

Preparing for Complex Conflicts

Dr. Robert D. Lamb and Melissa R. Gregg¹

Strategic Studies Institute, Army War College; and School of Criminology, Simon Fraser University

The United States and its partners have not been unambiguously successful in most of the conflicts they have been engaged in since 9/11. In some cases, conflicts that had seemed settled erupted again under different guises. Combatants that had appeared defeated emerged under different names. Partners that had seemed reliable turned out to have different agendas. Successful operations have rarely led to strategic success. In short, tactics, alliances, motives, and players shift so quickly now that existing analytic “conflict lenses” sometimes make today’s conflicts look more kaleidoscopic than focused – shift your perspective just a little and the whole picture seems to change.²

In the face of this complexity, how should the U.S. government organize and position itself to protect its interests and contribute to a stable international order in the future? Some scholars and practitioners have suggested the answer lies in finding ways to be more adaptive and innovative – more like startups and venture capitalists than government bureaucracies. But what does that mean in practice? What

are the systemic challenges the United States would need to overcome to prepare adequately for conflicts that realistically are not likely to be susceptible to normal planning?

CONFLICTS AS COMPLEX SYSTEMS

This policy brief – based on a year of research, including a literature search, expert consultations, a focus group, and a simulation exercise³ – addresses these questions and recommends some experiments and investments that can be made early in the next administration to position U.S. institutions for the longer-term reforms that will be needed to engage more intelligently and strategically with complex conflicts (at all stages) in the future.

Evidence is accumulating that conflicts are increasing in complexity (even as they are arguably decreasing in number). Today’s wars tend to involve more uncertainty, more volatility, and more actors with domestic, regional, or international affiliations. Parties to conflict are increasingly likely to be highly fragmented,

The **Fragility Study Group** is an independent, non-partisan, effort of the Carnegie Endowment for International Peace, the Center for a New American Security, and the United States Institute of Peace. The chair report of the study group, *U.S. Leadership and the Challenge of State Fragility*, may be accessed here: <http://www.usip.org/fragilityreport>. This brief is part of a series authored by scholars from the three institutions and others who advised the effort, that build on the chair report to discuss the implications of fragility on existing U.S. tools, strategic interests, and challenges. The complete list of policy briefs may be accessed here: <http://www.usip.org/fragilitypolicybriefs>.

use interconnected social networks (proximate or distant), and engage in competitive alliances out of expediency or necessity, rather than ideological alignment, trust, or a desire for power sharing. Even after rates of violence fall, the instability of these alliances can increase the likelihood of conflict recurrence and disrupt the transition to peace. In complex wars, it can be unclear what winning might even look like.⁴

Fragility has a similar complexity. The “absence or breakdown of a social contract between people and their government,” as the Fragility Study Group defines the term,⁵ is generally reflected in a lack of consensus over the system of governance that different populations within a defined territory would consider legitimate. When a governance system suffers from “deficits of institutional capacity and political legitimacy that increase the risk of instability and violent conflict and sap the state of its resilience

In a sense, fragility is a complex conflict that has not yet turned violent.

to disruptive shocks,”⁶ the result is that different political groupings find ways to fend for themselves – allying with other groups when convenient, competing with others for resources and influence, carving out their own safe spaces where possible, partnering with outside patrons when necessary, and communicating different narratives to different audiences to maximize whatever benefit can be achieved. In a sense, fragility is a complex conflict that has not yet turned violent.

For the sake of this brief, we consider a conflict to be complex if it involves more than two sets of direct combatants, uncertain or unstable alliances between

Bob Lamb (bob@rdlamb.com) is a visiting research professor at the Strategic Studies Institute of the Army War College and an adviser on strategy and policy through his consultancy, RD Lamb LLC. **Melissa R. Gregg** (mgregg@sfu.ca) is a Ph.D. student in criminology at Simon Fraser University with a research focus on international criminal law and violence against women.

them, fragmentation within at least one of them, involvement by external supporters who themselves are global competitors, and opacity in the motivations and objectives of at least one major combatant group. Fragile environments are complex if, instead of combatants, politically significant population groups interact with similar degrees of uncertainty, instability, and opacity.

