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Strategic Insight

Deterring Violent Non-State Actors in the New Millenium

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December 2, 2002

Introduction

The attacks of September 11 and the ensuing global war on terrorism have highlighted what many observers had predicted during the 1990s: that collective violence and challenges to the international system by violent non-state actors (VNSA) would become a defining feature of the post-Cold War security environment. It is asserted that new adversaries like Al Qaeda will pursue their objectives whatever the cost and cannot be deterred by the threat of retaliation. These assertions have generated much thinking and debate about the role that deterrence is supposed to play in national security strategy and policy. While it may be true that deterrence will not function with VNSAs in the same way deterrence worked during the Cold War, we believe a revised version of deterrence that we would call Broad Biological Deterrence, or BBD, remains a viable strategy for meeting the challenge posed by VNSAs.

Violent System

Our approach is founded in an organic systems perspective, which looks at VNSAs as a dynamic biological system operating within an open environment. Key sub-systems are the roots of violence as inputs, transformations, VNSAs as outputs and environmental dynamics. The framework captures divergent factors too often examined in isolation, drawing attention to the key relationships that amplify the cycle of violent collective action. An understanding of this system sets the stage for examining life cycles and crafting deterrence strategies to interrupt the cycle before the VNSA reaches maturity. For more on the particulars of the systems approach, see the Thomas and Kiser Institute for National Security Studies Occasional Paper #43, "[Lords of the Silk Route: Violent Non-State Actors in Central Asia.](#)"

Life Cycle

Like the modern nation-state, VNSAs are generally treated as formal institutions with no developmental history. This approach fails to accurately portray the VNSA. First, the formal structure never fully succeeds in "conquering the non-rational dimensions of organizational behavior." An informal structure

exists as well, which deviates from the well-defined roles imposed by the rational structure. It is better to view VNSAs as cooperative systems, consisting of individuals interacting in relation to a formal structure.

As cooperative systems, VNSAs are also open systems. The rationality of the organization cannot be simplified by examining them independent of their environment and static in time. The closed system approach is appealing, particularly since it allows us to apply the laws of physics to organizational behavior and control for environmental change. While convenient, the approach denies the reality that organizations are also living, social entities. The open systems approach leads us to the more apt science of biology.

The VNSA as an organism can be understood in terms of several key characteristics, which directly relate to the system of violence examined earlier. First, the VNSA imports some form of energy from the environment. The Revolutionary Armed Forces of Colombia (Fuerzas Armadas Revolucionarias di Colombia-FARC), for example, imports recruits as well as guns, training (P-IRA urban tactic training since 1998) and drug monies. Second, the FARC converts, or transforms the input into a trained guerrilla. Third, the reorganized input is exported to the environment; the FARC recruit joins a unit and conducts attacks on Colombian armed forces. Fourth, this pattern of activity is cyclic; the attacks generate new inputs—recruits, resources, governmental responses, etc. In a clear rejection of the closed system approach, the VNSA seeks negative entropy. That is, it seeks to arrest the entropic process of inevitable disorganization and death by importing more energy (recruits, guns, funds) than it expends, acquiring the negative entropy that allows it to survive crisis. Fifth, the energy inputs are also informative, providing the VNSA with intelligence about its environment. Defeat in combat provides the negative feedback often required to drive a fundamental shift in tactics as we saw with Al Qaeda after the pitched battle of Tora Bora.

Organisms have life cycles—they pass through a distinct series of stages in form and function, transitioning from gestation through growth to maturity and to death or transformation; so it is with VNSAs. The life cycle begins with gestation, or the initial conception of an idea for collective violent action. At gestation, the idea is no more than an embryo in the minds of one or several identity entrepreneurs who are part of an at-risk identity cleavage. Gestation occurs at the intersection of the roots of violence and state failure in our open systems model. At this crossroads, "identity entrepreneurs" are engaged in environmental scanning. These future VNSA leaders are evaluating the state's response to the salient roots of violence and drawing conclusions about the need and prospects for violent action. The organization has yet to take form or differentiate its functions; there are no recruits, training programs, facilities or sustainable resources. The gestating VNSA is the most difficult to identify, but is also the most susceptible to a deterrence strategy of environmental shaping.

