SCHOOL OF PUBLIC POLICY
CENTER FOR INTERNATIONAL & SECURITY STUDIES AT MARYLAND

Balancing Belligerents or Feeding the Beast: Transforming Conflict Traps

Nancy Kay Hayden, PhD

Executive Summary

Even as the threat of international conflict between great powers re-emerges, violent civil conflict remains one of the greatest threats to human security and global stability. Persistent conflicts – those that have been active for twenty years or more – resulted in 65 million forcibly displaced persons worldwide at the end of 2017. This record high is an increase of 20 percent from the previous year. In Africa alone, more than 35 such conflicts continue to pose the utmost challenge for conflict resolution despite investments of over a trillion dollars in peacebuilding and foreign aid by the international community. The spread of extremist threats through conflicts across the Middle East and Africa—e.g., Syria, Iraq, Sudan, Yemen, Somalia, and the Democratic Republic of Congo–demonstrate that ignoring these conflicts is not an option. Creating the right balance and coordination among security assistance, military peace operations, humanitarian relief aid, and long-term peacebuilding remains an elusive goal.

Are these intervention failures due to unsuitable policies and practices, to the fundamental intractability of the conflicts, or some combination of both? This question is the subject of many academic and policy studies. However, most studies of when, where, and how to intervene are limited in perspective, and fail to assess the combined effects of different types of interventions on human security over time.

Practitioners and policy makers recognize that lifting social and political systems out of the "conflict trap" requires a systems approach. Such an approach holistically considers the nature and context of the conflict, in conjunction with the scope, timing, and dynamic interactions among different modes and types of interventions. Using twenty-five years of comparative data on persistent conflicts in Africa, supplemented by a case study of Somalia, this brief presents a scalable systems framework to (1) examine the relationship between conflict persistence and factors associated with conflict contexts, peacekeeping and aid interventions, and (2) identify the underlying principles and practices for those conflict interventions most likely to result in conflict transformation that increases human security, and those most likely to sustain conflict.

Key findings

(1) Violence in persistent armed conflicts in Africa over the past 25 years display one of four types of archetypal system behaviors (Figure 1): Exponential Growth; Sustained Oscillations; repeated episodes of Overshoot-and-Collapse; or Damped Impulse (an intense but limited stimulus followed by gradual decline). These behaviors scale from local to state level. From a systems perspective, each behavior is characteristic of different underlying structural conditions in combination with resources within the system. Once established, the behavioral dynamics become self-reinforcing and may dictate the likelihood of conflict persistence or transformation through interventions.
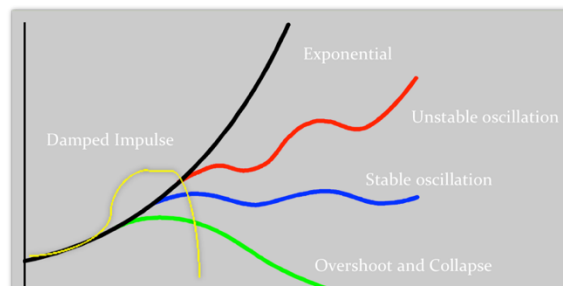

Figure 1. Archetypal System Behaviors

(2) Security and aid interventions interact at local levels to reinforce conflict structures and capacities. In so doing, they become endogenous to the conflict and contribute to the resilience of combatants. Conflict transformation must account for, and interrupt, these dependencies. For example, humanitarian aid delivery in conflict settings often requires security measures to protect aid workers and prevent cooptation of aid by combatants. Unintended consequences can be that

    a. The local economy becomes dependent on the conflict-driven demand for security measures. The creation of "security-entrepreneurs" among local populaces by the aid community has been a repeated programming challenge for NGOs and peacekeeping operations alike in East Africa.

    b. Competing "war lords" are created to oversee aid distribution. Empowerment of rival warlords in Somalia, Liberia, and the Democratic Republic of Congo to help with UN aid delivery significantly increased the intensity and duration of violence in those conflicts.

    c. Communities become isolated and vulnerable in humanitarian deserts in the wake of limited peacemaking operations that may drive combatants out, but not away. The combatants profit by imposing road taxes ("zaqat") where they control access of aid workers to the communities. This is a common practice by Al Shabaab in Somalia and various combatants in Syria (Figure 2).
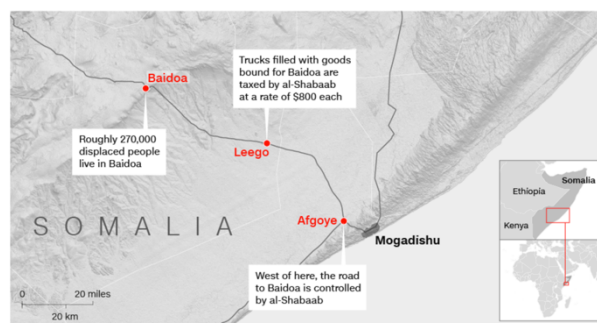

Figure 2 Al-Shabaab profits from foreign aid, CNN reporting February 12, 2018, https://www.cnn.com/2018/02/12/africa/somalia-al-shabaab-foreign-aid-intl/index.html2

(3) The prospect of conflict transformation depends strongly on two endogenous factors—opportunity costs of conflict and gender equality, in combination with processes by which external interventions are implemented. Specifically, the likelihood of successful

conflict transformation is highest when accompanied by gender empowerment and implemented through transparent, inclusive mechanisms at the local level that provide accountability, that scale from local to national levels, and that ensure coordination between security and humanitarian operations. Absent such process mechanisms, the resources provided through interventions are more likely to prolong conflict and human suffering than provide pathways for transformation.

These findings show that expectations of interventions in persistent conflicts must be tempered by realities of the conflict setting and *appropriately* resourced and managed (not too much nor too little). Delivery of security and aid interventions must be coordinated and employ mechanisms that are inclusive, transparent, and accountable at the local level. Moreover, conflict transformation cannot occur without structural changes to break cycles of dependency on conflict resources. In short, intervention failures have as much to do with how they are implemented as what they are.

Conflict Persistence: The Case of Somalia

Somalia epitomizes the complex ways in which interventions interact with endogenous conditions to affect conflict persistence and provides a case study of how different approaches affect conflict behaviors. In 1991, the central government of Somalia collapsed with the ousting of Mohamed Siad Barre, triggering a civil war that has lasted for more than 25 years. Since that time, the international community has alternated between intervening with humanitarian aid, ignoring the conflict, and deploying different diplomatic, military intervention, peacekeeping, and development initiatives. These interventions have included multi-dimensional, UN-approved international relief efforts; sanctions and diplomatic mediation; unilateral, military campaigns of neighboring countries; regional peacemaking missions; and infusions of development aid. Each intervention phase has been accompanied by different patterns of violence and structural shifts, resulting in lessons learned for aid, development, and peace-keeping communities (Figure 3).

