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Complex Operations: NATO at war and on the margins of war

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CHAPTER TWO

The paradox of complexity: embracing its contribution to situational understanding, resisting its temptation in strategy and operational plans

Jeremiah S. Pam¹

“That which is simple is always false; that which is not simple is unusable.”
Paul Valéry, 1942²

Introduction

Making sense of, and drawing practical lessons from, the U.S./Coalition experience in Iraq and the U.S./NATO experience in Afghanistan – particularly with respect to what hasn’t gone well and what needs to change in order for us to be more effective in the future – raises challenging theoretical questions about the very nature of this type of undertaking and the best ways in which to respond to that nature. This article discusses the meaning and role of “complexity” as a defining feature of security and foreign policy challenges such as Iraq and Afghanistan.

My argument proceeds in two parts. I begin with the phenomenon of “complexity.” I will first make the case that a certain kind of interactive “complexity” is a quite real, distinctive and substantive quality of some of the most important security challenges we find ourselves facing today, particularly so-called “Complex Operations” to respond to insurgencies and weak states - which taken seriously can provide invaluable contributions to our understanding of essential dynamics in operations like these.

¹ I am grateful for the many helpful comments received from friends and colleagues during a presentation of this material at the Lone Star National Security Forum organized by the Bush School of Government/ Texas A&M University, the University of Texas-Austin and SMU on April 10, 2010.

² “Mauvaises pensées et autres”, 1942, in *œuvres, Vol. II, Gallimard, Bibliothèque de La Pléiade, 1960, p. 864 (free translation).*

At the same time, however, I will suggest that this deeper understanding of the complexity of such situations can serve as an unhelpful, indeed counterproductive, basis for action – and that we should therefore strive to resist the lures of complexity in formulating strategy and practicing the operational art of making plans that connect strategy to tactics.

In sum, my argument is that there is a kind of ‘paradox of complexity.’ On the one hand, seeing the ways in which these kinds of security and foreign policy operations are complex provides benefits to situational understanding in all sorts of critical ways. Yet we should at the same time be constantly on our guard not to respond to that complexity with strategies and plans that are so complex that they are in practice incapacitating.

Having unpacked what I think are some of the broad implications of complexity and some related concepts, I will conclude with an analytical suggestion for thinking about these kinds of “complex problems” and brief descriptions of what strike me as five provisional policy lessons that follow from this paradox, with some illustrations from Iraq and Afghanistan.

The vogue of “complex” and “complexity”

“Complex” has become one of the defining buzzwords of contemporary security and foreign policy. The term “Complex Operations” seems to be close to gaining agreement as a broadly acceptable umbrella term for the kinds of civil-military, whole-of-government, U.S.-international operations of which the NATO operation in Afghanistan is currently the most prominent example. And as I will show in a moment, the challenges of insurgency and state weakness are increasingly being referred to as examples of the genus of “interactively complex” or “wicked” problems.

My unscientific sense is that is the most important factor behind “complex” achieving its current ubiquitous usage is in fact the dramatic return of another, obviously related ‘c’ idea counterinsurgency doctrine, as most famously symbolized by the U.S. Army/Marine Corps Counterinsurgency Field Manual that was drafted under the leadership of General David Petraeus at the U.S. Army Combined Arms Center at Fort Leavenworth (in conjunction with General James Mattis of the U.S. Marine Corps Combat Development Command) during 2006 and widely disseminated beginning in 2007 upon General Petraeus’ appointment as Commanding General of the Multi-National Force in Iraq.

But the origins of the current security policy usage of “complex” go back at least to the period following the end of the Cold War and the more frequent occurrence of overt interventions aimed at producing both security and non-security results undertaken during the 1990s, including the Kurdish relief effort following the 1991 war with Iraq and operations in Somalia, Haiti, Bosnia and Kosovo, among others. The Presidential Decision Directive (PDD) drafted by the Clinton Administration to try to codify some of the organizational lessons learned from all but the last of these interventions, PDD 56 of 1997, was titled “Managing Complex Contingency Operations.”

But does “complex” really mean anything? I will admit that I was at first somewhat skeptical. My initial suspicion was that the main point of the term “complex” might simply be to rationalize disappointing success in these kinds of undertakings by drawing a trumped-up distinction between them and a perhaps imaginary category of “simple” or “easy” ones.

Three integrally related concepts

Over the last year or two, however, I’ve become persuaded that “complex” does in fact have some quite real substance, and striking (if sometimes paradoxical) implications. The three qualities of complexity that seem most important involve ideas and literatures that are so rich that I won’t have space to begin to do them justice here, but I will provide a cursory review.

First, I noticed beginning around 2008 that some analysts had begun to describe the challenge of Iraq and Afghanistan operations not only in terms of complexity but by reference to a concept from a different social science literature – as “*wicked problems*.”³ As students of design and planning and public policy know, the concept of “wicked problems” was pioneered by University of California Berkeley professor of design Horst Rittel in the late 1960s and early 1970s to describe a category of social

