CTX

Preface to the Special Edition

The analytical process known as counterterrorism (CT) net assessment anticipates our ability to counter threats and thus provides a perspective on the factors that could define success or failure for US CT policy that is fundamentally different from other methods. CT net assessments help decision makers understand what is truly important about an issue by balancing desired outcomes and anticipated policy effects in the face of struggle. It is called a "net" assessment because it considers how we fare in removing obstacles, overcoming resistance, and exploiting opportunities to achieve our desired outcomes. Some threats might appear great but can largely be mitigated with current policies and capabilities, while others that seem more minor might turn out to be inexorable and actually pose a greater net concern.

Anticipating what is coming over the next ridgeline—be it cyber attacks, terrorism, weapons of mass destruction, or something not yet considered—is not a trivial endeavor. The simultaneous interactions of networks, technology, information, and politics combine to produce a potentially sinister, dauntingly complex strategic brew. Getting a handle on this strategic complexity requires a broader knowledge base than ever before to understand how varied and seemingly unrelated parts interact with one another—at dizzying speeds—to create new possibilities.

CT net assessment offers unique information that helps its users to achieve and sustain a competitive advantage. Such assessments require a strong and accurate diagnosis of the causes that underlie strengths as well as weaknesses, and how these causal factors interact and coevolve. A good diagnosis will provide the necessary "sense-making" to guide appropriate action in full cognizance of the long-term consequences of both action and inaction, in terms of potential threats and opportunities across a range of policy choices. A bad diagnosis can lead to policy choices that are inefficient, ineffective, and potentially tragic.

A CT net assessment process that considers and anticipates the emergence of new threats and the transformation of current ones challenges the traditional, static "war on terror" paradigm. Because new threats arise and old ones mutate, a theory of victory needs to focus on managing threats, similar to the strategic model used by police agencies as opposed to a World War II–style model of submission and defeat. The need for new thinking about the contours of success is especially obvious when one considers that CT activities in themselves greatly influence the emergence and evolution of violent non-state actors.

Rather than examining our own capabilities and limitations, or assessing the implications of the multifaceted strategic environment, most intelligence focuses on evaluating the capabilities of our adversaries. We need to expand beyond that approach and consider the net effect of the coevolutionary interaction of three complex dynamics: ourselves, the environment, and the adversary. The information produced through CT net assessment can help decision makers to focus and prioritize policies and resources to achieve advantage and hedge against uncertain future developments. Understanding our sources of advantage and those of our adversaries helps us to determine our leverage in a given situation and the conditions in the strategic environment that favor loss and opportunity.

We anticipate that this special issue of the *Combating Terrorism Exchange* will help the National Counterterrorism Center's net assessment practitioners and our colleagues in other agencies and other countries refine our craft as we continue to evolve in our thinking about and approach to net assessment. ❖

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The Weather of Violence: Metaphors and Models, Predictions and Surprises

Dr. Melvin J. Konner, Emory University

Metaphors (figures of speech) are a common part of the English language, and official speech about war, terror, foreign policy, and defense, including the net assessment of violent state and non-state actors, is no exception.[1] We talk about hawks and doves, predators and prey, boiling over, coming to a head, pressure cookers, cat and mouse games, and the spread of viruses or cancer. In just the second half of March 2015, US leaders and commentators used these metaphors to describe sectarian violence:

- 17 March, General Mark Welsh, Air Force Chief of Staff: "I use a NASCAR analogy. ... If the car trailing you has been behind for a couple of laps but [you are] consistently slowing ... you cannot keep them from passing."[2]
- 18 March, US Representative Nicola Tsongas: "I liken [fighting ISIS] to a multidimensional chess game";[3] and Secretary of Defense Ashton Carter: "The ISIL phenomenon is metastasizing."[4]
- 23 March, David Adesnik of the Foreign Policy Initiative: "If it's March Madness [college basketball playoffs], if it's the NFL [National Football League], you usually want to play a home game. In war, it's better to play an away game."[5]
- 26 March, retired Admiral James Stavridis speaking of Afghanistan: "There are ... microclimates"[6] of sentiment in local populations. About troops fighting Ebola: "Life is not an on-off switch. We don't fund this magnificent military just to be in combat. ... It's a rheostat between hard power" and soft. "We can dial that rheostat toward the soft power."[7] He showed the on-off switch with his finger, the rheostat, by turning his hand.
- 28 March, UN Secretary-General Ban Ki-moon, addressing the Arab League Summit: "Gaza remains a tinderbox."[8]

SOME METAPHORS WORK BETTER THAN OTHERS AT ENLIGHTENING THE LISTENER.