As clan-based warlords fought for political control in Somalia following Barre's fall, a massive, famine-driven humanitarian crisis necessitated intervention by the international community to provide secure delivery of relief aid in 1993. Unwilling and unable to conduct such operations alone, the United Nations (UN) requested help from an international coalition led by the United States, the Unified Task Force (UNITAF). At the time, U.S. Ambassador Robert Oakley and the U.S. Joint Chiefs of Staff argued that *since*

Figure 3 Intervention and Conflict Events in Somalia, 1989-2017

humanitarian, political and security goals were so interdependent, an integrated policy between

the United States and the UN must be established. Progress had to occur concurrently along a three-track strategy in support of these goals. Without a stable government, functioning police forces, and long-term economic aid, Somalia would slide back toward disaster, they maintained.

UNITAF fulfilled its humanitarian task in securing the delivery of aid, saving the lives of hundreds of thousands of Somalis,[1] but when the United States and UN pulled out of Somalia in 1995, the political and security mandates of the UNSOM I and UNSOM II peace operations were left unfulfilled. Security steadily eroded and political reconstruction was stillborn, with warlords continuing to build private militia and consolidate power, inviting military interventions by neighboring Ethiopia and Kenya. Al Shabaab's subsequent emergence as an alternative for justice and self-determination now threatens the region and the world, contained only by efforts of the international community through the African Union Mission in Somalia (AMISOM) and UN peacekeeping efforts, augmented by U.S. and European Union (EU) military support. Oakley's predictions of disaster without integrated intervention strategies proved correct.

The shadows cast by these dynamics are long, dark, and costly. When the fragile Federal Government of Somalia (FGS) was re-established in 2012, more than $7 billion of development and humanitarian aid had been expended by the international community, and over two million persons (almost 1/3 of the Somali population) had been displaced. More than 20,000 civilians had been indiscriminately killed by combatants, while severe famines had caused the deaths of more than 500,000.

In May 2015, U.S. Secretary of State John Kerry visited Mogadishu with great fanfare to meet with a consortium of international diplomats and International Non-Governmental Organizations (INGOs); commanders of the world's largest military peacekeeping force, AMISOM;[2] and leaders of the struggling FGS to support new hopes for political stability, security, and economic development in this ravaged country. These hopes were to culminate in free and fair elections in 2016, supported by the international community. February 8, 2017 marked an important milestone, as, after several delays due to continuing violence and instability, Somali Members of Parliament gathered in a high-security hanger at the Mogadishu airport to elect Mohamed Abdullahi Farmaajo the second president of the FGS in a peaceful transition of power from his predecessor.

While significant, this political progress is fragile, threatened by the resilience of Al Shabaab and warring clans, the continued presence of external interventions, and ongoing drought and food insecurity. Even as the international community optimistically predicted successful conflict transformation in Somalia in the spring of 2017,[3] over the course of the year more than one million persons were newly displaced due to drought,[4] hundreds of civilians were killed by

---

[1] At the height of Operation Restore Hope, over 30,000 troops deployed to provide security to UN humanitarian relief workers in the face of hostility by armed bandits and in fighting among clans.

[2] AMISOM currently deploys over 22,000 military troops, 386 police officers, and has trained over 4000 Somalia police officers.

[3] "International support for Somalia must focus on rebuilding security, averting famine", UN News Center, 11May 2017. http://www.un.org/apps/news/story.asp?NewsID=56729. Accessed February 7, 2018

[4] IOM Somalia Humanitarian Response – 2017 Annual Report, International Organization for Migration, Feb 9, 2018. https://reliefweb.int/report/somalia/iom-somalia-humanitarian-response-2017-annual-report. Accessed Feb 9, 2018.

bombings carried out in and around the capital city of Mogadishu,[5] while U.S. airstrikes more than doubled from previous years, incurring civilian as well as combatant deaths.[6] For the first time in five years, pirates hijacked a large tanker off the northern Somali coast. Even with the political progress, infusion of humanitarian aid totaling over $1B USD in 2017, and continued AMISOM presence of 22,000 troops, there were 5,800 direct conflict-related fatalities in Somalia in 2017, and an estimated 6.2 million persons (40 percent of the population) are in dire need of humanitarian assistance.[7] Clearly, human security and conflict transformation remain elusive goals throughout much of the country.

Beyond Somalia

Headline crises in Syria, Iraq, Yemen, Afghanistan, Ethiopia, and the Democratic Republic of Congo, —as well as ongoing events in Sudan, Nigeria, India, Columbia, and Myanmar, to name a few—show that trajectories of armed civil conflict that persist despite substantial international intervention are not unique to Somalia. Hard-won peace in conflicts thought to have been resolved with help of the international community—from Mozambique in the south of Africa to Burundi in the Central Great Lakes region, to the Ivory Coast and Sierra Leone in West Africa— is currently threatened. Over the past two decades, even as the overall number of new civil conflicts has decreased, conflict restarts and persistence have been rising. These conflicts differ in causes and combatants, but they pose similar challenges for appropriately balancing security assistance, peace operations, humanitarian relief aid, and long-term stabilization efforts.

Some argue that these challenges are intractable, and that a "hands-off" approach by the international community is required. Such arguments are short-sighted and result in unacceptable costs in terms of human suffering, regional instability, and threats to global security interests. These conflicts ravage the countries in which they occur, creating a normative mandate to relieve human suffering. In addition to the immediate effects of death by violence, disease, and starvation, the conflict traps they create exact huge long-term costs to human security, and the state economies and governing institutions upon which human security depends. The World Bank estimates that lost productivity, failure of state institutions, capital flight, and increased military spending, reduces average incomes at the end of civil wars by 15 percent less than they would have been otherwise, driving people into extreme poverty and deprivation. The devastating effects spill over into surrounding regions through displacements, disease, and illegal trade, causing regional instabilities and suffering (Figure 4). These conditions give rise to new global threats that require expensive interventions (military, peacekeeping, and humanitarian) to protect national security interests.