³ On insurgency as a wicked problem, T.C. Greenwood and T.X. Hammes, “War planning for wicked problems: Where joint doctrine fails” *Armed Forces Journal*, December 2009. On state weakness as a wicked problem, Kenneth J. Menkhous, “State Fragility as a Wicked Problem,” *Prism* 1, No. 2 (March 2010), 85-100. And for two recent articles on operational art that can be read as implying something similar to the analytical point made here that international civil-military operations themselves have elements of wicked problems worth attention independent of insurgency and state weakness, Christopher M. Schnaubelt, “Complex Operations and Interagency Operational Art,” *Prism* 1, No. 1, 37-50, December 2009; and Adam Elkus, “Operational art and modern strategy”, 11 December 2009. <http://www.opendemocracy.net/opensecurity/adam-elkus/operational-art-and-modern-american-strategy>

and policy problems that in many ways defied the clear definition and structuring usually thought necessary to plan an effective solution. Here is a description from the canonical article by Rittel and co-author Melvin Webber in 1973:

By now we are all beginning to realize that one of the most intractable problems is that of defining problems (of knowing what distinguishes an observed condition from a desired condition) and of locating problems (finding where in the *complex* causal networks the trouble really lies). In turn, and equally intractable, is the problem of identifying the actions that might effectively narrow the gap between what-is and what-ought-to-be. As we seek to improve the effectiveness of actions in pursuit of valued outcomes, as system boundaries get stretched, and as we become more sophisticated about the *complex* workings of open societal systems, it becomes ever more difficult to make the planning idea operational.⁴

The connection between “wicked problems” and the phenomenon of “complexity” is quite explicit here: it is the complexity that makes the problems “wicked” or intractable (as opposed to “tame” or tame-able).

Second, upon closer study it became clear that what is most significant is not complexity per se but a particular type thereof - *interactive complexity*. Natural scientists, engineers, designers and social scientists have long been aware (in their respective fields) of a rough-and-ready distinction between systems that are merely structurally complex (in other words, possessing many parts that can be relied upon to relate to each other in predictable, linear ways – for example, an automobile assembly line) and those that are interactively complex (in other words, possessing many parts that interact with each other in nonlinear and unpredictable ways, sometimes producing second, third and Nth order consequences far removed from and seemingly disproportionate to the first order actions – for example, a city). This distinction between structural and interactive complexity and the functional identity of the latter with the concept of wicked problems was brought out very clearly in a theoretically sophisticated pamphlet of the U.S. Army Training and Doctrine Command titled, “Commander’s Appreciation and Campaign Design” published in January 2008.⁵

⁴ Horst W.J. Rittel and Melvin W. Webber, “Dilemmas in a General Theory of Planning,” *Policy Sciences* 4, 159 [emphasis added], 1973.

⁵ U.S. Army TRADOC Pamphlet 525-5-500, “Commander’s Appreciation and Campaign Design”, version 1.0, 28 January 2008.

Finally, in many ways the most striking consequence of taking interactive complexity seriously has to do with what it suggests about the inherent challenges to gaining *knowledge* about interactively complex problems and solutions. If it is in the nature of certain types of problems to be characterized by unpredictable, non-linear interactions, sometimes producing disproportionate effects, it follows that for at least some of this special subset of problems we will be quite limited in what we know about the dynamics underlying problems and potential solutions. In other words, even if we know something about many of the elements of an interactively complex problem, there will be much about how those elements may interact, what may happen as a consequence, and how those consequences themselves may interact that we will not, and cannot, know in advance. Furthermore, a significant amount of what is known about these interactions will be widely dispersed among actors possessing different relevant vantage points. This context dependence will mean that much of what is known will be what the Hungarian chemist and philosopher Michael Polanyi called “tacit” knowledge – difficult to fully explain or communicate apart from the context.⁶ In short, for interactively complex problems, we will often not fully understand the sources of the problem or how a proposed policy intervention is likely to affect it for better or worse.

Four broader theoretical connections

While such implications initially struck me, at least, as somewhat startlingly radical, one of the things I discovered as I explored them further were the connections to a number of other parallel and powerful lines of thinking, of which I’ll briefly describe four.

First and most obviously, the emphasis on interactive complexity relates directly to the complexity theory that grew up so rapidly in science beginning in the late 1970s and began to receive significant broader attention in the late ‘80s and early ‘90s with the establishment of the Santa Fe Institute in 1984 and the publication of popular science books like James Gleick’s *Chaos: The Making of a New Science* (1987) and Mitchell Waldrop’s *Complexity: The Emerging Science at the Edge of Order and Chaos* (1992). During the 1990s this early wave of popular complexity theory intersected at a few points with security studies, notably in historian Alan Beyerchen’s 1992 article “Clausewitz, Nonlinearity and the Unpredictability of War,”⁷

⁶ Michael Polanyi, *The Tacit Dimension*, 1966/2009.

⁷ Alan Beyerchen, “Clausewitz, Nonlinearity and the Unpredictability of War,” *International Security*, Vol 17, No. 3, 55-90, Winter 1992/92.

in a collection of essays by international security scholars published by National Defense University in 1997,⁸ and in a book length treatment published the following year by Thomas Czerwinski, one of the editors of the first volume.⁹ However, the principal focus of much of this work was on the traditionally military dimension of security studies rather than the broader range of operations characteristic of many of the post-Cold War interventions, and some of it was frankly a bit caught up in what Czerwinski later called the “gee whiz of applying the emerging sciences of nonlinear dynamics, chaos and complexity to military affairs”¹⁰ – which was of course very much in keeping with the then-raging debates about how advances in technology and the advent of “net-centric warfare” had produced a paradigm-changing “Revolution in Military Affairs.”