Some metaphors work better than others at enlightening the listener.[9] Does Gen. Welsh's NASCAR image in the example above improve the listener's understanding of a fighter pilot being out-flown by a better plane?

If metaphors are brief, evocative figures of speech, analogies are extended parallels in which one unfamiliar thing is compared to another more familiar thing in order to enhance understanding. For instance, terrorism is often described in terms of a disease process, for which self-damage (the autoimmune response) is a risk of response. In other words, we are not just comparing a terrorist network

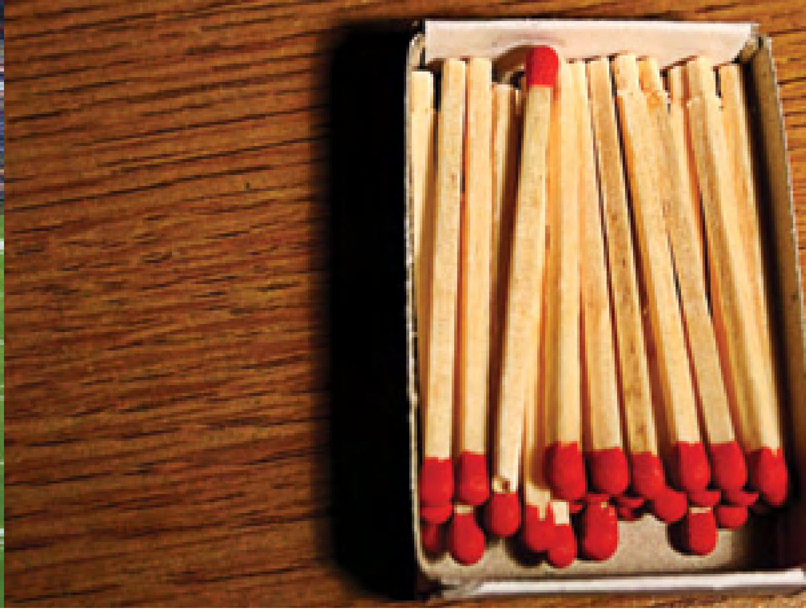
to, say, a virus, but we are also comparing different aspects of counterterrorism to the body's natural immune response and the doctor's treatment of the illness. Some analysts develop models, which are in essence elaborate analogies (which can take the form of diagrams on paper or algorithms on computers) that, at their best, can be manipulated mathematically to test hypotheses about real-world systems. To take another common example, the label "Hawks and Doves" generally refers to some population composed of aggressors (Hawks) and nonaggressors (Doves) and became a quantifiable game theory model in evolution and other fields. "Metastasizing," the cancer metaphor used by Secretary Carter, can be made part of an organismal model, although, as I demonstrate later on, that model can become confusing. Is ISIS a virus or a cancer attacking the body politic? The implications are different because the analogies imply different pathologies and types of treatment.

IS ISIS A VIRUS OR A CANCER ATTACKING THE BODY POLITIC?

A rheostat (one of the metaphors used by Admiral Stavridis) changes resistance to electricity, as with an electric light dimmer switch, and in engineering models, may be a part of systems that are simple or complex, closed or open. But to make the term useful as a model, we would have to decide whether we want to model the entire electrical system including the rheostat, or whether we want to use the analogy of a rheostat in isolation in order to bring a fresh perspective to people's minds. Finally, the term *microclimate*, also used by Stavridis, suggests either an analogy or a model of populations parallel to the way we model climate, weather, and other natural systems. In some ways, climate and weather can be predictable and cyclical, but in other ways, they can be formally chaotic and emergent.