---

[5] "Bombings in Mogadishu – a 2017 timeline", Al Jazeera, October 22, 2017, http://www.aljazeera.com/indepth/interactive/2017/10/attacks-somalia-timeline-171021144546962.html. Accessed Feb 7, 2018.
[6]"Somali citizens count cost of surge in US airstrikes under Trump", The Guardian, January 23, 2018, https://www.theguardian.com/world/2018/jan/23/somali-citizens-count-cost-of-surge-in-us-airstrikes-under-trump. Accessed February 7, 2018; "Pentagon Foresees at Least Two More Years of Combat in Somalia", New York Times, December 10, 2017. https://www.nytimes.com/2017/12/10/world/africa/pentagon-somalia-combat-islamic-militants.html?rref=collection%2Ftimestopic%2FSomalia&action=click&contentCollection=world&region=stream&module=stream_unit&version=latest&contentPlacement=4&pgtype=collection . Accessed February 7, 2018.
[7] "Somalia – Complex Emergency", USAID Fact Sheet #1, Fiscal Year 2018, February 9, 2018. https://www.usaid.gov/sites/default/files/documents/1866/somalia_ce_fs01_02-09-2018.pdf. Accessed February 22, 2018
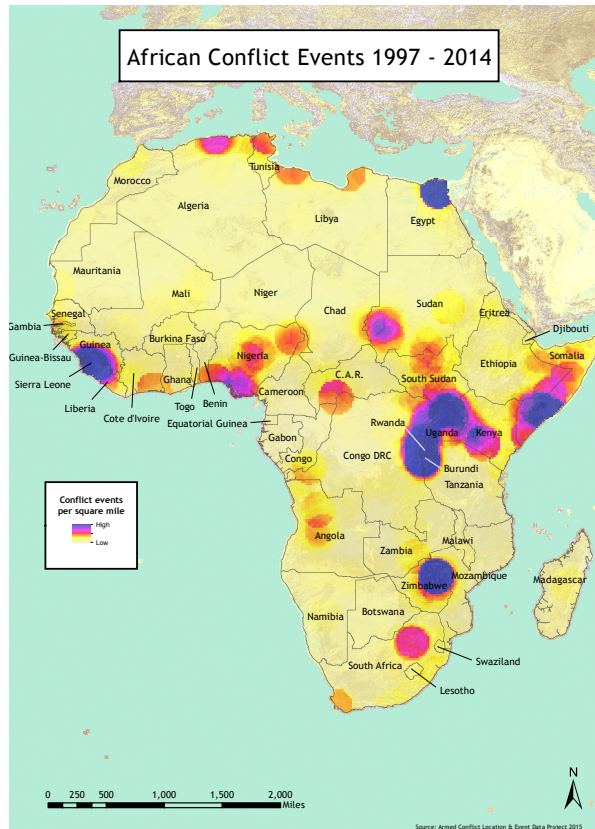
Figure 4 Spillover effects of civil conflicts in Africa 1997-2014. In East and Central Africa, cross-border effects remain high between Congo-Burundi-Rwanda-Uganda; between Somalia-Ethioipia-Kenya; between Kenya-Uganda, between South Sudan-Uganda. In West Africa,cross-border affects have been high in Sierra Leone, Buinea, and Libera. In South Africa, they were high between Zimbabwe and Mozambique. Data Source: Armed Conflict and Event Database.

Policy Responses: Intervention Approaches in Civil Conflicts

Most responses to civil conflict are predicated on the model of a "conflict trap", wherein civil wars weaken state economies and governing institutions, increase human insecurity, and create leaders and organizations vested in violence, creating positive feedback loops for conflict risk (Figure 5). Low-income countries without effective development policies or governance institutions to respond to and manage grievances are at most risk. Absent external interventions, these traps are self-reinforcing. Security and aid interventions (humanitarian and development) aim to break reinforcing cycles by strengthening economies and governance institutions while reducing human insecurity (Figure 6).
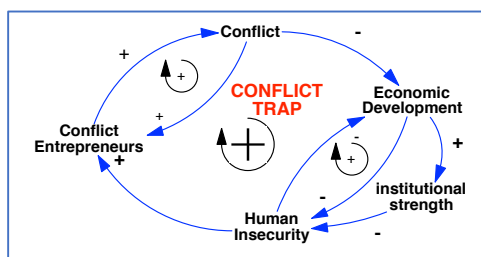

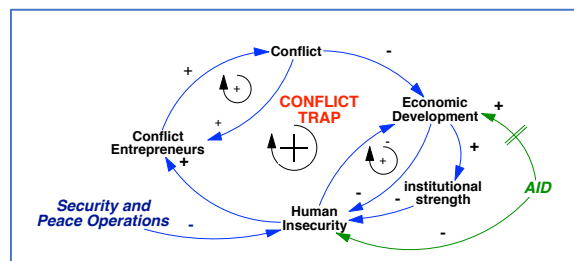Figure 5 Feedback Loops in Conflict Trap

Figure 6 Interventions Attempt to Alter Conflict Trap Dynamics

Military interventions in civil conflict have become the most likely use of armed force involving both major powers and less powerful states for the last several decades. External interventions involving coalitions of the willing, regional peacekeepers, and international peace operations increased tenfold from an average of less than two per year during the Cold War to an average of more than 20 per year since 2000. These interventions have entailed both Chapter VI and VII UN peacekeeping missions and peace enforcement missions, comprised of military coalitions of the willing and/or regional organizations acting under UN authorization or recognition (Figure 7).[8] They involve increasing numbers of troop contributing countries (TCCs), with the average rising dramatically from just under fifty TCCs per year in 1990 to over 120 TCCs per year in 2014. At the same time, aid from the international community to conflict-affected countries has been rising steadily, with approximately $50 billion USD in aid going to countries with recurring conflicts in 2014. Of this, approximately 50 percent is in the form of humanitarian relief.

Key challenges are knowing when to intervene, and with what amount of resources. Intervention strategies using foreign humanitarian and development aid are more effective at different phases during and after conflict. In recent years, a consensus has developed within the academic and
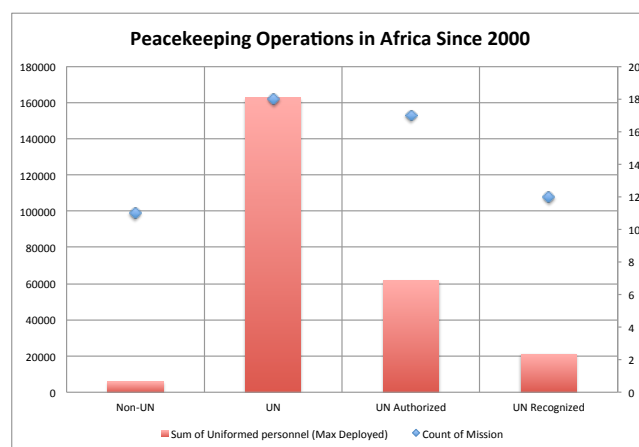

Figure 7 Uniformed personnel in peace operations in Africa since 2000

practitioner literature on conflict, peacekeeping, and humanitarian aid that the ideal scenario for breaking the conflict trap involves security measures early on (e.g., external military peace enforcement, peacekeepers, and police) to reduce violence between belligerents and protect citizens, followed by a buildup of humanitarian aid and development programs, conditional upon reform of government institutions. Theoretically, this sequencing reduces the likelihood that fungible aid will be diverted to support combatants and increases the likelihood that it will be distributed for the public good. However, the ideal sequence is rarely followed in practice, as new humanitarian crises and conflict entrepreneurs often interrupt policy plans, creating demands for earlier-than-ideal introduction of aid and/or imbalanced security measures.

---

[8] UN troops deployed under Chapter VI are involved in monitoring and peacekeeping activities such as protecting civilians, assisting in the disarmament, demobilization and reintegration of former combatants; protecting human rights, assisting in elections and restoring the rule of law and extending legitimate state authority. Chapter VII authorizes armed responses to acts of aggression and breaches of peace through the use of air, sea, or land forces as may be necessary to maintain or restore international peace and security. Such actions may include demonstrations, blockade, and other operations by armed forces.

Moreover, the approach may require two decades or more to significantly reduce the risk of recurring violent conflict, making comparative evaluation of effectiveness difficult.

Scorecard for Intervention Approaches

Meaningful assessment of intervention outcomes is difficult for several reasons. First, cohesive and coordinated strategies between security and aid interventions are the exception rather than the rule, creating conflating factors due to interactive affects. Second, long time periods (10 – 20 years minimum) and multiple scales (local, subnational, national, and regional) are required to rigorously assess and compare impacts of different types of interventions on conflict risk reduction. However, consistent longitudinal data does not exist for most interventions and types. What data does exist is most often reported only at the national level, and is rarely geo-referenced.[9] Thirdly, direction of causality of outcomes is difficult to attribute, as higher-level interventions are most often associated with more intense and complex conflicts. Finally, every conflict contexts is somewhat unique. However, in recent years, sufficient evidence has accumulated derive the following conclusions about intervention outcomes from the academic and policy literature.

