SYSTEMS THINKING IN CONFLICT ASSESSMENT
CONCEPTS AND APPLICATION

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CONTENTS

ACRONYMS

CAF	Conflict Assessment Framework
CDA	Collaborative for Development Action
CMM	Office of Conflict Management and Mitigation
DCHA	Office of Democracy Conflict and Humanitarian Assistance
DOD	Department of Defense
DOS	Department of State
GOSS	Government of South Sudan
ICAF	Inter-Agency Conflict Assessment Framework
JIWAB	Joint Irregular Warfare Analytic Baseline
M&E	Monitoring and Evaluation
NGO	Non-Governmental Organization
OTI	Office of Transition Initiatives
PPL	Office of Policy, Planning and Learning
PPD-6	Presidential Policy Directive on Global Development
QDDR	Quadrennial Diplomacy and Development Review
RPP	Reflecting on Peace Practice Project
USAID	United States Agency for International Development

BACKGROUND & ACKNOWLEDGEMENTS

This paper was commissioned as part of a project undertaken in 2011 by USAID's Office of Conflict Management and Mitigation (DCHA/CMM) and its implementing partner AMEX International to improve USAID's capacity to understand and apply systems thinking to the assessment of violent conflict for purposes of development planning and program design.

The project convened an Advisory Group of systems thinking experts[1] and conducted two Focus Groups and two training module pilots with USAID personnel and participants from the Department of State and Department of Defense on how best to incorporate systems thinking into conflict assessment. This concept paper is based on the results of those discussions, as well as desk research and the experience of the authors and Advisory Group members on uses of systems thinking. It provides a rationale for the use of systems thinking in USAID's conflict assessments and development planning processes generally, and it describes basic concepts of systems mapping and analysis as they might apply to conflict analysis by a development agency.

For additional information about the project, refer to the Development Enterprise Clearinghouse (http://dec.usaid.gov) or to DCHA/CMM.

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[1] For a list of Advisory Group members, *see* Appendix A.

INTRODUCTION

It is well documented that the costs of conflict and its impact on development goals are profound. Between 2006 and 2009, the Global Peace Index estimates that the cost of violent conflict on the world economy was a staggering $28.2 *trillion*. In terms of development, conflict can undo years of investment costing millions of dollars, limit sustainability, and restrict the humanitarian space needed for successful programs. Indeed, USAID estimates that roughly half of its program funds are applied to the world's most fragile states. The international community, including USAID, has worked to understand conflict better and to program in light of it. Accordingly, USAID's *Policy Framework (2011 – 2015)* commits the Agency to increasing its capacity for analyzing, preventing, and responding to crisis, conflict and instability.

The USAID Conflict Assessment Framework (CAF) and the Interagency Conflict Assessment Framework (ICAF) are direct responses to this need. Working systematically through these or related frameworks, USAID and its partners seek to analyze and prioritize the dynamics of peace and conflict, stability and instability, in a given country context. Conflict assessments generate recommendations for how USAID can apply its resources to minimize the chances of exacerbating violent conflict while maximizing its partners' capacity to manage disputes constructively. Conflict assessment is the first step in designing programs that effectively promote international peace and development.

USAID's Office of Conflict Management and Mitigation has conducted over 60 conflict assessments since 2002. Experience gained through these assessments, as well as advancement in the social science understanding of conflict, has underscored that armed conflict arises from a range of factors interacting in a dynamic and complex fashion. Mitigating conflict drivers, or at minimum ensuring development activities do not exacerbate them or undermine capacities for peace, requires recognizing and making sense of the inter-relationships between the political, economic, security, and social domains.[2]

Systems thinking is a way of understanding reality that emphasizes the relationships among a system's parts rather than simply the parts themselves. For the purposes of this paper, systems thinking can be described as the "science of wholeness." It is founded on the premise that, as Aristotle (*Metaphysics* 10f-1045a) once observed, the "whole is more than the sum of its parts." Following this view, systems thinking holds that the ability to see the whole of a phenomenon in its broader context will provide new and different insights than can be gained by looking at each of its component parts individually.

Defining what constitutes a "system" is not always easy. As Williams (2011: 16) notes, "[f]rustratingly—at least for some—there is no single, concise, and generally agreed-upon definition," and, moreover, myriad separate frameworks and methods that can be called "systems" approaches. Meadows (2008: 12) defines a system as "an interconnected set of elements that is coherently organized in a way that achieves something."[3] Peter Coleman (2011: 39) defines a dynamical system as "a set of elements that interact over time in accordance with simple rules" that leads to patterns of behavior.[4] At the broadest level, however, there is general agreement that a system consists of elements or parts, the links and interrelationships between the parts that hold them together, and a boundary, or the limit that defines what is inside or outside the system (Williams 2011: 26).

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[2] The OECD-DAC's General Principles for Good International Engagement in Fragile States and Situations provide guidance for international engagement in fragile and conflict contexts. *See* OECD-DAC 2008. Not all programs attempt directly to address drivers of conflict as peacebuilding interventions. Some are directed to other development aims. These, however, must be conflict-sensitive. For a distinction between peacebuilding and conflict sensitivity, *see* CDA 2009a.

[3] *See also* Ricigliano 2011; Senge et al (1994: 90) define a system as "a perceived whole whose elements 'hang together' because they continually affect each other over time and operate toward a common purpose."

[4] Eoyang (2007: 124) defines a complex adaptive system similarly as "a *collection of semi-independent agents that have the freedom to act in unpredictable ways, and whose actions are interconnected such that they generate system-wide patterns*."

Approaches to systems distinguish between different kinds of systems. Some distinguish between simple, complicated and complex systems (Quinn Patton 2011; Snowden & Boone 2007). Simple systems have high levels of certainty and predictability as well as cause-effect relationships that are known; there is widespread agreement about what to do and certainty about how the problem can be solved. Building a school is an example. Complicated systems are intricate in the number of parts and their hidden relationships to each other. They are systems in which there may be multiple "right" answers and are technically complicated, but cause-effect relationships are known, and results are challenging and difficult but knowable (Quinn Patton 2011). Complex systems are characterized by high levels of uncertainty and lack of agreement. Where complicated systems are the domain of the "unknown knowns," complex contexts are the domain of the "unknown unknowns" (Snowden & Boone 2007). Complicated and complex systems share important characteristics:

- Interconnectedness. A system consists of elements—things, tangible or intangible, and relationships or connections that hold those elements together. An individual element or phenomenon exists in relation to other phenomena as if in a spider web, where pulling one strand of the web will likely affect many others. Any element affects and is influenced by other components of the system. It is important to analyze not only the elements of a system (which generally are more easily noticed because they can be seen, felt or heard), but also the interconnections among them.

- Non-linearity. An essential insight of systems thinking is that cause and effect relationships are not linear. In other words, the relationship between causes and effects is neither unidirectional nor always direct or proportional. The scale of "effect" can be unrelated to the scale of the "cause," for example, as small actions can produce large reactions (Williams 2011; Quinn Patton 2011), and cause is often separated in time and space from effect.

- Feedback. The nonlinear character of many interrelations between system parts often (but not always) stems from feedback. Because elements and phenomena are interconnected, a change to any one piece in the system will reverberate or affect other parts, and that reverberation will eventually come back and affect the element that initiated the change. When X causes Y, it is also possible that Y causes (or at least influences) X in turn. The chain of causation from X, how it connects to other elements in the system, will often lead (or "loop") back to and affect X—often in unexpected ways.

- Patterns. Certain dynamic relationships and feedback among parts of a system recur over time. These recurrent behaviors form recognizable patterns, and these patterns can form feedback loops.

- Emergence. Because the parts of the system work together to create the behavior of the whole system, the whole system behavior is not just the summation of the behavior of the parts, but from the interdependent activities of the parts (Eoyang 1996). While goals do have influence over performance and change, one cannot determine in advance what will happen (Eoyang 2007; Quinn Patton 2011). Unanticipated consequences of actions are inevitable and important. Attempts to define and control outcomes often result in failure, because in complex contexts solutions cannot be imposed, but arise from the circumstances (Snowden & Boone 2007).

WHY SYSTEMS THINKING FOR CONFLICT ASSESSMENT?

The nature of systems thinking makes it particularly effective for analysis of difficult, recurrent or intractable conflicts whose solution is not obvious and that involve complex issues and a need for multiple actors to coordinate and see the "big picture," not just their part in it. Many conflict analysis frameworks are "static," providing only a snapshot, often piecemeal, of a situation without showing feedback or cross-factor interactions over time (Davis 2011). Ultimately, as Davis (2011: xvii) notes,

"over time, 'everything is connected to everything' . . . This interconnectedness makes analytic work difficult, but recognizing it is essential to meaningful communication and good S[tabilization] & R[econstruction] planning."[5] While acknowledging the need and utility of analyzing components of a system, systems thinking can help analysts address or avoid these shortcomings of traditional frameworks for conflict analysis and the consequences of using them exclusively, including:

- Fragmented programming;
- Biased, narrowly focused and partial analysis, designed to justify the need for one's own expertise or favorite approach or methodology;
- List-making without prioritization or dynamics, resulting in information overload and failure of many programs to achieve relevance or real effect on peace; and
- Lack of effective integration and use of analysis in program and strategy development, resulting in a gap between analysis and programming, again leading many programs to "miss the mark" (CDA Collaborative Learning Projects 2009b).

Systems thinking can contribute in three important ways to the quality and utilization of conflict assessments. It helps analysts move from a fragmented analysis (and programming) to a more **comprehensive** understanding of a conflict situation that remains **comprehensible**—that is, compelling, without long lists, and identifying key drivers and dynamics without oversimplification. It also generates a **portable** analysis in the sense that the analysis can easily be fed into strategy, program development, and monitoring and evaluation (Ricigliano 2011). [6]

COMPREHENSIVENESS: FROM FRAGMENTATION AND NARROWNESS OF INQUIRY TO COMPREHENSIVENESS WITH SIMPLICITY

Good assessment tools should capture the richness and complexity of a conflict context in order to give a broad overview of the environment an agency is trying to affect. Yet many are focused specifically on particular sectors (e.g., governance or education) or target beneficiaries (e.g., youth or farmers).

The Focus Groups convened as part of DCHA/CMM's systems thinking project commented that current assessment tools are "too limited," "don't show relationships" between factors or sectors, "don't deal with contributing factors not under our control," and make it "hard to get other sectors involved." This notion was echoed in a USAID-sponsored policy maker-practitioner dialogue on working in conflict: [7]

> Programming needs to be guided by a causal framework that recognizes
> interactions across sectors. One cannot promote health, for example, by
> attending to medical issues while ignoring issues of water, sanitation, shelter,
> and household income (USAID 2003: 38).

A growing number of governmental, non-governmental, and academic organizations have thus called for greater policy coherence, integration, coordination and holism as the key to increasing the effectiveness

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[5] Davis (2011: xvii) suggests that analysis of individual components of stabilization and reconstruction—security, political/governance, economic, social—and of the systemic interconnections between the components can be done simultaneously, or modularized and analyzed through factor tree analysis, so that analysts can "reason in causal terms at a given time, while recognizing that—over longer periods or time—interconnections are complex and the usual concept of causality is troublesome."

[6] This and other sections of this concept note draw heavily, with permission, from the book *Making Peace Last: A toolbox for sustainable peacebuilding* by author Rob Ricigliano.

