

Understanding the Security, Aid and Development Nexus in Civil Conflict: Balancing Belligerents or Feeding the Beast?

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The efforts of men are utilized in two different ways: they are directed to the production or transformation of economic goods, or else to the appropriation of goods produced by others.

Vilfredo Pareto

Cry havoc and let slip the dogs of war.

Shakespeare, Henry IV

Abstract

Recurring civil conflicts are the dominant form of violent armed conflict in the world today. The international community has responded with increased levels of peacekeeping and aid interventions. However, the research and policy communities lack robust understanding of causal mechanisms for how these interventions affect conflict recurrence and persistence. Empirically derived reference behaviors for persistent conflict suggest that feedback loops between peacekeeping, aid, and development interventions that have been largely ignored by the research community may, in fact, dominate system behaviors that perpetuate conflict. A simple model structure is presented that integrates theories of conflict and peace building with cross-country statistical analysis of structural conflict risk factors and with insights from field interviews with military peacekeeping troops and humanitarian aid workers in the Somali conflict. In the model, balancing loops involving peace operations and belligerents interact with reinforcing loops involving humanitarian interventions and local capacity to generate distinct archetypes of conflict persistence. While suggestive of causal mechanisms, this analysis demonstrates the need for finer-grained (e.g., micro-level) data over longer time periods to fully understand how resources inserted into conflict by external actors exacerbate security and conflict risk and when they contribute to peace and stability.

For almost two decades, the rate of new onsets of armed civil conflicts has been declining worldwide. Several factors have been suggested to explain this decline: the reduction of “proxy” conflicts (common during the Cold War) involving military interventions by powerful states on opposing sides; a decrease in political ideology as driver of violence (also common during the Cold War); the growing number of consolidated democracies; increasing recognition by the international community of secession as a legitimate way to defuse ethnic conflict; more substantial efforts by the international community to address internal factors seen as root causes of civil conflicts; and the increasingly interventionist nature of peacekeeping and peacebuilding activities by international organizations (HSRP, 2006; Newman, 2009). At the same time, conflict persistence¹ has been increasing, with

¹ As used here, the term *conflict persistence* refers to violent, armed conflict between the same actors over the same issue for long periods of time (e.g. ten years or more). This is similar to (but more specific than) the

repeated cycles of violence and recurring civil wars the dominant form of armed conflict in the world today (Backer, Wilkenfeld, & Huth, 2014; Cliffe & Roberts, 2011). Of 94 different conflicts that became active between 2000 and 2013, 65 were recurrences of past episodes. As a result, even as conflict terminations have increased, the overall number of ongoing civil conflicts in the world has not decreased at a commensurate level (Figure 1), while the number of uniformed personnel involved in peace operations surged to over 100,000 in 2014.² Between 2003-2005, these conflicts affected more than one billion people and resulted in an estimated \$270 billion in direct and spillover economic costs (*Human Security Report 2009-2010: The Causes of Peace and the Shrinking Costs of War*, 2011). Development aid to countries experiencing recurring conflict increased steadily in response, accounting for approximately 20% of all aid worldwide in 2014.³

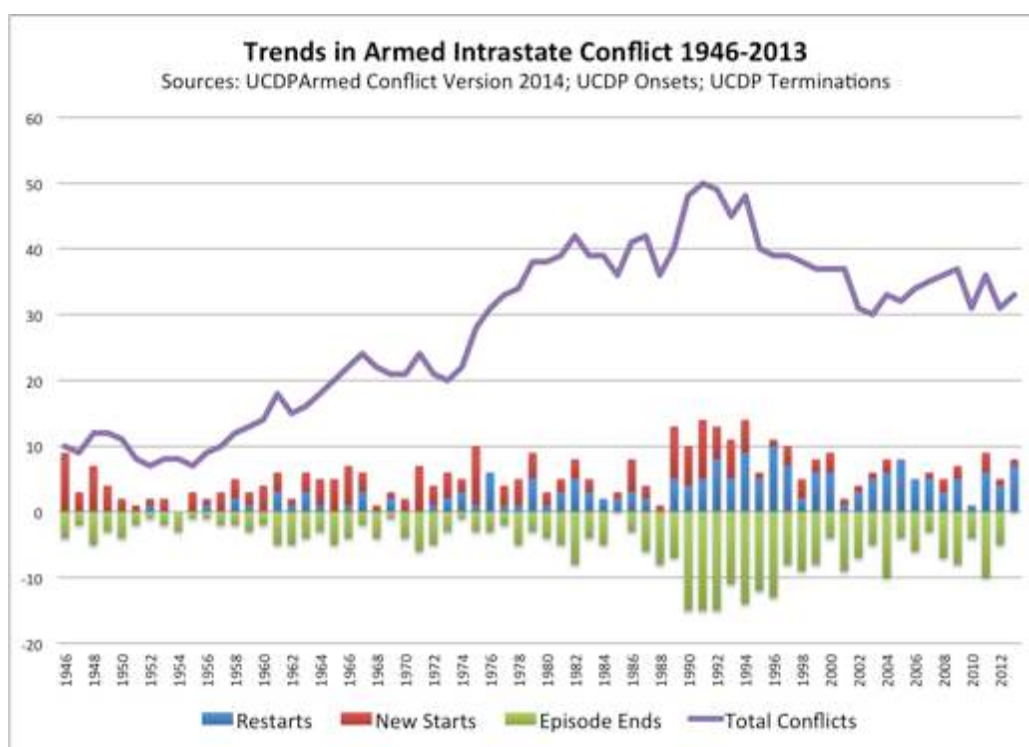


Figure 1 Armed Intrastate Conflict New Starts, Restarts, and Terminations 1946-2013

Persistent armed intrastate civil conflicts present threats to global security interests that raise difficult policy questions of when and how third party interventions achieve their objectives -- considering normative, material, economic, and political factors. In recent years, scholarly research has improved understanding of the macro-level conditions under which political instability is likely to break out, the dynamics of conflict escalation due to repression and instrumental violence, and the factors that impact conflict duration and termination. However, the ability to accurately predict where and when political

definition used in the Human Security Report 2012, which defines a persistent conflict as “one that involves many years of fighting.” (HSRP, 2012)

² Data sources: Providingforpeacekeeping.org (Perry & Smith, 2013) and (Bellamy & Williams, 2015)

³Data source: Aiddata.org (Tierney et al., 2011)

instability will erupt into violent civil conflict, and what policies will be most effective to prevent conflict, are elusive goals of both academic and policy communities. In recent years, more than 200 independent variables have been quantitatively explored in the literature using large-N, cross-country comparative statistical analyses to improve understanding of the conditions that pose the highest risk of political instability and onset of armed civil conflict. There is some degree of consensus on the significance of fewer than thirty of these variables, and a high degree of consensus on no more than seven (Dixon, 2009; Sambanis, 2002). Discrepancies and inconsistencies around contested variables are most commonly attributed to different theoretical frameworks, data limitations, lack of methods for exploring complex interaction effects between variables, different methods used to operationalize measurements, and scaling effects (Buhaug & Lujala, 2005; Collier & Hoeffler, 2001; Dixon, 2009; Hirshleifer, 2001; Sambanis, 2002).

At the country level, highest risk of political instability and conflict onset is generally agreed to be strongly and positively correlated to conditions of poverty coupled with a large population, economic contraction, weak government institutions and infrastructures, heavy reliance of the export sector on primary commodities, political change, and a recent history of armed conflict (Collier & Hoeffler, 2004, 2005; Collier, Hoeffler, & Sambanis, 2005; Collier & Sambanis, 2005; Dixon, 2009; Fearon, 2005; Gates, Hegre, Jones, & Strand, 2006; Goldstone et al., 2010; Ross, 2006). The convergence of these factors in civil war typically results in a prolonged process that has been called “development in reverse” that traps low income countries in persistent conflict. The theoretical explanation is that war retards development, and development retards war; the resulting double causation gives rise to “virtuous and vicious circles”. Low incomes and economic contraction reduce government capacity, purchasing power of civilians, and contribute to tensions that sustain the civil war. Civil war, in turn, destroys infrastructure and increases risk to foreign investors, reducing economic growth opportunities (and hence the opportunity cost of war) even more. In contrast, elite privilege and financial gains by rent-seeking leaders of combatant organizations – often associated with civil war – increase and thereby exacerbate pre-existing grievances resulting in more support for belligerents (Hirshleifer, 2001; Paul Collier, 2003).

