related to the *shura*-complex (CDCs, CLDCs, and DDAs) worsened: Conflict resolution by the DDAs or CDCs was perceived as less fair than during the baseline survey, the CDCs were felt to be less responsive, and the heads of the (CDC)-*shuras* were perceived less often to be the most powerful person in the village. In relative terms, however, the CDCs remain among the top governance performers, losing some ground primarily to elders and the *ulema* (i.e., Islamic scholars and clerics). Village cohesion,

Table 1: Principal Component Analysis for security

Variable	*Comp1*	*Comp2*	*Comp3*	*Un-explained*
Incidents		0.6509		0.3774
Fear ISAF	0.4317		-0.4119	0.2716
Fear Taliban	0.4848			0.1535
Fear all	0.3343	0.4666		0.3052
Not afraid	0.5295			0.0679
Fear some	0.4213	-0.2466		0.3507
Subj. security		0.4890	-0.4538	0.3298
Outlook 2014			0.7597	0.2059

Table 2: Principal Component Analysis for governance

Variable	*Comp1*	*Comp2*	*Comp3*	*Un-explained*
Gov. zones			0.4142	0.6574
Pol. security	0.2109	–0.2215	0.5383	0.1907
Gov. cares			0.5801	0.2698
Inclusiveness	0.4078		0.2055	0.4241
Social cohesion	0.3261	0.2741		0.5546
Power distr.	0.4956			0.2401
Power village	0.5057			0.2449
Gov. fairness		0.5302	0.3059	0.3234
DDA fairness	–0.2436	0.4876		0.3280
CDC fairness		0.5540		0.2558
Corruption	–0.2173			0.8336

measured via participation in *hashar* (communal work), improved between the baseline and follow-up surveys.

The qualitative district assessments help to explain the relative deterioration of the *shura*-complex. It is linked to the setting up of militias as part of the counter-insurgency campaign between baseline and follow-up. This re-empowered local commanders who, while often perceived as conducive to military aspects of security (i.e., keeping insurgents out of an area), began to meddle in local-level governance provision, negatively affecting its fairness and professionalism. In line with this expectation, the deterioration observed for the *shura*-complex is limited to those areas where militias were active.

The PCA of the survey data confirms that our normative indicators for legitimate power and fair governance are correlated but in an unexpected negative way: Informal power is linked to more fairness in conflict resolution, official power to less fairness (Comp1). Our analysis of governance zones confirms this finding as zones in which commanders dominate (arbitrary rule) are positively associated with security and fair conflict resolution. This indicates that under current conditions there seems to exist some demand for locally embedded, informal security providers. Other indicators behave as (normatively) expected in the PCA: Higher formalization and more state involvement (governance by government, hybrid governance) correspond to higher levels of attributed police and district administration performance (Comp3). Higher social cohesion goes together with just conflict resolution and lower values for a positive security effect of the police (Comp2), indicating a functioning *shura* system capable of solving local conflicts in the absence of the state.[21]

Trends in the field of *economic reproduction and development* are mixed as well. While total project counts dropped, the perceived positive change in the field of development improved, the only exception being the perceived positive contribution of government to development, which decreased. Objective economic indicators also remained unchanged or even improved, such as the size of bazaars and the number of cars per target village/CDC. Lastly, inequality and poverty increased as measured by access to and possession of land.

The PCA (Table 3) produces three components. The first captures development and public service indicators, the second rural and agricultural aspects, and the third individual economic potential. This shows that development, the private sector economy, and rural subsistence agriculture are largely independent of each other. Progress in any one of these sectors does not necessarily mean progress in the other sectors, and development does not automatically influence private business or the dominant rural subsistence economy in a positive way.

Table 3: Principal Component Analysis for development

Variable	*Comp1*	*Comp2*	*Comp3*	*Un-explained*
Project count	0.2062		–0.2452	0.7901
Positive dev.	0.5504			0.1535
Dev.org.cont.	0.4402			0.4353
Gov. contrib.	0.4388			0.4460
Mat. wellbeing			0.5069	0.5899
Car index			0.4644	0.6430
Bazaar index		–0.2695	0.3867	0.5989
Land equality		0.6460		0.3311
Landless/pov.		0.6366		0.3277
Tractor index		0.2509	0.5316	0.5522
Dev. exposure	0.5061			0.2940

Table 4: Principal Component Analysis for adaptation

Variable	*Comp1*	*Comp2*	*Comp3*	*Un-explained*
Modern values	0.4021	0.2412	0.2180	0.4788
Modern media		0.7345	–0.2464	0.1831
Girl schooling	0.5698			0.3979
State employ.		–0.2848		0.8605
Value threat	0.3806	0.3490	0.2971	0.3469
Madrassa ratio		0.3396	0.3584	0.6815
Dissat. curricula			0.7950	0.1527
Cell phones	–0.5841	0.2102		0.3306

Contradictory trends characterize the field of *adaptive change* as well. Girls' school enrollment increased further even as the number of *madrassas* (religious schools), an indicator of conservative values, increased as well. After years of growing openness toward a more liberal interpretation of gender rights,

we see a marked shift toward conservative attitudes during the follow-up survey (e.g., the rejection of state school curricula and girls' education, or the perception that development threatens local values). Turning to the technological aspects of modernization, between the baseline and follow-up surveys, we note an increased use of modern media to gain information as well as more bank accounts and more cell phones.

The PCA (Table 4) shows negative correlations (Comp1 and Comp3) between indicators of technological (mobile phones, modern media access) and social (values, education) modernization. The technological and social clusters stand for different kinds of modernization and adaptation and seem in at least partial contradiction to each other. Access to modern media and sources of communication (cell phones are increasingly used even in the countryside) may connect selectively to larger and dominant normative discourses about perceived contradictions between the West and the Islamic world and may inform local communities about divisive global incidents such as the burning of the Koran. We found a further indication for a connection between increased scepticism toward modern values and a wider discourse on threats to Islamic societies by analyzing guideline interviews conducted in all village clusters covered by the survey. There was almost no evidence in the interviews for concrete local experiences to explain the value threat perceptions but a far greater number of explanations that linked threat perceptions to the global controversies.

The program's effects on stabilization

Thus far we have identified the main theory underpinning the program activities, arrived at a working definition of stability, defined context-specific indicators, and used them to assess relevant stabilization dynamics. In this section we describe a testable impact model of the program's activities. This requires specifying activity-related independent variables (IVs), the dependent stabilization variables (DVs), and relevant control variables that could affect both program activity and stabilization. All variables, except for the activity-related IVs and some additional control variables are built from the stabilization indicators introduced earlier on. To assess the relation between program activity and stabilization dynamics, we opted for Ordinary Least Squares (OLS) regression analysis. To build the statistical models, we defined four independent variables that measure program activity, chose twelve meaningful dependent variables from the four fields of stabilization, and controlled for 18 other variables.[22]

The dependent variables are derived from the four fields of stabilization: physical security, governance institutions, economic development, and adaptive change (modernization). We enter the primary variables of interest in interaction with district dummies. The decision to include district dummies was informed by extensive qualitative research of the target region which revealed strong cross-district variations in terms of security, governance, economic potential, and adaptive capacity. In addition, the centrality of the DDA as the key district-level institution targeted by the program puts differences between districts into focus. Descriptive statistics derived from the two survey waves also show significant variation on a number of variables between and within districts. From a statistical point of view, this approach ensures that the clustered/nested structure of the data collected via a complex sampling method is taken into account.[23]

While we defined a total of twelve DVs relating to the four fields of stabilization and four IVs for program activities, for reasons of space constraints we present and discuss in this article results from a subset of only three dependent and two independent variables in the fields of governance and adaption. (Full results are available from the authors upon request.) The DVs are *Wolliswoli* (district administration) care, social cohesion, and value threat—elaborated upon shortly—and the IVs are project visibility and DDA visibility, also elaborated upon shortly. In what follows, we test the impact hypothesis upon which program is based.