Second, stepping back to take a broader view reveals that social scientists have been grappling with the implications of interactively complex problems in an impressive variety of contexts for some time – predating and in many ways anticipating scientific complexity theory – and some of these thinkers have reached supporting conclusions that are in some ways more relevant and persuasive. Jane Jacobs’ 1961 classic of urban planning *The Death and Life of Great American Cities* framed the concluding chapter in terms of “The kind of problem a city is” - and answered the question squarely: cities are problems in “organized complexity ... [which] present ‘situations in which a half-dozen or even several dozen quantities are all varying simultaneously and in subtly interconnected ways.’”¹¹ In 1984, Sociologist Charles Perrow’s *Normal Accidents* argued for the impossibility of completely foreseeing or avoiding complex interactions even with the most sophisticated techniques for managing certain high-risk technologies.¹² In *System Effects: Complexity in Political and Social Life*, international security scholar Robert Jervis defined the closely related idea of systems effects as “when (a) a set of units or elements is interconnected so that changes in some elements or their relations produce changes in other parts of the system, and (b) the entire system exhibits properties and behaviors that are different from those of the parts.” (Such latter properties are generally referred to as “emergent” in complexity theory – they “emerge” from the interaction of the system as a whole rather than any of its individual constituent parts, and can in fact be generated by the complex interaction of quite simple actions or rules.) Among the

⁸ David S. Alberts and Thomas J. Czerwinski, eds., *Complexity, Global Politics and National Security*, 1997.

⁹ Thomas J. Czerwinski, *Coping with the Bounds: Speculations on Nonlinearity in Military Affairs*, 1998.

¹⁰ Thomas J. Czerwinski, *Coping with the Bounds: A Neo-Clausewitzian Primer*, 1, 2008.

¹¹ Jane Jacobs, *The Death and Life of Great American Cities*, p. 433 [quoting Warren Weaver], 1961.

¹² Charles Perrow, *Normal Accidents: Living with High-Risk Technologies* (1984/1999).

conclusions Jervis drew were that where systems effects/interactive complexity is significant, “We Can Never Do Merely One Thing” and “Outcomes Do Not Follow From Intentions.”¹³

Third, social orders of any complexity and persistence (putting aside for the moment the benefits and flaws of particular such orders) are not only the product of deliberate policy decisions premised on full knowledge of the way various dynamics will interact¹⁴ in complex ways. Social orders are also in many respects unintended, arising as the result of the actions of many members of society pursuing ends other than the creation of any particular social order. This is, of course, a theme with a long history in social and political theory. Among moderns, Montesquieu was a notable proponent,¹⁵ and the most familiar example of the idea was put forth during the Scottish Enlightenment by Adam Smith, who explained the creation of market economies as the result of the ‘invisible hand’ by which the self-interested acts of individual buyers and sellers are coordinated to produce social goods.¹⁶ In the 20th century, the idea that there are inherent limits to central planners’ knowledge about certain kinds of complex interactions such as the efficient pricing of goods and production, which can therefore be coordinated *only* through unintended orders like markets is perhaps most closely associated with Friedrich Hayek.¹⁷

Fourth and finally, it is interesting to note that the same year that Hayek made his first major presentation of these ideas about economics and knowledge, 1936, was also the year that sociologist Robert K. Merton published his landmark article on “The Unintended Consequences of Purposive Social Action.” In this article Merton makes some strikingly similar observations about the effect of complex interactions (or “interplay”) on our knowledge of the consequences of social action generally. This, too, I think is worth quoting directly:

Although no formula for the exact *amount* of knowledge necessary for foreknowledge is presented, one may say in general that consequences are fortuitous when an exact knowledge of

¹³ Robert Jervis, System Effects: Complexity in *Political and Social Life*, 6, 10, 61.

¹⁴ Amitai Etzioni, “A self-restrained approach to nation-building by foreign powers”, *International Affairs* 80, 3-5, 2004.

¹⁵ See, e.g., Isaiah Berlin, “Montesquieu,” in *Against the Current: Essays in the History of Ideas*, 146, 1955/1982.

¹⁶ James R. Otteson, “Unintended Order Explanations in Adam Smith and the Scottish Enlightenment,” in Louis Hunt and Peter McNamara, eds., *Liberalism, Conservatism and Hayek’s Idea of Spontaneous Order*, 2007.

¹⁷ Friedrich A. Hayek, “Economics and Knowledge”, 1937, and “The Use of Knowledge in Society”, 1945, reprinted in Hayek, *Individualism and Economic Order*, 1948.

many details and facts (as distinct from general principles) is needed for even a highly approximate prediction. In other words, “chance consequences” are those which are occasioned by the *interplay* of forces and circumstances which are so *complex* and numerous that prediction of them is quite beyond our reach.

... with the *complex* interaction which constitutes society, action ramifies, its consequences are not restricted to the specific area in which they were initially intended to center, they occur in interrelated fields explicitly ignored at the time of action.¹⁸

In sum, we see an interesting convergence on a few propositions that, while developed in other contexts, seem quite relevant to the meaning of “complexity” in the context of security and foreign policy challenges such as Iraq and Afghanistan. These far flung inquiries give us a rich description of interactively complex or wicked problems as integrally tied up with the complex interactions of society itself, which are not always intended and cannot always be anticipated.

Implications – Analytical

So to bring things back to the concrete challenges of security policy in situations like Iraq and Afghanistan, what follows? I think these connections suggest two sets of observations, one analytical and having to do with how we might intellectually organize our thinking about both specific cases and this general category of post-Cold War interventions, and a second group more on the order of tentative policy lessons that follow from this analysis.