The causal loop diagram shown in Figure 2, based on the Collier-Hoffman model of civil war onset, Goldstone model of political instability, and the Conflict Trap, illustrates the theoretical assumptions of underlying mechanisms for how these risk factors are interrelated to sustain conflict. Key stocks in this model are societal resources – which can be used for either productive or destructive endeavors, economic development, human security, and violence. In this model, if productivity payoffs exceed war pay offs, there will be no civil war. Factors that decrease productivity payoff include inequalities that lower human security and opportunity costs of war for marginalized groups, reduced spending of GDP on for social services, and increased rates of elite capture and government corruption. War pay off increases for belligerents who are able to capitalize on the reduced opportunity costs of war (and thereby attract supporters), while increasing their capture of societal resources and conduct of illegal activities to build and sustain capabilities. Once civil war has started, the ensuing violence drives large population displacements (due to death, disease, and loss of property), thereby further degrading productivity payoff and

human security. If the war pay-off loop is weakened through interventions, and more societal resources are returned to supporting production rather than conflict capabilities, recurring civil war is more likely than the original risk of conflict, due to the long delays (e.g., often ten years or more) in reconstituting production capabilities, economic development, and human security (measured as infant mortality rates and disease).

1. Structural development factors invariably introduce new risks of intrastate conflict - although the patterns are different depending on context.
2. At country level, political uncertainty and instability emerge as causes rather than consequences of development failures and insecurity (and therefore provide a key to their remedy). There is a security-politics-development nexus that is highly context specific.
3. External factors, both regional and international, have such influence that country level factors alone cannot explain conflict and development nor provide solutions .

Figure 2 Causal loop diagram of key factors and economic mechanisms sustaining conflict

There is a gap in understanding these conflict dynamics at the micro-level, and how those dynamics interact with interventions at the sub-national level to effect macro-level conflict dynamics. The lack of understanding is evidenced by two disturbing trends regarding civil conflict: (1) today's civil conflicts last longer than in the past and result in higher deficits in human security;⁴ and (2) today's civil conflicts are increasingly likely to re-occur after wars stop - with around half of civil wars being due to post-conflict relapses. Present-day examples can be found across multiple continents and diverse geo-political and conflict settings that include Myanmar (Burma), India, Pakistan, Thailand, the Philippines, Iraq, Afghanistan, Mali, South Sudan, Yemen, Central African Republic, the DRC, Nigeria, and Somalia.

The System Dynamic community has long held an interest in developing models to study the dynamics of state stability and civil conflict such as those mentioned above (Anderson, 2007, 2011; Choucri et al., 2007; Coyle, 1998, 1999; Díaz, 2008). Most of these models treat civil conflict as a rebellion or an insurgency, focusing on competitive relationships between opposing forces for generating capabilities to sustain violence (Figure 3). Regional and international actors are treated as exogenous variables. However, as the cases discussed above demonstrate, once these external actors become involved in conflict, they become endogenous to the system and part of the resource base to impact resiliency of civilians, government, and rebels alike (Strandow, 2014).

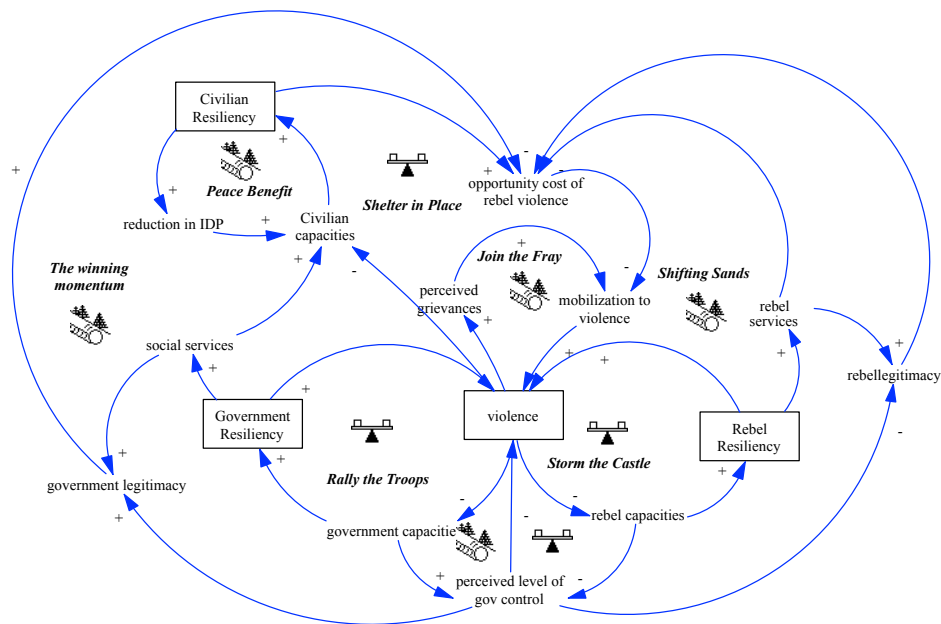


Figure 3 A Representative Causal Loop Diagram of Insurgencies

⁴ Human security concerns the protection and wellbeing of individuals and communities, in contrast to more traditional security concepts centered on protection of national territorial integrity and economic interests of the state (Gomez & Gaspar, 2013; Reveron & Mahoney-Norris, 2011). The human security concept includes chronic stressors, such as hunger and poverty, as well as disruptive violent events.

In previous work, I introduced a theoretically grounded approach combining individual agency to the system-level dynamics model in Figure 3 for exploring impact of interventions on resiliency of belligerents in civil conflict (Hayden, 2014). This model, which builds on structures from previous research by the system dynamics community on insurgencies and rebellion, focuses on individual agency and the supply of combatants necessary to rebellion (Figure 4). The primary mechanisms influencing recruitment in this model are exploitation of grievances by government opponents, perceptions of government resilience, and appeasement (by government) of dissidents. The difference between this model and others is the depletion of the population feeding the pool of potential dissidents through displacement, which can be more than 50% of the average population, and even higher locally.

The remainder of this paper describes empirical analysis conducted to assess the representativeness of the conceptual models in Figures 1-3. First, I describe quantitative analysis of macro-level conflict event data trends in Africa over a twenty-five year period. The reference behaviors revealed by the quantitative analysis suggests different structural features dominate conflict behaviors in different contexts. Secondly, I describe in-depth, micro-level qualitative research conducted through field interviews in East Africa to explore structural features driving the conflict in Somalia through narratives.