[7] The Dialogue was convened by USAID's Bureau for Democracy, Conflict, and Humanitarian Assistance, Office of Private and Voluntary Cooperation on January 23-24, 2003. *See* USAID, *USAID-PVO Dialogue on Working in Conflict* (Washington: USAID, 2003).

of development and security initiatives.[8] The United Nations has promoted the idea of "integrated missions," while many governments have endorsed a "whole of government" or "whole of community" approach (OECD DAC 2006). Through the 2011 Quadrennial Diplomacy and Development Review (QDDR), the Presidential Policy Directive on Global Development (PPD-6), and the *USAID Policy Framework 2011 – 2015*, the US Government and USAID has also endorsed the concept of "3D Security," which seeks to integrate defense, diplomatic, and development resources into a coherent initiative.

The value of these initiatives is summarized by Cedric de Coning (2007: 5), who writes:

> There is now broad consensus that inconsistent policies and fragmented programmes entail a higher risk of duplication, inefficient spending, a lower quality of service, difficulty in meeting goals and, ultimately, of a reduced capacity for delivery.

However, while there is a growing consensus on the value of integrated, holistic, and whole of community approaches, implementation of this conceptual model in the field has proven to be quite difficult. The inherent complexity of the contexts in which USAID works often results in assessments that seek to gain clarity by fragmenting their analyses and focusing on only one part of a complex system. This tendency toward fragmented assessment is bolstered by how donor agencies are structured and how funding is disbursed. A commentator in the USAID-sponsored dialogue among policymakers and practitioners noted above summarized a persistent reason why such integrated programming is difficult:

> Constraints on integrated programming arise mainly from the hegemony of specialized expertise and the structural divisions that pervade the humanitarian community … Further, donors organize grants by sector … The net result is that each sector operates as a separate world, having its own norms, values, and culture (USAID 2003: 38).

The difficulty is compounded in conflict contexts when humanitarian and development agencies try to integrate programming with organizations outside their professional community, such as defense and private sector actors.

The obstacles to integrated programming are both operational (e.g., agencies organized by sectors) and conceptual (e.g., different norms, values, and ways of thinking). Agencies tend to act separately because they start by thinking separately: assessment instruments tend to be limited to the sectoral expertise of the organization conducting the assessment. Thus, within USAID, there exist separate assessment frameworks for—to name just a handful of related areas—conflict, democracy and governance, security sector reform, disaster risk, local district stabilization, education in fragile states, and more.

The findings of a three-year action research initiative on effectiveness of peacebuilding, the Reflecting on Peace Practice project (RPP) of CDA Collaborative Learning Projects, suggest that the limited scope of assessment frameworks affects program effectiveness (Anderson & Olson 2003). RPP found that when conducting analyses, agencies tend to lead with their program or to limit their analysis only to those things that are relevant to the specific expertise of the agency or its beliefs or theories about how to bring about positive change (Anderson and Olson 2003: 46). In other words, if an organization does inter-communal dialogue work, then it would limit its assessment to only those factors that helped it to identify where to conduct dialogue or that affected the potential for a successful inter-communal dialogue.

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[8] *See Smith 2004, Tschirgi 2004, de Coning 2007, Nan 1999, Kriesberg 1996.*

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Although it is not necessary to know everything about a conflict context in order to be effective, it is important to gain a more comprehensive understanding of the conflict dynamics, including:

- The key driving factors (both negative and positive) of conflict and peace;
- The relationships and dynamics *among* factors, including the international and regional dimensions, and what approaches have been tried before, with what result; and
- The key actors who have significant influence on the conflict dynamics, including "what needs to be stopped" and who will resist it (CDA Collaborative Learning Projects 2009b; Anderson & Olson 2003).

If assessments cannot produce such a comprehensive, multi-faceted picture of the forces driving conflict and peace, *and* an understanding of how the factors interact and relate to each other, it will be difficult for agencies to work in an integrated fashion. Assessment tools that use systems mapping—the graphical representation of a systems analysis—can help produce a comprehensive, cross-sectoral analysis that identifies how various factors in different sectors interact. And while most methods analyze causes of conflict and actors separately, systems analysis can integrate them because it examines the dynamics between the structural and proximate causes of conflict, triggers and actors and their agendas and behaviors.

COMPREHENSIBILITY: MOVING FROM LONG LISTS TO KEY CONFLICT DYNAMICS

Responding to the need to provide a more comprehensive view of a programming context, analysts and assessment tools have run into a second problem: information overload. Assessments that seek to provide a deep analysis of all of the component parts of a conflict context produce more information than a policy maker or donor agency can absorb. The result is that some assessment tools generate long lists of factors that leave decision makers overwhelmed by information and no clear priorities and no clear sense of how the factors work together to produce a conflict dynamic (CDA Collaborative Learning Projects 2009b). As Donella Meadows (2008: 13), a pioneering systems analyst, has noted: "Once you start listing the elements of a system, there is almost no end to the process. You can divide elements into sub-elements and then sub-sub-elements. Pretty soon you lose sight of the system. As the saying goes, you can't see the forest for the trees." Even the CAF/ICAF, with its nine analytic categories, can prove overwhelming to key decision makers at an embassy. As a result, the incomprehensibility of these assessments leave some program planners and decision makers free to categorize any program they might implement as relevant to peacebuilding.

A common approach to preventing information overload is to limit comprehensiveness by focusing an assessment on particular sectors or geographies, such as governance in eastern Afghanistan, without considering poverty, agriculture, market development, inter-group relations, and other potential contributors to conflict or peace. This is essentially a "reductionist" approach of seeking to understand the whole conflict by studying its component parts. Unfortunately, the need to focus an assessment in order to provide depth of understanding works against the need to provide breadth of understanding, which would, in turn, provide a comprehensive view. In sum, comprehensiveness without comprehensibility leads to programs uninformed by analysis. On the other hand, comprehensibility without comprehensiveness leads to problems stemming from a lack of coherence or coordination in programming.

A systems approach helps analysts foster comprehensibility and comprehensiveness simultaneously. Conflict systems mapping imposes a set of filters to force analysts to focus on key insights. First, systems thinking distinguishes between *detail* and *dynamic* complexity, and rather than try to depict *all* the variables that are present in the system, it tries to capture the system's structural interrelationships and

dynamics.[9] Second, the process of identifying key dynamics (or key causal feedback loops) forces analysts to winnow out data so that they only include data on key factors that make up important feedback loops and factors that have many important impacts or ripple effects on other factors in the system. Finally, a systemic analysis can be applied at different levels—whole system, subsystem, greater system—and thus can provide a way simultaneously to understand interconnections and dynamics at the broadest level while "drilling down" to understand subsystems and factors in greater depth in order to design programs.

As such, systems thinking can be an important addition to USAID conflict assessment tools and frameworks. Many of these tools, in particular the USAID conflict assessment framework, start from a very systemic premise that conflict cannot be understood as just a human rights, governance, or economic issue; rather, the drivers and mitigators of conflict are complex, interdependent, and dynamic. The USAID conflict assessment looks at how identity groups, institutions, and societal patterns interact with each other and the underlying context to form core grievances and sources of resilience, as well as at the ways that key actors interact with these grievances and resiliencies to either mitigate or drive the potential for conflict. In calling for the production of an analytic narrative, the USAID conflict assessment requires analysts to pull the various insights from the conflict assessment's analytic categories into a coherent story that highlights the important findings.

Yet these assessments can also be conducted in a "reductionist" manner, especially when they focus on specific determinants of stability and instability (e.g., identity groups, societal patterns, core grievances, sources of resilience, key actors) as priorities or predominant causes. Systems thinking allows analysts both to prioritize *and* synthesize the factors. It provides a way to identify what the most important pieces of information are, and, more importantly, how the various determinants of stability and instability are connected—how one phenomenon, for example, such as a cultural value on relationships, might affect another, such as influence of reformist leaders. The connections or relationships among the elements are as important, if not more so, as the factors or causes themselves for understanding the dynamic of the conflict: "[t]he elements, the parts of systems we are most likely to notice, are often (not always) least important in defining the unique characteristics of the system—*unless changing an element also results in changing relationships or purpose*" (Meadows 2008: 17). The systems map can use a picture to tell a compelling story about a complex social context, such as Mindanao or Cambodia, that identifies the most important elements (or combination of elements) comprehensively and comprehensibly depicts *how* they interact to cause conflict. In a systems approach, prioritization applies to combinations of factors. For example, in evaluating an automobile, we demand that it have a good propulsion system *and* a good braking system *and* a good steering system, etc. Having "good enough" versions of all the subsystems, along with good integration, has higher priority than, say, achieving the very best of any one of those subsystems.

PORTABILITY: FEEDING THE ANALYSIS FORWARD INTO PLANNING AND PRO-GRAMMING

Analysis should be the starting point for the design, monitoring, and evaluation of conflict and development programs. This requires that the core lessons of an assessment "feed forward" to inform the future decisions of people beyond those who conducted the initial analysis.

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[9] Senge (1994: 79) describes the distinction in the following way: Tools for forecasting and business analysis "are all designed to handle the sort of complexity in which there are many variables: detail complexity. But there are two types of complexity. The second type is dynamic complexity, situations where cause and effect are subtle, and where the effects over time of interventions are not obvious. . When the same action has dramatically different effects in the short run and the long (run), there is dynamic complexity. When an action has one set of consequences locally and a different set of consequences in another part of the system, there is dynamic complexity. When obvious interventions produce non- obvious consequences, there is dynamic complexity."

The lack of effective "feed forward," or translation of analysis to strategy and programming, has been one of the strongest critiques of assessment frameworks in general. A recent study of conflict assessments published by the International Peace Institute notes:

> There is frequently inadequate attention paid to how assessment tools fit into broader strategic planning processes. Consequently, assessment processes are often one-off exercises, instead of efforts to collect and update analysis at regular intervals that can feed into planning cycles (Slotin, Wyeth & Romita 2010).

CDA Collaborative Learning Projects' *Reflecting on Peace Practice* program has found more generally that the lack of connection between analysis and strategy and program planning has been a key reason many programs "miss the mark" (Anderson and Olson 2003; CDA Collaborative Learning Projects 2009b).[10] Focus groups within USAID suggest that this has unfortunately been the Agency's experience too often.

Key insights from conflict assessments must therefore be conveyed to planners/designers, implementers and evaluators in a comprehensive, comprehensible form if these different players are to make effective decisions based on the original analysis. This need not be only in the form of specific program recommendations. Indeed, even when recommendations are welcomed or even required, there is no guarantee that the rationale and spirit behind them will be transmitted intact across parties and audiences—and, therefore, that their implementation will have the anticipated results. While recommendations can be helpful, effective "feed forward" requires a more substantial articulation of the implications of the analysis for strategy, programmatic goals and program design.

Systems mapping is a powerful tool for bridging the gap between analysis and strategy and incorporating the analytic narrative generated by a conflict assessment into planning. The process of producing such a map often offers key insights in several areas that help users design policies, strategies and programs that are most likely to promote substantive change in the conflict. First, systems maps synthesize analysis by elucidating the patterns and inter-relationships across factors (i.e., the *key dynamics*). Second, systems maps can help analysts identify *leverage points for change*—places where relatively small changes can lead to larger shifts in the behavior of the system (Meadows 2008: 145; Ricigliano 2011: 146). Third, systems maps and the process of producing them can help analysts understand, articulate and test their theories of change at the micro- and macro-levels. Because the maps represent perceived connections and dynamics between factors, planners can trace the anticipated effects of a strategy or program across factors and dynamics on the maps and identify the contextual forces that will undermine it. This is a critical step for developing appropriate indicators for monitoring and evaluation, not just of a particular program or strategy, but of the theories and hypotheses themselves. Each area is described in greater detail below.