I discuss some models and their possible value later in the article, but first I consider a basic view of human violence with regard to the rise of violent non-state actors (VNSAs), seen from the perspective of evolutionary anthropology. This is a discipline that makes regular use of metaphors, analogies, and models. For example, Lawrence Kuznar and Carl Hunt (in this issue) discuss the Blue-Green-Red metaphor and turn it into a model with measurable components.[10] But they also discuss VNSAs as tribes or chiefdoms, terms that are much closer to the reality of many of these groups. If al Qaeda is compared to a tribe and ISIS to a chiefdom, the parallels are more precise and elaborate than is the case with the color metaphor, and anthropologists have testable models for how tribes may evolve into chiefdoms.

More importantly, tribes, chiefdoms, and VNSAs are human groups that must be understood in a deeper evolutionary context because their dynamics are not only analogous to but also consistent with and resulting from a long evolutionary



history. The members of these groups follow known scientific laws and exhibit biological and behavioral processes that are not metaphoric but real. I first describe these processes before considering the value of some often-used models for describing terrorists and counterterrorism. I conclude that studying the thing itself (i.e., a particular VNSA or network) remains a superior route to understanding, instead of relying on models or analogies.[11] I also describe some general principles that may help guide a common-sense approach to net assessment.[12]

A View from Evolutionary Anthropology

Evolutionary anthropology sees human nature as real and definable, resulting from evolution by natural selection.[13] Statistically, historically, and biologically, violence is part of our nature but much more for males than females—a difference with deep evolutionary and genetic roots.[14] This includes individual as well as group violence, ambush and raiding, and deadly as well as ritualistic conflict. Tribal conflicts are especially intense because the absence of state or other higher-level authority encourages almost continual war. Examples of perpetual tribal conflict include the Enga of highland New Guinea, the Yanomamo of Amazonia, the Ilongot of the Philippines, the Nuer of southern Sudan, and the tribes of the British Isles between CE 800 and 1200.[15] The possession of women has frequently been a source of violence among men, and the seizure and accumulation of women was pervasive in ancient times. Reproductive inequality among men intensified with the rise of empires because the most powerful men could accumulate many more wives and concubines than ordinary men, but rape has always been a part—often a goal—of war.[16] This behavior transcends time, space, religion, and ideology. One analysis of Y-chromosome DNA (inherited only through males) shows that rape has long been a successful reproductive strategy for some men at the expense of others, and of women.[17]

Proportional to population, violence has declined by many measures, owing to the rise of the state, the spread of democracy, and a general improvement in women's status.[18] Violent organizations like Boko Haram, Al Shabaab, the Lord's Resistance Army, and ISIS[19] resemble tribes or chiefdoms, emerging in weak states where young men's violent tendencies and desire for women can gain free expression. Violent actors may operate in small groups where individuals goad each other (the "bunch of guys" thesis)[20] or in larger groups resembling whole tribes, but either way, fictive kinship among members is important, and prestige is a common goal. Our brains, it turns out, are not very good at distinguishing fictive from real kinship or the prestige that leads to reproductive success from the fatal kind that does not.[21]

Anthropologist Kuznar describes the limits of rationality in conditions where potential gains in prestige exceed likely losses (a sigmoid model of motivation). Such a situation can trigger a primitive brain response (in the limbic or emotional brain) in young men who are anxious to gain prestige, and it is at this point that such men are likely to act.[22] Social media have proved to be effective means for worldwide recruitment by extremist groups that exploit this emotional vulnerability. As recent research has shown, poverty and lack of education do not explain terrorism, a finding that James A. Piazza, writing in this issue, confirms.[23] Piazza adds that new democracies may experience a rise in acts of terrorism, while more mature democracies are at a lower risk. He points out the three factors that most strongly contribute to a rise in terrorism: human rights abuses, the exclusion of minority groups from civil institutions and access to political power, and foreign military interventions, all of which pit domestic groups of some kind against each other.[24]