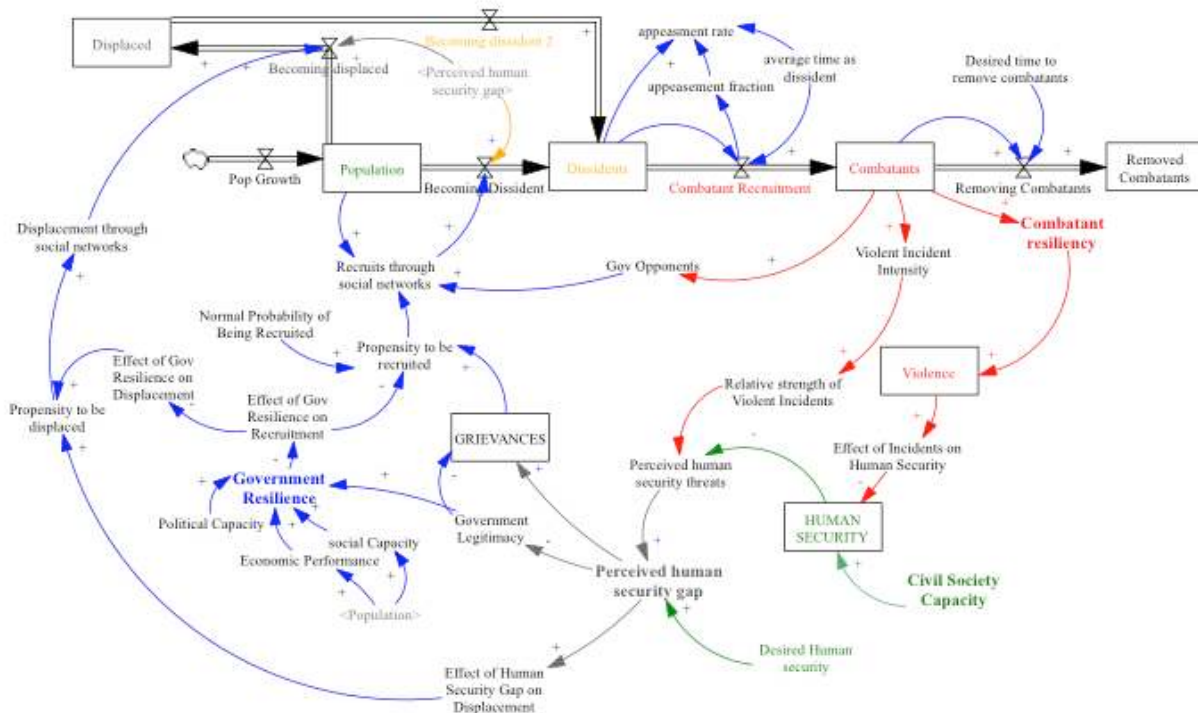


Figure 4 Causal Loop diagram of civil conflict contains endogenous variables linked to individual agency sub-modules simulated through agent based modeling.

Quantitative Analysis

Data on violent events/year in 38 different persistent conflicts in 33 African countries from 1989-2014 exhibit reference behaviors characteristic of system dynamics.⁵ Reference Behavior A, Overshoot and Collapse, is illustrated by the conflict in Sierra Leone, where a steep rise in violent events/year peaks over a period of 1-3 years, and is followed by logarithmically decreasing count over a period of at least ten years (Figure 5). Other conflicts in this category during this time period are Angola, Liberia, South Africa, Namibia, Eritrea, Kenya (political), Burundi, and Rwanda.⁶ Reference Behavior B is a highly damped response to an impulse function. An example is Mali, which experienced a sudden increase in conflict in 2011 when arms from the conflict in Libya flooded the northern sector where Al Qaeda in the Islamic Maghreb was active (Figure 6). Troops from France responded very quickly to contain the outbreak. Other countries in this category are Lesotho, Guinea-Bissau, the Republic of Congo, and the conflict with the Seleka coalition in the Central African Republic.

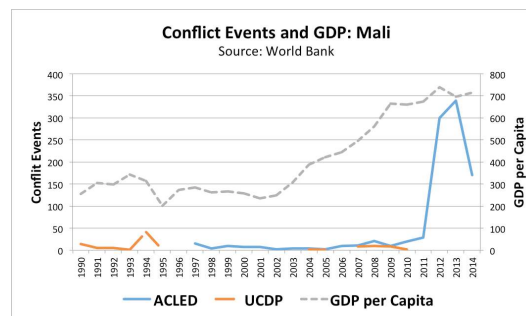
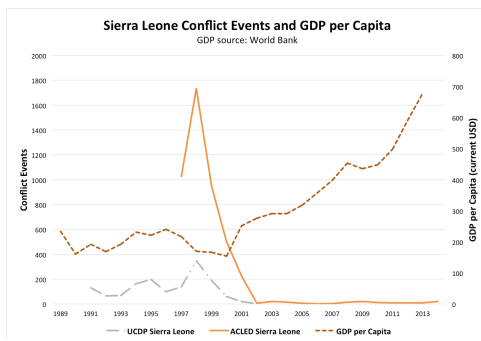


Figure 6: Reference Behavior B - Damped Impulse

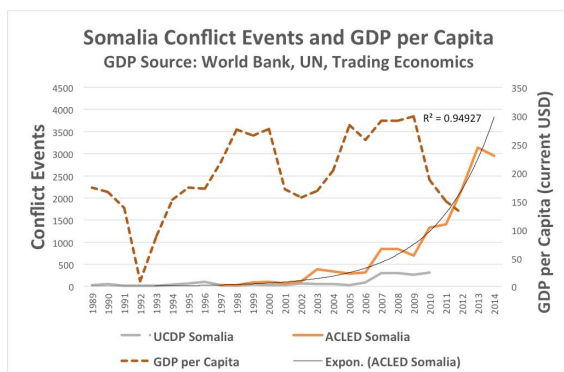


Figure 7 Reference Behavior C -Exponential Growth

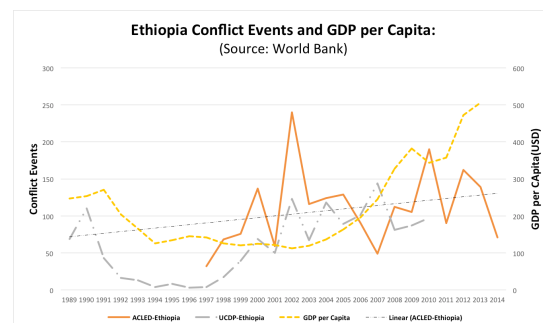


Figure 8 Reference Behavior D - Oscillations

Reference Behavior C, exponential growth, is exhibited by Somalia, where a relatively slow build-up in the number of violent events/year occurs over a period of up to ten years, followed

⁵ Data is from the Armed Conflict Location and Event Dataset (ACLED) and from the Uppsala Conflict Data Project (UCDP/PRIO).

⁶ In Rwanda, a second cycle of Behavior 2 is observed at year 11 post-conflict, when a secondary steep rise is observed, immediately followed by another logarithmically decreasing collapse in number of violent events.

by a rapid and steep rise in counts (Figure 7). Other countries in this category during the same time period are Nigeria (Boko Haram), Sudan, Mozambique, Cameroon, Sudan, Gabon, the Democratic Republic of the Congo, Mauritania, and Burkina Faso. Reference Behavior D, Oscillations about a Mean, is exhibited by the conflict in Ethiopia, where the number of violent events oscillates significantly over a period of more than 15 years (Figure 8). Other countries in this category during this time period are the Ivory Coast, Nigeria (political), Algeria, Guinea, Kenya (ethnic), Central African Republic (political), Senegal, Zimbabwe, and Uganda.

It is critical to understand how multiple system level factors explain outcomes in terms of these different reference behaviors, and what that means in terms of likelihood of conflict persistence and/or recurrence. The reference behaviors are driven by structures involving endogenous causal loops within countries, regional feedback loops, and feedback loops introduced by interventions of the international community that can be quite complex. However, the fact that the conflicts studied exhibit these four reference behaviors suggests that their structures can be simplified to the most dominant mechanisms associated with their respective reference behavior. Reference Behavior A obtains from situations dominated by consumption of the capacity to engage in conflict at unsustainable rates, with no replenishment, leading to collapse of violence. Reference Behavior B emerges from structures that experience a surge in capacity for violence, but the capacity is prevented from moving through the system by a dominant balancing loop with little to no delays. Reference Behavior C emerges from structures dominated by positive feedback loop with no apparent limitation on capacity for violence or significant balancing loops. Reference Behavior D obtains from situations in which capacity for violence is sustained in the presence of balancing loops with delays.