More formally, we consider fragile and conflict environments to be *systems*, and complex ones to be *complex systems*. Conflict systems are like ecological, electrical, and biological systems. They absorb *inputs* that can change the *status* of the system and generate *outputs*. In conflict systems, inputs can include weapons, money, recruits, knowledge, diplomatic cover, and other resources that come from outside the system. Status variables, which measure overall changes in the system, can include levels or types of violence, control of territory, changes in power and legitimacy, and other dynamics of concern. Outputs can be whichever status variable is of greatest interest – for example, which combatant controls the most territory, or how many civilians are being killed – or can include externalities such as refugee flows, the risk of uncontrolled disease outbreaks, or geopolitical tensions that spill over beyond the conflict.⁷

To understand complex systems, it helps to learn how different factors (variables) affect each other and how their interactions affect the outcomes of interest (i.e., status and outputs).⁸ In other words, it helps to understand the *components* of the system and the *linkages* between them. In conflicts, components can include combatants, legitimacy, finances, resentment, extremism, social networks, rumor, population subgroups, territory, and anything else that affects the conflict. The linkages between these components can be simple, as in a transfer of funds that increases the resources available to purchase weapons. Linkages can also be very complicated. Complications can include negative feedback loops (which counteract the effects of certain inputs), positive feedback loops (which exponentially amplify outcomes), multiple causality (in which one variable is affected by a lot of different variables in a lot of different ways), and delays between causes and effects.

Because of these complex internal dynamics, inputs can create cascades of effects (second- and third-order or higher) that make it extremely hard to predict what effects they ultimately will have. Large

inputs can have no discernable effect. Small inputs can sometimes have very large effects. Multiple inputs can increase a system's unpredictability exponentially.

In short, anything one does in a complex conflict can have unexpected consequences – or none at all.

THE DUAL-SYSTEM PROBLEM

Fragile and conflict environments are complex systems, but they are not the only complex systems policymakers have to navigate when dealing with conflicts: The policymaking system itself is also complex.

Decisions about foreign conflicts and fragile states are generally made by high-level political appointees acting on information from high-level intelligence officials and on advice from military officers and low-level political appointees. They are implemented through offices led by low-level political appointees constrained by budgets and rules enacted by elected legislators; by the established processes, knowledge, incentives, and mindsets of all the offices responsible for approving, enabling, and carrying out the decisions; and by politics, competing geostrategic priorities, and public opinion informed by real-time sources of horror stories and propaganda.

The actual outputs of this complex system – what happens in the field – far too often do not look at all like the recommendations and decisions made at the beginning of the process. Between “lessons learned” and what ends up happening on the ground, there is a massive system of countervailing pressures that sometimes makes it impossible to do “what works” according to experience and evidence.

In systemic terms, these policy actions – the delivery of money and equipment, meetings and trainings, arms and bombings, etc. – are *outputs* from a complex policy system. But the outputs of the policy system are also supposed to be *inputs* to the conflict system. And as the previous section argued, inputs into conflict systems do not necessarily lead to the expected conflict outcomes.

In other words, policy inputs (decisions about what to do) are separated from conflict outcomes (success in battle, protection of innocents, defeat of enemies) by not one but *two* unpredictable complex systems: the policy system and the conflict system.⁹ Given this dual-system problem, it should not be at all surprising that conflicts seem increasingly unwinnable.

Policy decisions are separated from conflict outcomes by not one but two unpredictable complex systems: the policy system and the conflict system.

CULTIVATING A SYSTEMIC MINDSET

Global trends toward complexity and intractability do not bode well for U.S. involvement in conflicts in the future. To identify steps the United States can take in the next year to start building a more capable system, the authors, working with Kevin Melton of the International Peace and Security Institute (IPSI), collaborated on four lines of research: a literature review identifying promising approaches for dealing with complex conflicts; expert interviews and workshops soliciting ideas for feasible reforms; an experimental public forum

Summary of Research Findings

Interviews. Experts interviewed for this project encouraged cultivating a systemic mindset, as well as entrepreneurial and experimental mindsets, for all stages of conflict work.

Literature. Previous authors have offered *systemic* reasons for changing how support is delivered, engaging marginalized groups, and being agile in complex environments.

Public forum. An experimental forum to engage U.S. citizens found doubts about the value of military interventions that do not involve protecting Americans, allies, or vulnerable populations – but clear support for preventing conflict escalation.

Simulation. A three-day, 30-role simulation of a complex conflict negotiation found complexity suppressed innovation and aided spoilers, while having coercive power suppressed participation and innovation.

on various approaches to intervention; and a three-day, 30-party simulation of a complex conflict negotiation (see sidebar on previous page for basic findings).