Groups in conflict, regardless of size, mirror and escalate each other's violence, a process called *mimetic rivalry*. "Sacrifices" in war become literally that: making the cause sacred with one's blood.[25] Religious motives intensify these processes but are not necessary for violence to intensify.[26] As Michael Vlahos has demonstrated, groups are always fighting for identity, among other goals.[27] When a global *civilization* (e.g., ancient Rome, today's advanced Western world) faces a *tribal* group with a stronger identity, the less well-defined civilization may lose. But war strengthens identity and the sense of kinship. According to a study published in 1968, of 3,421 years of recorded history to that date, only 268 years saw no war anywhere in the world.[28] Since 1968, there have been no war-free years.[29]

All this violence is carried out mainly by males, although women often participate.[30] Women do become terrorists as well, but infrequently enough that they can be enumerated and named; they often become involved through romantic or family relationships with men, which suggests ways to track their involvement.[31] Surveillance must not ignore women, but men, especially young men, form the core, the main leadership, and the great majority of almost all violent groups' members.

MANY IN THE WEST ARE IN DENIAL ABOUT THE INNATE QUALITY OF VIOLENT BEHAVIOR.

Why should we consider human nature when analyzing terrorist violence? Many in the West, including many intellectuals, are in denial about the innate quality of violent behavior and hold a naïve view of the current extremist violence as a political response to overreach by a hegemonic West.[32] One result of this misinterpretation is the defunding of surveillance and defense agencies within governments. Furthermore, since young men account for the overwhelming majority of violence in all cultures, any psychological or psychobiological analysis must focus on them.[33]

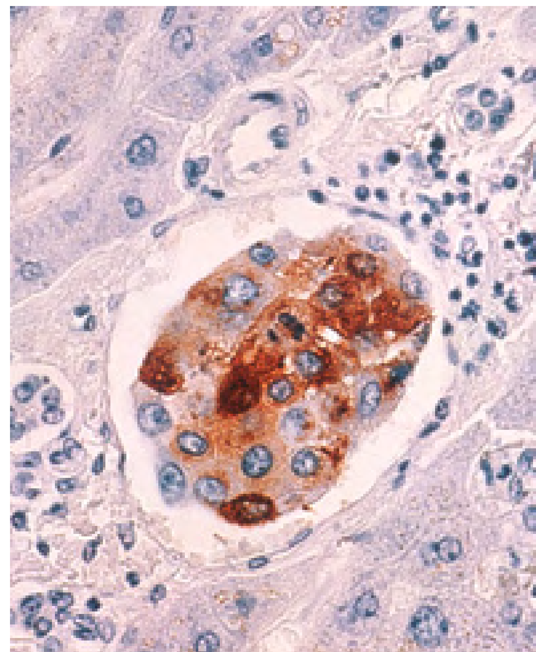
Metaphors or Models?

If violence is a fundamental, ever-present danger, can we predict or at least minimize it? The ability to predict and/or prevent is one purpose of models, and it is how they should improve on metaphors or analogies, which only emphasize a point or, in the worst cases, distract from it. Models should clarify thinking, be quantifiable, and make testable predictions. Of these three goals, models that apply to VNSAs have often accomplished the first and sometimes the second, but rarely the last.[34] In this section, I briefly summarize three models commonly used in the study of violence: the Hawk-Dove game theory model; the general systems model; and the chaos, emergence, and complexity model. All three have figured in discussions of international order, making them potentially relevant to net assessment, but not all have proven to add analytical value to common-sense approaches.

The Hawk-Dove Model

Some models began as metaphors. In evolutionary theory, Hawks and Doves are actors in a mathematical game-theory model.[35] Consider a population with two genetic types: one that always fights for a resource (Hawks) and one that always yields (Doves). If the entire population consists of Doves, then an aggressive Hawk mutant that emerges within the population will thrive, and over generations its genes will spread. But under reasonable assumptions about the cost in death and damage that comes with fighting, and the value of the arbitrary resource—food, territory, opportunities for reproduction, and so on—Hawks will not completely eliminate Doves because, at a certain point, Hawks will usually encounter other Hawks, and the fight will be a costly mistake instead of an easy win. (Note that, like all models, this one requires certain simplifying assumptions, such as an inability to know in advance how the adversary will behave.) In a population consisting primarily of Hawks, Doves will gain fewer resources but lose much less by not fighting, thus gaining an evolutionary advantage. Equilibrium is reached when it is no longer advantageous for either Doves or Hawks to increase in number; this is called an *evolutionarily stable strategy*, and the equilibrium point depends heavily on the assumptions about the damage from fighting versus the value of resources.