Most conflicts exhibiting Reference Behavior A appear to be in a state of stable peace, which may be a result of structural adjustments that shift the use of resources to predominantly productive capabilities, rather than destructive. An example is Sierra Leone, where civil war prior was fueled for many years by trade in diamonds. The most recent war in Sierra Leone, triggered by a coup d'état in 1997, was declared over in 2002, in part due to international sanctions to reduce the illegal diamond trade, accompanied by deployment of more than 17,000 UN peacekeeping troops.⁷ Sierra Leone has since experienced relative peace and stability, as well as substantial economic growth, as shown by the steady rise in GDP per capita since the end of violence (Figure 5). In contrast, conflicts exhibiting Reference behavior B are at risk of recurrence, depending on the power of the damping function over time. Examples of conflicts where violence was originally damped but has seen recent recurrences are the Republic of the Congo and South Africa.

Reference Behaviors C and D illustrate cases of persistent conflict. The resources to sustain conflict in Somalia have varied over the past twenty-five years, with different roles played by the international community. Conflict events escalated significantly from 2011 – 2012 when the African Union Mission in Somalia (AMISOM) successfully dislodged Al Shabaab from the

⁷ UN peacekeeping troop buildup in Sierra Leone was incremental, beginning with 6,000 in 1998, increasing to 11,000 in February 2000 (UN Security Council Resolution 1289), to 13,000 in May 2000, and peaking at 17,500 in March 2001. <http://www.un.org/en/peacekeeping/missions/past/unamsil/background.html>

power base it had held in Mogadishu since 2006.⁸ At the same time, Kenyan troops entered Somalia to attack Al Shabaab rebels accused of kidnapping foreigners on Kenyan soil.⁹ AMISOM presence in Somalia has since increased, driving Al Shabaab out of other strongholds, and a fragile federal government has been installed in Mogadishu supported by the international community. Yet even so, violent events have continued to increase exponentially, as dynamics between other international (e.g., development and humanitarian aid workers), regional (e.g., peacekeeping troops) and local actors (e.g., politicians and war lords) continue to fuel new and old conflicts, and Al Shabaab resorts to terror tactics.

Like Somalia, Ethiopia has a long history of corruption and civil war that is impacted significantly by regional actors. However, in contrast to Somalia, the civil wars have been driven by secessionist goals rather than competition for consolidation of national power. The federal government in Ethiopia has resisted defeat or concessions in the case of the Ogaden region (made up primarily of Somalis) but has made concessions in the conflict with Eritrea.

The existence of these four patterns of conflict event frequency raise questions about existing explanations for conflict persistence, which are based primarily on cross-country, econometric studies or comparative case studies. Namely, are the observed behavior trends explained by country and conflict characteristics that existing theories associate with conflict risk and duration? If not, what are alternative or supplemental explanations? To explore these questions, I tested the following hypotheses:

H1: Observed behavior patterns of conflict persistence can be explained by country characteristics associated with conflict risk and duration (modified Collier-Hoeffler conflict trap): *economic contraction, state capacity, state reliance on commodity exports, state reach, poverty, social polarization and political exclusion.*

H2: Observed behavior patterns of conflict persistence can be explained by conflict characteristics: *type of conflict, history of conflict, fungible resources accessible to belligerents; number and types of belligerents.*

H3: Observed behavior patterns of conflict persistence can be explained by interactions between belligerents, peace operations, and humanitarian interventions.

⁸ There was also a massive famine in 2011, brought on in part by the previous years of conflict that resulted in massive displacements.

⁹ For a timeline of the conflict in Somalia, see <http://www.bbc.com/news/world-africa-14094503>. AMISOM is a regional peacekeeping mission operated by the African Union with the approval of the United Nations. The African Union's Peace and Security Council created it in 2007 with an initial six-month mandate that has been subsequently extended and expanded to 22,000 troops as of 2014. Original troop contributing countries Uganda and Burundi were joined by Ethiopia in 2014 (<http://amisom-au.org/2014/01/ethiopian-troops-formally-join-amisom-peacekeepers-in-somalia/>), Kenya in 2012 (<http://amisom-au.org/kenya-kdf/>), and Djibouti in 2011 (<http://amisom-au.org/djibouti/>). Troops from Sierra Leone joined AMISOM in 2013 (<http://english.cntv.cn/program/newsupdate/20130402/100693.shtml>) but were called home in 2014 due to the Ebola crisis.

If true, H3 suggests the following corollary:

H3 Corollary: Observed behavior patterns of conflict persistence result from local level interactions between aid, belligerents, and peacekeeping forces:

- *Interventions that amplify otherwise low state reach and capacity, and widen the goal-gap for belligerents, lead to exponential growth.*
- *Overshoot and collapse results from initially high levels of reach and capacity of belligerents that are quickly exhausted (low aid) or damped (high peacekeeping).*
- *Moderate state reach, belligerent capacity, and goal-gaps result in widely oscillating conflict patterns. Moderate to high levels of neutral aid attenuate conflict, especially in areas of low state reach where peacekeeping troops tend to concentrate.*

Using reference behavior of conflict persistence as the dependent variable, I test Hypotheses 1, 2, and 3 using multinomial and binomial logit regression analysis for the explanatory power of combinations of independent variables from three categories: country level risk factors, conflict characteristics, and third party interventions. Country level risk factors are averaged over the time period between 1989 and 2014, and include average GDP per capita, GDP growth, population size, land mass, population density, percent urban population, percent of GDP dependent on export of natural resources (e.g., oil, minerals), government reach, inequality and depth of poverty. Government reach is approximated by road density and access to electricity; inequality is measured by the GINI index; depth of poverty is measured as the mean GDP per capita of the lowest decile.¹⁰ Conflict characteristics tested are number of belligerents, type of conflict (territorial or political), previous history of conflict, war on borders, involvement of religious extremists and/or ethnic factions, and the number of other ongoing conflicts in the country during the same time period. Intervention variables tested are the amount of aid, the presence of peacekeeping forces (differentiated as UN, regional, or ad hoc coalitions), the duration of peacekeeping missions, and the existence of peace agreements or negotiated settlements.

Due to the limited sample size, tests were conducted progressively, first assessing the explanatory power of factors within each of the categories in isolation from other categories; then testing the explanatory power of models that combined statistically significant variables from each category. Results for the most statistically significant variables are shown in Table 1. In Table 1, the default reference behavior is type C. Factors tested but not shown to be statistically significant in explaining deviations from the reference behavior are marked with an “x”. Where a factor is statistically significant for explaining deviation from the default reference behavior, the alternative behavior type, coefficient and standard deviation are shown.

Not surprisingly, Models A and B show that factors associated with conflict risk are insufficient by themselves to explain the patterns of conflict persistence. This is consistent the literature on durations of conflict. The results in Model G, which control for both onset

¹⁰ Governance factors such as corruption, transparency, and polity are not included, as the data does not support sufficient differentiation among the cases.

risk factors and subsequent conflict characteristics, weakly support theories that give preference to state reach (as measured by urban population) and two conflict characteristics –number of belligerents and existence of a war on the border - over economic factors in explaining conflict reference behaviors. The explanatory power of state reach is consistent with research showing the dependence of conflict duration on state capacity to achieve a victory e.g., (de Rouen & Sobek, 2004; Holtermann, 2012). The correlation with the number of belligerents and existence of border wars is consistent with research that attributes war duration to the difficulty of reaching negotiated settlements e.g., (Fearon, 2004; Hegre, 2004). The results do not support reliance on commodity exports, economic contraction, or poverty as explanans for patterns of conflict persistence. Taken together, Models A, B, and G (as well as other models tested) fail to support Hypothesis 1 and partially support Hypothesis 2.