One of the most important findings that emerged from this research was a serious shortcoming in the mental models decision-makers have about conflict, fragility, and social change.

The usual approach to conflict is not dynamic but linear: directly targeting something undesirable (e.g., enemy troops) and the resources that sustain them (e.g., foreign money and weapons), or directly supporting other actors who oppose them (e.g., foreign support in proxy wars). Linear thinking is the default mindset of human psychology, represented at times by cognitive biases that make rapid decisions possible. For most of day-to-day life, a linear mindset is adequate, even for simple conflicts.

A systemic mindset, by contrast, is a way of thinking that makes it possible to deal with the dynamic nature of more complex conflicts. It represents a deep curiosity about the full range of factors affecting the conflict, how those factors interact, and what unexpected consequences are possible. Systems thinking by its nature also recognizes that domestic institutions are part of the dual-system problem and understands that policy resistance – the disconnect between recommendations, decisions, and outcomes – is merely a symptom of disconnected subsystems within a complex policy system. In this way of thinking, any approach to complex conflicts should be sensitive to system inputs, components, and outputs alike.

Three sets of approaches are worth exploring:

- **Harmonization.** Complex conflicts are unpredictable. One way to improve predictability is to reduce the number of inputs. That can be accomplished by not intervening at all (or with only humanitarian relief); by reducing or streamlining the number of agencies, contractors, and allies attempting to influence the outcome; or by harmonizing the work of those actors so they act as a unit.
- **Inclusion.** In complex systems, overlooked components, subsystems, and feedback loops often turn out to have important effects. There is evidence that marginalized groups, subnational

or informal governance structures, and subnational-regional linkages (e.g., foreign patrons of local militia) are significant contributors to conflict outcomes, but common practice in foreign affairs often overlooks them. Similarly, back-office functions such as contracting, budgeting, personnel security, and human resources have significant influence over an institution's ability to deliver policy actions, but many planners do not understand or account for them.

- **Iteration.** Complex conflicts are difficult to understand and influence, but scholars have found ways to discover internal dynamics: Try something, see how all the known variables change, try something different, then repeat, looking for patterns linking certain actions to desired outcomes.¹⁰ Iterating and adjusting is an approach that requires not just a systemic but an experimental mindset as well, which can be at odds with the logical frameworks, linear theories of change, and inflexible funding mechanisms common in large bureaucracies.

Fragility is the laboratory of complexity. Fragile states are ideal places to practice implementing agile, systemic approaches to complex conflicts before violence erupts.

Engaging successfully with complex conflicts almost certainly requires not only a systemic mindset; it requires personnel who are entrepreneurial and experimental as well.

An experimental mindset treats ideas and plans as testable hypotheses and opportunities to learn – using and generating the best information possible, questioning assumptions, identifying hidden assumptions, being willing to learn from failures, and rejecting half-truths, biased evidence, and intellectual dishonesty. At minimum, a willingness to be honest about what is and is not known and to follow the facts wherever they lead is essential. As one expert told the authors, “Everything we do should be evidence-based

or evidence-producing.”¹¹ Actual experiments are not possible in complex conflicts, but natural experiments and opportunities to explore dynamics are abundant and should be encouraged.

Fragility is the laboratory of complexity. Places that top various lists of “fragile states” are usually the places where the most complex conflicts break out. They are therefore ideal places to practice implementing systemic approaches to complex conflicts – when violence is still at low enough levels that it is possible to operate on the ground, learn the internal dynamics, and institutionalize agile decision-making and implementation processes. Experimenting with new processes in fragile states can therefore accomplish two things: learning about operating in complex conflict environments and, ideally if probably only occasionally, preventing violent conflict from erupting in the first place.

Operating in such environments very likely requires an entrepreneurial mindset as well. Many experts have advocated for more agile – innovative, adaptable, but systematic – approaches to foreign conflicts. Entrepreneurs know their customers, take risks, accept failure, adapt, and try again – and the most successful ones never let themselves be fooled by their own public relations. In institutions where failure is punished, most people become highly risk-averse and many feel pressure to frame results optimistically. Those who are more comfortable with risk and ambiguity (“intrapreneurs”) can be real sources of innovation within established institutions and are the ideal personnel to involve in any experiments in agility.

RECOMMENDATIONS

The U.S. policy system – not as it looks on paper but the *de facto* complex system that turns advice and resources into decisions and actions – needs to be understood and simplified so policy actions (outputs) can be connected more predictably to the recommendations and policy decisions that produce them (inputs).