(1) Key dynamics. Traditional planning processes focus the attention of planners on one or more key issues or needs, frequently reinforcing fragmentation and responses that are "guided by the presenting situation and blind to the dynamics unfolding across its different phases" (Coleman 2011: 89). As noted above, from a systems perspective, affecting specific variables is less impactful than affecting dynamics and relationships among variables. As Donella Meadows (2008: 16) notes:

> General Motors and the U.S. Congress somehow maintain their identities even though all their members change. A system generally goes on being itself,

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[10] The findings of the *Reflecting on Peace Practice* project (RPP) emerged from a three-year collaborative learning process engaging over 200 agencies and many individuals around the world on effective peace practice. The effort conducted twenty-six case studies and consultations with over 1000 practitioners to clarify what works and why, publishing the findings in *Confronting War: Critical Lessons for Peace Practitioners*. Since 2003, RPP has worked with active peace programs throughout the world to test, refine and deepen the lessons of *Confronting War*.

changing only slowly if at all even with complete substitution of all its elements—as long as its interconnections and purposes remain intact.

Peter Coleman, Columbia University professor and a member of the DCHA/CMM Systems Thinking Project Advisory Group, and his colleagues (2011: 50) similarly note that "[t]he recognition that conflict and peace arise and develop within complex, non-linear systems suggests that we learn to attend to temporal patterns and trends, not specific outcomes." Elsewhere, Coleman elaborates more directly:

> [W]e should be less concerned with bringing about specific outcomes in a conflict (generating particular insights, agreements, behavior change). Instead, we should focus on altering the parties' general patterns of interaction in a more constructive direction (Coleman 2011: 95).

Systems thinking helps identify the key dynamics—not just key factors—on which planners should focus. By defining success not just as changing specific elements in a system, but on changing the larger dynamics, it also helps development professionals to design programs that are more likely to have an impact on the broader dynamic of conflict and peace.

(2) Identifying leverage points for change. Once the key conflict dynamics have been identified as part of the diagnostic phase of the assessment, the question for response purposes is: how can those dynamics be changed? In particular, how can an external, resource-constrained actor such as USAID have the biggest effect possible on them? Not all dynamics are equally susceptible to change, and not all changes in a system are equally impactful. Many efforts focus on important elements or dynamics of a system, but encounter resistance that counteract the effects of the intervention. In Kosovo, for example, international donors' efforts to strengthen inter-ethnic cooperation and multi-ethnicity by supporting multi-ethnic projects had limited effect, in part because increased multi-ethnic cooperation prompted local leaders to exercise social control to restrict its scope, permitting cooperation for property sales or economic activity, while forbidding other forms. This effectively limited the potential for growth of multi-ethnic cooperation, and the attendant improvements in perceptions and attitudes, trust and social capital they might have created (Chigas et al. 2007).

A dynamic where change might be possible contains a leverage point. A leverage point is a place where a positive, relatively small change is more likely to be amplified and create a bigger change. The higher the leverage, the less likely the system will be able to resist change, the more likely the intervention will work and be sustained, and the lower the relative cost. For example, the practice of foot binding, where the feet of young women were bound in order to make them eligible for marriage, was widespread in traditional communities in China. Legislation and other policy efforts by the government had failed to change this practice. Yet, it was when anti-footbinding campaigns orchestrated contractual arrangements in which prominent families would promise that their sons would marry women with unbound feet that the practice began to decline rapidly (Ko 2005; Jackson 1997).[11] Because foot binding had significant effects on marriage and social status, a leverage point existed in changing elite behavior (especially those of families with sons) regarding marriage; in that way, a change by a relatively small number of people was amplified to such an extent that the entire system of foot binding changed.

Systems thinking can help identify these leverage points as effective places to intervene. Leverage points can lie in changing a driving factor (including the structural elements and the rules that shape how parties behave), or breaking links between factors—either by changing key assumptions and attitudes that underlie them or working on the parties' incentives and behavior directly.

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[11] Other factors were, of course, at play in this dynamic, including Western influences, the influence of the Communist party, and economic changes in rural areas, where textile production in the home, traditionally the work of girls and women, gave way to industrialization (Bossen et al. 2011).

Leverage points are often counterintuitive. It is not simply a matter of choosing the most important cause to work on. Because of the interconnectedness of the parts of a system, action does not need to be directed at the site of the problem to be effective (Burns 2011: 103). Indeed, this may be the place where direct intervention is *least* likely to be successful. Often, typical approaches, such as increasing levels of funding or removing a bad actor, are not leverage points at all because changing these obvious problems does not change the underlying system. For example, sending new people to Congress usually does not succeed in changing Congress as an institution (Meadows 2008). David Stroh (2009) points out that seemingly obvious solutions to complex problems are often counterproductive: "temporary shelters can undermine community efforts to end homelessness, food aid can lead to increased starvation, and drug busts can increase drug-related crime."

In the illustrative systems map of South Sudan contained in Figure 1[12], for example, a leverage point could be identified in the way conflict between traditional and modern governance systems is managed. A key driver of conflict was identified in the perceived legitimacy and capacity of the Government of South Sudan (GoSS). Interventions to affect legitimacy and capacity directly have mixed results, however, as shown in the four feedback loops, numbered B5, R6, B7, and R8 (bottom right of the map). The two loops labeled "B" are balancing loops; they serve to stabilize the situation (see below for an explanation of balancing loops). In this case, these two loops serve to restore the perceived legitimacy and capacity of the Government of South Sudan (GoSS). The two loops labeled "R" are reinforcing loops and have the opposite impact, generating either vicious or virtuous cycles. Here, both international aid and foreign investment serve to destabilize the situation by lowering the legitimacy and capacity of the GoSS (see below for an explanation of reinforcing loops). While external support in the form of international aid and technical assistance or foreign investment can help to restore the legitimacy and capacity of the GoSS (loops B5 and B7), they also put the legitimacy of the GoSS under stress (loops R6 and R8) by increasing conflict between traditional and modern systems of governance (factor circled in green). The current tendency for modern political or economic structures (e.g., a local government appointee) to try to supplant traditional local authorities decreases the perceived legitimacy of the GoSS by causing local inhabitants to resent the federal government. As a result, the impacts of external support on this factor create dynamics that counteract the stabilizing effects of external assistance in South Sudan.

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[12] This system map was created as part of the Joint Irregular Warfare Analytical Baseline (JIWAB) a study in Support for Strategic Analysis (c.f. DoD Instruction 8260.05 7 July 2011). The study methodology is centered on "contextualized understanding" which calls for a deep understanding of a possible future operating environment. The JIWAB study leaders, based at Marine Corps Combat Development Command in Quantico used a participatory systems diagramming approach, co-lead with Mr. Ricigliano, using Sudanist experts, and conflict analysis experts from George Mason University to augment their study team. The maps generated in this exercise formed the basis for the rest of the study effort. For more information on the JIWAB study, contact Yuna Wong, PhD at yuna.wong@usmc.mil.
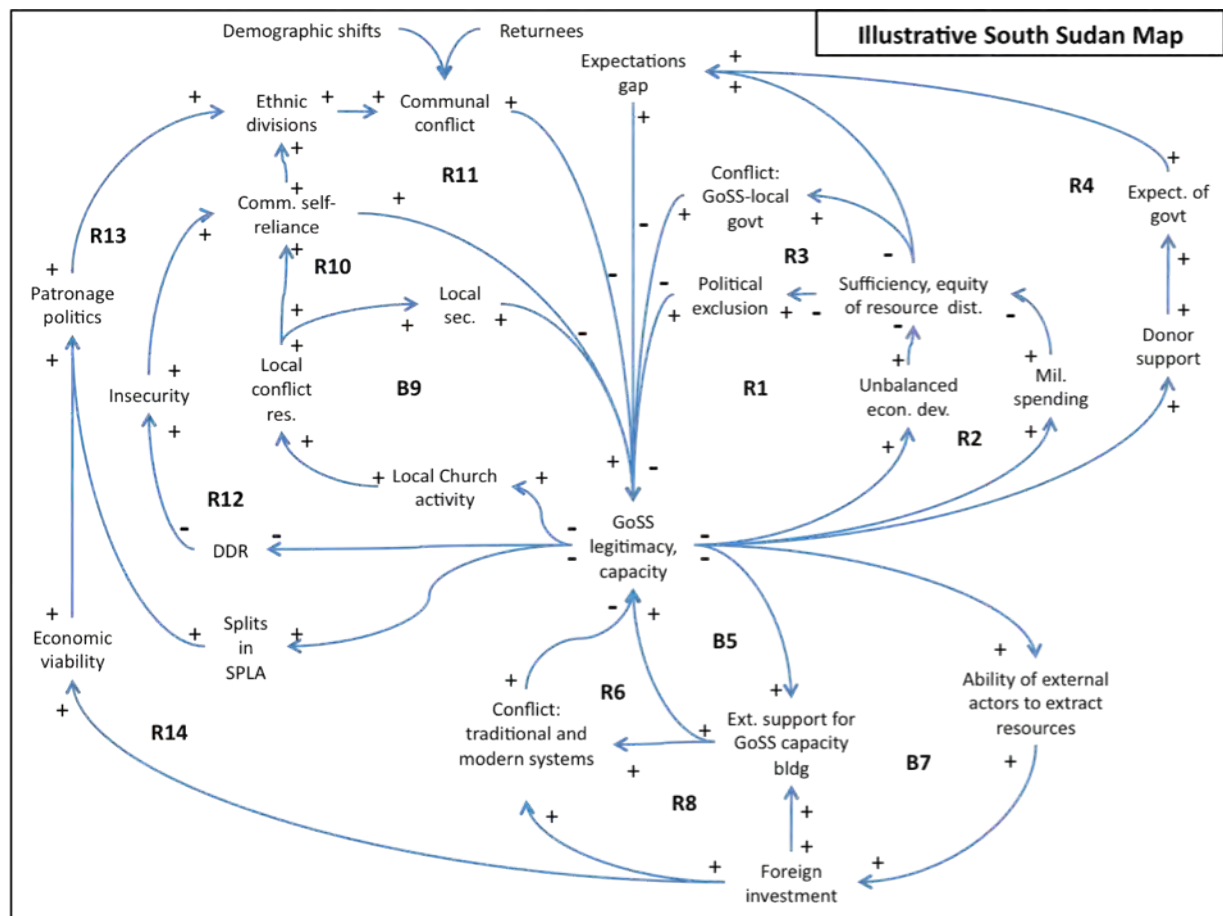
Figure 1: Illustrative Systems Map of South Sudan

This situation also presents a possible leverage point. For example, if modern and traditional governance structures were able to work cooperatively with each other (and not against each other), then the impact of this factor ("conflict: traditional and modern systems") might be to *increase* the perceived legitimacy of the GoSS. If the relationship between these two factors changed, the two destabilizing dynamics (R6 and R8) would become balancing dynamics, and the four dynamics would work together to increase the legitimacy of the GoSS rather than cancel each other out. In addition, because the factor "conflict: traditional and modern systems" is itself currently in a state of flux (i.e., the interaction between these two systems is changing everyday, on its own accord), it may be a particularly powerful leverage point. It is an indication that it may be easier to affect this factor than to affect one that has been frozen or stagnant or which has proven resistant to attempts at change.

(3) Framing/contextualizing theories of change and developing indicators of impact. A *theory of change* states what expected (changed) result will follow from a particular set of actions and *how* that result will come about. Effective design, monitoring, and evaluation of conflict mitigation programs is contingent upon there being clearly defined and well-grounded theories of change, because only then is it possible to:

1.   Identify an appropriate set of indicators for measuring results;
2.   Assess how well the results were actually met; and

3. Compare results across similar interventions to determine if the theory holds up.[13]

The more robust the theory of change of the program is and the more adapted it is to the conflict in question, the greater the likelihood a program will be effective. To be effective, theories of change have to be contextualized: a general theory of change needs to be articulated in terms of how it will affect individual factors, relationships between factors, and key dynamics that appear in a systems map of a particular context.