Military interventions: Quantitative data analysis of armed civil conflict consistently shows that changes in the balance of power brought about by external, non-neutral armed military interventions lead to increased violence against citizens, and most often result in longer conflict duration, regardless of the setting or type of civil conflict.

Peace Operations: Limited evidence shows that types of peace operations in civil conflict matter. Specifically,
- The presence of uniformed UN peacekeeping troops reduces the level of hostilities and may support enduring peace, independent of the type of conflict. However, the conflict durations are usually longer;
- The presence of UN observers alone is associated with increased hostility;
- Prior to 2008, the presence of non-UN uniformed peacekeeping troops did not have a significant effect on successful peacebuilding.

These outcomes for peace operations are explained in the literature through the lenses of the security dilemma, instrumental logic of violence, and bargaining models. Frequently cited levers for affecting outcomes are the relative capacity of the intervening troops, and perceived neutrality.

Foreign Aid: Overall, foreign aid has a poor record for improving overall human security in conflict settings. Specifically,

- *Humanitarian aid* in conflict settings where security is low (and hence where the aid is often most needed) increases the risk of conflict and likelihood of violence against citizens;

---

[9] Projects by AidData.org to geo-reference aid disbursement at the subnational level in Africa and Asia are helpful but to date have been limited and constrained by the lack of granularity in data reporting.

- Increased *development aid* in conflict settings, as well as foreign aid shocks (e.g., severe decreases in aid revenues), tends to increase the likelihood of violence against citizens;
- Improving social and institutional capacities through *technical development assistance* is most effective in early post-conflict stages; development aid to shape elite interests is only effective if delivered at least 4 years post-conflict. Earlier financial interventions give rise to the high risk of conflict recurrence.

Explanations most often cited in the literature for the dismal outcomes of foreign aid assistance are greed and corruption, opportunity exploitation, exclusionary practices, learned dependence, and binding constraints combined with lack of donor capacity and/or over enthusiastic donors.

Shifts in Intervention Approaches

Four shifts in intervention policies have occurred in recent years, some of which are in response to the above results. The first is an increased emphasis on development assistance as a means of conflict *prevention*. The second is increasing the use of Non-Governmental Organizations (NGOs) as the vehicles for aid delivery in conflict settings, with an emphasis on building absorptive capacity at local levels, working through civil society organizations. The third is donor emphasis on local community priorities and resilience for aid programming in conflict settings, and less on state-level metrics of development. Finally, multidimensional peace operations are increasingly deployed in active conflicts, including those that involve regional organizations (such as the European Union or the African Union) and coalitions (such as the Economic Community of West African States, or ECOWAS) for peace enforcement activities as precursors to UN peacekeeping operations. (Figure 8).
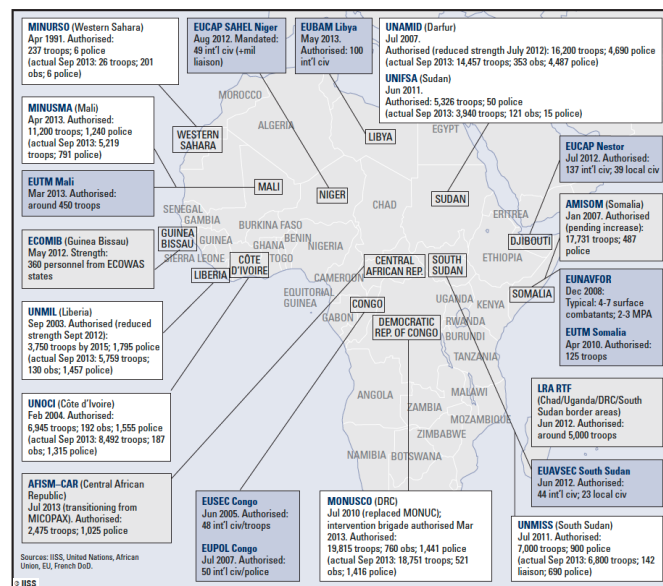
Figure 8 Locations of Peace Operations in Africa in 2014, from Military Balance Report 2014. Of the 21 peace operations in Africa in 2014, four were led by regional African organizations with a total of approximately 30,000 troops.

Map 8 **Africa: Selected Peacekeeping and Security Missions**

The U.S. shift to emphasize development assistance over security assistance began in the early 1990s at end of the Cold War. This shift was based less on research into the economic causes of

civil war, and more on belief in the democratic peace theory, combined with perceptions of reduced national security threats as communist regimes were challenged in former Soviet Union countries. Allocations by the US Agency for International Development (USAID) to democracy and governance initiatives targeting developing countries grew from $121 million to $722 million per year from 1990 to 2003. This trend was amplified after 9/11 when foreign aid became a key weapon in the U.S. global war on terror. Global trends in aid to conflict-affected countries mirror those of the United States (Figure 9).

Figure 9 Foreign Aid Trends in Areas Experiencing Civil Conflict

The shift towards local civil society NGOs as implementing partners in aid delivery increases the salience of the aid and reduces opportunities for governme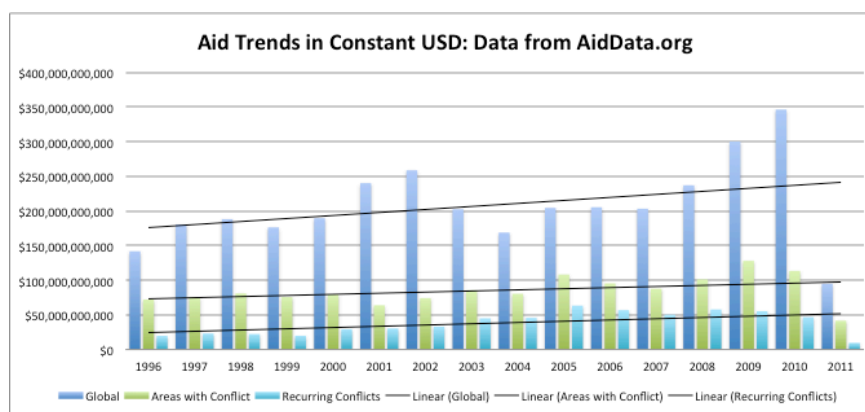nt corruption and co-optation of these resources. However, an unintended consequence is decreased transparency and accountability, as these funds are extremely difficult to quantify and impossible to track, making it hard to fully account for funds and to assess the extent to which donors and international actors are working in partnership with local actors. Lack of transparency, in turn, creates problems for appropriately sequencing and coordinating security and aid interventions, makes coordination with peace operations difficult, and creates divisions among humanitarian actors and between humanitarian actors and peacekeepers. These divisions are routinely exploited by belligerents to reduce intervention effectiveness, gain access to resources, and perpetuate conflict.