Gen. Stanley McChrystal’s reforms to harmonize decisions of previously disconnected special operations and intelligence teams demonstrated it is possible to turn a complex policy system into a *less* complex policy system and make more coherent and timely decisions as a result.¹² Civilian and civil-military efforts need to be harmonized at least as much, so

leaders can be more confident the best decisions will be made and implemented as intended. That will take years and likely decades. But new administration officials can begin to understand and sensitize themselves immediately to the systemic nature of the policy system and take the first small steps toward simplifying it in their first year.

What about the second system in the dual-system problem: complex conflicts? It is not uncommon for civilian, military, and intelligence officials to be familiar with one or two components of conflict systems. McChrystal’s special operators knew a lot about the networks they targeted, for example. But in their well-harmonized targeting of that network, they did not always see how those networks were connected to other components of the conflict system – political leaders, opposition figures, civil society groups, and communities.

Many U.S. civilian agencies do engage with those components. But the United States as a whole needs to learn how to get deeper inside complex conflict systems. Getting inside the conflict system means putting people in place who have visibility on as many components of that system as possible and authority

Summary of Recommendations

Invest in research on domestic policy resistance to better understand the systemic barriers to harmonization within U.S. civilian and military institutions.

Require experiential training (simulations and war games) to sensitize foreign-policy decision-makers to policy resistance and the systemic, unpredictable nature of conflict policymaking.

Initiate harmonization experiments in the first year to give successful pilots time to gain bureaucratic traction by the end of the first term.

Experiment with ring-fenced, multiyear pilots of agile processes, from decision-making through implementation, in fragile states to test different approaches to complex conflicts.

to direct where and how inputs from *all* U.S. sources should be employed, to minimize surprises produced by second- and third-order effects. Learning to do this will take years, but as with the policy system, there are small steps that can be initiated in the first year of the new administration.

The authors offer four recommendations to clear the path toward solving the dual-system problem:

- **Begin to understand the *de facto* U.S. policy system by investing in research on policy resistance.** Investments in conflict prevention, flexible funding for civilian agencies, interagency coordination, rewards for experimentation, and other policies and processes that would make the United States more agile and effective in conflict environments are repeatedly recommended, sometimes tried, and often abandoned. There are established methods for studying policy resistance, but they are not commonly employed.¹³ The new administration should immediately fund a series of six-month studies on these and related topics to identify sources of policy resistance. Such studies will likely unearth overlooked feedback loops and influence flows within the system – an important first step toward understanding how best to carry out longer-term harmonization reforms.
- **Cultivate a systemic mindset by investing in experiential training in policy resistance.** All newly appointed personnel with influence over conflict-related decisions and implementation – national security staff, Schedule C advisers to Senate-confirmed political appointees, and foreign-policy deputy assistant secretaries/administrators – should be required to participate in at least one *system-sensitive* simulation (or war game) of Washington-based conflict decision-making so they can experience policy resistance firsthand (and learn the system dynamics causing them) at the beginning of their terms.
- **Speed harmonization by initiating experiments and pilots in the first year.** Most new administrations facing conflicts and political transitions take a few years to learn that they really do need harmonized decision-making at home and agile

implementation abroad. But reforms like that take a year to launch and at least three years of sustained operation before they have enough bureaucratic traction to survive the terms of the leaders who supported them. The Obama administration should identify any of its own harmonization initiatives that are beginning to work so the new administration can pick them up during the transition. Any new harmonization pilots should be launched in the first year and treated as experiments: with a systematic research design, different approaches on different topics or regions, reliable data collection, and clear, system-aware criteria for judging success.

- **Learn to get deeper inside conflict systems by initiating experiments in agile practices.** The new administration should select one or two fragile states and one or two areas in or near an ongoing conflict to experiment with ring-fenced, top-to-bottom decision-making and implementation processes. Congress should approve flexibility – in funding and accountability – for several two- to four-year experiments, and the new administration should bring together decision-makers, military officers, intelligence officials, civilian planners and implementers, and back-office personnel in contracting, budgeting, personnel security, and human resources to try new processes that touch both the policy system and the conflict system. Participating in the experiment should be career-enhancing for all, and those chosen to participate should be a mix of people with an entrepreneurial mindset and those without (to test learning). The on-the-ground efforts should be agile and responsive by design.¹⁴ And it should be set up as an experiment, with systematic methods and honest reporting of results.