The analytical point is that while the idea of complexity and interactively complex or wicked problems seems to me to be exactly the right conceptual framework for thinking effectively about this policy area, I think we would gain from thinking about three distinct groups of complex problems, notwithstanding their interrelationships, which I’ve come to think of as (1) the complex problem of *our* Complex Operations, (2) the complex problem of insurgency and (3) the complex problem of state weakness.

The first of these focuses on understanding the inherent dynamics of *our*

¹⁸ Robert K. Merton, “The Unanticipated Consequences of Purposive Social Action,” *American Sociological Review*, Vol. 1, Issue 6, 899-900, 903, December 1936 [emphasis added].

own “Complex Operations” – namely, civil-military, whole-of-government, U.S.-international collaboration on any sort of common effort deserving of the name. I suspect it’s impossible to have spent any amount of time working on Iraq or Afghanistan – whether in Washington or Brussels, Baghdad or Kabul, Kirkuk or Marja – and not see that the international effort itself has important features of the interactively complex or wicked problem described above. The most important is the phenomenon of what might be called “emergent policy,” by which bureaucratic incentives, organizational routines, interagency interactions and simple but profound differences in perception of reality regularly produce results that are not intended or anticipated by any central policymaking intelligence. The need to initiate a second, course-correcting Afghanistan-Pakistan strategy review in the summer and fall of 2009 just months after the same senior policymakers had completed a previous review and announced a strategy in March 2009 was perhaps a recent illustration – what intervened in the meantime were not only new perceptions of the threats and challenges and how to respond to them but also new insight into the difficulties of keeping the many parts of the U.S. and NATO effort on the same hymn sheet that the first strategy had been meant to serve as.¹⁹ However, to my mind the definitive analysis of this dynamic remains former Johnson administration official Robert Komer’s Vietnam study originally released by RAND in 1972 with very possibly the most apt title ever given an official study: *Bureaucracy Does Its Thing*.²⁰ (The more prosaic subtitle was “Institutional Constraints on U.S.-GVN [Government of Vietnam] Performance in Vietnam”). Reading this in Baghdad in 2006, one was hard-pressed to believe that it had been written 34 years ago about a war that took place a subcontinent away rather than the day before about Iraq and the Coalition effort there.

A second complex problem is the *insurgency* itself. I have the least to say about this both because it’s the furthest beyond my area of expertise and because it’s already being studied so intensively and ably by so many security specialists. My point here is just that the factors that start, sustain and stop people from taking up arms and joining an organized resistance, often against great odds, on their own soil, are sufficiently special and interactively complex to be thought of as a distinct complex problem in itself – even though it obviously never can or should be analytically isolated from other social, political and international factors.

¹⁹ Paul Richter, “U.S. envoy Holbrooke has been there, but will it help?” in *Los Angeles Times*, October 08, 2009.

²⁰ R.W. Komer, *Bureaucracy Does Its Thing: Institutional Constraints on U.S.-GVN Performance in Vietnam*, R-967-ARPA, August 1972.

The third complex problem is that of *weak states* above and beyond an insurgency's immediate security threat. To be sure, one of the most important dimensions of this state strengthening process for long term sustainability will be strengthening local security forces so that they can maintain the Weberian monopoly on the legitimate use of force with much less intensive and direct international assistance. But this is obviously only one dimension of what we used to think of as a much broader process of the political and economic development of states and civil societies. I think the utility of thinking of this broader conception of development as an interactively complex problem should be self-evident from what has been described earlier, as how modern states and civil societies developed was the original and natural focus for many of the thinkers grappling with complex problems that have been mentioned, from Montesquieu to Smith to Hayek.²¹

Implications – Policy

I hope it is the case that the rationale behind most of my concluding thoughts on five concrete policy lessons follows fairly straightforwardly from what has already been discussed.

1. When we match “our” complex coalitions and organizations against the complex problems of other states such as insurgencies and state weakness, it shouldn't be surprising to find that the U.S. and international entities are often by their nature imperfectly oriented towards the latter – and will often demonstrate great creativity to avoid operating out of their traditional zones of comfort or efficacy or running organizational risks of being too directly associated with failure.

In 1976 public policy scholar Aaron Wildavsky described, in the context of U.S. bureaucracies charged with responding to domestic wicked problems like poverty and education, the phenomenon of “strategic retreat” from objectives that are either “unobtainable” (within given constraints) or just particularly difficult for a given organization.²² Similarly in foreign policy, when faced with a foreign

²¹ And in case there was any doubt about the relevance of the kind of complexity analysis referred to here to economic development, the Overseas Development Institute of London recently published a lengthy report drawing a multitude of interesting connections between economic development and the scientific complexity theory literature. Ben Ramalingam and Harry Jones with Toussaint Reba and John Young, “Exploring the science of complexity: ideas and implications for development and humanitarian efforts,” Working Paper 285, October 2008.

²² Aaron Wildavsky, “Strategic Retreat on Objectives: Learning from Failure in American Public Policy”, 1976, in Wildavsky, *Speaking Truth to Power: The Art and Craft of Policy Analysis*, 1987.

wicked problem whose “solubility” within given constraints is highly uncertain (say, poverty in Afghanistan), U.S. and international organizations can be expected to go to great lengths to find a way of approaching the problem so that they can “succeed” independently of the situation on the foreign ground. This is the case simply because these organizations are driven by organizational dynamics independent of any particular foreign policy problem.