Innovation Need: A Systems Approach that Works

Donor organizations for both security and aid interventions—e.g., U.S. Department of Defense (USDOD), European Union Military Commission (EUMC), the World Bank, USAID, UN Security Council (UNSC), and the UN Development Program (UNDP)—recognize the interdependencies between aid and security interventions in civil conflict, and that policy and operational coordination between peace operations and economic assistance through humanitarian and development aid is a key factor in the success of failure of peacebuilding strategies. They find that interactive effects are especially important to consider when resources that start out as exogenous factors (e.g., those introduced through peacekeepers, humanitarian aid) become endogenous to the system over time. They have accordingly called for more system-

based approaches to doctrine and operations in conflict settings.[10] However, as noted during a UN debate in 2014 on improving conflict prevention measures, such approaches are often at risk of being "little more than a thematic vision."[11]

The remainder of this brief describes an innovative, concrete approach for analysis and design of conflict interventions from a systems perspective. The approach, based on dynamics of complex adaptive systems, provides new insights on correlations between system-level behaviors and conflict persistence; the dependence of system behaviors (and, by association, conflict persistence) on conflict context, intervention pathways and capacities; and interactive effects between conflict factors and interventions.

System Reference Behaviors, Dominant Structures, and Conflict Dynamics

A fundamental concept of dynamic systems is that of *reference behaviors*. The premise is that there are a limited number of archetypal patterns for how system variables interact and change over time to result in system states of equilibrium, instability, or resilience. Basic reference behaviors introduced earlier in Figure 2 are Exponential Growth (or Decay), Overshoot and Collapse, Sustained Oscillations, and Damped Impulse. A variation of these is S-shaped growth, which results from exponential growth that becomes limited by the constraints on capacities within the system.

Reference behaviors result from underlying system structures characterized by feedback loops between stocks (e.g., accumulations of capacities) and flows (e.g., rates of capacity usage)—and time delays within those feedback loops. Stocks are the "memory" of a dynamic system and are the sources of its disequilibrium and dynamic behavior when compared to goals and expectations. Examples of stocks are Gross Domestic Product (GDP), food supplies, refugees, human security, violence. Examples of flows are GPP per capita, annual aid distribution, displacements, death rates, and recruitment.

---

[10] For example, the *US Army Counterinsurgency Field Manual 3-24* published in 2006 calls for explicit consideration of interactions between peacekeeping, stabilization, and kinetic operations while prioritizing the security of citizens to defeat insurgents. In her foreword to the field manual, former US Deputy Assistant Secretary of Defense Sarah Sewall calls this systems' approach a "radical departure" from previous military doctrine. The EUMC also adopted a systems approach in its revised Concept for Military Planning of 2008, which calls for the integrated use of a wide range of tools across "institutions and policy areas that comprise political, diplomatic, economic, humanitarian, and military actions." Similarly, in adopting Resolution 2171, which pledges a systems approach to conflict prevention, the UNSC recognized in 2014 that early warning, preventive diplomacy, mediation, deployment, peacekeeping, disarmament and peacebuilding are "interdependent, complementary and non-sequential" *The World Development Report of 2011* focuses on the interconnections between security, humanitarian relief, and development interventions. The report notes that failure to address the security of citizens, justice, access to resources, and economic development with a systems approach results in repeated cycles of violence in fragile states, and makes specific recommendations for layered approaches across multiple levels. Taking up this theme in 2012, the US AID hosted a summit on "Strengthening Country Systems" to explore ways to apply systems approaches being piloted by the Agency to the problems of aid effectiveness. More recently, UNDP Administrator Helen Clark highlighted the need for systems approaches in her speech at the High-Level Panel on Humanitarian Financing, July 14, 2015, "Building a New Vision to Address Long-term and Recurrent Humanitarian Crisis".

[11] Remarks made by Carolyn Schwalger, Deputy Permanent Representative of New Zealand at the 7247th meeting of the United Nations Security Council, "Speakers in All-Day Debate Cite Early Warning, Mediation, Cooperation with Regional Organizations as Effective Tools," UN Meetings Coverage and Press Releases, SC/11528, 21 August 2014.

Each feedback loop in a system is a closed chain of causal influences that drive stocks and flows, and that constitutes a unit of analysis for the system. Complex systems contain multiple, interacting feedback loops that may be either balancing or amplifying with respect to the stocks they contain. Relationships between these feedback loops, their relative strengths, and the delays between them determine the reference behaviors of stocks and the overall system state of equilibrium or disequilibrium.

Systems dominated by feedback loops with capacity limitations or limited goal-attainment generate overall balancing behavior. Overshoot and Collapse and Sustained Oscillations are two such behaviors leading to different system states due to capacity limits or delayed responses to competing goals. Two examples of the former are (i) the violence of Hutus against Tutsis' in the 1994 Rwanda genocide that resulted in the collapse Hutu power; and (ii) the stalemate of combatants in the Second Liberian Civil war which led to Peace Deal in 2003 brought about through nonviolent means in large part by the joint Muslim-Christian Women's Peace movement. Examples of the latter are the ongoing ethnic clashes in Ethiopia and Kenya. Systems in which dominant feedback loops are goal-seeking with unconstrained capacity result in amplifying behavior characterized by Exponential Growth. Besides Somalia, examples include the Democratic Republic of Congo, Sudan, and Nigeria, although the resources for relatively unconstrained conflict growth differ in each of these cases. Damped Impulse results from attenuated response to a sudden, one-time increase of flow into a stock with a delayed response. Examples include the Angolan civil war triggered 1976, leading to a massive infusion of weapons from both the Soviet Union and US to arm both sides, and the more recent insurgency in Mali triggered by flood of arms from Libya after 2012.

Applying these theoretical concepts to the general problem of civil conflict persistence, one can expect high risk of conflict persistence when underlying structures lead to exponential and oscillatory reference behaviors, and increased likelihood of conflict transformation in the case of overshoot and collapse. Conflict deterrence, rather than transformation, results from Damped Impulse. A theoretical mapping between conflict risk factors and interventions, causal mechanisms for conflict persistence, dominant system structure, and expected impact on system reference behavior is shown in Table 1.

The conflict risk factors and theoretical mechanisms in the two left-hand columns of Table 1 are drawn from the conflict literature. The dominant system structures and expected reference behaviors (two right-hand columns in Table 1) are derived from the literature on complex system dynamics. The mapping between the two sides of the table was developed and mapped as part of this research and discussed below. The expected reference behavior for each in the right-hand column. The mapping in Table 1 was qualitatively tested, through triangulated data that includes over 100 field interviews on the Somali conflict, case study literature on conflicts in Africa, and analysis of media and donor reporting. Interviews were conducted with representatives of donor organizations (USAID, UN organizations, EU, African Union, INGOs and local NGOs); local scholars and government advisors; civil society actors; peacekeeping soldiers (AMISOM); aid recipients and refugees. The interviews took place in Kenya, Ethiopia, Burundi, Uganda, Geneva, and Washington DC over the course of three months during the summer of 2015.