The United States, like the international community more broadly, is not currently organized to deal with the complex conflicts it is already engaged in. The best we likely can expect is skilled improvisation, lucky breaks, slow progress, and generous humanitarian assistance to relieve the suffering we are unable to prevent. But the next administration can work closely with Congress to begin developing the intellectual resources, institutional behaviors, and cultural mindsets needed to engage more intelligently and strategically in complex situations of the future.

NOTES

- 1 Bob Lamb and Melissa R. Gregg are advisers to the International Peace and Security Institute (IPSI), an applied-research and experiential training organization based in Washington, D.C., through which much of the research for this project was carried out. This policy brief is a preview of a longer monograph being prepared by the authors and others. The authors would like to thank Kevin Melton for his collaboration on this research as director of IPSI's Kaleidoscopic Conflict Project.
- 2 David Crane, a lawyer and international prosecutor whose research is focusing on a potential war-crimes case against Bashar Assad, coined the term "kaleidoscopic conflict" to describe the complex war in Syria and the likely trajectory of warfare in the future. The authors are grateful to him for initiating the project through which this research was undertaken.
- 3 References for evidence presented in this paper will be provided in the authors' forthcoming monograph.
- 4 For example, the Syrian regime and the Islamic State group are fighting each other. The United States opposes both, so it supports, for example, Kurdish fighters, who also oppose both. But it also supports a regional power that opposes both the Islamic State group and the Kurds – and it is therefore only a slight exaggeration to argue that almost anything the United States does in the Syrian war can end up both supporting and opposing its adversaries *and* opposing and supporting its partners.
- 5 William J. Burns, Michèle A. Flournoy, and Nancy E. Lindborg, "Fragility Study Group: U.S. Leadership and the Challenge of State Fragility" (United States Institute of Peace, Center for a New American Security, and Carnegie Endowment for International Peace, September 2016).
- 6 Ibid.
- 7 Whether any particular variable is considered an *output* or a *status* depends mainly on what questions are being asked about the system and how it is being modeled. Status variables are usually called "state" variables by scholars, but *status* is used here because, among policymakers, "state" generally implies a political unit in the international system (e.g., "fragile states") and the authors want to strongly encourage readers not to think of conflict systems as being coextensive with (political) state borders. A good introduction to complex systems in the context of conflicts is Giorgio Gallo, "Conflict Theory, Complexity and Systems Approach," *Systems Research and Behavioral Science*, 30 no. 2 (2013), 156–175. For a discussion of the "standard approach" to modeling complex systems, see James Lyneis and James Hines, "The Standard Method for System Dynamics Modeling," Worcester Polytechnic Institute, class handout for SD554 Real World System Dynamics, Spring 2007.
- 8 System dynamics modeling, political economy analysis, control (or cybernetic) theory, and design thinking are all useful approaches to understanding complex systems and identifying paths through them to achieve some future objective.
- 9 Moreover, the American policy system is only one of potentially dozens of separate policy systems offering inputs into the conflict.
- 10 This approach – act, observe, adjust, iterate – would be familiar to anyone who has studied feedback control in electronics and "OODA loops" in military strategy. See David Sylvan and Stephen Majeski, "Reviving the Cybernetic Approach to Foreign Policy Analysis: Explaining the Continuity of U.S. Policy Instruments" (paper presented at the 47th annual convention of the International Studies Association, San Diego, California, March 22-26, 2006); and Frans Osinga, *Science, Strategy and War: The Strategic Theory of John Boyd* (Abingdon, UK: Routledge, 2007).
- 11 Anonymous by request, personal communication, San Francisco, June 2016.
- 12 Stanley A. McChrystal, *Team of Teams: New Rules of Engagement for a Complex World* (New York: Portfolio, 2015).
- 13 One of the authors (Lamb) is collaborating with Nancy Hayden on a forthcoming study, using dynamic-system modeling, of policy resistance to flexible contingency funding for civilian agencies.
- 14 Agile software development processes break problems down into steps, just as many development projects do, but the implementation of the steps is left up to the teams closest to the code, and there is a built-in mechanism for dealing with surprises without disrupting the workflow. There are opportunities to experiment with policy processes in the same spirit.



www.carnegieendowment.org
@CarnegieEndow



www.cnas.org
@CNASdc



www.usip.org
@USIP