Systems thinking and systems mapping facilitates the development and testing of theories of change by (a) making explicit the inter-relationships across conflict factors and dynamics; (b) helping planners identify and trace the anticipated effects of their interventions on the system; and (c) helping planners and implementers anticipate and monitor unintended impacts of their programs. This process of framing in turn helps analysts and program managers monitor and validate their interventions, leading to better projects in the short term and greater learning in the long term.

For example, in the systems map of South Sudan (Figure 1, above), an intervener might use various education-related theories of change (e.g., that improved secondary education builds the foundation for citizen participation in governance, which in turn supports just and sustainable societies). While there may be sound evidence to support this theory of change in general, to be effective in South Sudan, the intervener needs to understand how that theory of change would affect (or contribute to affecting) the key leverage point: improving the relationship between "traditional and modern systems" and how that factor affects the perceived legitimacy and capacity of the GoSS. Could educational programs be designed to build understanding of how traditional and modern governance structures can work together? How might local leaders and government officials participate in designing or executing educational programs? How could educational programs link to other key factors in the four interlinked feedback loops that affect the relationship between traditional and modern structures (e.g., "externally supported GoSS capacity building programs" or local operations funded by "foreign investors")? Are there other initiatives in rural communities that could affect factors in these feedback loops, and to which an education program should connect, such as local governance initiatives or programs to build local business cooperatives? What other factors in these feedback loops might undermine educational programs designed to improve the relationship between traditional and modern structures (e.g., could GoSS capacity building or foreign investment be done in ways that exacerbate the relationship between traditional and modern structures or lessen the perceived legitimacy of the GoSS)? These are questions planners or programmers might ask to test their theories of change and refine them to be valid in the particular context in which they are working.

A systems analysis can be helpful for monitoring the outcomes and impacts of an intervention and identifying how programs should be adjusted to improve them. In the Kosovo example above, a systems map might have helped program planners and implementers understand and adjust programming to take account of some of the resistances (in the form of social control by local leaders) and some of the unintended negative consequences of their support for multi-ethnic programming. In this way, systems analysis draws attention to the downstream or ripple effects, as well as emergent outcomes, of particular interventions on dynamics within the system. In other words, systems thinking helps development professionals to better understand the links between their different individual efforts, ascertain those efforts' collective impact on the whole, and draw focus to the areas or issues where good intensions are at greatest risk of doing inadvertent harm.

In the illustrative analysis of South Sudan, planners would need not only to measure the outputs and outcomes of their education efforts in relation to the beneficiaries and institutions they are targeting,

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[13] *See* Nan 2010. *See also* Norad 2011. OECD-DAC 2008 (emphasizing the importance of articulating theories of change for evaluating peacebuilding and conflict prevention activities).

but also to identify and measure ways that their programs/programmatic theories of change impact the *overall system*. For example, how would the project measure whether their intervention improved perceptions of the legitimacy and/or capacity of the GoSS? What emergent outcomes or ripple effects might occur as a result? How might this program have ripple effects on other community-related factors/dynamics in the systems map, such as ethnic divisions and conflict in rural communities (see loops R11, R12, and R13 in Figure 1, above)? How might other dynamics in the system (outside loops B5, R6, B7, and R8) affect the legitimacy and capacity of the GoSS, and what impact might a change in the B5-R8 loops have on other dynamics that GoSS capacity and legitimacy affects?

Such analysis and monitoring, which looks at the ripple effects of a program, helps programmers and evaluators find appropriate indicators of change at levels beyond just the immediate or localized programmatic level, i.e., at the meso- or macro-levels. This is key to bridging the micro-macro gap to understand how change at the micro level (program, local community, sector, etc.) can stimulate change in the large system of conflict beyond the immediate arena of the intervention.

It should be noted that systems thinking is not a panacea. It is neither necessary nor desirable for all analytic and planning tasks. Linear and "reductionist" (breaking a problem down into its component parts) analysis and planning methods are good for discrete and known problems, where there is a degree of certainty about the outcomes. In the USAID context, this might include planning a polio vaccination campaign, building a school, or organizing an election. For these kinds of problems, "best practice" can provide steps that can be followed to achieve desired outcomes with a fair degree of confidence, even if the steps are complicated and difficult. Systems thinking and dynamic causality are better suited for setting priorities and aiming efforts in more complex and dynamic situations, where there is uncertainty, and often a high degree of disagreement, about how to achieve outcomes, and even what the nature of the problem is at all. Such situations might include understanding how best to alleviate poverty in rural Afghanistan and whether schools or elections will be helpful in that effort. Moreover, systems thinking can better anticipate and lessen the chances of negative unintended consequences by helping to identify factors (across sectors) that may interfere in any one intervention. This may be particularly useful where those "disruptive factors" are outside the scope of a specific project (e.g., activity of armed groups that might interfere with efforts to rehabilitate forests or train farmers).

BASICS OF SYSTEMS MAPPING

Systems analysis requires the analyst to look for interconnections among parts of a system in order to track causal relationships that form feedback loops. The basic building blocks of systems mapping are as follows:

- Key driving factors. Conflict analysis is likely to generate a multitude of factors, many of which are interconnected in many different ways. Generally, only the most important factors are mapped in a systems map. A key driving factor is an element or dynamic without which the conflict would not exist or would be completely different. One can test the importance of a system's elements by imagining what would happen if it were changed or eliminated.

- Interconnections (or links). From any element or factor, one can trace arrows that represent the influence it has on another element. Variables can move in the same direction (e.g., an increase in A's level of arms leads to an increase in the level of threat felt by B); they might both increase or decrease. The variables can also move in opposite directions (e.g., an arms buildup by B may lead A to have less trust in B). These links form the building blocks of cycles, or feedback loops, which characterize the various dynamics of the system.

- Feedback loops. A feedback loop is a chain of causal connections from a factor or element that comes back to affect that element. There are essentially two kinds of feedback in a system. A *reinforcing loop* refers to a dynamic in which most of the factors build on each other, each one contributing to or augmenting an overall dynamic of exponential growth. If the growth is positive, it is a virtuous cycle; if it is negative, as in conflict escalation, it is a vicious cycle. An example is the classic "action-reaction cycle" of an arms race:

If A feels threatened or insecure, A may purchase and build up arms to protect itself. This causes B to feel threatened, and to respond by building up its own arms. B's action in turn causes A to feel
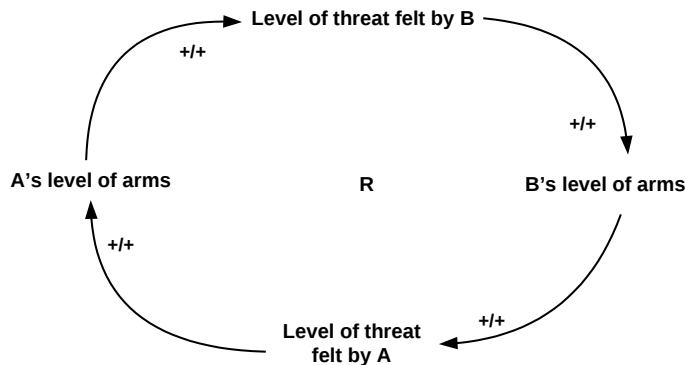
Figure 2: Arms Race—A Reinforcing Loop

even more threatened and invest more in defense systems. And so the story continues. This is a classic escalation loop—a reinforcing feedback loop, or vicious cycle, that is self-perpetuating.

In a *balancing loop*, the dynamic serves to return a system (or subsystem) to a state of equilibrium or to counteract the dynamic of a reinforcing loop. A thermostat is a classic example of a balancing loop: as the temperature changes in a room, the thermostat will activate (or deactivate) the heater to bring it back to the desired setting or goal. In the arms race example, if a third party invited B to engage in dialogue with A, a balancing loop might be created as follows (if the dialogue is effective):
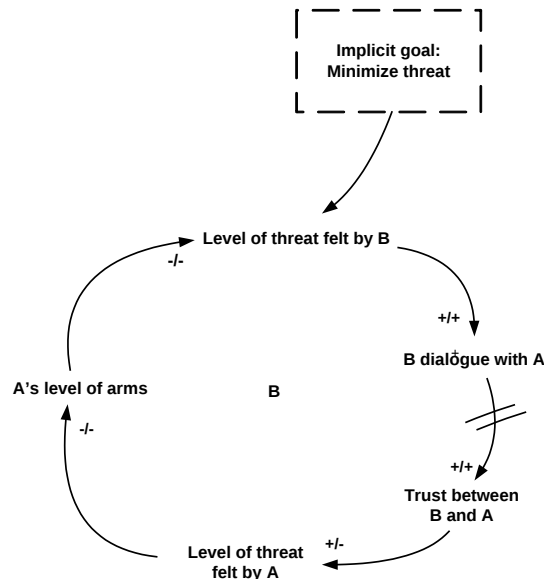
Figure 3: Crisis Management Mechanism—a Balancing Loop

B's implicit (or explicit) goal is to minimize the threat it feels from A. As B feels greater threat, B increases dialogue with A. Greater dialogue leads to greater trust, which in turn reduces A's sense of threat, inducing A to slow its buildup of arms. The feedback is to bring B's level of threat back to its acceptable minimum level.[14]

Two further dimensions are important to understanding and mapping a system:

- Delays. Systems are characterized by time delays (represented by a // in a systems map)—that is, the effects of various causes or elements often take time to play out (and therefore are not always visible). Delays often cause decision makers to overreact or underreact. There will, for example, be a delay between the time a thermostat activates a boiler and the time the room reaches the desired temperature. A decision maker who feels cold may wait a few minutes for the room to heat up, but, still feeling cold, will push the thermostat up 10 degrees. The room warms up nicely, but soon the decision maker is sweating. Similarly, in the above example of dialogue processes between B and A, the effects of dialogue on trust may take some time, yet policy makers and funders may withdraw support before the mechanism is able to make its impact. Analogous sequences of events are frequently observed in policy-making.

- Mental Models. In addition to other kinds of factors, important elements of a systemic conflict analysis are the mindsets or ways that people think—called "mental models" in the systems thinking world (or "frames" in communication theory). These often determine how and what we perceive, and are a powerful yet hidden aspect of a system. For example, a mental model underlying the arms race might be "overwhelming force will deter" or "we will not survive if we do not dominate."

Systems maps are built using these basic building blocks. A systems map would include several of these feedback loops, which themselves are interlocking. Often, grievances represent reinforcing loops (vicious cycles) and resilience often occurs as a balancing loop dynamic working on the same element.[15] In the simple example of the effects of dialogue or crisis management mechanisms on an arms race, a systems map might be constructed by linking as in Figure 4:
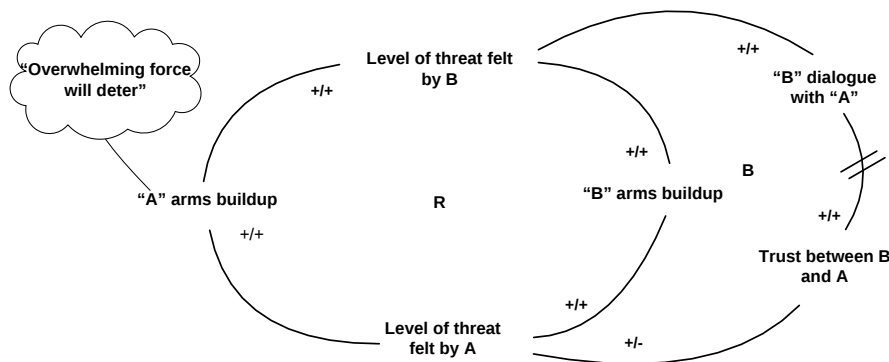
Figure 4: Building a Systems Map

[14] The +/+, -/-, +/- and -/+ in the diagrams illustrate the nature of the causal relation. Notations of +/+ and -/- indicate a reinforcing relationship—B feels *more* threatened as A builds up arms, or B feels less threatened if A decreases arms buildup. Notations of +/- or -/+ indicate an opposite relation—e.g., the *more* trust there is between B and A, the *less* "A" feels threatened. "R" and "B" are used to characterize the nature of the feedback loop—reinforcing or balancing.
[15] Resilience can also come in the form of a virtuous cycle (a reinforcing loop with positive results) counteracting the effects of a vicious cycle (a negative reinforcing loop). Often, in conflict situations, these virtuous cycles are dormant and have been overwhelmed by the negative reinforcing dynamics.