Within the field of governance we discuss two DVs: *Wolliswoli* care (our proxy for output legitimacy of the state administration at district level) and *hashar* obligations (our proxy for social cohesion). We hypothesize that the program improves legitimacy and effectiveness of both district and community-level governance via capacity building, the introduction and application of procedures, on-the-job training, and by connecting communities with district-level institutions.[24] Regarding the capacity for adaptive change we investigate a variable called development as value threat. We hypothesize that the program improves openness and competence to adapt to new, modern technologies, information, and organizational reforms. This is achieved via participatory approaches to development in which the DDA is an increasingly legitimate and competent two-way transmission belt for development initiatives between the state and NGOs, on the one hand, and communities, on the other.[25]

To measure program activities we defined four primary independent variables (IVs) based on program visibility and an assessment of the utility of program activities for the district. The respondents were asked if they have heard about the DDA and the program's district-specific infrastructure projects as well as what they think about their usefulness for the district. These variables capture the program's intent to improve the visibility and perceived performance of its principal partner

and of the specific infrastructure projects this partner facilitates via block grants. We argue that *awareness* and *perception* are more meaningful measurements of the program's intended stabilization impact than material outcome indicators alone: At the heart of the impact model lies the improvement of trust and legitimacy through better local governance and this, to a large extent, is a subjective perception. On a technical note, the block grants received by the DDAs are of similar size in all program districts, and the procedures of project selection deciding about the use of the block grants are similar as well. There is thus no variance on this factor.

In the following section, we restrict ourselves to reporting results related to the visibility IVs only, i.e., project visibility and visibility of the DDA. In addition to the mentioned control variables, we also control for (1) all Wave 1 baseline scores for DVs, where applicable, (2) objective project count per village, and (3) subjective development exposure per village as we anticipate that the relation between the program activity-related variables and the dependent variables measuring stability is affected by the baseline score of an indicator (e.g., subjective fear levels) or the exposure of respondents to other development projects.[26]

The reported marginal effects relate to project visibility and DDA visibility exactly as per model specification. As argued, since capturing the net effect of the program on stability is the main challenge of an impact assessment, we control for all possible covariates that could, in theory, affect stability, including, among others, general village-level development exposure (both subjective and objective). However, decoupling program activity-related IVs from subjective development exposure (which captures all other development initiatives) and entering them both in the same model could raise misspecification concerns because one might assume that the two are highly correlated. This is, however, not the case as (1) they refer to different levels of societal organization (village vs. district) and are different in their degree of strategic implementation (*ad hoc* vs. long-term), and (2) multicollinearity tests conducted for each regression model and correlations among the variables concerned do not point to these being collinear. After adding district interactions and control variables we find the expected relations based on our theoretical framework. Omitted variable bias cannot be excluded, but the interaction terms introduced in the models control for district-specific contextual effects.

Results of the regression analysis

The first observation is that the level of aggregation matters: Statistical significance, strength, and direction of effects vary across districts in almost all models related to the four fields of stabilization (for an example, see Figure 2). We believe this heterogeneity of findings is caused by the high degree of fragmentation of the governance landscape—typical for fragile and conflict-affected states—and we consider this to be a key finding of the assessment. In the following, we report only on the statistically significant results (see Table A1) associated with the varying number of districts in fields of stabilization, governance and adaptation.[27]

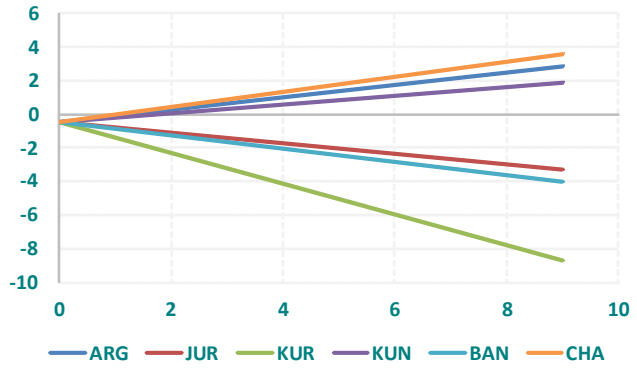

Figure 2: District partial effects: Project visibility on value threat. *Note*: Positive slope indicates increasing value threat. Districts: ARG: Arghanj Khaw; JUR: Jurm; KUR: Kuran wa Munjan; KUN: Kunduz; BAN: Bangi; CHA: Chal.

Governance effects

In the majority of districts program activities correlate significantly and positively with the indicator we use to estimate the perceived legitimacy of the district administration. Specifically, on average, project visibility in 11 out of the 25 districts is associated with an increase in the perception of a caring district administration (Table A1, Col. 1). Similarly, DDA visibility is associated with an increase in the perception of a caring district administration in 9 out of 25 districts and a decrease in one (Table A1, Col. 2). This is the strongest indication we have in our regression analyses that program activities are related to the legitimacy of the district-level state administration. Positive effects of development efforts on the legitimacy of the state have been observed before; here we have, however, a strong indication that a specific program has such effects even after controlling for other, and sometimes similar development, efforts.[28]

Assessing the relation between infrastructure financing and capacity-building activities on the one hand, and social cohesion as measured by *hashar* (communal work) compliance on the other, we find that, on average, project visibility is associated with an increase in compliance rates in seven districts and associated with a decrease in six others (Table A1, Col. 3). In contrast, the DDA visibility variable is associated

with an increase in *hashar* compliance rates in one district and associated with a decrease in seven other districts (Table A1, Col. 4).

It would appear that one cannot discern a straightforward trend: The relation between the primary IVs and DVs, as derived through the interaction terms, seems to indicate statistically significant positive but also negative associations, reflecting the heterogeneity of effects across districts. The question of whether the program affects pre-existing levels of social cohesion in a positive way or whether it can take a toll on existing functional societal institutions remains an important concern for understanding and controlling possible side effects of program interventions.

There is likely no direct causal link between the visibility of the program's infrastructure projects and social cohesion. It is also not a central aim of the program's infrastructure component to increase social cohesion. This impact is, however, more relevant for the capacity-building component of the DDAs since they are directly involved in the organization of inter-communal *hashar*, our proxy for social cohesion. As noted, DDA visibility seems to be associated with lower rates of *hashar* compliance in seven of the eight districts for which we have statistically significant results. It is likely that this result relates to different levels of organization: We observe that DDAs most active in *hashar* organization do so in a more formal, administrative way to tackle district-level problems (e.g., reacting to natural disasters or emergencies); our proxy indicator refers, however, to the more customary village-level *hashar* activities. Hence, less local willingness to participate in community-level *hashar* could be a state formation effect. This effect is likely absent in the heavily insurgency-affected *Dashti Archi* district, the only district for which there is a positive relationship between DDA visibility and *hashar* compliance.

Adaptive change

In twelve districts, a relatively clear connection emerges between the two program activity-related variables—project and DDA visibility, respectively—and the perception of threats to local norms and Islamic values as a consequence of general international development work. However, the direction of these relations is not the same for all districts. Project visibility is, on average, associated with an increase in the level of perceived threat in three districts and with a decrease in another three (Table A2, Col. 1). In contrast, DDA visibility is, on average, associated with a decrease in the level of perceived threat in only one district and with an inverse relation in six others (Table A2, Col. 2). The different effects cluster with provinces: We note a negative relation for districts in Kunduz Province, in which the insurgency is strongest, but a positive relation for districts in Badakhshan which, until 2011, was least affected by the Taliban insurgency.

We only have tentative explanations for these findings. It is possible that DDAs on some occasions come to represent and advocate for modernization within village communities. Based on the results of our qualitative research into the issue of value threat, we find it more likely, however, that the DDA and value threat variables both correlate with an insufficiently controlled for third variable, possibly related to the exposure to specific propaganda (the concentration of negative results in the province most affected by the insurgency points into this direction).

Tentative lessons

The international NGO whose program we assess attempts to provide an enabling environment for stability. It does so through the provision of community-prioritized development infrastructure meant to improve access to services and subnational governance. At this early stage of project implementation and research into potential long-term effects, it is not yet possible to provide a definite answer as to whether the program has been successful in achieving its intended positive impact. From the observed relations between program activity and stabilization indicators we can, however, draw some tentative conclusions.