Table 1 Conflict Risk Factors, Interventions, System Structure and Reference Behaviors

Conflict Risk Factor/Intervention	Theoretical Mechanisms	Dominant System Structure	Expected Reference Behavior
Commodity exports	Higher rentier income increases greed, differentially affects capacities	Positive reinforcing loops with delayed resource constraints	Exponential (weak constraints) or Oscillatory (strong constraints)
Low GDP per capita	Equally affects capacities, low opportunity costs	Delayed balancing loops create strong reinforcing loop	Exponential with eventual saturation
Low GDP per capita and high inequality	Grievance and low opportunity cost	Goal-driven with delayed resource constraints	Exponential (weak balancing loops) or Oscillatory (strong balancing loops)
Availability of illicit income	Increased relative capacity for belligerent	Asymmetric capacity constraints	Exponential
Type of conflict: coups	All or nothing	Goal-oriented with resource constraint, no delays	Overshoot & Collapse
Type of conflict: ethnic "sons of soil"	Hold out for accommodation & negotiation	Goal-oriented with delayed feedback from constraints and/or goal	Oscillatory
Sanctuary, landmass, population size	Low state reach relative to belligerent capacity	Asymmetric capacity constraints	Exponential
Social fragmentation	Low state reach, competing goals of inter-ethnic rivalries	State reach constraints, delayed competitive goal-seeking	Oscillatory
Number of belligerent groups	Diluted state capacity, competing goals and resources	Capacity constraints, competitive goal-seeking	Overshoot & Collapse and/or Exponential
Foreign military intervention	Increase relative capacities and expectations	Change strength of balancing loops and delays	Episodic Damped Impulse (on side of government) or Exponential (against government)
Military victory	Increased post-conflict violence, corruption, uncertainty	Goal seeking with asymmetric capabilities, no delay (competitive pay-off)	Episodic Overshoot & Collapse
Negotiated settlement	Capacity limited commitment problems; security dilemma; gender empowerment	Delayed capacity limited goal-seeking on all sides (mutual accommodation);	Oscillatory
Peace operations post conflict	Increase commitment capacity and transparency, human security, reduce corruption	Reduce delays and goal-seeking gap	Damped Impulse, Oscillatory with lower amplitudes and mean
Peace operations during conflict	Reduce expectations of, cost of coordination, security dilemma	Reduce delays and goal-seeking gap	Damped Impulse, Oscillatory with lower amplitudes and mean
Foreign Aid during conflict	Aid as benefit: Increase state capacity; reduce grievances	Goal-seeking with reduced delays and increased capacity	Overshoot & Collapse, Oscillatory with lower amplitudes and mean
Foreign Aid during conflict	Aid as harm: Corruption, rent-seeking, capture, increase grievances	Increase asymmetric capacity, goal-gap within balancing loops; increase goal-seeking	Exponential
Foreign Aid post conflict	Improve social capacity through technical assistance	Increase governance balancing loop	Overshoot and collapse
Foreign Aid post conflict	Increase elite power through financial assistance	Create competitive goal-seeking loops	Exponential

Comparative Analysis of Conflict Persistence and Intervention Policies

Using the annual count of violent conflict events as the measure of system state for reference behavior, thirty-four persistent conflicts active in Africa from 1989-2014 exhibit one of four reference behaviors. These conflicts are listed in Tables 2-3, grouped according to the mode of reference behavior. In Tables 2-3, Group A consists of conflicts exhibiting overshoot and collapse; Group B consists of conflicts exhibiting damped impulse; Group C consists of conflicts exhibiting exponential growth; and Group D consists of conflicts exhibiting oscillatory behavior

Table 2 Summary Metadata of Country Level Conflict Risk Factors

Average Country Level Risk Factors for Conflict Persistence 1990 - 2014										
		State Capacity				State Reach			Poverty	Inequality
Conflict Country[1]	SD Mode	Ave GDP per Capita	Ave Population[2] (M)	Ave GDP Growth[2]	% GDP Oil Exports[3]	% Urban[2]	% Electricity Access[2]	Military Expenditures[4] (M) [% Gov Spending]	Annual GDP per capita 10%[2] (2010)	GINI[2]
Burundi	A	170	7.3	1.3	-5.6	8.6	3.1	50 [18.5]	53	36
Chad	A	475	8.9	6	33	22	1.97	216 [14.1]	108	44
Liberia	A	200	2.9	5.1	-0.8	48	1.59	7.7 [3.6]	79	36
Namibia	A	3087	1.9	4.2	-4.4	34	35.5	191 [9.7]	336	61.3
Rwanda	A	332	8.5	5.2	1.3	16	6.43	67 [13.3]	64	50
South Africa	A	4590	44.4	2.5	0.07	58	71.3	3380 [4.8]	467	62
Average A		*1475.7*	*12.3*	*4.1*	*3.9*	*31.1*	*20.0*	*650[10.7]*	*184.5*	*48.2*
Angola	B	1922	15.1	5.8	46	34	31.3	1670 [10]	361	49
Congo-Brazzaville	B	1581	3.3	3	54	50	27.5	156 [8.3]	308	51
Guinea	B	417	9.1	3.4	-2.6	32	16.8	78.2 [10.7]	93	42
Guinea-Bissau	B	350	1.3	2.5	-3.3	38	53.7	8.4 [9.7]	78	43
Lesotho	B	617	1.9	4.2	8.8	20	9.46	33 [6.8]	55	56
Mali	B	382	12	4.6	-5	30	15.1	78.2[6.7]	105	42
Sierra Leone	B	308	4.7	2.6	-15.5	41	8.79	28.4 [8.2]	84	37
Average B		*796.7*	*6.8*	*3.7*	*11.8*	*35.0*	*23.2*	*293.2[8.6]*	*154.9*	*45.7*
Bukina Faso	C	379	12.5	5.5	-4.4	19.8	8.7	75.2 [8.2]	87.7	45
Cameroon	C	900	16.8	2.2	7.2	46.5	41.4	214 [7.9]	225	43
DRC	C	249	52.2	0.8	2.6	36	.	247 [8.7]	55	43
Gabon	C	6302	1.3	2.9	39	77	39.8	136 [6.1]	1701	42
Mauritania	C	670	2.9	3.6	-5.7	50	14.9	59.2 [.]	173	40
Mozambique	C	295	19.1	6.5	-7.2	29	9.51	79.3 [9.7]	57	45.7
Nigeria (BH)	C	850	129	5.8	33	37	44.9	817 [3]	161	46
Somalia	C	195	7.8	0.4	-1	34	25.8	307[3]*	.	.
Sudan	C	903	29.4	3.8	10.2	32	25.7	1070 [21]	234	35
Average C		*1193.7*	*30.1*	*3.5*	*8.2*	*40.1*	*26.3*	*333[8.5]*	*336.7*	*42.5*
Algeria	D	2713	24	2.8	19.7	50	97.1	3897 [10]	505	35.3
CAR	D	279	37	1.1	-7.1	38	6.15	20.3 [9]	49	53
Ethiopia	D	273	68.9	6	-5	15	15.2	478 [15]	95	33.6
Ivory Coast	D	952	16.1	2.1	2.5	45	48.9	244 [12.2]	218	41
Kenya (Kik)	D	576	32.7	3.5	-8.9	21	16.1	375 [6.8]	110	47
Niger	D	258	12.4	3.3	0.9	16.5	7.4	35.6 [5.7]	80	38
Nigeria (P)	D	850	129	5.8	33	37	44.9	817 [3]	161	46
Senegal	D	736	10.5	3.5	0.001	36	16.1	126 [6.1]	167	43
Uganda	D	332	25.9	6.8	-4.9	12.7	10	224 [12.5]	78	43
Zimbabwe	D	608	12.6	5.9	-3.4	33	33	220 [10.2]	.	42
Average D		*757.7*	*36.91*	*4.08*	*2.6801*	*30.42*	*29.485*	*643[9.1]*	*162.556*	*42.19*