The balancing loop counteracts or mitigates the force of the reinforcing loop (R) by redirecting the response to a perceived threat. It is important to note that both reinforcing and balancing loops coexist in a system in this way, even during an escalation of an arms race, when the reinforcing loop (vicious cycle) may dominate.

SYSTEMS ARCHETYPES

At times, time constraints and the level of detail and complexity of a situation are so great that identifying key drivers and effective focal points for intervention is difficult. Most conflicts, however, are not unique in their underlying structure and dynamics, even if the context and the circumstances are very different. In this context, systems archetypes can be useful tools for analyzing the dynamics of a situation and focusing attention on systemic structures and dynamics, rather than on individual factors or events.

Archetypes describe common system dynamics that produce patterns of behavior in a variety of contexts. Reinforcing loops (vicious and virtuous cycles) and balancing loops (stabilizing or resistance dynamics) are archetypes. Others include self-fulfilling prophecies, addiction and escalation (Meadows 2008: 111). The archetypes provide a structural template for analyzing a situation that can help focus attention on the heart of the problem. Because common high-leverage actions are associated with different archetypes, they can also be used proactively for program planning—to help focus attention on program approaches that are likely to have the biggest impacts, and to help program teams look ahead at potential systemic consequences of their proposed strategies and plan for them. As Donella Meadows (2008: 112) notes:

> [S]ystem traps can be escaped—by recognizing them in advance and not getting caught in them, or by altering the structure—by reformulating goals, by weakening, strengthening, or altering feedback loops, by adding new feedback loops. That is why I call these archetypes not just traps, but opportunities.

Some common patterns (or archetypes) of social conflict that are emerging from analyses are described below, along with some very general approaches to addressing those dynamics. Some model typical problem situations. Others describe common problems associated with attempts to deal with a situation, either by the parties themselves or a third party. Moreover, many archetypal dynamics may be at play in any one conflict situation. Analysts should avoid settling on one archetype or explanation right away, but continue to look at the conflict through the lens of several different archetypes, to determine which fits better, or whether several are operating simultaneously. It is useful to explore a number of different stories (archetypes), as they help us ask questions about the conflict and programs that we might otherwise not ask.

SHIFTING THE BURDEN/EXCLUSION[16]
A common archetype is the story of Shifting the Burden. In this archetypal dynamic, a "quick fix" to a complex problem is adopted—one that is obvious and immediately implementable. The solution usually relieves the problem symptom, at least in the shorter term, but has several negative side effects:
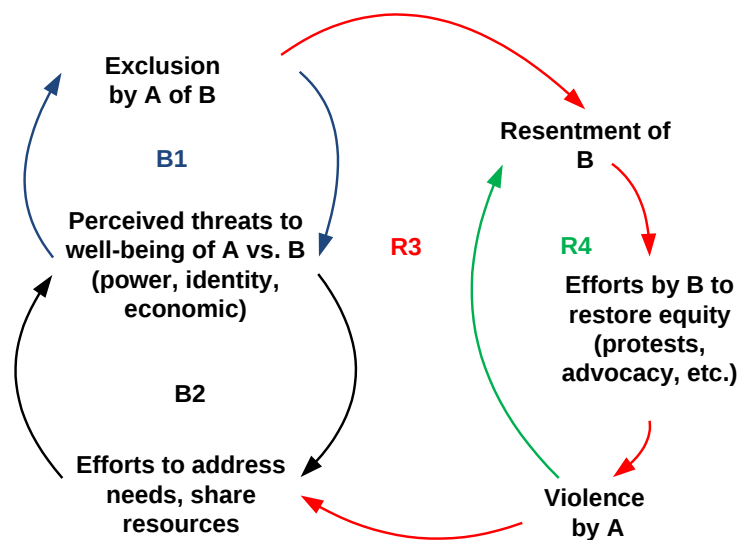
- It diverts attention from the real, underlying problems that need to be resolved for a solution to be sustainable.

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[16] The templates for these archetypes have been adapted from those developed by Kemeny, Goodman, and Senge at Innovation Associates in the 1980s. *See* Senge et al 1994: 113-169; Kim 2000. Several were based on "generic structures" that were identified by Jay Forrester, Donella Meadows and other systems dynamics pioneers previously. *See, e.g.,* Meadows et al. 1972.

- It undermines the viability of the potential solutions to the underlying, root problems.
- Parties can become "addicted" to the symptomatic solution, such that the addiction itself becomes an additional problem.

Exclusion and discrimination can be a type of shifting the burden dynamic. Exclusion, a response to perceived threat (to power, economic gain, identity, security, etc.), mitigates the threat, but has a side effect (over time) of generating a cycle of resentment and grievances (R4) that makes it more difficult for the parties to work together to address the needs of the excluded party (R3). Continuing vicious cycles of repression and eventual violence make efforts to address the problem through power-sharing, development, etc. even more difficult.
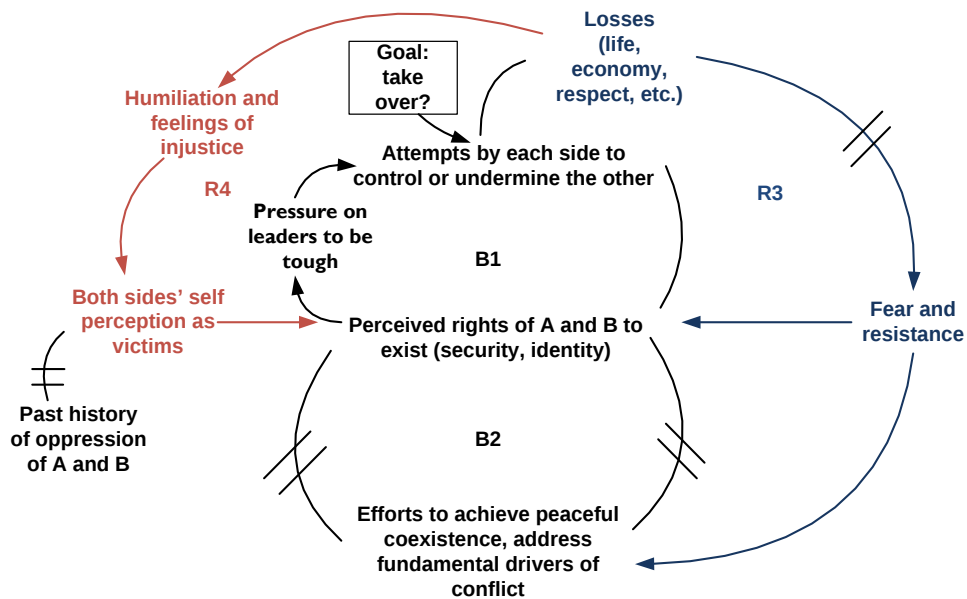
Exclusion Archetype

Protracted identity-based conflicts share a similar structure (*see* Stroh 2002). Shorter term "fixes" to security threats lead to side effects, such as mistrust and hatred, that undermine the parties' ability to address the fundamental issues in conflict. The parties become "addicted" to confrontation.
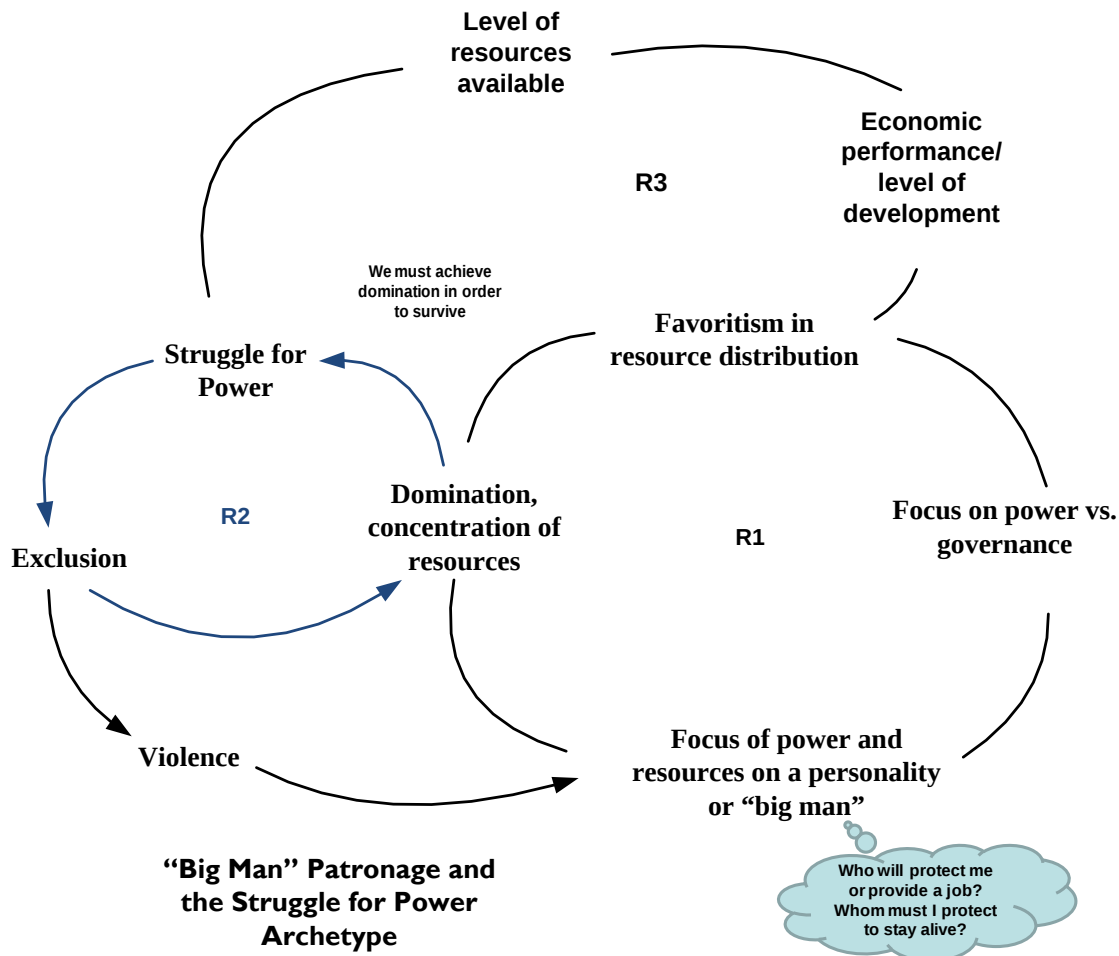
Changing the dynamics of these archetypal patterns may entail finding ways to shift attention from the "quick fix" to the fundamental solution—perhaps through creation of a societal vision or coalitions that could motivate a sustained effort to deal with underlying causes of conflict—or to change the reward structure for the "quick fix."