In regard to governance, the results on output legitimacy are robust, convincing, and relevant, especially at the district level where Afghans meet, demand, and challenge their state. The partly negative effect on local social cohesion, however, needs to be taken seriously and should inform future modes of program delivery. That a development program focused on the extension of governance services can simultaneously weaken social cohesion and traditional community institutions should not come as a particular shock—state formation may, for example, strengthen the Ministry of Public Works instead of *hashar*, or DDAs and CDCs instead of traditional *shuras*. However, in the Afghan context, local self-help and self-organization will be vital for a long time to come. Hence, weakening traditional institutions and increasing everyday exposure to (potentially corrupt) officialdom could pose a serious problem and needs to be understood better.

Regarding adaptive change, our study highlights how important are communication and soft skills, even when projects are implemented through representatives of local community institutions like the DDA, CLDC, or CDC. However, regional effects (e.g., negative results clustering in insurgency-affected Kunduz) also indicate that there may be a stronger ideological force at play that can be influenced only marginally by development work.

Finally, we emphasize that the strong showing of district effects on the observed relations underline how important a differentiated, local needs and capacities-driven approach is for the success of a program like the NGO's discussed here. In this case, a one-size-fits-all approach does not yield the best results.

Notes

At different stages, Kristin Bergmann-Warnecke (baseline), Alicia D. Cooperman, Jan R. Böhnke, and Johannes Schult (follow-up) supported us technically for data processing, OLS regression, and advice on statistical methods. We thank them for their work. All remaining errors are ours.

1. Overrun the country: McChrystal (2009a); Woodward (2011). Change to COIN strategy: McChrystal (2009b).

2. The specific organization(s) and donor(s) involved are not named in this article as they are of no concern for the arguments presented here.

3. For details, see Koehler, *et al*. (2011); Böhnke, *et al*. (2014).

4. Theoretical ideas: Elwert (2002); Elias (1983).

5. Partial or net impacts are the specific share in impact that can be attributed to program activities. Survey and qualitative data collection took place in cooperation with our Afghan partner organization, AHRRAO, under the supervision of the authors.

6. For details on the multi-stage sampling strategy and indicator development, see Koehler, *et al*. (2011).

7. Guideline interviews are semi-structured interviews that follow a pre-defined list of guiding questions. In difference to surveys the form of the interview is an open conversation or discussion.

8. Details with full technical explanations of the indicators are available upon request.

9. Push insurgents back: Giustozzi and Reuter (2011). Taken back: NATO (2013).

10. Latent Class Analysis: Böhnke, *et al*. (2013, p. 29). Expert-coded: Koehler, *et al*. (2011, p. 14).

11. Constitution: Islamic Republic of Afghanistan (2010). Five tiers of governance: IDLG/MRRD (2013).

12. District Councils not yet established: AREU (2011). Patronage networks: Koehler and Gosztonyi (2011).

13. Demand for state services: Koehler and Gosztonyi (2011). History of challenging state rule: Rubin (2002). Reliance on local institutions: Barfield (2010).

14. On governance zones, see Koehler (2012).

15. Development indices: UNDP (2013).

16. U.S. and German governments: LaFranchi (2011); BMZ (2010).

17. To be clear, here we measure *general* exposure and satisfaction, not NGO-specific; with the NGO's stabilization program, we then ask for attributed utility (negative, neutral, positive) for the district.

18. Top-down: Barfield (2010). Resistence: Rubin (2002). Taliban religious ideology: Giustozzi (2007; (Nojumi 2008).

19. Universal religious code: See Suhrke (2012, pp. 203–211).

20. High dimensionality of data: Different aspects of security, governance, development, and adaptation each are accounted for with a variety of indicators. Optimal composite indices: Optimality is defined by weighing all indicators in the analysis in such a way that most of the variance is explained. PCA per field of stabilization: Only statistically significant loadings are shown; indicators are scaled (1–10) and directed, with higher numbers indicating higher stabilization scores.

21. Arbitrary rule: See Koehler, *et al*. (2011).

22. In each field of stabilization, Model 5 constitutes our preferred specification—with the largest number of controls—based on the impact hypothesis identified in the program's theory of change and best-fit statistics as measured by R-squared and RMSE. Four alternative specifications include fewer controls.

23. Interaction with district dummies: We introduce interaction terms into the models to account for heterogeneity of effects in relation to each district rather than the aggregated effect of the primary independent variables across all districts as the central units of analysis.

24. *Wolliswoli* care: A survey question asks respondents whether they believe that the local district administration (*Wolliswoli*) takes care of community needs. The question is a five category Likert-scale variable ranging from "never" to "always." *Hashar* obligations: A scale variable ranging from "most people not interested" to "most people interested."

25. Development as value threat: A survey-based composite indicator representing average levels of agreement with four value statements regarding girls' and boys' education, off-farm work for women and men, and the impact of public schooling on community norms.

26. Project visibility: A survey question asks respondents whether they have a heard of a program project, chosen from a list of projects implemented and completed at the district of the respondent at the time of survey. The variable accounts for a program project visibility dummy coded as one for "heard of the project" by the respondent. Visibility of the DDA: Survey-based dummy variable asking respondents whether they have heard of the DDA. Visibility of DDA is an indication of the institution being active.

27. High degree of fragmentation: As mentioned, program implementation is similar across the districts and an additional variable assessing the quality of the infrastructure projects in the eyes of the respondents produced nearly invariant positive results (99% attributing a positive effect to the projects they knew of). Hence, we do not believe that differences in

implementation account for the observed district effects, and we are confident that project visibility is an adequate proxy for program exposure. Statistically significant results: Table A1 includes only results associated with the interactions extracted from the fully specified model (Model 5). The full set of tables is available from the authors upon request.

28. Observed before: Böhnke, Koehler, and Zürcher (2010); Beath, Christia, and Enikolopov (2012).

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Appendix

Table A1: Marginal district effects (governance)

Variable	*(1)*	*(2)*	*(3)*	*(4)*
BAD_arg	1.211*** (0.361)	0.413 (0.348)	0.021 (0.139)	0.0857 (.075)
BAD_bah	0.852* (0.356)	0.474** (0.168)	–0.413* (0.207)	–0.225* (0.089)
BAD_jr	0.237 (0.239)	0.328 (0.284)	–0.130 (0.167)	–0.119 (0.104)
BAD_khas	1.040* (0.433)	0.462** (0.139)	–0.091 (0.140)	0.143 (0.168)
BAD_kis	0.642* (0.279)	0.027 (0.222)	0.329 (0.220)	0.180 (0.147)
BAD_kur	1.642*** (0.236)	0.809 (0.436)	–0.499*** (0.107)	0.026 (0.189)
BAD_war	0 (.)	0.149 (0.132)	0 (.)	–0.113 (0.195)
BAD_yam	0.990 (0.588)	0.619* (0.279)	–0.594** (0.205)	–0.040 (0.127)
BAD_zeb	1.443* (0.678)	–0.118 (0.250)	–0.463*** (0.136)	–0.038 (0.115)
BAD_bj	–0.312 (0.265)	0.068 (0.202)	–0.530 (0.303)	–0.370** (0.127)
KUN_ali	0.323 (0.446)	1.001*** (0.143)	0.188 (0.260)	–0.436*** (0.127)
KUN_das	0.141 (0.621)	0.649** (0.237)	0.874* (0.371)	0.752*** (0.174)
KUN_ima	1.401*** (0.306)	1.771*** (0.223)	–0.324* (0.162)	–0.641*** (0.100)
KUN_kha	–0.213 (0.537)	1.079*** (0.256)	0.106 (0.302)	0.142 (0.219)
KUN_kun	0.294 (0.731)	2.125*** (0.225)	–0.801* (0.327)	–0.904*** (0.142)
TAK_bah	1.442*** (0.272)	0.072 (0.240)	0.510** (0.164)	0.024 (0.102)
TAK_ban	1.501*** (0.319)	–0.213 (0.171)	0.624*** (0.099)	–0.035 (0.062)
TAK_cha	–0.547 (0.298)	0.265 (0.209)	0.769* (0.342)	–0.387*** (0.062)
TAK_esh	0.363 (0.252)	0.002 (0.101)	0.669*** (0.138)	0.084 (0.076)
TAK_far	0.552*** (0.097)	0.463** (0.165)	–0.050 (0.315)	–0.368*** (0.098)
TAK_kal	0.068 (0.184)	–0.112 (0.140)	0.490* (0.193)	0.041 (0.052)
TAK_kho	0.989*** (0.207)	0.168 (0.160)	0.180 (0.129)	0.165 (0.085)
TAK_rus	–0.205 (0.140)	0.055 (0.145)	0.290** (0.107)	0.107 (0.109)
TAK_wars	0.640 (0.430)	–0.523* (0.221)	0.220 (0.177)	–0.042 (0.098)
TAK_yq	0.388 (0.312)	0.052 (0.142)	0.166 (0.156)	–0.149 (0.077)