In some respects, one of the original puzzles that started me down this path was why anyone would think that recognizing (accurately, I have argued) the fundamental challenges of Iraq or Afghanistan as “wicked problems” would be a basis for optimism that they could be solved straightforwardly with more application or resources or time measured in years rather than decades. As I’ve already mentioned, the whole intellectual genesis of wicked problems in the late ‘60s and ‘70s was to try to understand the *limits* of what it had been possible to achieve in the great social policy initiatives in which so many had placed so much hope for the previous decade if not generation.²³ And one of the findings of this original literature that I found helped explain dynamics I’d seen in Iraq and Afghanistan was that very often when an immovable object like a formidable bureaucracy was confronted with an unstoppable force in the form of an interactively complex policy problem, the bureaucracy usually found a way to ensure that its efforts could be framed in a way that would allow it to claim success on its own terms rather than risk having its reputation, budget and perhaps even survival dashed on the rocks of the complex problem itself.

None of this is to exclude the possibility of inspired efforts by particular individuals within bureaucracies and donor countries to ignore institutional equities, reach across organizational boundaries and bridge cognitive barriers to forge a common understanding of the problem and develop a few solutions that might actually be responsive. But it does help explain why even when the rhetorical responses of governments and organizations to foreign complex problems are long lists of commitments ostensibly aimed at having transformative effects on the country itself, the most visible efforts actually undertaken are often much more comfortably within the pledging countries’ own control, such as policy reviews, reorganizations of our own structures and a primary emphasis on the spending of our own money via

²³ Nathan Glazer, *The Limits of Social Policy*, 1990.

trusted channels so that we at least know we will have appropriate receipts.²⁴

2. *Understanding the dynamics of interactively complex problems (on our side and theirs) even retrospectively requires extraordinary effort, and prospective knowledge is inherently hazy.*

My main point has been that complex problems typically involve interactions between social factors and policy interventions that are so complex, and so regularly give rise to unintended emergent properties and consequences, that our efforts to understand what is actually going on will often be like seeing through a glass darkly. Small things will sometimes have big effects. Sometimes unintended consequences will be beneficial (like the social goods of markets and efficient pricing described by Smith and Hayek). Sometimes unanticipated consequences will be strongly negative (like the breakdown of social order in Iraq in 2003 following the disbanding of the Iraqi army).

Because the owl of Minerva flies at dusk, in hindsight with the benefit of good information, analysis and powerful imaginative faculties, it will often be somewhat easier to figure out what went wrong or right. Such after-action reviews will be invaluable sources of information about how policy interventions and social factors have previously interacted, which in turn will be a useful input in thinking about how they might interact in the future.²⁵

But as Merton pointed out in 1936, it is in the *nature* of interactively complex problems that there will remain limits to our ability to anticipate how the Nth order interactions between multiple social factors (including policy interventions) will ultimately play out, and thus to our ability to fully anticipate the consequences²⁶.

²⁴ U.S. Special Representative for Afghanistan and Pakistan Ambassador Richard Holbrooke's recent efforts to channel a greater proportion of U.S. assistance directly to Pakistani governmental bodies and non-governmental organizations rather than U.S. and international contractors and NGOs has been a notable – and notably controversial within the relevant U.S. agencies – effort to resist this tendency. See James Traub, "Our Money in Pakistan," March 17, 2010, http://www.foreignpolicy.com/articles/2010/03/17/our_money_in_pakistan

²⁵ For recent persuasive statements of the need for situational understanding that acknowledges the full complexity and uncertainty of the current security challenges, H.R. McMaster, "The Human Element: When Gadgets Become Strategy," in *World Affairs* (Winter 2009), and TRADOC Pamphlet 525-3-0, The Army Capstone Concept, "Operational Adaptability: Operating Under Conditions of Uncertainty and Complexity in an Era of Persistent Conflict, 2016-2028", 21 December 2009.

²⁶ Rory Stewart recently made a related point about the inherent limits of our knowledge and ability to predict outcomes in Afghanistan in his essay "The Irresistible Illusion".

To take a current example from Iraq, who could have predicted the results of the second round of national elections held in March 2010 just two years ago, let alone in 2003? While as of mid-April 2010 a new government had not yet been formed and it thus remains very difficult to say what the elections will mean politically, the election results alone abounded with surprises, of which I'll just mention three. First, the return of Ayad Allawi, who was appointed by the Coalition Provisional Authority in 2004 as the first interim prime minister, then suffered such a weak showing in the 2005 elections that many took it to mean he'd been unable to establish an Iraqi constituency and was no longer a significant political force. Nonetheless, in the March 2010 elections, Allawi headed the coalition of parties that won the largest number of seats in the new Parliament. Second, one of the more religious Shia parties with which the U.S. had previously had a generally close relationship before and after 2003, the Islamic Supreme Council of Iraq (ISCI), suffered disappointing results – in part, credible news accounts have suggested, because they were perceived by some Shia voters as too close to Iran. Third, the Shia party of Moktada al-Sadr, whose ties with Iran and lethal militias were major sources of concern for the Coalition for much of the time after 2003, did very well in the election – in part because al-Sadr was seen by some Shia voters as more of an Iraqi nationalist and *less* close to Iran.²⁷

3. The international actors with the best chance of understanding complex problems will usually be those with the most local knowledge – who will very often be those physically closest to the relevant situation and local actors.