**Protracted Identity-Based
Conflict Archetype
(from D. Stroh)**

"BIG MAN" ARCHETYPE

Several emerging archetypal patterns in conflict situations revolve around elite power struggles' favoritism (or patronage or corruption). One variation is the "Big Man" archetype. It is essentially a set of interconnected vicious cycles. Here it is not merely the struggle amongst elites, but the focus of power and resources on a "big man" which unleashes a struggle for competition that can lead to violence. The "big man" model could be rooted in and perpetuated by peoples' struggle to survive and the belief that protection and patronage of the "big man" is needed for survival. The patronage inherent in the "big man" model reinforces the concentration of power and resources in the hands of the "big man" (R1) and in turn unleashes a struggle for power and a pattern of exclusion by the dominant group that increases the stakes in maintaining (or getting) power, and the likelihood of violence (R2). Concurrently, patronage and favoritism negatively affects government performance (as poorly qualified people, for example, are hired into government and overgrown bureaucracies consume increasing proportions of the budget), and leads to diminishing availability of resources and poor development. This, in turn, raises political states and exacerbates elite competition (R3).

Level of resources available

Economic performance/ level of development

R3

We must achieve domination in order to survive

Favoritism in resource distribution

Struggle for Power

R2

Domination, concentration of resources

R1

Focus on power vs. governance

Exclusion

Violence

Focus of power and resources on a personality or "big man"

Who will protect me or provide a job? Whom must I protect to stay alive?

"Big Man" Patronage and the Struggle for Power Archetype

In analyzing such systems, one can ask whether there are "weak" links between factors that can be broken in the vicious cycle, new feedback loops (e.g., accountability mechanisms and information flows) that can make it more difficult to engage in favoritism, or ways of creating means of survival other than the public sector or "big man" patronage. These questions can help focus exploration of strategic and program approaches on areas where there might be some leverage.

SUCCESS TO THE SUCCESSFUL

This dynamic occurs when the "winners" in a competition receive, as part of their reward, the means to compete more effectively (Meadows 2008: 127). This archetype suggests that success for one party or another may depend as much on structural forces and initial conditions than on the behavior or performance of the parties. It can help explain the perpetuation of marginalization (or of domination) even in the absence of oppressive or discriminatory policies. An example can be found in an ethnic group's domination of the economy (e.g., business sector, tourism, etc.). If that group were, for example, given land under colonial times, it started with some resources that are used to develop tourist facilities that bring in revenue. This success brings in more investment; infrastructure becomes concentrated in this area, as it is needed for continuing growth (R1 in the map below).
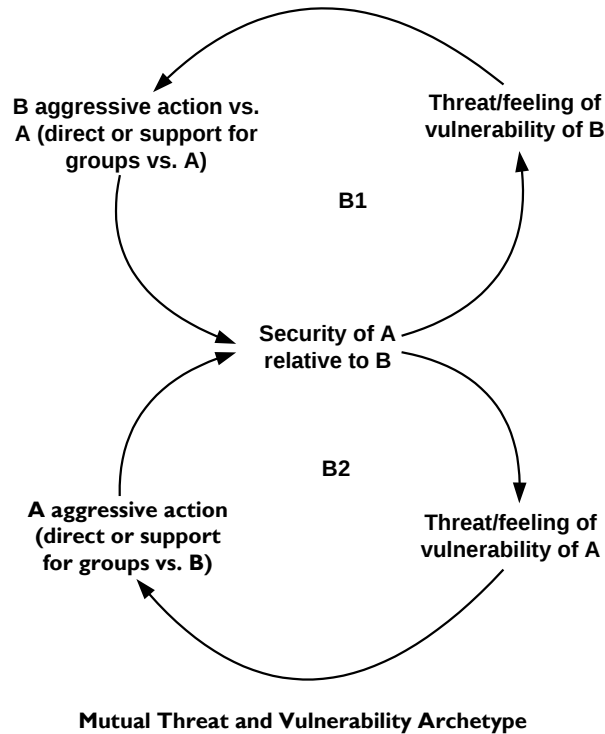
Success to the Successful
Archetype

A favored (e.g.,
investment, credit,
education, etc.)

B marginalized

Resources to A vs. B
(education, land, power,
resources, etc.)

R1

R2

A success

B disadvantage (e.g.,
with investment, credit,
education, etc.)

Favoritism,
Colonial Policies

At the same time, the groups that did not receive land initially are disadvantaged; they have fewer means to develop businesses and become employees of the business of the other group. Their areas become more and more disadvantaged in terms of infrastructure development, further diminishing their opportunities for economic success in a spiraling vicious cycle (R2). If this leads to resentment and frustration, it could reinforce conflict dynamics. Breaking this dynamic may require devising ways to diversification (such that the disadvantaged do not compete directly with the "successful"), feedback loops to prevent one party from dominating, ways to level the playing field or rewards for success that do not unduly advantage the "winners."

MUTUAL THREAT AND VULNERABILITY (OR ESCALATION)

When two parties are trying to protect and restore tolerable levels of security for themselves through coercion or power-based means, they can create a vicious cycle of escalation that ultimately makes them less secure. This archetype explains how rational actions by each party, based on "zero-sum" measures of security, lead to a vicious cycle (reinforcing loop) of escalation in the longer term. An arms race is a typical mutual threat and vulnerability situation. To interrupt this dynamic, it is important to understand the relative measure that is pitting the parties against each other and to identify ways of negotiating a "disarmament," a larger goal that can encompass both parties' goals or ways to respond differently to the perceived threat. A variation describes how this dynamic can be driven by internal political competition within one or both parties that strengthen more extreme voices.

Mutual Threat and Vulnerability Archetype

B aggressive action vs. A (direct or support for groups vs. A)

Threat/feeling of vulnerability of B

B1

Security of A relative to B

B2

A aggressive action (direct or support for groups vs. B)

Threat/feeling of vulnerability of A

Mutual Threat and Vulnerability Archetype
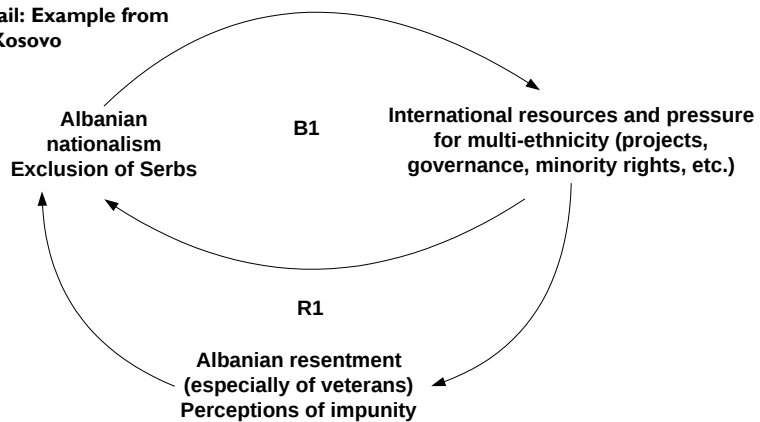
FIXES THAT FAIL (OR POLICY RESISTANCE)

When practitioners find themselves asking why a problem they thought they were addressing is worse than before, then this archetype might be at work. A party takes action to "fix" a problem, and temporarily it does. But the "fix" worsens the problem in the long term. International donor policies prior to the recognition of Kosovo's independence are a good example. International resources for multi-ethnic projects and pressure on ethnic Albanians to integrate ethnic Serbs into political, economic and social life in Kosovo did initially serve to reduce nationalistic actions and to promote cooperation and positive action. Yet, an unintended consequence was that it increased Albanians' perceptions that their needs were being ignored in favor of Serbs' needs and that past injustices were not being addressed. As a result, nationalism was strengthened, not reduced, by the policy as public resentment mounted and more extreme groups gained popularity (Chigas et al. 2007).

Fixes that Fail: Example from Kosovo

Albanian nationalism Exclusion of Serbs

B1

International resources and pressure for multi-ethnicity (projects, governance, minority rights, etc.)

R1

Albanian resentment (especially of veterans) Perceptions of impunity

LIMITS TO SUCCESS
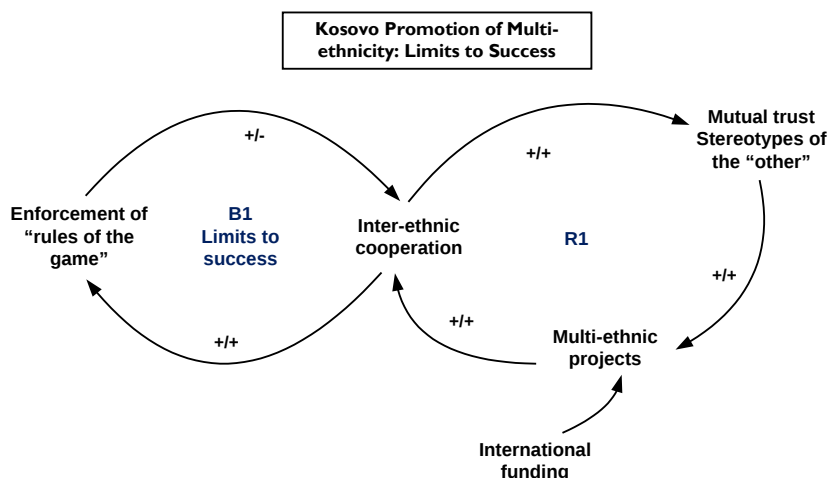
This is a story of unanticipated constraints on success. A virtuous cycle (a reinforcing loop) operates effectively for some time until a balancing loop or limiting process comes into play. Typically, the dynamic is one of rapid success followed by a slowdown or decline in results. "Picking the low hanging

fruit" or working with the "easy to reach" in peacebuilding work often encounters the problems embodied in this archetype. As Anderson and Olson (2003: 57) note:

> RPP [Reflecting on Peace Practice] found that most peace agencies work with people who are, comparatively, easy to reach. As a beginning point, this makes sense, because initiating peace activities in a tense conflict arena is difficult.
>
> … In their analysis of the lack of effectiveness of some dialogues, dialogue participants noted that they very often participate in dialogues because they share positions that are closer to those of the "other" side than to those of the extremists in their own societies. And, retrospectively, they note that the limited success of their dialogue processes often stems from their inability, or reluctance, or lack of opportunity to dialogue with those whose views are radically different within their own societies.