Notes: Coefficients, followed by standard errors in parentheses. *** p<0.01; ** p<0.05; * p<0.10.
Col. (1): Marginal district effects of project visibility and *Wolliswoli* care: Marginal effects of projvis on q28_31_wolliswoli_rec, by district.
Col. (2): Marginal district effects of DDA visibility and *Wolliswoli* care: Marginal effects of DDAvis on q28_31_wolliswoli_rec, by district.
Col. (3) Marginal district effects of project visibility and social cohesion: Marginal effects of projvis on q19_hashar, by district.
Col. (4) Marginal district effects of DDA visibility and social cohesion: Marginal effects of projvis on q19_hashar, by district.
In all cases, marginal effects are derived from OLS models with clustered standard errors at the CDC level to reflect similarity of preferences within a CDC. These marginal effects are from model (5) with all controls included. If the district coefficient =0 and SE= (.), then this district was omitted because it was too similar to another independent variable after including all control variables.

Table A2: Marginal district effects (adaptive change)

Variable	*(1)*	*(2)*
BAD_arg	0.363** (0.131)	0.226* (0.101)
BAD_bah	–0.129 (0.076)	–0.062 (0.042)
BAD_jr	–0.315** (0.115)	0.008 (0.067)
BAD_khas	0.047 (0.071)	–0.060 (0.073)
BAD_kis	–0.028 (0.036)	–0.066 (0.043)
BAD_kur	–0.919*** (0.060)	–0.010 (0.072)
BAD_war	0 (.)	–0.295 (0.327)
BAD_yam	0.0004 (0.089)	0.025 (0.052)
BAD_zeb	0.270 (0.309)	0.047 (0.172)
BAD_bj	0.028 (0.068)	0.125** (0.038)
KUN_ali	0.016 (0.091)	0.101 (0.061)
KUN_das	0.193 (0.149)	0.048 (0.051)
KUN_ima	0.064 (0.083)	0.127*** (0.038)
KUN_kha	–0.098 (0.101)	0.181* (0.079)
KUN_kun	0.256* (0.118)	0.113 (0.075)
TAK_bah	0.152 (0.136)	–0.178* (0.071)
TAK_ban	-0.400 ** (0.137)	–0.114 (0.064)
TAK_cha	0.452** (0.172)	–0.029 (0.067)
TAK_esh	0.181 (0.136)	0.027 (0.053)
TAK_far	0.177 (0.306)	0.168 (0.250)
TAK_kal	0.053 (0.116)	–0.047 (0.047)
TAK_kho	0.038 (0.100)	–0.020 (0.070)
TAK_rus	–0.013 (0.031)	0.034 (0.043)
TAK_wars	–0.133 (0.110)	0.139* (0.068)
TAK_yq	0.003 (0.138)	0.221* (0.090)

Notes: Coefficients, followed by standard errors in parentheses. *** p<0.01; ** p<0.05; * p<0.10.
Col. (1): Marginal district effects of project visibility and foreign development aid as value threat: Marginal effects of projvis on q32fordevthreat, by district.
Col. (2): Marginal district effects of DDA visibility and foreign development aid as value threat: Marginal effects of DDAvis on q32fordevthreat, by district.
In both cases, marginal effects are derived from OLS models with clustered standard errors at the CDC level to reflect similarity of preferences within a CDC. These marginal effects are from model (5) with all controls included. If the district coefficient =0 and SE= (.), then this district was omitted because it was too similar to another independent variable after including all control variables.

ECONOMIC IMPEDIMENTS TO A TALIBAN PEACE PROCESS

JAMES WEIR and **HEKMATULLAH AZAMY**

James Weir, Ph.D., is a cultural anthropologist and cofounder of the Afghanistan Research, Consultancy and Cooperation Organization (ARCC), Kabul, Afghanistan. He can be reached at jimmyweir2012@gmail.com. Hekmatullah Azamy is a research analyst at the Centre for Conflict and Peace Studies (CAPS), Kabul, Afghanistan. He can be reached at hekmatullah.azamy@yahoo.com.

Abstract

An important question underlies the potential for a successful peace process in Afghanistan: If political negotiations between the Taliban leadership and the Afghan government succeed, will fighters in the field cease their activities, especially illicit funding practices, and accept government legal authority? Interviews conducted in early 2014—well before the announcement of Mullah Omar's death or the appearance of Islamic State in the region—indicate that a wide gulf separates the motivations of low-level insurgents from their leadership's ideological objectives. The rank and file fight for multiple reasons, the most significant of which is the financial advantage of association with the movement. Recent studies of the economics of insurgency describe a crime-insurgency-terror nexus that applies to the contemporary Afghan context, albeit requiring adjustment to account for the distinctive political circumstances and wartime history of Afghanistan.

Recent studies of the economics of insurgency describe a crime-insurgency-terror nexus that applies to the contemporary Afghan context.[1] This article draws on research into violent extremism conducted in Helmand and Herat provinces in early 2014. Research began as an effort to understand the political grievances and objectives that lead Afghans to become insurgents. The goal was to identify policies and programs that would lessen divisions between rural communities, the Afghan government, and Taliban insurgents. The expectation was that a better grasp of the political concerns of rank and file insurgents could usefully inform peace efforts. Interviews indicate, however, that Islam-inspired political opposition to the Afghan government does not significantly motivate most insurgents, suggesting that the terms "Islamist" or even "insurgent" are becoming misnomers. Frustration with corruption and government patronage networks was widely acknowledged, but rarely expressed as sufficient justification to take up arms. Retribution for loss of family or pursuit of local political grievances inspired some fighters. Although most insurgents state a mix of motivations and justifications for support of the Taliban, and the most consistent factor emphasized—by Afghan government officials, Taliban, and villagers lacking any clear association—was financial.

Our research finds insurgents in Helmand and Herat provinces funded by a host of illicit sources, primarily poppy production, "Islamic" taxation, extortion of development projects and foreign military contracts, forced bill collection, and smuggling. Unlike the early years of the conflict, funding no longer primarily originates with leadership outside Afghanistan. Rather, funds flow from Taliban-controlled regions up the chain of command to the leadership and then become re-dispensed in the form of individual payments. This creates a sense of autonomy, and some frustration, among the rank and file and necessitates the senior leadership to violently enforce rigorous mechanisms to ensure compliance.[2] These funding sources (described below) grew more lucrative as the conflict dragged on. No longer a means to sustain a violent insurgency, the practices have become integral to the political economies of Taliban-influenced regions and bring many villagers into association with the movement.