It follows from what's been said that particularly with respect to the complex problems of insurgency or state weakness, where most of the key complex interactions are taking place in the foreign country, those closest to that action will generally have a better vantage point from which to observe the interactions and their context (Polanyi's "tacit knowledge"), and be better positioned to accurately interpret and perhaps even influence them. By contrast, those further away will generally be at a disadvantage from this perspective – particularly if they are somewhere like Washington or another capital where there are many domestic (e.g. U.S.) complex interactions (e.g., what was on the front page of today's newspaper, where one's agency is in the all-important budget process, what hearing Congress is planning, what happened at yesterday's NSC meeting) competing for one's observational and interpretative attention. While it is sometimes suggested that diplomatic or

²⁷ Anthony Shadid, "Followers of Sadr Emerge Stronger After Iraq Elections," in *The New York Times*, March 16, 2010, <http://www.nytimes.com/2010/03/17/world/middleeast/17sadr.html?scp=1&sq=shadid%20sadr%20iraq&st=cse> and related video interview of Shadid at <http://video.nytimes.com/video/2010/03/16/world/1247467351682/iraq-elections-sadr-and-his-rivals.html>

intelligence reporting should be able to bridge this gap, both experience and theory incline me to think that those will usually be at best a fragmentary and very imperfect substitute for undivided immersion in the country situation and ongoing access to first-hand participants.

Of course, it is important to note at least three caveats to the presumption in favor of a field advantage in local knowledge. First, to the extent that what I've called the complex problem of *our* Complex Operations plays out in *our* capitals, people in those capitals will possess a knowledge advantage with respect to that dimension of the problem. Second, for all the importance of local and tacit knowledge, oversight from capitals (ideally in the form of regular, extended, truly two-way discussions with those based elsewhere) remains critical to ensuring that there are checks protecting against field officials' excessive embrace of the host nation's interests vs. U.S./Alliance interests referred to as local "capture" or "going native." (Of course, those doing the Washington oversight will want to make sure they are not just mistaking field officials' stronger grasp of local and tacit knowledge about what approaches are most likely to work or fail in light of the actually-existing local context – which may be different from ideas generated further away – for malign "capture.") Finally, there will be some matters of importance to the host nation with respect to which field officials do *not* have a knowledge advantage, for example, regional or global dimensions of the problem or grand strategic tradeoffs that are required by bigger picture considerations.²⁸ The obvious example of a regional dynamic that might be simply be beyond the scope of a field official based in a particular country to grasp as clearly as an official with a regional perspective is the impact of the insurgency in Pakistan on the insurgency in Afghanistan and vice versa. Nonetheless (to caveat the caveat), I see every reason to think that many, if not most issues of greatest importance to a country's vulnerability to an insurgency or able to strengthen its state will not fall under this exception. (And it is worth keeping in mind Jane Jacobs' wry comment about the value of regional approaches in the context of urban planning: "A Region is an area safely larger than the last one to whose problems we found no solution"²⁹).

²⁸ Although I think its framing for the more straightforward context of a sovereign governing entity's delivery of services means that it does not have a direct application to the case of a foreign intervention, a sophisticated discussion of the strengths and limitations of centralized vs. decentralized actors under complex conditions and an alternative model of "experimentalist" governance that seeks to reconcile the best of both can be found in Charles F. Sabel and Rory O'Donnell, "Democratic Experimentalism: What To Do About Wicked Problems After Whitehall (and What Scotland May Just Possibly Already Be Doing)" in OECD, *Devolution and Globalisation: Implications for Local Decision-Makers*, 67-90, 26 October 2001.

²⁹ Jacobs, *op cit*, 438.

To cite an Iraq example, I would argue that an important key to the gradual improvement in the effectiveness of the U.S. effort during 2007 and 2008 was that Ambassador Crocker and General Petraeus were able as part of “the surge” to win and keep a greater degree of delegated authority and freedom from micromanagement, which was complemented by some White House efforts to reorient Washington’s role to place a greater emphasis on supporting and exercising strategic oversight of, rather than second-guessing, the field. Despite this temporary improvement, however, the structural tension persists between the perspective of Washington and the perspective of the field with respect to fundamentally foreign operations, especially among civilian agencies. (In general, it’s my sense that militaries, whose business during wartime requires them to deal on life-or-death terms with fundamentally local dynamics much of the time, have learned through hard experience the costs of failing to delegate to field commanders – although they too are periodically forced painfully to relearn the lesson as well³⁰).

4. Incremental, indirect and oblique approaches will often be most likely to produce sustainable reform.

If we’re not sure how complex dynamics work and interact, it makes sense to take a step-by-step approach when seeking to change them, experimenting with discrete interventions until we gradually gain a better understanding. Champions of the value of this kind of an *incrementalist* approach to reform can be found across the ideological spectrum and in varying country circumstances. Although Hayek’s emphasis on the limits to our knowledge about interactively complex processes sometimes sounds like a denial of the possibility of any deliberate change (e.g., his emphasis on the “fatal conceit” of “how little [men] really know about what they imagine they can design”³¹), his most fundamental objection was to the feasibility of comprehensive reforms formulated and run from a central point far from the relevant dispersed knowledge.³²

Coming from the opposite direction ideologically, economist Joseph Stiglitz has cited Hayek’s thinking about the implications of central knowledge limitations as an inspiration both for the work on informational problems for which he won the Nobel Prize and for his critique of the “shock therapy” approach to

³⁰ On the World War I battle of Passchendaele as one such painful learning experience about the limits of military planners’ knowledge, see M.D. Feld, “Information and Authority: The Structure of Military Organization.” *American Sociological Review*, Vol. 24, No. 1, pp. 15-22, February 1959.