To expand the predictive value of the model, we can add intermediate types, called *Retaliators* (who attack only when attacked first) or *Bourgeois* (who act like Hawks when they already hold the resource to be fought over but like Doves when they do not). Again, the outcomes depend on the arbitrary values of costs and benefits that have been assigned by the researcher to test hypotheses and variables. But these models can successfully predict animal behavior and may suggest some general strategic principles. For example, non-Hawks of various types could benefit from two Hawks fighting; this might suggest that if two or more of the United States' potential adversaries are in conflict (e.g., the Soviet Union and China prior to 1990, Iran and Iraq before 2003, or Shi'a and Sunni Muslims), watchful waiting may be more adaptive than intervention. Other (often metaphoric) game theory models, such as "Chicken," "Tit-for-Tat," or "The Prisoner's Dilemma," have helped clarify thinking about competitive relationships, but no game is better than the assumptions of its creator.



The Organismal Model

The idea that a society is an organism has long had intense appeal for researchers, but is this a model or just a metaphor?[36] Either way, it has two big problems: members of a society are not genetically identical, and they often secede from one social "organism" to join another. The functional integration of society is therefore transient, and a society can be regarded as an organism only metaphorically. To some extent, every individual in a society is at odds with every other member in the competition for resources and status, however closely they are allied.[37]

Still, some extensions of the metaphor, or analogies, do seem useful. An exception among our body's otherwise genetically identical cells is the cancer cell, which mutates to grow without restraint. No longer genetically identical to the host, it multiplies at the expense of other cells—and eventually the entire organism. The appropriate response is to cut the tumor out, or degrade and destroy it. The speed of a tumor's metastasis depends not only on the point of origin and the cell type of the cancer (e.g., breast or prostate), but also on the cooperation of whatever distant organ it potentially spreads to (such as bone, liver, or brain—the "seed and soil" hypothesis), just as viruses and other infections depend on host resistance.[38] Disease also can be a useful analogy to vulnerability to violence.

Equally interesting is the immune system extension, especially autoimmunity. The influenza epidemic of 1918 hit young adults hardest because they had robust immune systems: they were killed by their own bodies' response to the virus. Many symptoms of infectious disease, such as fever, are actually part of the body's immune response. In the same way, autoimmune diseases—including allergies, multiple sclerosis, lupus, and rheumatoid arthritis—are inherently self-attacks and, therefore, hard to deal with, as is cancer, because they derive from the body's normal functions.

Counterterrorism professionals have appropriately been concerned about the damage that US responses to attacks have done—in blood, treasure, and freedom from government interference—to the United States. Triggering this kind of self-damaging response from their targets has been a goal of terror groups.[39] Controlling our responses to terrorist attacks may be analogous to withholding antibiotics where they are inappropriate or limiting the body's immune attack on itself when trying to fight an infectious or autoimmune disease.

Systems Models

Systems models, which originated in engineering and were extended to the biological and social sciences, have proven their predictive value in the physical world.[40] Closed, negative feedback (cybernetic) systems, such as a thermostat or a guided missile are straightforward, mathematically representable, theoretically generative accounts that offer testable predictions. In biology, examples of (relatively) closed systems include homeostasis (the tight autonomic regulation of body temperature or blood sodium), homeorhesis (developmental changes that return to a genetically guided path), and imprinting (the tendency of ducklings to follow the mother). These are not completely closed systems, because they all require the exchange of energy and substance with the environment, and imprinting requires initial learning, but they are in principle almost as simple as the thermostat and the guided missile.

ALL LIVING SYSTEMS MUST USE ENERGY AND INFORMATION TO RESIST THE DISORDER OF THE WORLD.