Meanwhile, fighters in the field, long resentful of the leadership's comfortable safety in Pakistan, had their allegiances further tested after learning that their leadership lied for two years about the death of the movement's supreme leader and then watched a power struggle unfold. Interviewee statements from early 2014 about the motivations and economics of the conflict indicate that ordinary foot soldiers are unlikely to lay down their arms easily and accept the government's legal authority, at least not based on a peace agreement that would expand the government's authority in exchange for concessions that primarily benefit the Taliban leadership. After 14 years of conflict, a political truce will likely entail, at least in the short-term, decreased incomes and increased uncertainties about the future for many fighters in the field. Intangibly, yet perhaps of greater importance, the end of conflict, especially in the absence of alternative livelihoods, will result in a loss of purpose, respect, and honor among home

constituencies. For peace to take hold, illicit economic practices must be disrupted and replaced with viable, legal alternatives, or risk having these practices continued under the control of more radicalized, criminal groups.

Continuing uncertainty about the outcome of the conflict combined with distrust of most political leaders, after decades of lawlessness, insecurity, and limited economic alternatives, leave many ambivalent about the national political dimensions of the conflict. After initial optimism when a U.S. air campaign dislodged the Taliban, hope soured as former warlords were placed in power and the conflict deepened. Despite many substantial reconstruction successes, the international response also made the Taliban more potent, as U.S./NATO forces backed the return of warlords to government positions and development money funded pervasive corruption. The U.S. expenditure of USD110 billion for reconstruction, combined with a military cost estimated at USD1 trillion, occurred with insufficient oversight, planning, or grasp of ground realities. Afghans who successfully maintained ties to both sides of the conflict grew empowered, while the deepening flow of resources into the region created structural disincentives to ending the conflict. Particularly in Helmand, Taliban control of territory meant that poppy production could thrive, leading rural villagers, farmers, and criminals to insurgent association. Meanwhile, past opportunities to negotiate with or accommodate the Taliban leadership have been squandered. We find that opposing visions of Afghanistan's political future no longer define the present instability; instead, the greater obstacle to durable stability is curtailing the illicit funding practices that now predominate, particularly in remote rural regions, where insurgency creates income.[3]

The emphasis of respondents in Helmand and Herat on the financial motivations of the rank and file diverges from the explanations—offered by most leaders on all sides—of the insurgency as a fight to replace the Afghan government, to drive out foreign influence, and to enforce a radical form of Islamic governance. The current impasse is more clearly understood when set against three sequential, but related, changes that have occurred to the movement since its inception, here first presented in basic terms. In the first stage, nationalistic and faith-based ideology propelled the Taliban to power in the mid-1990s. In the second stage, following the U.S. intervention in 2001, retribution and revenge motivated many to return to the movement. In the present circumstances a third stage finds financial incentives displacing the importance of both ideology and retribution. Each side to the conflict seems fixed on continuing to present the conflict in ideological terms, perhaps because the financial realities of the conflict make all sides compromised. Widespread corruption among government leaders, made more problematic by poorly managed international largesse, have exacerbated long-standing local political divisions, particularly in Helmand province. In these circumstances, vulnerable, excluded, or antagonized communities joined insurgents largely because of the economic opportunities of association, and, to a lesser extent, to protect themselves from the Taliban. Political Islam or local and personal grievances remain relevant, but practical economic realities and opportunities after decades of conflict are the greater factor leading many to pursue self and community financial interest in the name of "insurgency". In light of this reading of current circumstances, our concern is that for stability to take hold greater attention must be given to stopping or controlling extra-legal practices. As long as insurgency remains a source of easy profit for many nonideological or politically alienated participants, a peace negotiation with the senior leadership may splinter the group even further, enabling criminal and more radical transnational Islamist groups to become an alternative to the Taliban, the most menacing of which now is Islamic State (IS).[4]

To better understand the political grievances and objectives that lead Afghans to become insurgents, we conducted research on violent extremism in Helmand and Herat provinces in early 2014. The expectation was that a better grasp of the political concerns of rank and file insurgents could usefully inform peace efforts. Interviews indicate, however, that the terms "Islamist" or even "insurgent" are becoming misnomers. Most respondents stated a mix of motivations and justifications for support of the Taliban. The most consistent factor emphasized—by Afghan government officials, Taliban, and villagers lacking any clear association—was financial.

Methodology and background

This article is based on 60 interviews conducted in early spring 2014 with active, former, and imprisoned Taliban, government officials, and community leaders in Helmand and Herat provinces. 32 interviews were conducted in the regional capital of Helmand, Lashkargah, and surrounding districts, while 28 interviews were conducted in Herat City, with interviewees coming from nearby districts. Not coincidentlly, Helmand province is the most violent and insurgent-influenced province, the country's largest producer of opium, and site of the greatest expenditure of international funds. Herat province is strategically located in the west of the country, with Herat City a vibrant economic center closely connected to Iran and Turkmenistan through business and cultural connections. The governors of each province facilitated access to Taliban prisoners and to reintegrated former Taliban commanders and

fighters. Members of the Provincial Peace Committee (PPC) and Provincial Joint Secretariat Team (PJST) also helped to arrange interviews with community leaders. Additional interviews were arranged through local channels with former and current Taliban commanders and high-ranking Afghan security officials. Former Taliban interviewees were asked to arrange interviews with their associates who are still actively fighting. Most interviews were conducted in person, and recorded, with a few conducted by phone.

Interviews took place between January and March 2014, supplemented by interviews and research conducted by Hekmatullah Azamy as part of his daily work as well as by a literature review. The purpose of the interviews was clearly explained to the respondents: to understand the concerns and grievances of the Taliban with the aim of identifying policies and practices that might mitigate conflict. Interviews were unstructured conversations that covered a variety of topics, including the motivations of Taliban fighters. Interviewees understood the interviews would be used for research or journalism. Due to the politically sensitive and dangerous circumstances, interviews were kept as open-ended discussions.

In Herat and Helmand provinces the primary sources of locally available insurgent funding are the drug trade, the Islamic taxes (*Zakat* and *Ushr*), extortion of international, government, and business contracts, smuggling of mineral resources across borders, and the collection of electric bills. These funding sources can overlap, for example Islamic taxes can be applied to profits from the drug trade or smuggling, while the line between taxation and extortion is thin, determined by circumstances and perceptions. Similarly, individual interviewees often mention multiple funding sources, but statements from interviews are included under only one heading. The descriptions of illicit funding sources are unavoidably incomplete. The practices described here occur mostly hidden from the purview of the state, while the continuing conflict makes rigorous quantitative data collection impractical. One aim of this article is to present sufficient information about these financial sources as a important factor, among many, to associate with insurgents.

The drug economy

According to the 30 October 2014 Special Inspector General for Afghanistan Reconstruction (SIGAR) report, Afghanistan produces more than 90 percent of the world's opium, valued at up to 15 percent of the country's gross domestic product, and generating employment for over 400,000 people—more even than the Afghan armed forces. Helmand province, where 32 of the interviews were conducted, produces an estimated 49 percent of Afghan opium or over one-third of the world's opium. As a result, poppy production dominates the local economy, connecting rural constituencies and the Taliban to the illicit global economy through transnational criminal networks. An important example is the opium trade as a factor that influences the Taliban's relationship with groups like the Islamic Movement of Uzbekistan (IMU) who facilitate the cross-border trade of the product through Central Asia and beyond.[5]

A recent UNODC report indicates that from 2013 to 2014 the country's opium harvest increased by 17 percent, the largest crop on record, while the year before (2012-2013) production increased 36 percent and was valued at over USD3 billion. Opium production increased two and a half times since 2001, despite a U.S. expenditure of USD7.8 billion on fighting the drug trade over that same period. The money available due to poppy production on Taliban-controlled regions becomes dispersed across a wide network, ranging between itinerant day laborers and corrupt government employees to Kabul and Dubai-based drug kingpins. More than simply funding Taliban activities, the wide socio-economic reach of drug production creates disincentives to legitimate governance and to resolve conflict.[6]