³¹ F.A. Hayek, *The Fatal Conceit*, 76, 1988.

³² Andrew Gamble, “Hayek on knowledge, economics and society,” in Edward Feser, ed., *The Cambridge Companion to Hayek*, 128, 2006.

economic reform during the transitions from the former Soviet Union.³³ Stiglitz contrasts the destabilizing effects of “shock therapy” approaches with China’s path of incremental but steady reform (quoting Vincent Benziger): “wisely realizing that they did not know what they were doing,” “crossing the stream by reaching for the next stone” and demonstrating that it not only is not necessary to do all things at once, but that progress on small things can create more sustainable momentum for further reforms.³⁴ This argument against the need to do everything in order to do anything also echoes economist Albert Hirschman’s critique of “big push” models of development economics and advocacy for “unbalanced growth”, although Hirschman’s fundamental point may be the need for country leaders to be sufficiently sensitive, agile and courageous to be able to take advantage of openings for reform wherever they materialize and whether planned or fortuitous.³⁵

Perhaps somewhere in the middle, social scientist Charles Lindblom has long been an advocate for “muddling through” or, more recently, “epiphenomenal problem-solving”, in which “solutions to problems emerge not from deliberation or design but as by-products of people’s attention to other concerns or problems”. Somewhat like Hirschman, Lindblom has also emphasized that “appropriate or best problem solutions, if found at all, are appropriate or best to a time and a place.”³⁶

Relatedly, *indirect approaches* emphasize international actors working “by, with and through” local parties – in substantial part in order to make the best use of their local knowledge. Such an approach has long been a traditional tenet of U.S. Army Special Forces doctrine, and it is also a basic premise of classic diplomacy’s emphasis on influencing and persuading local officials to move in desired policy directions (rather than seeking to take the decision out of their hands)³⁷.

³³ Joseph E. Stiglitz, “Whither Reform? Ten Years of the Transition,” Keynote address, World Bank Annual Conference on Development Economics, 22, April 28-30, 1999.

³⁴ Vincent Benziger, “The Chinese Wisely Realized that They Did Not Know What They Were Doing,” letter to World Bank Transition 7 (7-8 July-August 1996), 6-7 <http://www.worldbank.org/html/prdr/trans/j&a96/art4.htm>

³⁵ Albert O. Hirschman, *The Strategy for Economic Development* (1958); Albert O. Hirschman, “The Principle of the Hiding Hand” in *Development Projects Observed*, 9-34, 1967; Albert O. Hirschman, “The Case Against ‘One Thing At a Time’” in Hirschman, *A Propensity to Self-Subversion* (1989/1995); Judith Tendler and Sara Freedheim, “Bringing Hirschman Back In” in Lloyd Rodwin and Donald A. Schon, *Rethinking the Development Experience: Essays Provoked by the Work of Albert O. Hirschman*, 176-209, 1994.

³⁶ Charles E. Lindblom, “The Science of Muddling Through” (1959); Charles E. Lindblom, *Inquiry and Change: The Troubled Attempt to Understand and Shape Society*, 223, 1990.

³⁷ David Ellerman provides a particularly broad and deep discussion of the indirect approach in Chapter 3 and 4 of *Helping People to Help Themselves: From the World Bank to an Alternative Philosophy of Development Assistance*, 2005.

Finally, oblique approaches seek to enable goals that are difficult or impossible to achieve directly by doing other things that are within our means. In *The Utility of Force*, Rupert Smith describes this as the fundamental objective of sophisticated modern counterinsurgency: “if a decisive strategic victory was the hallmark of interstate industrial war, establishing a condition may be deemed the hallmark of the new paradigm of war amongst the people.”³⁸ As an illustration of Smith’s point about establishing a condition, I would argue that in Iraq from 2003-2007 it was common to underestimate Iraqi civil capacity when people talked regularly about the state having “collapsed.” At the same time, it was common to overestimate the degree to which international parties could substitute contemporary Western policies, laws and institutions. In contrast to both positions, in fact there remained an Iraqi state – but it had been effectively ‘driven underground’ by the conditions of physical insecurity and the uncertainty of occupation. By eventually focusing on doing what we could to improve security via the military surge, we in essence ended up adopting an oblique approach by which we were setting the conditions for the state to re-emerge, which it proceeded to do over the course of 2007 and beyond – even though international actors remained limited in our ability to strengthen it directly (that is, apart from improving security). More recently, economist John Kay has described the need for oblique approaches as required under a wide range of contemporary circumstances defined by complexity – and he argues that attempts to try to manage complex problems that are incapable of direct management using direct rather than oblique approaches have been a significant factor behind a number of catastrophic breakdowns, including the global financial crisis.³⁹

5. *Complex strategy and plans are less likely to succeed against complex problems, while simple strategy and plans will often be more effective.*

I think what complexity analysis teaches us about the difficulty of understanding, let alone predicting, complex interactions suggests that we’re better off focusing on a few interventions so that we have a better chance of observing the consequences (positive or negative) than doing many things the results of which will be more unclear. Furthermore, the interaction between our Complex Operations and their complex problems, and the multiplication of unintended consequences, suggests that complex strategies and plans may simply be impossible to effectively coordinate. By contrast, we have a much greater chance of getting many diverse actors all moving in the same direction if we’re pursuing a small number of objectives

³⁸ Rupert Smith, *The Utility of Force*, 272-3, 2005/2008.