[1]Some countries have conflicts with different reference behaviors [2]Data from World Bank [3]Data from The Economist [4]Data from SIPRI *Estimated

Table 3 Summary Metadata of Conflict Interventions[12]

		Foreign Aid				Military Peace Operations			Governance & institutions	
Averaged Intervention Data 1989 - 2014										
Conflict Country[1]	**SD Mode**	**Total Aid (M)**	**Ave Aid Per Capita**	**Ave Aid as % GPD**	**Humanitarian as % of all Aid**	**Mission Months**	**UN+Reg Troop Mission Months**	**Coalition + Single Actor Troop Mission Months**	**Polity (-9 to 9)**	**CPIA (1-6)**
Burundi	A	10188	52	31	22	176	201169	22400	1.3	3
Chad	A	10692	48	16	19	363	99597	302208	-2.8	2.7
Liberia	A	9303	104	49	39	311	2684392	6500	2.2	1.3
Namibia	A	6196	129	4.6	1	27	53640	22500	6	3.5
Rwanda	A	16463	74	25	12	54	1009309	9600	-4.7	3.2
South Africa	A	30418	26	0.5	0.8	0	0	0	8.4	3.9
AVERAGE A		*13877*	*72*		*16*	*155*	*674685*	*60535*	*1.7*	*2.9*
Angola	B	12424	35	3.9	18	218	204476	0	-2.5	2.1
Congo-Brazzaville	B	9187	109	8	7.2	76	0	88240	-2.8	2.6
Guinea	B	10950	52	13	2.9	0	0	0	-1.5	2.9
Guinea-Bissau	B	3530	104	39	5	77	32394	0	2	2.7
Lesotho	B	4371	94	18	1.9	9	0	6300	4.9	3.3
Mali	B	22475	74	22	2.3	50	113721	48480	5	3.4
Sierra Leone	B	8999	75	28	12	275	1002646	233520	1.5	2.8
AVERAGE B		*10277*	*78*		*7*	*101*	*193320*	*53791*	*0.9*	*2.8*
Bukina Faso	C	20137	64	20	1.2	0	0	0	-2.3	3.5
Cameroon	C	27649	68	8.2	0.5	0	0	0	-4.5	3
DRC	C	46059	32	14	22	218	2357910	565200	1.2	2.1
Gabon	C	6890	232	4.6	0.08	228	0	171600	-2.9	2.9
Mauritania	C	9918	139	24	2.3	0	0	0	-4.6	3.3
Mozambique	C	47188	100	43	9.2	72	130236	379200	2.8	3.3
Nigeria (BH)	C	15352	16	2.5	0.3	0	0	0	4	3.5
Somalia	C	10398	45	34	46	229	1388520	546300	0.04	1.7
Sudan	C	28592	35	4	33	280	3143331	18000	-5.6	2
AVERAGE C		*23576*	*81*		*13*	*114*	*780000*	*186700*	*-1.3*	*2.8*
Algeria	D	25069	37	1.8	5.6	24	0	12000	-1.2	2.9
CAR(Seleka)	D	1731	65	21	30	171	259517	89400	0.8	2.5
CAR (political)	D	2900	53	14	8.9	384	83262	392400	0.5	2.5
Ethiopia (P, OLF)	D	51667	28	11	17	24	0	12600	-1.2	3.1
Ivory Coast	D	33578	85	9.5	7.1	440	1216596	338100	-1.7	2.9
Kenya (Kik)	D	42661	50	9.6	7.8	0	0	0	1.9	3.5
Kenya (Turk)	D	42661	50	9.6	7.8	0	0	0	1.9	3.5
Niger	D	13152	42	17	5.2	0	0	0	3.1	2.9
Nigeria (P)	D	61352	18	3.5	1	0	0	0	0.4	2.9
Senegal	D	24247	94	14	0.8	144	0	187200	3.9	3.4
Uganda	D	35253	54	19	4.7	14	1060	0	-3.3	3.7
Zimbabwe	D	15741	52	8.5	15	0	0	0	.	2.6
AVERAGE D		*29168*	*52*		*9*	*100*	*130036*	*85975*	*0.4636*	*3.0*

In Table 3, peace operations involving uniformed personnel are measured in terms of mission months, and the sum of number of troops per month x mission months (troop mission months).

Multinomial regression analyses using system reference behavior as the dependent variable provide insights to the following policy questions concerning interventions in persistent conflict:

How do external interventions affect risk of conflict persistence, compared to endogenous conflict risk factors?

Endogenous conflict risk factors, absent consideration of interventions, have strong explanatory power for differentiating among observed reference behaviors of conflict, with security and aid interventions reinforcing but not fundamentally changing the dynamics generated by endogenous conditions. Mechanisms associated with state capacity and reach, governance, cooperation mechanisms, opportunity costs, and social cohesion are the most robust predictors of reference behaviors.

Specifically, compared to a baseline outcome of Sustained Oscillatory behavior,

- Overshoot and Collapse leading to conflict transformation is more likely with higher levels of gender equality, which is known to support enhanced cooperation mechanisms in conflict resolution; higher opportunity costs, as indicated by depth of poverty; presence of border wars; and higher levels of state reach as measured by state security forces per km^2. It is less likely with higher levels of state capacity as indicated by GDP per capita, high dependence on oil rents, and larger populations.
- Damped Impulse, which temporarily suppresses conflict, is more likely with higher levels of state capacity as indicated by military expenditures as percent of GDP; state reach as measured by percent urban population; border wars; and gender equality. It is less likely with larger populations and numbers of belligerents.
- Exponential Growth is most likely when opportunity costs, indicated by male youth unemployment, are low; state reach, indicated by higher numbers of belligerents and percent urban population, is low; governance as measured by Polity IV is poor; and there is lack of social cohesion, indicated by higher ethnic polarization and social fragmentation. It is less likely when ***both*** state capacity, as indicated by GDP per capita, and state reach, as measured by state security forces per km^2, are high.

Are levels of and types of interventions correlated with patterns of conflict persistence? If so, what types of interventions are most likely to result in conflict transformation? How do aid and security interventions interact to affect long term risk of conflict persistence?

All else being equal, compared to Sustained Oscillatory behavior,

- Higher levels of aid (both development and humanitarian) are positively correlated with Exponential Growth, Damped Impulse, and Overshoot and Collapse. Higher levels of total aid as a percent of GDP are most strongly correlated with Overshoot and Collapse.
- Higher levels of UN troops for peace operations are positively correlated with Exponential Growth, Damped Impulse, and Overshoot and Collapse.
- Higher levels of regional troops for peace operations are negatively correlated with Overshoot and Collapse, and positively correlated with Exponential Growth and Damped

Impulse. Coalition troop presence is also negatively correlated with Overshoot and Collapse.