In a 15 January 2014 statement made to a U.S. Senate Caucus meeting, SIGAR's Inspector General John Sopko said that all the gains made over the past 13 years "are now, more than ever, in jeopardy of being wiped out by the narcotics trade which not only supports the insurgency, but also feeds organized crime and corruption." With billions spent yet failing to curb drug production, both drug profits and the money spent to combat poppy create opportunities for collusion between and among villagers, criminals, insurgents, and government officials. For example, efforts at drug eradication are widely acknowledged to have targeted less influential communities, and protected more powerful actors, often those with ties to both the insurgency and the Afghan government. As a result, a popular perception is that international actors support government leaders who have recognized connections to drug producers who, in turn, pay the Taliban for protection. With the lines between illegal and legal actors blurred, poppy production appears to be neither meaningfully criminal nor indication of support for the Taliban as a political entity, while Taliban facilitation of the poppy economy creates wealth and political influence.[7]

In recent years analysts have drawn attention to how the consolidation of drug cartels (based on poppy and hashish) and organized crime in Afghanistan has come to resemble a process found in Mexico and Colombia. A chapter in a 2006 UNODC/World Bank report devoted to the topic explains the

"mafiazation" of the drug economy in Afghanistan, with profits concentrated in the hands of influential, largely hidden, actors, while the Taliban act as "protectors" of these criminal organizations that often originate around families. In our interviews, respondents explained that many Taliban groups are comprised of family members who fight collectively to earn more. "Families play a dominant role in the Taliban hierarchy; as a family group they make more money and have an unquestioned trust in each other," explained one respondent—an observation often repeated.[8]

One observer—Gretchen Peters—explains "that it is no longer possible to treat the insurgency and the drug trade as separate matters, to be handled by military and law enforcement, respectively ... For many rural Afghans the greatest perceived threat is crime and economic instability, not the insurgency per se." Based on her interviews she concludes that "more than 80 percent of those surveyed for this project believe Taliban commanders in the south now fight for profit rather than religion or ideology." She argues that the drug trade have changed the nature of the Taliban movement, making it difficult to distinguish anti-government activities from criminality and the pursuit of basic livelihood in compromised circumstances. Our own, more recent research indicates that this shift has become only more entrenched since Ms. Peter's research and asks about its implications for the future of insurgent–government relations.[9]

Insurgents seek areas and communities free of significant state intervention, where they can install their own form of governance, provide essential services, expand into adjacent territories, and prove themselves a viable alternative to state authority. Combining violence, governance, and otherwise illegal economic opportunities, the Taliban persuade and coerce those with limited ideological or political sympathy to associate, with monetary incentives a convincing factor. The Taliban are said by most not to be directly involved in the daily affairs of drug production, but instead administer, protect, and finance production, and transport or charge merchants and transporters for protection from both government and thieves. Respondents mention various forms of Taliban involvement, including attacks on government security check posts, diversionary strikes, planting improvised explosive devices (IEDs), and building defensive positions around poppy fields. Battlefield tactics have mutated over the course of the conflict to include the protection of drug refinement, storage, and shipment routes. There are reports of opium warehouses where merchants and traffickers store and withdraw opium and around which fighting can be most fierce.[10]

An Afghan general stationed in Helmand, asked about whether the local Taliban might join the government, responded: "High ranking Taliban make 10-fold the money I make," and as long as being Taliban remains so lucrative why would they join the government? "Commanders charge opium carriers and other smugglers PKR100,000 [Pakistani rupees] per vehicle to cross Taliban controlled territories. Why would the Taliban join the peace process? They are kings in their areas." Similarly, a high Afghan intelligence officer in Helmand said: "The fight will never end in Helmand because of three reasons: first the opium trade, followed by taxation and extortion." Taliban activities spike after the first poppy harvest in the spring of most years. The Taliban interviewed rarely made direct mention of the money made from the poppy economy, yet made frequent, often brash, reference to money from taxation and extortion of the Afghan government and international military forces.

Wakil Ahmed Muttawakil, the former foreign minister under the Taliban regime, explained, somewhat defensively, that the Taliban do not force ordinary Afghans to grow poppies, but acknowledged Afghan farmers are lured by the high return on poppies and do pay religious tax to the Taliban in return for protection. Due to the vast sums associated with poppy in a region otherwise devoid of industry or economic alternatives, the drug economy is a significant source of income for Taliban-influenced communities, one that thrives where the movement holds the greatest influence. But while proud of being active resistance fighters and able to generate an income, we find insurgents cautious about being associated with poppy production. Fighting a corrupt government and invading foreign forces can be honorable, even when the precise justification for violent resistance is unclear. Drawing profit from drug production is accepted as a material necessity, especially during wartime, but it does not in itself warrant respect. Given the size of the poppy economy, especially in Helmand, the frequent mention of money to be made as an insurgent, and the widely recognized wealth of some leaders, the connection between insurgency and drugs is undeniable. Insurgents likely deemphasize their involvement since it discredits their Islamic credentials, while government officials stress the connection between drug money and insurgency.[11]

Islamic taxes

Zakat, one of the five pillars of Islam, obliges Muslims with sufficient wealth to give back to the community (*ummah*) with money intended to help the poor. The Islamic taxes of *Zakat* (alms) and *Ushr* (tithe) are an important source of Taliban fundraising. *Zakat* is a tax on capital assets including money, agricultural goods, precious metals, minerals, and livestock at a rate between 2.5 and 20 percent. *Ushr* is usually a 10 percent tax collected at the time of agricultural harvest. *Zakat* is

intended to benefit the poor, but some Muslim scholars also justify it to finance a *jihad*. Livestock and money from local and large businesses operating in Taliban influenced regions is a source of Zakat, while Ushr is particularly applied to taxing opium and hashish (marijuana) yields.[12]

Respondents made frequent mention of Taliban taxation. The collection or imposition of Islamic taxes is difficult to distinguish from extortion (discussed below) of protection money. The popular perception is that payment of taxes prevents Taliban attack or abuse, while, at least for some, it fulfills an obligation of faith. Government or international development projects are particularly subjected to taxation or extortion, as the sources of these projects are deemed worthy of abuse, but lucrative local businesses are targeted as well. These taxes, much like the protection of drug production, fund local Taliban cells and create a revenue stream that is sent up the chain of command to the Taliban leadership. In the early years of the conflict, funding was more likely to originate with donors from Gulf nations, local wealthy patrons, and the booty collected from large operations and then percolated down the chain of command to active rank and file members. But particularly in Helmand, due to the substantial combined income from the poppy economy, development projects, and shipping contracts to military bases, funding originates in the field and must be carefully monitored by a Taliban financial commission to ensure that monies collected are sent to the leadership.

Two additional observations about how the application of Islamic tax influences attitudes toward the insurgency warrant attention. Afghans report being forced, feeling obliged, or willingly offering payments to the Taliban. Whether by coercion or inclination, payment enforces a perception of distance from the Afghan government and of legitimacy for the Taliban presence. On one hand, the Taliban, in some communities, successfully collect money from residents and are able to dispense services, including quick and enforced legal pronouncements. On the other hand, government often struggles simply to ensure its own security and it can be ineffective in providing basic services, thus failing to demonstrate its legitimacy. As such, Islamic taxes must be seen not only as a source of income for the Taliban movement and the individual cells that collect them, but as an influence on the perceptions of nonaligned villagers who must carefully assess the political reach and military might of both government and insurgency in their communities, matters with sometimes dire livelihood and security implications.

We find communities who offer their own men to the Taliban as a means of lessening the demands of taxation while keeping the movement's more zealous members at a distance. Several described joining the insurgency as "insider Taliban" to prevent "outsider Taliban" from imposing both their cultural and financial demands. The example of Kochi Amir (name changed), the son of important tribal leader, and himself a tribal leader, is telling in its pragmatism and ambivalence as villagers negotiate their security and livelihood in an environment where limited resources and powerful, unpredictable forces prevail. Kochi Amir explained that he selected his tribesman to join the Taliban to protect his community from more zealous Taliban who demand excessive taxes or impose their extreme cultural and religious standards. "We are not ideological fighters," Amir exclaimed. "I armed a group of youth from our village to serve in Taliban ranks. We take part in their activities to resist the permanent presence of outsider Taliban in our communities. Many Taliban are brutal and their presence can cause us heavy losses, both financial or in conflicts." At the same time, Kochi Amir continued, he supports the government as well, by helping to organize an Afghan Local Police (ALP) unit in his area. He told us that with ties to both sides, if either side captures men from his village, he has contacts he can work with to release them. As an influential leader without a formal role in the government or the Taliban, his allegiance is not squarely aligned with either side. His first responsibility is to his tribal community, acting as their public representative and negotiating for their welfare. In volatile circumstances, where neither the state nor the insurgents hold ethical or military authority, rural communities maximize ties across political divides in pursuit of security and livelihood.