Practitioners engage people in cross-community activities—such as dialogue, youth camps, joint projects—and as success is experienced, expand their efforts. Yet, at some point success slows down; it is either harder to attract participants, or projects and contacts do not expand or deepen. The virtuous cycle has encountered a limit. The fate of international support for multi-ethnicity in Kosovo (see full description below) illustrates how this can occur; multi-ethnic projects expanded and resultant cooperation and coexistence improved, but they did not expand beyond business transactions, and social contact beyond the programs was limited. Joint projects gradually became essentially mono-ethnic, as farmers divided up equipment intended for joint use, and NGO members began to work separately (Chigas et al. 2007). A limiting factor—enforcement of social boundaries, or the "rules of the game," by local leaders—diminished the potential of these multi-ethnic programs to have an impact on inter-ethnic coexistence in Kosovo.
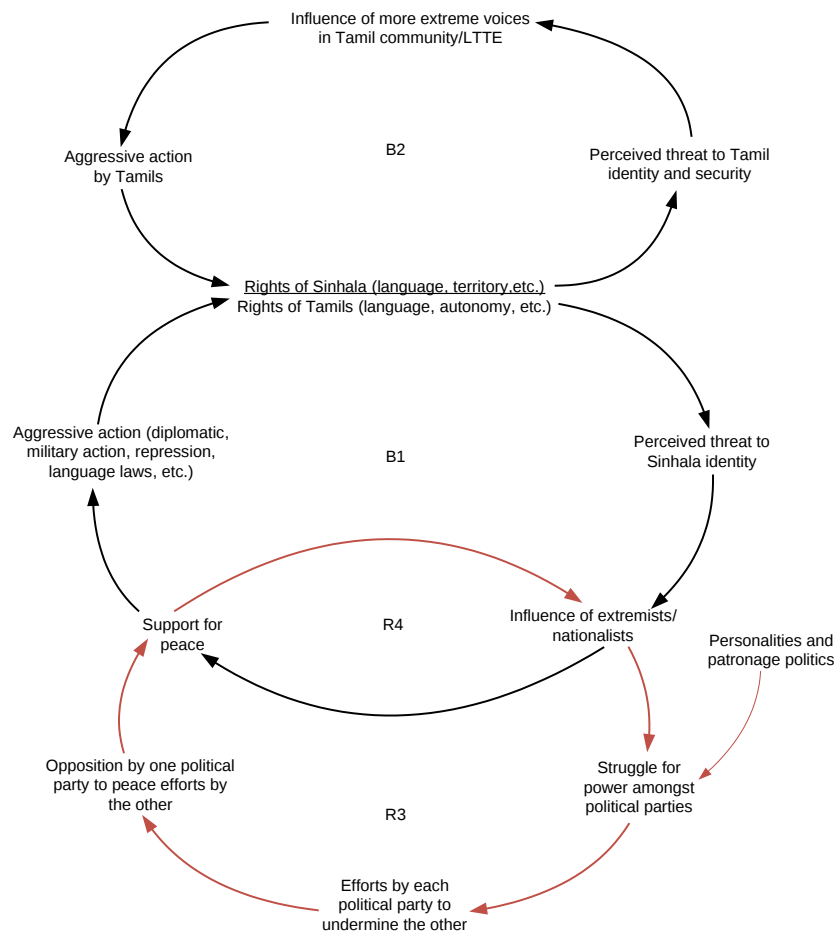
AN EXAMPLE: ADAPTING AND BUILDING ON ARCHETYPES TO GENERATE A CONFLICT ANALYSIS

Archetypes are not sufficient in themselves for analysis; they provide insights into the underlying nature of the conflict and a basis for further analysis and refinement. They are useful tools for constructing hypotheses about the governing forces of a system and for identifying key dynamics.

In Sri Lanka, in a conflict analysis conducted in 2008 (Woodrow et al. 2008), the "mutual threat and vulnerability" (or ethnic outbidding) archetype seemed to fit. Some changes were needed, and the generic factors were replaced by causal factors at work in Sri Lanka to adjust the archetype to "tell the story" of the central dynamic of this conflict. The analysis identified a basic escalation dynamic as a central dynamic between Sinhala and Tamils. The generic factor of "security of A relative to B" (zero-sum comparisons of security) was replaced by what was considered to be a central variable in Sri Lanka:

a zero-sum view of the pursuit and achievement of identity and security, and causal loops built from that variable. Successes achieved by Tamils on the battlefield or in other arenas were perceived as losses by Sinhala, and the perceived threat to Sinhala identity increased (see B1). This led to greater influence of nationalist voices, decline in support for peace, and aggressive action to restore Sinhala rights and successes (B1). Sinhala successes, however, were at the same time seen as threats to Tamil identity and security, leading to similar behavior to restore Tamil rights. Together, these balancing loops produced an ever-escalating dynamic.

The internal dynamic which feeds inter-ethnic escalation was then added to the escalation dynamic in the form of a causal loop of factors that strengthened the nationalist voices dynamic (R3 and R4). In the post-colonial period, the Sinhala majority pursued efforts to reassert their identity on the island; this produced a continuous struggle for power and access to resources and patronage systems amongst the two main rival Sinhalese parties. The main objective of each political party was to undermine the other, and any move towards peaceful settlement with the Tamil minority was consistently attacked by the party in opposition—regardless of which party that was. The effect of this was to decrease support for peace and increase the influence of nationalist voices. Several factors were added to the generic archetype to complete the causal loop; in addition, factors that were not part of the causal loop, but which influenced it (e.g., patronage politics) were added. Mental models could also have been added to this archetype to deepen the analysis of the situation in Sri Lanka.

APPLICATIONS OF SYSTEMS THINKING: KIRIBATI AND KOSOVO

Traditional planning models identify a disliked symptom or problem to be fixed, design a solution, then set up contracting procedures that specify the problem and the remedial action, and set out accountability mechanisms to ensure that the contractor implements the program as designed and achieves success as measured by predetermined benchmarks. Program grants are typically awarded through a competitive process to see who is best suited to implement the program. An implementing agency is selected, funds are released, and donors then hold the contractor accountable for results. From a linear perspective, this approach is logical. Yet experiences in the Pacific island nation of Kiribati and in Kosovo illustrate the problems with this approach.

KIRIBATI: A FIX THAT FAILED[17]

In Kiribati, there were two main livelihoods: fishing or coconut farming. Over time, the fish stocks began to be depleted, threatening one of the main ways islanders supported themselves. Aid organizations and the government of Kiribati concluded that the declining fish population was caused by overfishing: more people fished than could be supported by the surrounding environment. Due to the structure of Kiribati's economy, the solution seemed to be obvious: make coconut farming more attractive than fishing so that more people would choose to grow coconuts instead of catch fish.

In 2004, with the help of aid organizations, the Government decided on a plan that would subsidize coconut farming, thus making it more profitable than fishing. The program was designed to achieve two goals: reduce overfishing and increase incomes for the population (Harris 2009). From a linear perspective, this seems like a creative and sound plan, and the immediate result was positive; the subsidies did get more people to grow coconuts, and the plan did increase incomes.

Yet, ultimately, as the program's evaluation observed, "[t]he result of paying people more to do coconut agriculture was to increase fishing" (Harris 2009). In fact, fishing increased by 33 percent, and the fish population dropped by 17 percent. It seems that people on Kiribati loved fishing and used the extra income and leisure time they gained from coconut farming to buy better fishing equipment and to fish more often.

This seemingly easy fix to a relatively straightforward problem highlights the dangers of linear planning and defines how a systems view is different. The basic but fundamental difference is that a linear view sees problems that must be fixed. The Government and aid organizations assumed that by making coconut farming more profitable than fishing, more people would grow coconuts and less would fish. They believed that more revenue from coconut farming would reduce the need for (and amount of) *commercial fishing*, thereby increasing *fish stocks* and reducing the *amount of income from fishing*. This drop in income would then lead to more need for *coconut farming*, and the cycle would reinforce the draw toward coconut farming and away from commercial fishing. This dynamic is represented as *R1* in Figure 5.

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[17] Excerpted from Ricigliano, *Making Peace Last* (2011).
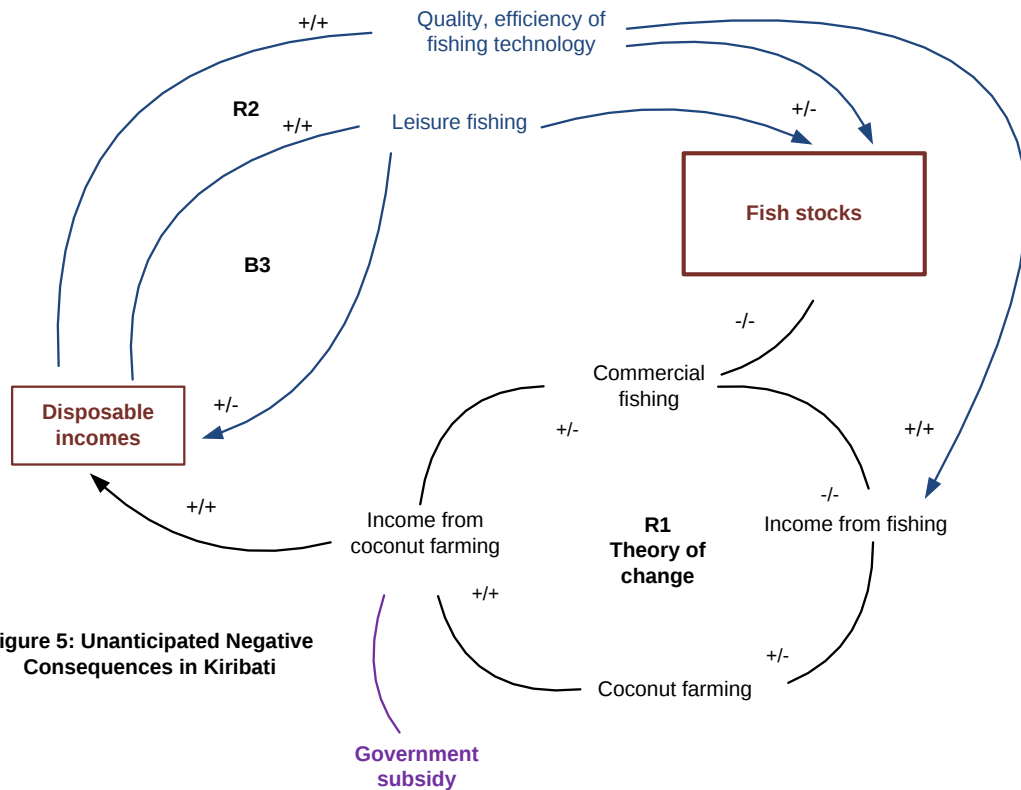
Figure 5: Unanticipated Negative Consequences in Kiribati

What the government and aid agencies did not count on was that when increasing the *profitability of coconut farming increased disposable incomes* (as hoped), this would increase the *amount of leisure fishing* and improve the *productivity of fishing* (for both commercial and leisure fishing) by increasing the *quality of fishing equipment and technology*. This is represented as R2 in Figure 5. The strategy of increasing the profitability of coconut farming might have worked to reduce the amount of commercial fishing and to increase fish stocks if not for the impact of leisure fishing and fishing technology. The level of fish stocks was dependent on three factors: the *level of commercial fishing*, the *level of fishing technology*, and the *amount of leisure fishing*. The Government and aid organizations had neither identified nor considered the impact of two of these three variables. The *amount of leisure fishing* and *level of fishing technology* had a negative impact on the ability of a partial reduction in commercial fishing alone to increase the level of fish stocks.

Attempts to change a conflict cannot be successful if they focus only on changing a discrete part, or several discrete parts, with no recognition of the dynamic system that these individual pieces comprise. Unfortunately, trends in the peacebuilding field have done just that. From a well-intentioned desire to improve evaluation of peacebuilding programs, donors insist on narrowing their focus to specific "deliverables." This has had the effect of encouraging the disaggregation of a complex conflict into discrete projects with measureable results. The result, however, is that no one is charged with looking at how the many disparate projects can be re-aggregated into a systemic change process.

KOSOVO: BUILDING MORE COMPLEX THEORIES OF CHANGE

Experience from Kosovo similarly cautions against such a linear perspective in complex conflict contexts. In order to reduce hostility and nationalism amongst Kosovo Serbs and Albanians, and their apparent unwillingness to live together, international agencies funded multi-ethnic projects, pushed for minority rights, and rewarded people and groups who cooperated with the "other side." These joint

(inter-ethnic) projects and institutions comprised a significant proportion of the peacebuilding programming in communities in Kosovo around 2004 – 2006. The activities varied widely. One category of programming, for example, facilitated business cooperation between Albanians and Serbs. The programs included business grants to promote cross-ethnic business linkages, such as an Albanian-owned milk station which processed milk obtained from Serb-owned dairy farms, and agricultural cooperatives in which Serbs and Albanians shared equipment. The idea of these programs was to provide economic benefits for both communities, and, as one agency's staff described it, make it "bad business to harm your neighbors." Other programs sought to create inter-ethnic cooperation through joint activities, including: a Serb-Albanian women's program supporting income-generation possibilities backed a cross-ethnic bakery supply project and handicrafts projects, youth internet cafes servicing multi-ethnic youth, joint environmental clean-up, multi-ethnic youth magazines, cultural activities, and a cross-ethnic advocacy project for access to youth services. These sought to create opportunities for positive contact among ethnicities that would help break down negative stereotypes of the "other."