Table 1 Multinomial Logit Regression Models of Correlation Between Conflict Risk Factors and Characteristics, Interventions and Conflict Persistence Reference Behaviors¹¹

Correlation Between Onset Risk, Conflict and Intervention Factors and Reference Behaviors A, B, C, D								
	Onset Risk Factors		Conflict Factors + State Reach	Intervention Factors	Intervention + Conflict Factors	Intervention + Conflict Factors + Deprivation		
	Model A	Model B	Model G	Model T	Model W	Model S	Model U	Model V
Country Factors								
GDP Per Capita	X							
GDP GROWTH	X	x						
Average POPULATION	x							
State reach: %URBAN POPULATION		x	B**[.05, .03]					
VAR URBAN POPULATION			B**[.26, .12]					
% OIL COMMODITY EXPORTS/GDP	X							
Depth of poverty		x				x	A* [.002, .001]	x
<i>tested but fail to show significance: population density, land mass, % GDP metal commodity exports; % GDP food exports/imports; inequality</i>								
Conflict Factors								
# BELLIGERENTS			B*[-.64, .34] C*[-.31, .17]		B*[-1.3, .8]	x	x	A*[-.59, .3] B**[-.83, .4]
WAR ON BORDER			A*[-1.9, .12] B***[8.7, 3.4]		A*[-2.3, 1.4]			
<i>tested but fail to show significance: type of conflict, religious extremism, history of conflict, ethnic factions</i>								
Intervention Factors								
TOTAL AID & DEVELOPMENT				A*[-.08, .04] B**[-.17, .09]	A**[-.07, .04] B*[-.16, .09]	A*[-.08, .04]; B**[-.17, .09]	A*[-.07, .04] B*[-.16, .09]	A*[-.07, .04] B*[-.17, .01]
UN PK MISSION MONTHS				x				
TOTAL NON-UN PK MISSION MONTHS					x		x	
TOTAL PK MISSION MONTHS						x		
PEACE AGREEMENTS/NEGOTIATED SETTLEMENTS								x
<i>tested but fail to show significance: # PK missions</i>								
Model strength								
MULTINOMIAL LOGIT REGRESSION W/ ROBUST S.E.								
PROB > CHI2	0.32	0.7	0.006	0.005	0.004	0.01	0.01	0.01
WALD CHI2	14	7	28	28	29	25	25	26
Degrees of Freedom	12	9	12	12	12	12	12	12
Log PSEUDO LIKELIHOOD	-44.6	-47	-36	-36	-34	-38	-36	-37
pseudo R2	0.13	0.09	0.3	0.27	0.3	0.25	0.26	0.26
NO. OBS	38	39	38	37	36	37	36	37

Models T, W, S, U, and V support Hypothesis 3, which tests interventions by third parties as explanans for the reference patterns of conflict persistence. Model T tests for the presence

¹¹ In Table 1, Reference Behavior A is overshoot and collapse, Reference Behavior B is damped impulse, Reference Behavior C is exponential growth, and Reference Behavior D is oscillations about a mean.

of international aid and peacekeeping forces alone, with no controls for either country level risk factors or conflict characteristics. Model W tests for the explanatory power of interventions when controlling for conflict characteristics; Models W, U, and V test for the explanatory power of interventions when controlling for both conflict characteristics and economic country risk factors. The most robust outcome from these models is the consistent role of aid for differentiating between reference behavior types. Depth of poverty, and number of belligerents are also shown to be statistically significant.

To better understand these statistical correlations, the data for aid, number of belligerents, and depth of poverty by reference behavior type are shown in Figures 9-11.¹² Higher numbers of belligerent groups are clearly associated with exponential growth (Figure 9). While extreme depth of poverty is evenly distributed between all four types of reference behaviors, higher income levels of the lowest decile are slightly more associated with exponential growth (Figure 10). Higher levels of aid are strongly associated with exponential growth, as well as oscillatory behavior – both of which result in more persistent conflict (Figure 11).

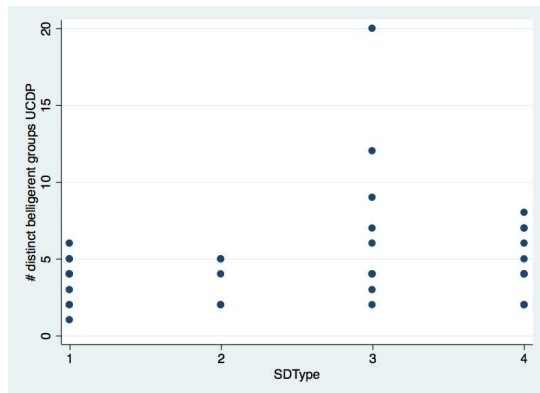


Figure 9 Number of Belligerents

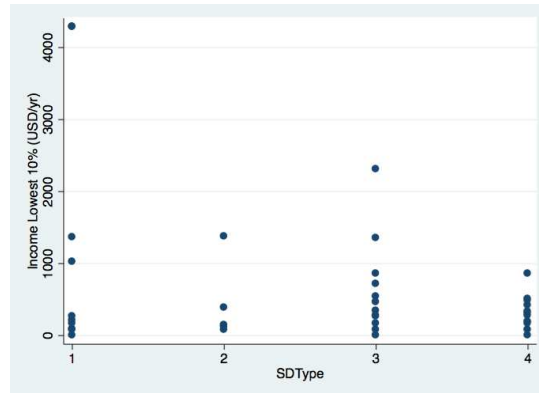


Figure 10 Income Level of Lowest Decile

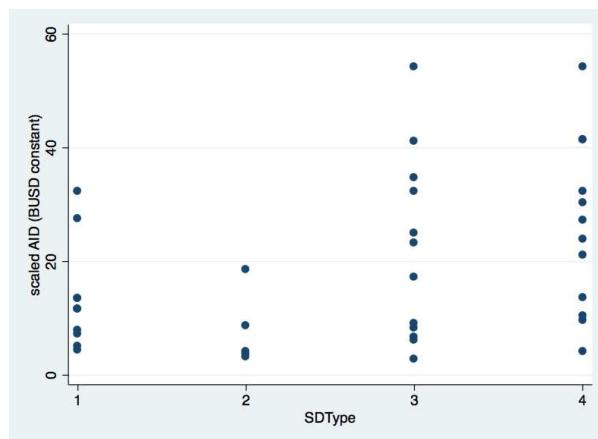


Figure 11 International Aid 1989-2014 (Billion USD)

¹² In Figures 8-10, SDType1 = Reference Behavior A, SDType2 = Reference Behavior B, SDType3 = Reference Behavior C, and SDType3= Reference Behavior D.

While the presence of peacekeeping forces are not statistically significant explanans for the different reference behaviors, the more robust models control for peacekeeping presence and duration in the models. Considered in the context of previous research findings, this analysis suggests that aid provides an alternate mechanism to those proposed in the Conflict Trap for a revenue source to sustain conflict. Reference Behaviors A and B may reflect low opportunity for predatory aid capture by belligerents combined with high damping through peace operations or government forces.

Qualitative Analysis

Fieldwork conducted in East Africa during the summer of 2014 provides a case study to test the assumptions of causal mechanisms for conflict persistence represented in the structures shown in Figures 2 -3, with emphasis on gathering data to understand mechanisms for testing Hypothesis 3 (and the Corollary) regarding the impact of aid and peacekeeping interventions on conflict dynamics. Structured interviews with over 75 government representatives, peacekeeping troops, aid workers, development specialists and scholars in seven different countries (Ethiopia, Uganda, Burundi, Kenya, Netherlands, Switzerland, United States) highlighted the critical need to include regional and international actors as endogenous to the system to explain local level dynamics in the Somali civil conflict. Specifically, these interviews suggested that (1) a key structure missing from the models in Figures 2 and 3, is a “peace entrepreneurial cycle” that may exacerbate conflict by siphoning off aid resources to support conflict capacities, which provides an additional motivation for perpetuating conflict, as it creates a market pull for aid resources, and (2) the emphasis on combatant recruitment through violence and propaganda may not be as important to conflict persistence as the potential for conflict to attract exploitable aid that is fought over.