Abdullah Charsi, a former Taliban leader who joined the government and has come to regret the decision due to the loss of income (and, presumably, prestige), proudly explained that as a Taliban he raised all the money he needed and was beholden to no one. "I started my opposition with two AK-47s ... I had no link with Pakistan or any other countries supporting Taliban. I sought the help of my tribesmen to provide shelter, food, manpower, clothing, and weapons. As I grew more powerful, Pakistan offered assistance by treating our wounded soldiers and even tried to place my group into larger Taliban fronts. At my peak, I had over 300+ fighters in eleven subgroups operating in four districts. Now that I am with the Afghan government, we live in crisis. I'm under mountain of debts living here in Herat City. As a commander I had power, money, men, and other facilities. Businessmen, voluntarily, sent me money, clothes, shoes, etc. I sacrificed everything for joining the peace process, but if this situation continues as it is now, I will go back to 'hills' and reassemble my group—they, too, are desperate, and it won't take an hour for me to gather them again." For him, as for many of the interviewed, the

financial dimensions of the conflict make the boundary between insurgency and criminality porous and create ambivalence toward being for or against the government.

Development projects and military supplies

As the insurgency widened, poppy production and Taliban taxation took new meanings, growing more profitable where the Afghan government lost influence. But while opium and Islamic taxes are locally generated income sources for the Taliban that were prevalent before the international intervention, charging protection money on the transportation of military supplies and extorting international and government-sponsored development projects became new income sources that grew in tandem with the international response to the conflict. A troubling conclusion is that the international effort to fight the Taliban and to fund development projects—the very effort to win the "hearts and minds" of locals—became a significant source of Taliban funding and corrupt government practices, while exacerbating local tensions as select leaders received preferential treatment and excluded adversaries grew antagonistic. Taliban receiving funds from transportation contracts has been publicly documented since 2009, with a U.S. congressional report commissioned to document the practice in 2010. Little has been done to curtail these practices, and as international forces withdrew, SIGAR continued to complain that the Taliban generate funds from U.S. military transportation contracts. Beyond funding the Taliban and bringing Afghans into the movement for the money to be made from insecure circumstances, perhaps even more insidiously, the Taliban's ability to profit from foreign contracts indicated, especially to wavering segments of the Afghan population, that the international or government commitment was limited. An important concern in quickly evolving circumstances is that with international reconstruction and military funds drying up, the competition for funding sources is likely to result in an increased reliance upon alternative illegal funding sources, particularly poppy.[13]

Interviews indicate a consensus that it has become impossible to execute government or internationally sponsored development projects without payments that end up in Taliban coffers. Respondents explain that Taliban commanders approach project implementers asking for an obligatory 10 percent charge of project funding or face obstacles, including the likelihood of attacks. The practice is so widespread that company owners approach Taliban and voluntarily pay the 10 percent to ensure good relations. Some respondents explained that by paying sufficient taxes, businessmen can establish a monopoly over the execution of projects in areas, as the Taliban then prevent competitors from operating in a region. Former and active Taliban group commanders in both provinces acknowledged this practice.

Rehman, a former Taliban commander, explained in a February 2014 interview in Herat province, how he funded his group through locally generated resources. He joined the peace process with 15 of his fighters in January 2014. (He was later killed by former fellow commanders after they lured him into a trap by expressing their interests to join the peace process, a recurrent problem for those who change sides.) Rehman began: "In my entire four years of fighting, I never asked any other country to pay us. Every penny we spent came from local villagers, big security companies, and state officials who were paying us not to attack them." Rehman at first worked with ISAF troops, but lost his job after information he provided resulted in an operation that killed and injured civilians. His account of serving on both sides of the conflict indicates again that an ideological or political commitment to either side is not a substantial factor.

Another former Taliban commander in Herat province explained that most of the projects in the district where his group was active were implemented through the National Solidarity Program (NSP) and that there was no project executed without paying the 10 percent obligation to the commander governing the area. The trucking cartels, supplying goods to ISAF, development projects, and the Afghan government, appear to all have been charged levies that benefitted the Taliban. After USD110 billion of U.S. money spent in reconstruction over 14 years, one must ask to what extent the war effort strengthened the Taliban and how the abrupt diminishment of resources in the countryside will influence the conflict as the country enters a "Transformation Decade," a phrase used by international actors and government officials to describe the post-2014 decade. Competition over limited resources appears poised to grow fiercer while potentially providing a fulcrum for groups like IS or international criminal networks. The practice of extortion or taxation of development projects and supply contracts had at least four negative effect: (1) funding the Taliban and their affiliates, (2) encouraging alienated men to join the insurgency for easy money, (3) lowering the quality of projects executed, and (4) blurring the clear separation of sides to the conflict.

Electricity bills, telecommunications, mineral extraction, and extortion and theft

The Taliban deny outright theft and extortion, but many of our respondents say both occur at various levels and in different forms. The group does not always demand cash from the drug lords and wealthy businessmen. Rather, in return for their

protection and provision of government-like services, including the settlement of legal disputes, locally powerful patrons are asked to provide material resources, often items that require a complicated importation process that is beyond the means of many Taliban. Items requested include vehicles of all kinds, communications technology, weapons, medicine, and food. Such supplies, while required, also help to avoid the appearance of being overly driven by money. The Taliban tax villagers in a wide variety of circumstances. In Greshk district people explain that Taliban sometimes levy special taxes on households as they plan large-scale operations, in an amount between AFN4,000 to 5,000 (Afghanis) per household. Similarly, a vaccination manager working for the department of public health in a district of Helmand said that Taliban have asked him to pay AFN10,000 every month as part of a pension-like payment to the family of a Taliban fighter who was from the same village and was killed in a battle with Afghan National Security Forces. This government employee explains that he cannot continue his job without making payments.

Apart from those already discussed, there are additional funding sources for the Taliban. These tend to be less systemic, less lucrative, and more location specific. They include the collection of electricity bills, holding the functioning of telecommunications towers hostage to payment, the extraction of minerals, cross-border smuggling, and theft. In Kajaki district of Helmand, the Taliban have been known to collect electricity bills and people are said to be happy with these charges as they are less than actual usage fees. Telecommunications antennas are allowed to stand if Taliban are paid. Similarly, people hired to watch the antennas are often introduced by the Taliban or else the towers are subject to attack. Antenna guards are said to occasionally plant IEDs for the Taliban, without easy detection.

Afghanistan is estimated to have mineral reserves valued at USD3 trillion. Helmand and Herat have highly prized marble; in addition, Helmand has brown, white, and green onyx—the most expensive marbles found in Afghanistan. In Helmand province, as in other parts of the country, regions rich in minerals often fall under Taliban control. However, in many instances where advanced machinery and skilled labor are required, the Taliban and local communities extract resources inefficiently, employing crude and destructive methods to obtain a variety of precious and semi-precious stones, including marble. A government official in Helmand we interviewed listed marble as one of the reasons for continued insurgency in some regions. He explained that locals take up weapons and join insurgents to create insecurity so that smuggling can be conducted without government intervention. Others complain about Pakistanis who illegally cross the border to extract the marble and leave behind wreckage when their activities are finished. Unlike the criminal practices described—that is, drug production, protection money, or extortion—mineral extraction, bill collection, and the taxation of local businesses are income sources that should benefit the Afghan government once wrested from Taliban influence.[14]

The evolution of insurgency in a war economy[15]

In the 1990s, the Taliban emerged from civil war promising peace, the rule of law, and Islamic governance. Afghanistan was then divided into rival *mujahideen* fiefdoms, with extortion, road taxes, and civil disorder rampant and battle lines drawn through urban centers. Initially the movement received wide support, as their success reining in the impunity of regional warlords and curtailing widespread criminal predation brought relative stability. The movement claimed to act in the name of nation and Islam, although their conservative cultural edicts and enforcement methods were troubling, especially when viewed from outside the country. At this first stage, the Taliban nevertheless were accorded a degree of moral authority, as the best of the available alternatives and as defender of those victimized by unscrupulous warlords.