Still, strictly speaking, all living systems are open because they must acquire and use both energy and information to resist the disorder of the world (which is called entropy, one aspect of the second law of thermodynamics). In the process of evolution, living systems accumulate information that allows them to maintain their improbable order. In the 1950s, general system theory claimed to be able to provide models for everything from physics to economics, but after decades of effort, it is difficult to point to examples in general system theory that do with open systems what is readily done with closed ones: predict.[41]

The burden of proof is now on the proponents of these models to offer quantitative representations and predictions that are more useful than what we usually see on a "galactic radiator" PowerPoint slide: scores of boxes and arrows that tell us only that the system is very complex and not very predictable. The systems model is thus a metaphor, but not a sharp one. Theoretical biologist Ludwig von Bertalanffy wrote "that it took more than two hundred years before the intuitive world system of Copernicus and Kepler was transformed into the physics of high-school textbooks."[42] Counterterrorism cannot wait so long.

Chaos, Emergence, and Complexity

Complexity models have largely displaced general system theory, which they partly resemble.[43] Complexity models, however, try to describe what emerges from formal chaos, which is a new and important concept.[44] Identified in practical terms by meteorologist Edward Lorenz, chaos refers to a deterministic outcome that is technically unpredictable due to its extreme sensitivity to initial conditions.[45] A butterfly fluttering its wings in Japan might theoretically cause a storm in Mexico weeks later, but there would be so many causal steps, each amplifying the last, that even if we had all the data we needed to trace them, it would take a computer larger than the universe, with transistors more numerous than atoms, to do the calculation.

Something similar applies to predicting whether it will be raining in Washington, D.C., two weeks from now. Chaos theory explains why this prediction cannot accurately be made and may never be made. We can predict the *chance* of rain a few days out with some confidence, but as we move further out in time, the steps in the causal chain add up and error accumulates exponentially. We should recognize what we *can* predict, beyond the next few days. We can say with a high level of confidence that the temperature in Washington, D.C., will not reach 100 degrees Fahrenheit on any day in January in 2025, but it will probably be a couple of degrees warmer on average during that month in 2125 (the whole world will be warmer, but local climates are less predictable). When will a devastating blizzard or Category 5 hurricane next hit the city? Good question.

Meteorologists know what they do not and cannot know. The worldwide network of climate scientists systematically shares data and maintains vigilance so that when an unpredictable disaster (including a natural one, such as an earthquake, tsunami, flood, tornado cluster, or volcanic eruption) does approach, it will be identified *as early as possible.* While doing the science, this network also broadcasts minute-by-minute information to billions of people. With this information, advanced countries and even many developing countries are able to build infrastructure to specifications that minimize damage, prepare evacuation and other response plans, and err on the side of caution in invoking such plans.

What about emergence and complexity? Slowly heating a viscous fluid initially produces formal chaos, but patterns eventually emerge, often around "strange attractors"—unpredictable points of organization. Emergence in turn can lead to stable complexity, a state that is intensively studied by mathematicians and scientists. Scientists once thought that the laws of chemistry would be derivable from physics, those of biology from chemistry, and so on up to economics and even history—but this is no longer the case. Even the structure of the ammonium ion (four hydrogen atoms around a nitrogen atom) cannot be predicted from physical laws one level down. In other words, "more is different."[46]

PATTERNS EVENTUALLY EMERGE, OFTEN AROUND "STRANGE ATTRACTORS."

So each level of complexity has *its own* patterns and laws, because the relationship between any level and the next higher up is one of unpredictable emergence. David Ruelle, one of the first physicists to apply chaos theory, wrote in 1991, "The physics of chaos, ... in spite of frequent triumphant announcements of 'novel' breakthroughs, has had a declining output of interesting discoveries. Hopefully, when the craze is over, a sober appraisal of the difficulties of the subject will result in a new wave of high-quality results."[47] In 2001, however, he remained skeptical.[48] John Holland, another pioneer, concluded in 2014 that physicists who study "complex systems are still primarily at the stage of collecting and examining examples."[49] Embracing complexity theory is to some extent a matter of taste, as with the other models, and even with metaphors or analogies; beyond the key discovery of formal chaos and its explanation of the limitations on prediction, there is no compelling scientific reason to adopt it.[50]