One example was described by a twenty-year veteran in the home office of a major international Non Governmental Organization (NGO) whose mission is to feed those caught in the Conflict Trap. As shown in the Causal loop diagram in Figure 12, ongoing violence, fed by grievances due to human security gaps, further decreases human security (Feeding the Flames loop). NGOs introduce a balancing loop by providing external aid in response to perceived human security threats (Feeding the Needy Loop). However, humanitarian aid workers often contract with local leaders to provide physical security for food aid delivery. The specifics of these contracts are often “off the books” and/or kept confidential to protect the identities of those providing services in conflict settings. The NGO field workers do, however, require that all parties to the conflict be represented in the pool of security providers organized by the local leaders to ensure that the aid does not exacerbate tensions. As a result, all parties find a benefit in “cooperating” in this security arrangement as long as they are fairly and equally paid. Security incidents go down and food is delivered (Win-Win Loop). Eventually, however, the international organization’s home office sees that security incidents go down and determines that fewer resources need to be spent on security. The program manager in the field must bear the news to the local leader that funds have been cut and some people providing security will have to be let go. The result is either that local leaders (and community) instigate a few “security incidents” to create more of a demand for their services, or that old tensions are rekindled in competition for the jobs, which in turn create new security incidents (Food Fight Loop). The home office becomes alarmed; concerned that conflict will soon escalate, they bring field personnel home and put the aid program on hold

until further notice. In most cases, as human security continues to deteriorate, they are back within a year or so, with new field personnel and program managers at the home office who start the cycle all over again. In doing so, a local culture of entrepreneurship around the market for security drives predictable, episodic oscillations of low-level conflict. Depending on the relative strength of the Win-Win and Food Fight loops and length of delays, the entire Feeing the Needy loop may shift from a balancing to a snowball effect. This cycle has been known to last under the radar screen of the home office for decades, becoming an invisible local level driver in some persistent conflicts.

Another concern that emerged from field interviews involves the impact of “successful” peacemaking operations on the delivery of humanitarian aid in remote rural areas. In Somalia, AMISOM has been successful in liberating remote villages from rebels. As they have done so in recent operations, the regionally based peacekeepers advertise their plans to liberate the village well in advance to reduce the risk of civilian casualties (and thereby reduce risk of increasing local grievances). The rebels, anticipating that they will be outnumbered, retreat a day or two ahead of the troop advances rather than stay to put up a fight. In many cases, they threaten the local leaders to accompany them and take key resources from the villages. They only retreat “a little bit”, to just outside the reach of the troops into the bush. The troops then march into the village where they meet little to no resistance, but also little to no infrastructure for governance. The peacekeeping soldiers seek out the local leaders who are left, with whom they work to establish new systems for managing the peace, governance, and service delivery. Usually, this results in the creation of a new set of “gatekeepers”, who control the flow of services and resources as well as providing local physical security. These gatekeepers may have grievances of their own – being minority clans or persons of lower stature now elevated to unaccustomed positions of authority.

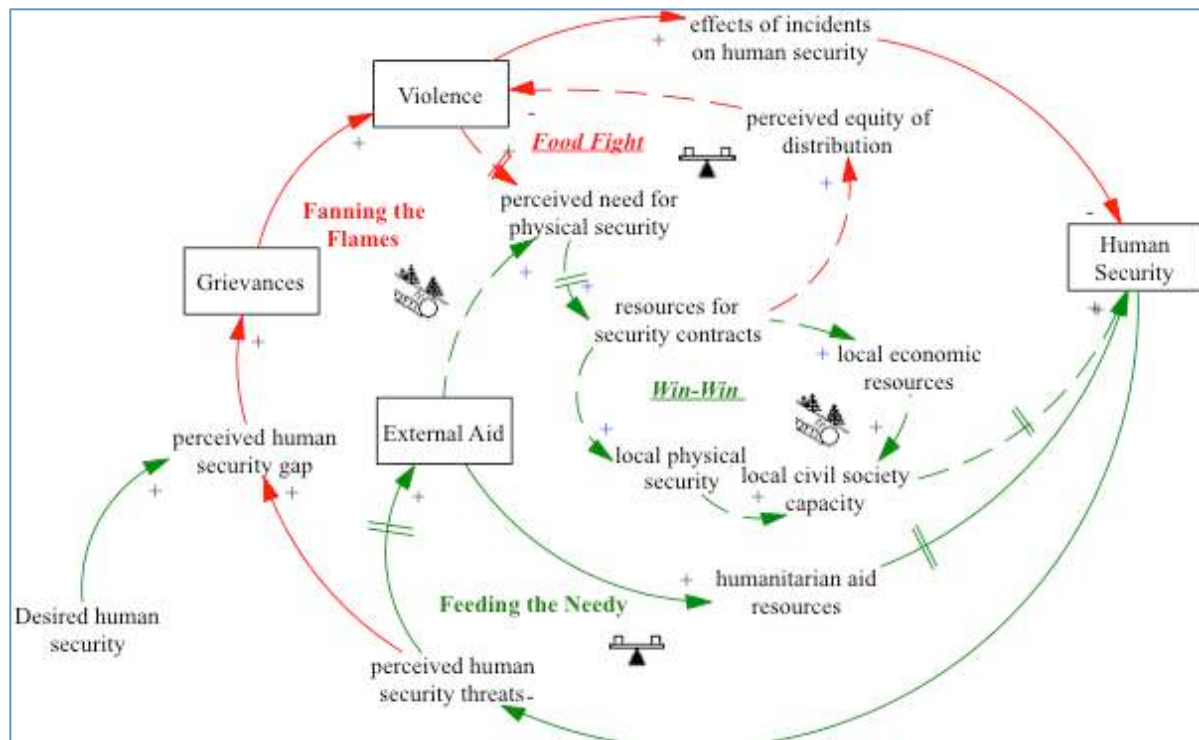


Figure 12 Causal Loop Diagrams of Aid and Conflict

Aid workers attempting to bring resources to the villages experience two new challenges. The first is the development of relationships with the new set of peace entrepreneurs, which usually involves some type of quid pro quo arrangement involving a distribution of resources. This is particularly difficult to do and maintain their principle of neutrality, as the new gatekeepers are clearly working with the peacemakers, who are not neutral. In addition, the rebels now control the roads, and are able to set up roadblocks to prevent supplies from reaching the villages without exacting a “tax” or and perhaps seize them for their own use. In both instances, aid resources may be significantly diverted.

Power struggles over the control of aid resources can arise among gatekeepers, creating more violence that feeds the Food Fight loop. Human security and resiliency of civilians and local government decrease in the villages as peacemakers move on to the next campaign, while people are left more or less confined to their village under conditions that are worse than they were before. This pattern has led to many instances of increased violence and deficits in human security in rural areas even as AMISOM has proclaimed increasing victories and liberations in the past two years, making stabilization operations a high priority. However, AMISOM has no mission for such operations; these are mandated to the UN, whose program has to date lagged behind the liberating advances of AMISOM, due to concerns of security and access.

Tensions between peacekeepers and aid workers can sometimes increase resiliency of rebels. The role of peacekeepers is to increase human security, which in theory should reduce the need for external aid. However, as described above, there is often a significant delay or impediment to the delivery of aid after “liberation” of a village by peacekeepers. Peacekeeping soldiers may share their rations and medical supplies with villagers as part of the “hearts and mind” battle. Slowly, as villagers come to trust the soldiers, they may inform about rebels who have melted

into the background and still control the roads. Humanitarian aid workers, must negotiate with those who control access to the roads into the villages from a position of strict neutrality that usually precludes collaboration with peacemakers yet accommodates negotiations with the rebels. In so doing, they fund the rebels to fight back against the peacemakers, who then have less to share with the villagers. This has the effect of increasing rebel resources available for conflict and potentially reducing human security of civilians, depending on the timing and level of resources delivered compared to those shared by the peacemakers. This dynamic appears to be consistent with data on aid, peacekeeping, and conflict in Somalia (Figure 13), but requires micro-level data to substantiate.