In 2001, the U.S. quickly forced the Taliban from power. Many returned to homes in rural villages, while some settled in Pakistan. But over time, sidelined and often provoked by warlords-turned-government-officials, now backed by international actors, a resistance movement slowly took shape. One interviewee, a former deputy minister during the Taliban regime, told us: "The mistake Afghan government made was not engaging the Taliban in the new government; they felt isolated. Those Taliban that continued to fight used government abuse and disrespect as an opportunity to attract the former Taliban and inspire them to start opposition." As former Taliban began to take up arms, a new, younger generation—often those excluded from the resources visibly flooding the country and frustrated by government corruption and patronage networks—slowly joined the senior leaders. As this second stage took shape, the movement reemerged fueled by a combination of resentment, grievance, and revenge. The struggle to reclaim control of the government was a somewhat secondary motivation.

The years 2005 to 2006 mark a turning point. The Taliban escalated attacks and increased their territorial ambitions. International forces and reconstruction assistance responded with a "surge" that peaked between 2009 and 2011, in an effort to reassert control over contentious districts and win over wavering Afghan "hearts and minds." In areas where the Taliban succeeded to carve out territory beyond government

control, poppy production and a host of illicit economic practices grew highly profitable. At the same time, the Taliban learned to tax and extort the unprecedented volume of international resources flowing across the countryside, while colluding with influential actors who had ties with both insurgents and the government. As the conflict lingered, vulnerable segments of Afghan society became uncertain about whether the Taliban or the Afghan government would ultimately prevail, while the Taliban clearly held the greater monopoly on indiscriminate or vengeful violence. In this third stage of the movement's evolution, financial incentives and basic human security became motivations for association. Ideological, political, or governance objectives became increasingly secondary concerns, with the exception of some senior leaders and radicalized participants.

Conclusion

Our research finds the Taliban at the center of a crime-insurgency-terror nexus: Criminal activities made possible by the political circumstances of a war economy, supported by a relatively small number of genuine anti-state actors, use a variety of tactics, including attacks aimed at spreading terror and intimidation, to deadly effect. The Taliban are an indigenous response to Afghan political history, an early inspiration for a global rise in a violent *jihadi* movement, and a by-product of an insufficiently planned Western effort to fight a "war on terror" without an adequate grasp of Afghan realities. The movement now more closely resembles a criminal franchise than a political enterprise, a loose collection of rank and file insurgent groups who ostensibly submit to the movement's authority for as long as they continue to see financial benefit. The senior Taliban leadership maintains many of the same claims they have for the past two decades, to be defenders of Islam, nation, and communities against threats that are now both foreign and local. But most of the rank and file profit from insurgency and insecurity, a reality both international actors and the Taliban leadership seem unprepared to acknowledge.

As Afghanistan enters its next decade, stabilization efforts must identify appropriate and internationally coordinated responses to a mix of destabilizing elements. While negotiations with the Taliban leadership are a welcome and necessary first step to ending the conflict, they are not sufficient. Peace talks should occur simultaneously with an effort to disrupt criminal networks and to establish legal economic alternatives. Anti-corruption practices, new national and international drug policies, effective, locally-specific economic and agricultural programs, creative approaches to researching and combating violent *jihadi* groups and criminal enterprises—to name some of the issues this research draws attention to—must accompany peace negotiations, based on a realistic assessment of ground realities and a long-term vision. By nearly all social and quality of life indicators, e.g., health facilities, educational enrollment, life expectancy, infant mortality, the country is in fact vastly better off than it was 14 years ago. Yet important challenges remain and need to be honestly assessed, more in terms of the changing contexts of a violent conflict and evolving local and geopolitical circumstances and less in terms of the professional interests of Western officials and the desired outcomes and time frames of international organizations. We conclude by summarizing a few basic observations and recommendations.

Development assistance in the countryside is becoming substantially reduced, while the Afghan government remains dependent on international funds for the foreseeable future. The withdrawal of international troops removes both an income source and ideological motivation, that, coupled with the cover- up of Mullah Omar's death over the past two years and the leadership crisis that has ensued, leave the movement's political foundations shaky. Mullah Akhtar Muhammad Mansur, Mullah Omar's successor, is as yet an untested leader. Although reportedly interested in peace negotiations, his long-term objectives are as yet unclear.[16] As the new Taliban leadership establishes itself, a disillusioned rank and file contending with political and economic uncertainty, war fatigue, and new geopolitical configurations of *jihadi* groups—most notably IS—all could contribute to an interest in negotiations with Kabul. However, an overly abrupt political agreement with the Taliban leadership, one that does not begin to address the political-economic circumstances of the countryside and the futures of today's foot soldiers, might result in IS filling a power vacuum. If enough Taliban refused to follow their leadership into a negotiation process, IS could recruit some of them, based on both ideological and financial incentives, while allowing farmers to grow poppy, and connecting locally sourced products—especially poppy, but also minerals, antiquities, and smuggled commodities—to international markets far more effectively than the Taliban have.

Political negotiations with the Taliban leadership should include finding solutions to the practices outlined above, most substantially to seek Taliban assistance in reining in the production of poppy, and generally helping the government to revert the wartime economy to a productive, legal, taxable, and sustainable course. Otherwise, the Afghan government will have to take strong measures, supported by violence, to rein in these practices. Poppy farmers need viable economic alternatives, while big smugglers must be aggressively

confronted to the full extent of the law. A coordinated regional and international effort to lessen the demand of illegal opiates in Western countries and to intercept transnational smuggling routes, with particular attention paid to Afghan borders with Central Asia and Iran, will help mitigate the problem. Similarly, mineral resources and other illegally smuggled goods should be kept out of black markets by creating internationally recognized restrictions on their illegal export, and clear, verifiable mechanisms for their efficient extraction and transport into international markets. As many have argued, Afghanistan has tremendous potential to become a regional economic and transport hub, connecting energy-rich Central Asia to power hungry South Asia, even to western China, to Iran, and to warm-water ports on the Indian ocean. Materializing the economic potential of the region is an essential component to combat the present state of insurgency, especially for the rural, impoverished Afghan countryside, where an entrenched war economy has become the greatest incentive for association with the Taliban.

Notes

1. See, e.g., Peters (2009a); Makarenko (2012); Felbab-Brown (2013); Chayes (2015).

2. The Taliban *layha* (code of conduct) contains a description of mechanisms designed to prevent financial abuses; see Clark (2011).

3. Continuing uncertainty: Felbab-Brown (2013). Ground realities: SIGAR (2015).

4. Widespread corruption: Malkasian (2013).

5. 90 percent of world's opium: SIGAR (2014b); percent of GDP: AREU (2014).

6. Recent report: UNODC (2014). U.S. expenditure: Stancati (2014).

7. Sopko quote: SIGAR (2014a). Widely acknowledged: Peters (2009a); Malkasian (2013); Chayes (2015).

8. Mexico and Colombia: Petrich (2013). UNODC/World Bank report: See Buddenberg and Byrd (2006).

9. One observer: Peters (2009b).

10. Reports regarding warehouses: Malkasian (2013).

11. Former foreign minister: See Bashir (2014).

12. To finance *jihad*: Mission Islam (n/d); Malkasian (2013).

13. Publicly documented: Roston (2009); U.S. House (2010).

14. USD3 trillion worth of mineral reserves: Najafizada (2011).

15. This section is a further development of Weir and Azamy (2014).

16. Azamy (2015).

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