These results, which are robust to model permutations, suggest that

- Persistent conflict characterized by Sustained Oscillatory reference behavior, where the system is in a state of semi-equilibrium with resilient but constrained actors on both sides, is most likely in the absence of interventions. Endogenous factors that create stable balancing constraints—and hence a quasi-equilibrium system state of conflict resilience—are higher state capacity[13] combined with low state reach, low opportunity costs combined with low social cohesion within a large population. Absent fundamental structural changes or system shocks, these conflicts may persist indefinitely (e.g., Kenya).
- Conflict transformation opportunities in the aftermath of Overshoot and Collapse are most likely when both opportunity costs of conflict and gender equality are high; and when higher levels of development aid are combined with the presence of UN peace operations, but not coalition or regional peace operations (e.g., Rwanda). Where state capacity is higher due to oil resources and/or larger populations, the likelihood of conflict transformation is reduced, regardless of interventions (e.g., Nigeria).
- Higher levels of humanitarian aid and security interventions through regional or coalition forces are equally likely to result in either Damped Impulse or Exponential Growth. A key differentiating factor appears to be the relationship between state capacity and state reach. When these are high, Damped Impulse behavior is more likely, regardless of the interventions (e.g., Angola). When state capacity and reach are low, Exponential Growth is more likely, and interventions tend to amplify the exponential behavior (e.g., Somalia). All else being equal, large populations and higher numbers of belligerents reduce effective state capacity and reach, and thus increase the likelihood of conflict persistence.

Accounting for Scale Effects

The comparative analysis of system-level reference behaviors in these 34 conflicts is based on macro-level measures of endogenous factors and interventions. However, most conflict events and transformative mechanisms occur at the micro level. Micro-level, geo-located data on conflict events in Somalia reveal that the same reference behaviors are present at the district levels. While these can be generally associated with different intervention trends over time, geo-located aid and security data, as well as economic, demographic, and governance data, are insufficient for quantitative correlation tests at the micro-level of the same type as conducted at the macro level. Qualitative narratives from structured field interviews corroborate the associations between amplifying mechanisms for exponential conflict behavior due to aid and security interventions, and confirm the transformative effect of gender empowerment on local level conflicts.

---

[13] State capacity consists of both military capacity and governance capacity. Military capacity concerns the state's ability to deter or repel challenges to its authority through force. Indicators of military capacity include size of security forces relative to the populace and military spending. Governance capacity concerns the state ability to provide services for the populace and to accommodate grievances through institutionalized channels. Three different aspects of governance capacity are bureaucratic efficiency, resources, and dependence on patrimonialism.

Policy implications and recommendations

The approach presented in this brief provides an operationalized systems-level framework for concretely assessing how contextual factors in conflict, aid and security interventions interact to affect conflict persistence in the long-term, and implications for policy. Specific findings are that

(1) Persistent civil conflicts exhibit archetypal reference behaviors characteristic of complex adaptive systems. The behaviors are dependent on endogenous system level capacities for conflict, cooperation, and governance, and the amplifying and balancing feedback structures through which these operate.
(2) Interventions that fail to change structural factors or relative capacities that determine dominant, systems-level feedback mechanisms are likely to reinforce, rather than transform, existing conflict patterns.

One of the most robust and striking findings is the strong correlation between system behavior that supports conflict transformation and the degree of gender equality. This correlation is different than—and independent of—factors for corruption, polity, or institutional capacity. The interpretation that gender equality may be a proxy for cooperative behavior and conflict management skills is reinforced by the qualitative analysis in the Somalia case study, and is consistent with experiences of the international communities engaged in peace and security, as well as the development fields. This finding presents an important challenge and mandate to bridge the policy agendas across these communities to strengthen the role of women in peacebuilding while ensuring their security at the same time.

A second and related policy implication is that to effectively transform conflict, interventions must change underlying structures. However, both the peacekeeping and humanitarian aid communities rely on normative and operational principles of neutrality, which are usually contradictory to objectives of structural change and rarely achievable to the ideal desired. Transparent and inclusive mechanisms to balance competing interests in how aid and security interventions are implemented at the local levels are minimum requirements to resolve this dilemma.

Transparency mechanisms in regional organizations, as exemplified by AMISOM, are minimal to non-existent. For example, data for troop deployments within specific areas of operation below the administrative level over time are not only inaccessible to the public, but they are often not even known to commanding officers of the different AMISOM units. Even more problematic are unclear communications regarding the reality of security situations on the ground, as peace operations attempt to gain the critical confidence of local communities necessary for prevailing in counterinsurgency operations, and addressing lessons learned from peacekeeping failures to protect civilians. Transparency in regional peacekeeping operations and command structures in Africa, their relationships to domestic security capacities, and transformation pathways for stabilization operations are all necessary and achievable policy goals requiring a combination of political will, cultural adjustments, and prudence, and supported by infrastructure investments for sustainability.

Transparency within the aid community active in conflict settings also varies widely. Reporting mechanisms for official development assistance by government donors and major INGOs are robust and increasingly accessible to the public for monitoring, research, and policy planning. However, these mechanisms lack transparency beyond the first level of donors and providers, who increasingly push funds down to lower levels through civil society NGOs and other domestic actors. These funds are extremely difficult to quantify and impossible to track, making it extremely difficult to fully account for funds and to assess the extent to which donors and international actors are working in partnership with local actors.

Transparency in security assistance provided by donors is as important as transparency within receiving organizations for getting this ratio right. Current U.S. policies for building partner capacity through security sector assistance programs lack sufficient transparency mechanisms for monitoring and accountability, despite a proliferation of oversight committees, as exemplified with current situations in Yemen, Syria, and Iraq.

Increased local ownership, inclusivity and participation of all sectors of society (elders, youth, women, and civil society) is a mantra found in almost every research study and set of policy recommendations for interventions in conflict settings, grounded in solid research and field experiences, and instantiated as an international policy norm in the UN Security Resolution 1325 reaffirming the full participation of women in conflict resolution and peacebuilding. Inclusive processes are credited with conflict transformation in Burundi, Rwanda, Liberia, and Somalia at both the local and national levels. In contrast, lack of inclusivity is a characteristic of persistent conflict, and a major contributor to mass atrocities and the rise of violent extremism. Exclusionary policies, however, continue to plague many peacebuilding efforts, especially with respect to disarmament and reconciliation of armed groups in conflicts.

Finally, local polities must be empowered to hold accountable those who receive benefits from external interventions. Ultimately, this requires a shift from the principle that those in power control the resources to one that provides for inclusive, local-level participatory decision processes regarding resource distributions. In the highly-militarized societies that characterize persistent conflict settings, this shift is difficult to say the least, and is at the heart of conflict transformation goals. Often, there are few formal institutions with capacities to provide such accountability, nor are they necessarily the best path in cultures ripe with corruption. In these cases, informal institutions and civil society groups with local level buy-in are preferable vehicles for accountability and can borrow strategies from both successful grassroots peacebuilding activities and playbooks of nonviolent activities. Security sector reform is key to whether such informal institutions and civil society groups can be effective accountability mechanisms. Successful security sector reform, in turn, has been found to depend critically on the participation of civil society.

About the author

Nancy K. Hayden is Principle Member of the technical staff at Sandia National Laboratories, where she is an expert on the nexus of international security policy, science and technology, and the social sciences. The brief draws from her UMD doctoral dissertation of the same title.