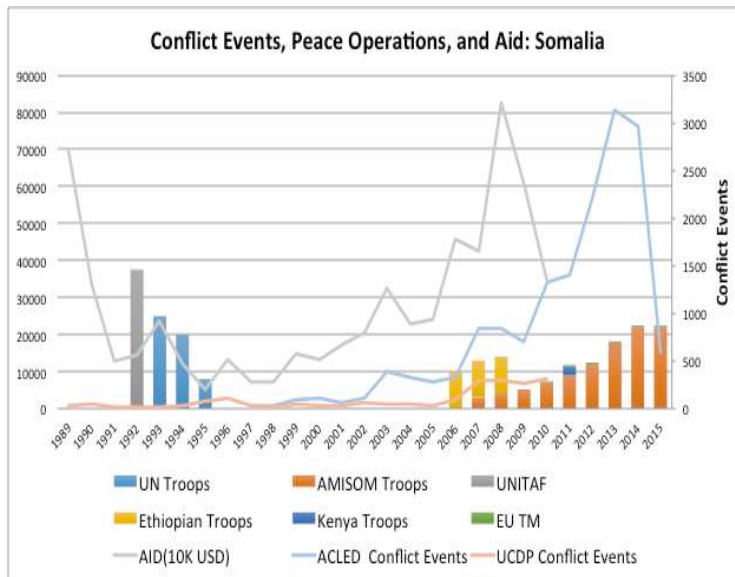


Figure 13 Aid, Peacekeeping Troops and Conflict Events in Somalia.

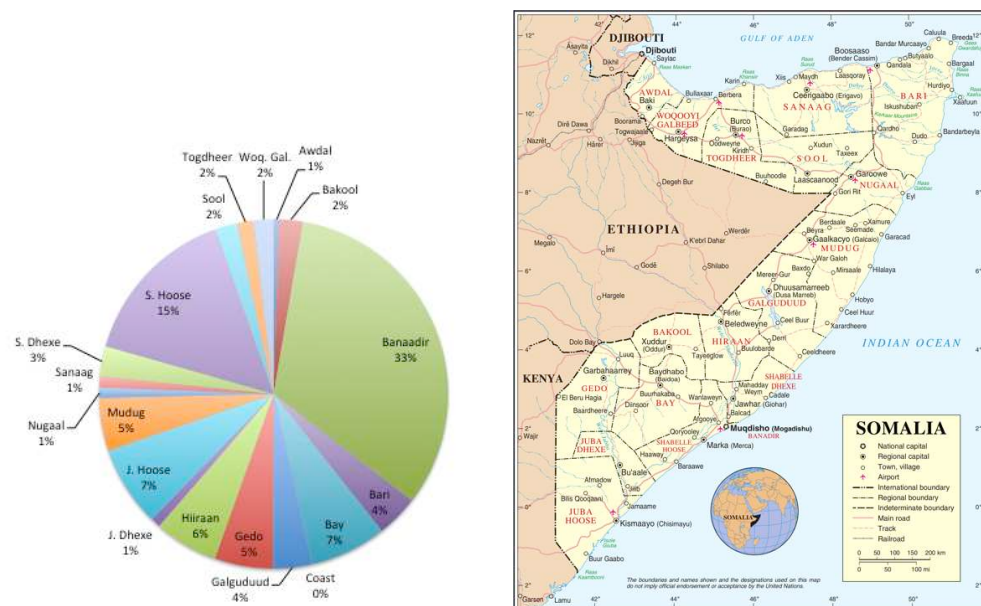
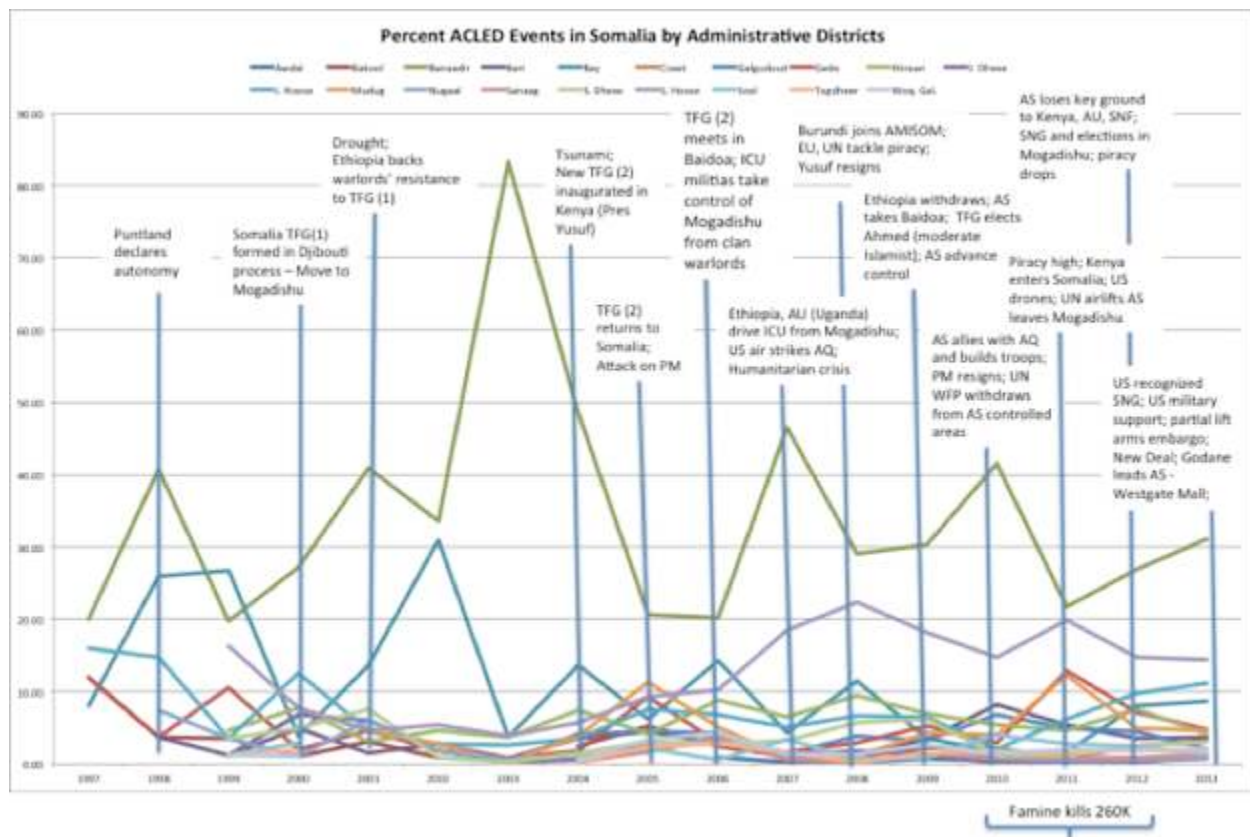
A third example of external aid contributions to conflict involves development activities by international sponsors to increase human security. In many cases, metrics for these activities are short-term measures to show tangible, immediate progress on the ground in delivery of new resources. Such metrics do not consider the long-term dynamics and potential for conflict created by the new resource that has been created. A case in point is building new ground wells. Donors may be satisfied with achievements measured in terms of numbers of new wells, people served, and gallons of water pumped. However, these metrics do not take into account tensions at the local level around power over the new well and distribution of the resources. Often, once the representatives of the donor program are gone, new conflicts erupt at the local level, fueling pre-existing conflicts or generating new ones. These new conflicts often lead to actions such as “spoiling the well”. Not only is the new resource lost, but existing social capital and resiliency among civilians is also damaged.