The Limits to Prediction

Citizens wonder why there have been so many US "intelligence failures," including the failure to predict the Tet Offensive (1968), the Yom Kippur War (1973), the Iranian revolution (1979), the Soviet invasion of Afghanistan (1979), the fall of the Soviet Union (1989–1990), the second Indian nuclear test (1998), the 9/11 attacks, the absence of nuclear weapons in Iraq, and the Arab Spring, among others.[51] Some were failures of communication. US Senator Daniel Patrick Moynihan predicted the Soviet collapse while then–CIA director Robert M. Gates loudly proclaimed the USSR's invulnerability.[52] The CIA warned the Jimmy Carter administration of Soviet military preparations throughout 1979, but because these warnings were downplayed, there was no high-level anticipation that the USSR would invade Afghanistan.[53] According to the 9/11 Commission Report, al Qaeda's attacks on New York and Washington "should not have come as a surprise," and the failure to foresee them was due to "an overwhelming number of priorities, flat budgets, an outmoded structure, and bureaucratic rivalries."[54] A decade later, the same bipartisan group that wrote the report welcomed the implementation of its recommendations for improving intelligence processes but assessed the threats to be even more complex and growing, and asked "whether the United States is prepared to face the emergent threats of today."[55] Missing the "meteoric growth of ISIS" is US intelligence's most recent failure.[56] What are we overlooking or underestimating now: the international Islamist network Hizb-ut-Tahrir, working quietly but relentlessly for a worldwide caliphate;[57] the thousand non-Islamic hate groups in the United States;[58] Pakistan's instability; or perhaps a widening Saudi-Iran war?

MISSING THE "METEORIC GROWTH OF ISIS" IS US INTELLIGENCE'S MOST RECENT FAILURE.

It would help if mathematical models in organismal, general systems, or chaos/emergence/complexity theory could make specific or even general predictions that are better than common-sense conventional ones based on demography, economics, politics, and surveillance of current developments. There is little evidence as yet that these models can do this.

In net assessment, therefore, we can be skeptical about models as predictors, and focus on (1) making general and specific preventive and defensive preparations based on our best overviews of future war and terror; and (2) seeing emergent patterns as soon as possible.[59] "Big Data" may be more useful than big models,[60] although more modest models (e.g., the Hawk-Dove model, Kuznar's econometrics of prestige, and chaotic unpredictability) could help.

Using the weather analogy, we should push the predictive science, know where it stops being useful, and use systematic worldwide surveillance to detect emergent threats. In 2014 and 2015, ISIS, like the Ebola outbreak in West Africa, emerged as a major threat that we could have identified much earlier, better prepared for, and possibly prevented.[61] Meteorologists and other geoscientists agree on most of the methods and theories related to their fields, share information, and

disseminate their findings quickly and effectively both to the general public and up the chain of command. They are properly and predictably resourced, inspire confidence because they know the limits of their knowledge (the real contribution of chaos theory), and constantly improve surveillance. Imagine if we had a daily "weather of violence" report: a fast-paced one- or two-minute broadcast across media that featured a colored world map, hot spots around the world, and a summary of what was "happening now." People would get used to thinking about the occurrence of terrorism frequently and calmly.

This is not a nihilistic view of net assessment. If violence is a part of human nature, following *broadly* predictable patterns, then the United States must take the following actions:

- Defense and intelligence budgets must not be arbitrarily cut by sequester or fluctuate year to year.
- Information sharing among intelligence agencies must be smooth and reliable.
- Leaders must heed warnings, followers must be forthright about sounding warnings, and whistle-blowers must be protected from retaliation.
- The United States must maintain a decisive military edge, a large professional human intelligence network, and cutting-edge cybersecurity and data integration. The United States must also be willing to station forces longer in some places, in peacetime as well as in combat.[62] Prevention is better than treatment.
- US spending for diplomacy and foreign aid should be increased as leverage against enemies that exploit vulnerable populations.[63]
- Diplomatic efforts should aim specifically to end human rights abuses, promote the rights of minority groups, and prevent invasions, three factors known to foster terrorism.[64]
- Programs that educate girls and empower women should be funded. They improve local and national economies, reduce violence in the long run, and are the best ways to spend an aid dollar.
- A naïve public must be educated about the clear and present danger of terrorism. They might be more willing to spend public money to support those who spy, fight, and die for them, and on the diplomacy and foreign aid that will help mitigate needless risk.
- Responses need to be measured: government officials and the public must neither overreact nor underreact to acts of terrorism.