Yet, like the Kiribati program, these apparently successful projects at best achieved limited success, or, at worst, had negative impacts (Chigas et al. 2007). Why? The analysis and theory of change are shown in the figure below. Of concern to third parties was the nationalism and hostility toward the other side that seemed to underlie the apparent unwillingness of the parties to live together. The theory of change of the programming, represented by B1 in Figure 6 below, posited that by providing rewards and incentives for cross-ethnic contact and activities, international agencies could help Kosovar Albanians and Serbs develop bridges that would reduce cross-ethnic distrust, build willingness and capacity to work together, and create interdependence between ethnic groups that would restrain them from violence. This would help to reduce nationalism to a desired (low) level, create interdependence and lead the parties to be more willing and able to reach and implement a political agreement on the status of Kosovo.

The policy did show some success; some people were in fact cooperating across ethnic lines. The projects had some powerful effects on participants and played an important role in providing opportunities for inter-ethnic contact that otherwise would not have occurred after 1999. Participants reported that they developed good communication in dialogue and training programs, and that they were more relaxed with people from the other group. The joint projects also helped build some lasting ties across conflict lines. "The relationships are better. There was much more business, a higher frequency," one beneficiary commented (Chigas et al. 2007). The scale of multi-ethnic participation in the cultural events, such as festivals, also suggests that there was interest in cross-community contact beyond participants in inter-ethnic projects.

At the same time, people reported that there were few informal, non-NGO-initiated multi-ethnic activities. In many projects, especially the institutional ones, the cooperation was often largely *pro forma*; initiatives that were multi-ethnic on paper often never became multi-ethnic. Participants in the agricultural cooperative divided the equipment and did not work together afterwards. Minorities brought into a multi-ethnic radio station were marginalized in terms of responsibilities, and in one case, they all left, leaving the multi-ethnic station without any diversity. Internet cafes offered services to the other group, but because of the location of the center, the minority were afraid and did not go.
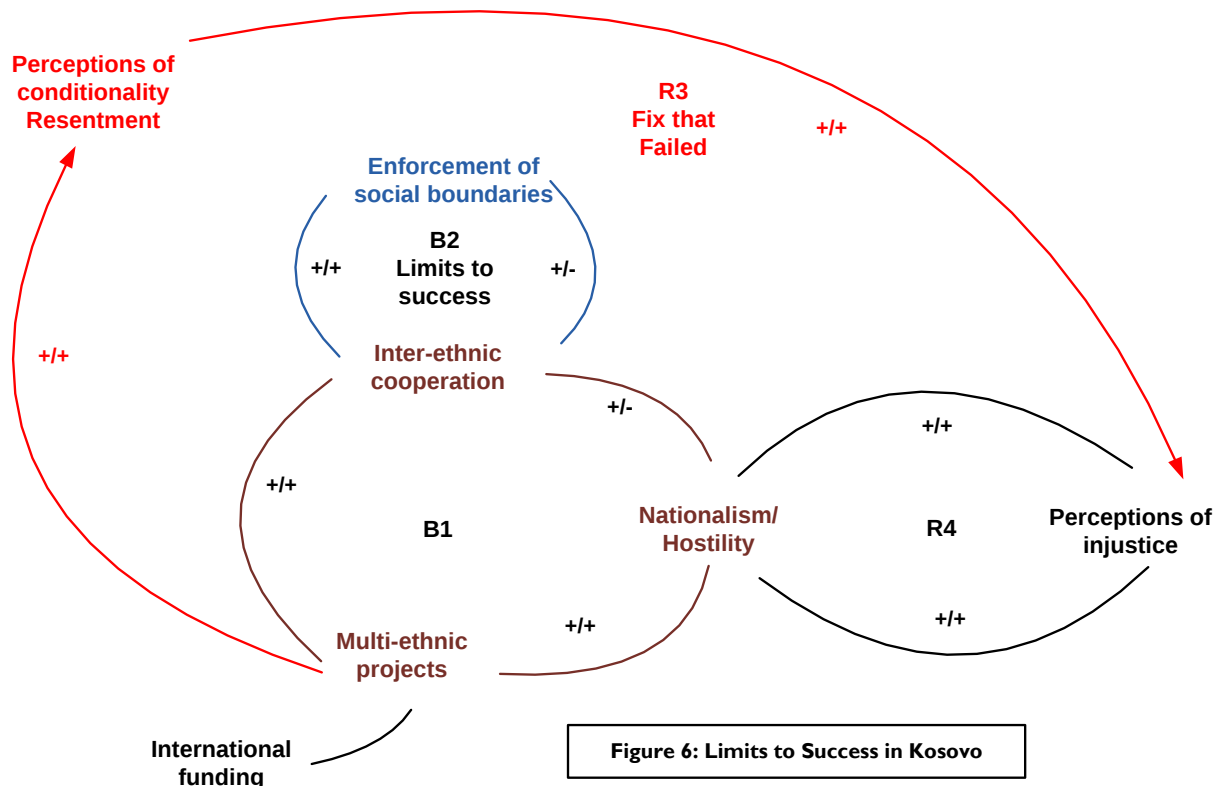
Figure 6: Limits to Success in Kosovo

A systemic analysis revealed that several constraining factors in the context undermined the effectiveness of the international agencies' approach. Increased multi-ethnic cooperation prompted K-Albanian (and K-Serb) leaders to enforce social boundaries and "rules" of engagement; cooperation for property sales or economic gain became "ok," while other forms of cooperation were socially sanctioned (B2). This effectively limited the potential for growth of multi-ethnic cooperation in the absence of more *intra-ethnic* work to address resistance to and social sanction for inter-ethnic cooperation.

In addition, international donors' assumptions that their support for multi-ethnic projects and minority rights would provide an incentive for cross-ethnic communication and collaboration proved to be wrong. Members of both groups, especially Kosovar Albanians, viewed this as a condition for funding, not a benefit, and resented it. In particular, each group, Kosovar Albanians and Kosovar Serbs, felt that the international agencies had ignored their needs, favored the other group, and sanctioned impunity by this policy. Kosovo Liberation Army veterans, furthermore, felt excluded from the process, as they did not receive much of the assistance, which had targeted "multi-ethnic" geographic areas in which most veterans did not reside. Consequently, the international policy of promoting multi-ethnicity had an inadvertent negative consequence of worsening, not improving, coexistence and inter-ethnic hostility (R3 and R4)—a "fix that failed." Feelings of both Kosovar Serbs and Albanians of being treated unjustly and feelings of resentment towards the other side undermined the level (and desire) for coexistence in a vicious cycle in which the hostility in turn reinforced resentment and feelings of injustice (R4). Local perceptions of the international community's "carrot" as a "stick" reinforced this negative dynamic (R3) and counteracted the positive effects of cooperation and communication. The failure to consider (or monitor) the elements of the system that were not directly targeted by the programming, and to consider how the existing "system" of hostility might resist change, undermined the overall impacts of donors' programming in the region.

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CONCLUSION

The challenge of doing development well, especially in conflict-affected environments, is in many ways the challenge of grappling with complexity. The organic interconnectedness among diverse events and sectors, and their dynamic interplay, makes it difficult to design and implement effective policies and programming that try to reduce this complexity by focusing only on manageable pieces or program areas. Program planning requires assessments that are comprehensible, but in the process of achieving clarity often sacrifice comprehensiveness. The resulting programs' effectiveness is frequently compromised by events on-the-ground that are outside the immediate scope of the project.

Planners and policy makers have tried to confront this complexity head on, but the result is often seemingly endless "lists of lists" of key factors which make coherent program planning difficult. Assessments that are comprehensive but are not comprehensible also lead to programs that are less effective than they could be.

Systems thinking, and specifically systems mapping, is a promising way out of the "comprehensive versus comprehensible" dilemma. Systems thinking is a way to produce rich assessments (narratives) of complex environments that facilitate effective program planning, implementation, monitoring and evaluation, and learning from experience. Incorporating systems thinking into USAID poses two key challenges: first, development of technical capacity with systems thinking tools and building those into assessment, planning, and monitoring and evaluation; and second, adoption of a systems practice, which requires a culture that is flexible and adaptive, interdisciplinary and cross-sectoral, and learning enabled.

The challenge of building technical capacity requires integrating systems mapping into holistic assessments instruments, like USAID's CAF, and building the ability to interpret those maps in order to inform the work of planners, implementers, and evaluators (also known as "feed forward," or integration into subsequent policy and programming cycles). Systems mapping involves the skill of representing key factors that affect a conflict environment as dynamic feedback loops. These feedback loops are the primary mechanisms that can amplify or undermine the impact of USAID programs. Many of these dynamics recur in different contexts, and system archetypes, or representations of the recurrent patterns that tend to be repeated in different forms across conflicts, can be a helpful way to develop systems maps. The understandings of the dynamics of conflict that emerge from this analysis can then be integrated into, or "fed forward," into planning, implementation and monitoring and evaluation on an ongoing basis.

Feed Forward involves using those systems maps to identify leverage points, which in turn can help USAID aim its efforts, contextualize its theories of change, and develop more effective monitoring and evaluation processes. Feed Forward allows the insights from a systems map to be portable, or transferrable to people outside of the initial assessment (e.g., planners, implementers and evaluators). These tools are all in service of increasing the ability of USAID projects to contribute to sustainable societal change in the complex environments in which USAID works.[18]

The use of these systems thinking tools can help enable a systems practice at USAID. Understanding and affecting key dynamics, as opposed to looking at just programmatic outputs, can help USAID become more flexible and adaptive. Even when USAID programs are successful and achieve the program goals, such as increasing agricultural yields or holding a free and fair election, their success in complex conflict-affected environments will be determined by how those substantive impacts affect key dynamics in the underlying social context or conflict. Monitoring changes in these key dynamics over time will help USAID learn how to adapt its programming over time to have a larger impact beyond the confines of

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[18] The USAID project on Systems Thinking Tools and Conflict Assessment has produced a systems mapping manual and project report, as well as developing training module in systems mapping, that will help in building this capacity at USAID.

the programs themselves. In addition, the focus on key dynamics and leverage points will help USAID develop cross-sectoral programming by providing a common focal point around which USAID can combine the work of its various bureaus/teams. For example, if changing the relationship between modern and traditional systems in rural South Sudan is a leverage point, then USAID can identify ways that education, economic, governance, and environmental programs can work together in order to change that relationship in various villages.

Building USAID's capacity to use systems tools to aid conflict assessment will help build the ability for USAID to grapple successfully with the complexity of the environments in which they work. There is the potential for systems tools to increase USAID's ability to follow a systems practice throughout a program's life cycle—from assessment through planning, implementation, and evaluation/learning. In order to best capitalize on this investment in capacity building at USAID, future work might be done that examines USAID's ability, as an organization, to implement a systems approach. For example, what structures and policies within USAID currently facilitate or impede taking a systems approach? What aspects of USAID's culture facilitate or impede developing a systems practice? In light of this, what might be done to build on USAID's strengths and overcome its weaknesses?

Finally, it is appropriate to remember that one of the hallmarks of systems thinking is emergence—or the tendency for new strategies and outcomes to arise that were not necessarily contemplated at the start of a process. USAID has made a critical investment in embarking on the road to a systems practice. Now it is time to build on what emerges.

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