A fourth mechanism for sustaining exponential growth in conflict may be triggered by diplomatic efforts by regional and international actors to mediate between combatants for a settlement. In Somalia, as in many other African conflicts, the prestige and privileges that accompany participation in these efforts can create conflict within combatant camps, as well as foster grievances among those who might be overlooked because of their peaceful tendencies. In

this case, peacemaking initiatives are highly coveted and fought over by potential participants. Mediation and consultative efforts by regional and international actors in Somalia have triggered this type of conflict, as shown in Figure 13 by the dramatic rise in conflict events in political power centers for years 2000, 2006, and 2011 during times of major diplomatic initiatives by third parties.

Each of the peacemaking entrepreneurial feedback loops (with associated delays) discussed above are primarily local level phenomena. The micro-level patterns of conflict events over time at the administrative level within Somalia exhibit the four reference behaviors seen at the macro level. Figures 14 and 15 shows the percentage of total conflict events in each district from 1997 – 2014, and where these are located geographically. Figures 16 - 21 show the reference patterns of conflict events across some key administrative districts. These patterns suggest that the micro-level dynamics (and structures) proposed in the Corollary to Hypothesis 3 may be driving conflict trends. Conflict events in Galguduud (Figure 16) and Gedo (Figure 17) districts -- both relatively remote from resources and on the border with Ethiopia -- exhibit Reference Behavior A (Overshoot and Collapse).¹³ In contrast, conflict events in Hiraan (Figure 18) and those of Banaadir, which contains the port of Mogadishu (Figure 19), exhibit oscillatory behavior about an exponentially increasing mean. Both areas received the primary concentration of peacekeeping forces and aid. Conflict patterns in Jubbada Hoose, which contains the port of Kismayo (Figure 20), and Shabeellaha Dhexe (Figure 21), which contains smaller ports between Mogadishu and Kismayo, exhibit primarily exponential growth. Kenya peacekeeping troops, present in Jubbada Hoose, are suspected of pursuing their own entrepreneurial interests in the port of Kismayo, while peacekeeping troops have only recently reached the Shabeellaha Dhexe area, although humanitarian aid has reached there. These micro-level patterns suggest power structures closer to the political center create balancing loops with delays that operate in conjunction with exponential growth, while areas further from the political center and resource generating enterprises experience overshoot and collapse.

¹³ In Figures 15- 19, conflict events from ACLED, and are differentiated by type. CE1= battles with no change of territory; CE2= battles in which non-state actors take control of territory; CE 3= battles in which government regains territory; CE4 = establishment of headquarter or base; CE5= nonviolent activity by a non-state actor; CE6= riots and protests; CE7= violence against citizens.



¹⁴ In Figure 13, TRG=Transitional Federal Government; ICU= Union of Islamic Courts; AS = Al Shabaab; AU=African Union; AQ=Al Qaeda; EU= European Union; UN=United Nations; SNG=Somali National Government; SNF=Somali National Forces

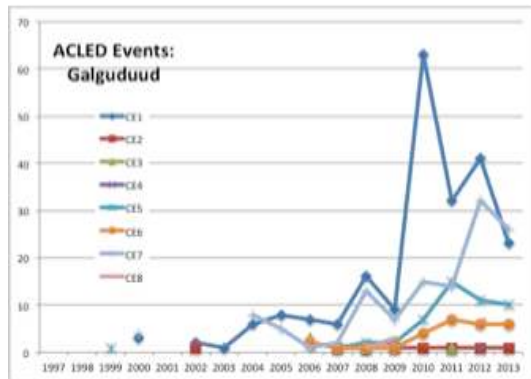


Figure 16 Conflict events in Galguduud District

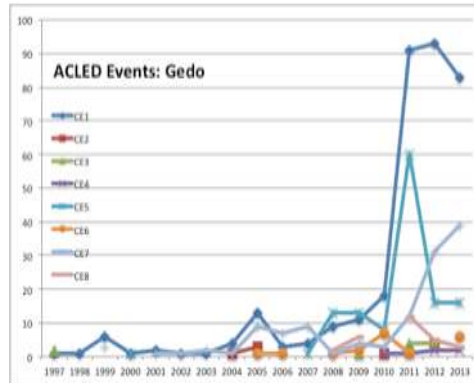


Figure 17 Conflict Events in Gedo District

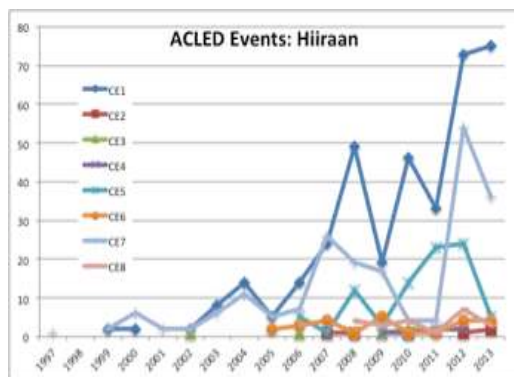


Figure 18 Conflict Events in Hiraan District

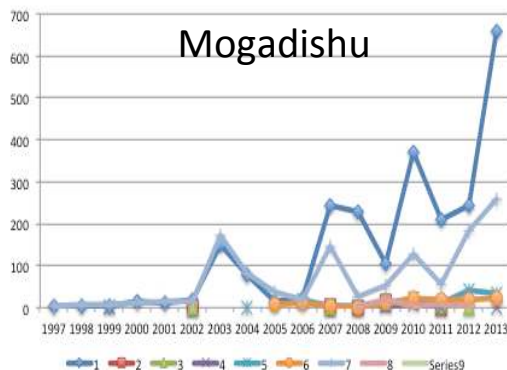


Figure 19 Conflict Events in Banadadir District

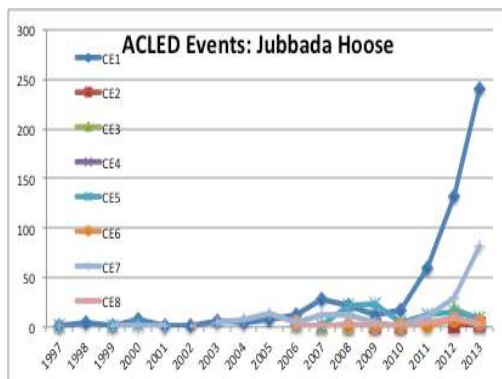


Figure 20 Conflict Events in Jubbada Hoose District

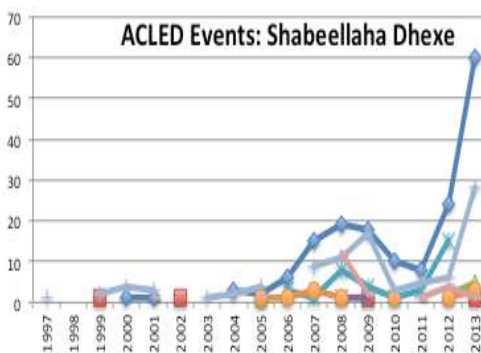


Figure 21 Conflict Events in Shabeellaha Dhexe

Conclusions

Through the analysis of conflict trends as reference behaviors, system dynamics provides a framework for gaining insights into dominant mechanisms that influence conflict persistence. The empirical evidence from conflict trends in Africa suggest that security and development interventions intended to increase civilian and government resiliency may interact in counterproductive ways to exacerbate conflict and potentially increase combatant resiliency at a micro-level. A case study supported by evidence from field studies and statistical conflict data in Somalia demonstrates the utility of the dynamic peacemaking-entrepreneurial cycle to explain exponentially increasing level of violence at a country level. Rigorous tests of this hypothesis

require geographically coded micro-level data on humanitarian aid and development data, which do not currently exist, but are under development.¹⁵ When completed, additional research will be able to 1) Validate these models at the micro-level for Somalia; 2) explore whether these dynamics explain exponentially increasing reference behavior in other cases; and 3) explore additional feedback loops and/or conditions that may lead to the different reference behaviors in Africa conflicts; and 4) extend the analysis to cases outside of Africa, as data allows.

¹⁵ See, for example, efforts of aiddata.org (<http://aiddata.org/>).

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