³⁹ John Kay, *Obliquity*, 2010.

that can be clearly explained to all (and supervised).⁴⁰

I will use as my final illustration an example that may seem quite prosaic but was in many ways both one of my original impetuses for thinking about the role of complexity and a main source of my hope that a different approach to strategic and operational plans might be (more) effective despite the challenges inherent in interactively complex or wicked problems: the use of Iraqi budgets as a strategic focal point to enable more effective alignment of U.S./Coalition state-strengthening efforts with those of the Iraqi government at both the national and subnational levels.

We all recall that in 2004 and 2005 and 2006 the Iraq effort was routinely condemned as seriously, perhaps even fatally, hindered by coordination challenges – between civilians and the military, between different civilian agencies and, most importantly, between the U.S. efforts and the Iraqis themselves. Both official audits and journalistic accounts produced story after story about how the left hand didn't know what the right hand was doing and all of the ways in which this was undermining our efforts to get to the point when the Iraqi government and economy could stand on their own.

As it happened, a little appreciated but significant factor in addressing some of the most important coordination problems and improving the effectiveness of our efforts to support Iraqi self-governance was a belated recognition of the strategic importance of Iraqi public finance – Iraqis allocating and executing their own money via their own budgets. At the heart of this approach was the idea of accomplishing the general objective of finding some way to align our efforts around Iraqi priorities and the strengthening of Iraqi capacity for sustainable state functioning via a context-specific strategy of generally accepting Iraqi budgets (national and subnational) as “good enough” indicators of Iraqi national and local priorities and then doing everything we could to help Iraqi officials carry out their own priorities by better executing their budgets. Crucially, the simplicity of this strategy helped make it capable of catching on widely and providing some valuable coherence to the U.S./Coalition effort.

As recounted in the capstone report of the Special Inspector General for Iraq

⁴⁰ For analogous arguments in the international business context that only simple strategies are capable of dealing with the interactively complex and consequently highly uncertain globalized business environment, Donald Sull, *The Upside of Turbulence: Seizing Opportunity in an Uncertain World*, 63, 2009; Miguel Pina e Cunha and Armenio Rego, “Complexity, simplicity, simplicity,” *European Management Journal*, Vol. 28, Issue 2, 85-94, April 2010.

Reconstruction, *Hard Lessons: The Iraq Reconstruction Experience*⁴¹, in 2006 most Americans in Iraq were still focused on spending U.S. money largely independently of Iraqi government institutions. Consequently, “In many cases there was a lack of sufficient Iraqi participation in deciding how or what to reconstruct and ensuring that projects could be maintained afterwards” (333). The end of 2006, however, saw “The Rise of Budget Execution” as a U.S. civilian and military priority (267). By mid-2007, the standard for a useful expenditure of U.S. funds had largely shifted to “if it can’t be done by Iraqis, we probably shouldn’t do it. What is better is a project that takes 60 days instead of 30 days – but is done by the Iraqi manager and is sustainable by the Iraqis [and] that their operations can support” (298). By mid-2008, Iraqi public finance and budgets had become such a central organizing principle to the U.S. effort that the Embassy and Multi-National Force Iraq created a civil-military Public Financial Management Action Group (PFMAG) chaired by the senior civilian and military leaders responsible for governance and the economy and incorporating the participation of dozens of U.S. organizations working on the civil side in Iraq in order to ensure that all civilian and military personnel, whether working with ministries from Baghdad or with provinces from Provincial Reconstruction Teams (PRTs), would make assisting with the execution of Iraqi budgets a paramount civil administration mission priority⁴². By the end of 2008, an independent U.S. Institute of Peace study of the PRTs had concluded that “[the budget execution] role is critical to the U.S. mission in Iraq and is the primary strategic justification to continue the PRT program”⁴³.

Conclusion

In closing, I’ll return to the epigram of Paul Valéry quoted at the beginning: “That which is simple is always false: that which is not simple is unusable.”

The “paradox of complexity” appears all too real in practice, and is supported by a persuasive range of examples from other policy areas and literatures. What follows from this? Certainly, nothing in the foregoing discussion should be taken as suggesting an argument against action per se, let alone action informed by

⁴¹ Special Inspector General for Iraq Reconstruction, *Hard Lessons: The Iraq Reconstruction Experience*, U.S. Government Printing Office, 2009 [parenthetical references are to page numbers in this report].

⁴² U.S. Government Accountability Office, “Securing, Stabilizing and Rebuilding Iraq: Progress Report: Some Gains Made, Updated Strategy Needed”, GAO-08-837, Appendix III: Comments from the Department of State. Department of Treasury 73, June 2008.

⁴³ Rusty Barber and Sam Parker, “Evaluating Iraq’s Provincial Reconstruction Teams While Drawdown Looms” USIPeace Briefing, 3, December 2008.

careful consideration of lessons learned from experience. But one way we might consider trying to resolve this paradox of complexity is by distinguishing between the value of complexity in two circumstances. On the one hand, it is and will remain of the greatest value to have the best *understanding* possible of the dynamics of an interactively complex situation, whether regarding our civil-military, whole-of-government, international operations or with respect to the complex problems that an insurgency or a weak state presents. On the other hand, the best way of responding to a complex situation will often be to strive *not* to mirror the complexity of the problem in our strategy or operational plans or organization. Instead, this analysis suggests the conclusion that particularly (but not only) where we have significant complexity on our side, we will be better off exercising the self-restraint necessary to pursue simpler strategies for intervention that improve our ability to see and act on the consequences of our actions.