Conclusion

Paul Bracken, in his 2006 "basic starter kit" for net assessment, expressed skepticism about mathematical models similar to those outlined here: "You can get many things right by just thinking about them a little bit."[65] He urged that we "*model simple and think complex*" (italics in the original), resist the "tyranny of small decisions," and reject "muddling through."[66] My list of needed actions, above, is very much in the spirit of Bracken's recommendations. Net assessment demands a longer time span than policy

makers commonly use. Like the fluttering butterfly in Japan, "change that is imperceptible from day to day can produce large effects viewed over time."[67] This applies to positive processes like education as well as negative ones like recruiting terrorists.

Finally, Bracken wrote, "An interesting metaphor for net assessment is to compare it to Wall Street. … Time after time some players use information that is available to all to make a lot more money than other players."[68] As with investing, net assessment is neither an art nor a science but a practice; some investors, like Warren Buffett and John Templeton, have done very well using simple models. Gathering, sifting, and integrating information matters more than complex equations.

Common sense approaches to anticipating and reducing risk are vital because violence is inevitable and our ability to predict it is limited. Models that work may be more useful than metaphors, but so far, they continue to promise more than they deliver in practical predictions. US President Theodore Roosevelt borrowed a wise African proverb that became a useful metaphor for US foreign policy: *Speak softly and carry a big stick.* We can expand that now: *Speak softly, carry a big stick, make friends and strengthen them, scan the horizon constantly, and if you see something, shout your warning until you are heard.* ❖

ABOUT THE AUTHOR

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NOTES

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4 Ibid., minute 53:18.

5 See minute 38:36 of "National Security Priorities," C-SPAN video/transcript, 1:24:40, 23 March 2015: http://www.c-span.org/video/?324967-1/senator-tom-cotton-remarks-us-national-security-priorities

6 See minute 1:20:15 of "Diplomacy and Foreign Aid Fiscal Year 2016 Budget," C-SPAN video/transcript, 1:53:30, 26 March 2015: http://www.c-span.org/video/?325026-1/ben-affleck-bill-gates-testimony-diplomacy-national-security

7 Ibid., minute 1:29:34.

8 Ban Ki-moon, "Secretary-General's Remarks at the 26th Ordinary Session of the Council of the League of Arab States" (speech, Sharm-el-Sheik, Egypt, 28 March 2015): http://www.un.org/sg/statements/index.asp?nid=8500

9 A metaphor is a rhetorical device by which one image or idea, such as a sports match, is used to represent another, such as a political fight or an actual war, in order to illustrate a point. For example, David Adesnik compares domestic and overseas wars to "home" and "away" games. See Adesnik, "Winning the Away Games," *US News and World Report*, 13 March 2015: http://www.usnews.com/opinion/blogs/world-report/2015/03/13/defense-cuts-threaten-us-navys-ability-to-project-power

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11 A superb example is James A. Piazza's "Characteristics of Terrorism Hotspots," in this issue of *CTX*.

12 Paul Bracken, "Net Assessment: A Practical Guide," *Parameters: US Army War College Quarterly* 36, no. 1 (2006): 95: http://strategicstudiesinstitute.army.mil/pubs/parameters/articles/06spring/bracken.pdf

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37 See Konner, *Tangled Wing*, chapter 2, for further discussion.

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55 *Today's Rising Terrorist Threat and the Danger to the United States: Reflections on the Tenth Anniversary of the 9/11 Commission Report* (Washington, D.C.: Bipartisan Policy Center, 22 July 2014): http://bipartisanpolicy.org/library/rising-terrorist-threat-9-11-commission/ . Mars, Bronstein, and Sullivan, in this issue of *CTX*, also appropriately refer to "dark networks" as "*emergent*, as opposed to purposefully designed."

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67 Ibid., 94.

68 Ibid., 100.