The VNSA moves from gestation to growth at the point when goals are specified, an organization takes initial form, and basic functions ensue. Growth occurs at the intersection of state failure and identity mobilization with gestation continuing as long as the roots of violence persist. The development of specific, prioritized goals by VNSA leadership opens the door to traditional deterrence. The VNSA remains heavily focused on recruitment, developing resources and establishing an organizational model (hierarchical, network, cells, etc.) to eventually conduct a sustained campaign of violent action. Only sporadic violent acts can be expected during the growth stage.

It is in maturity that the VNSA achieves its closest approximation to the formal organization of structural theory, thus providing the greatest opportunity for the application of rationality-based deterrence strategies. A mature VNSA has completed its development, achieving the form and functions that are optimal, or nearly so, for it to achieve specified, prioritized objectives. The VNSA engages in environmental scanning, reorganizes inputs and exports a product back to the environment. Patterns of activity, authority relationships and membership are all discernable, and preferred forms of conspiracy violence are actively employed.

These insights set the stage for a re-examination of traditional deterrence.

Deterrence

A *narrow* conception of deterrence has an ineliminable psychological component, where psychology is construed in the narrowest sense possible. *Broad* deterrence revolves around preventing action by either direct or indirect influence on psychology, where indirect is given a very liberal reading. Broad conceptions will consider other aspects of the psychology of action besides rational actor assumptions, as well as environmental factors that are only indirectly related to psychological concerns.

Narrow psychology focuses only on traditional "folk psychological" concerns—that is, it considers only beliefs, desires, and attitudes to be the objects of psychology proper. It contrasts with broad psychology, which consists in considering *all* those states of the mind/brain information-processing system that influence action—they must only involve *some aspect* of information processing. Proper consideration of the life-cycle of VNSAs forces us to adopt the broadest possible stance with regards to both these "conceptual cuts."

Traditional Rational Choice (TRC) theory makes several assumptions regarding an agent's psychology (including that the agent has a well-ordered and transitive utility function, possesses full or perfect information, and is a 'perfect reasoner'). However, these assumptions are realistic only under certain conditions, and human "molar level" psychological processes will be even more likely to influence the action of the VNSA than in the classic picture. Molar level psychological processes do not always conform to the normative predictions of the TRC model. Pertinent, although not exhaustive, examples of exceptions include: heuristics and biases, ecological rationality, fast and frugal heuristics, metaphor and analogy, the story-telling mind, "hot" cognition, and the dynamic nature of cognitive states.

The heuristics and biases research program originated by Daniel Kahneman and Amos Tversky, argues that humans often take cognitive short-cuts that do not conform to TRC theory. These include such phenomena as the *availability heuristic*, where our judgments about relative frequency can be skewed by the availability of events to our memory. *The representativeness heuristic* says that we judge the probability of events based on the extent that they represent the features of their parent populations, even when this leads to irrational conclusions.

The ecological rationality program, explored by Gerd Gigerenzer, states that in certain cases the mind's ability to leverage structure present in the environment so as to achieve reasonable conclusions can be affected by the format in which the information is delivered. An example here includes the fact that whether or not probabilistic events are expressed in natural frequencies or in terms of base rates makes a huge difference in whether we can reason successfully from these premises. The "fast and frugal heuristics" agenda, also developed by Gigerenzer, notes that cognitively successful outcomes can be achieved even by mental processes that are not classically rational; as he states, "the major thrust of the theory is that it replaces the canon of classical rationality with simple, plausible psychological mechanisms of inference (such as "take the best," which assumes the answer you recognize is the correct answer)—mechanisms that a mind can actually carry out under limited time and knowledge...". Being able to manipulate the inferences that *actually* occur is critical for deterrence.

Reasoning by metaphor and analogy, a research program explored by Mark Johnson, Giles Fauconnier, and Mark Turner, argues that our most complex mental tasks are usually carried out not by TRC mechanics, but rather by a set of analogy-making and metaphor-mapping abilities that form the core of human cognition. Reasoning by analogy and metaphor can often lead to the same conclusions as a TRC-style deduction, but does so more quickly and can lead to critical mistakes.

The story-telling mind is a research program that combines metaphor and analogy into an exploration of the powerful grip narrative has on human cognition; narratives can restructure our mental spaces in ways that profoundly impact our reasoning ability, and yet that cannot necessarily be captured by TRC assumptions (think of the grip that the "Jihad versus McWorld" narrative has on Al Qaeda and how this affects the way they think about the future).

The "hot mind" and affective/limbic considerations are on an agenda championed by neurobiologists such as Ralph Adolphs, Joseph Ledoux, and Antonio Damasio; they point out that reasoning itself is shot-through with emotional and affective considerations, some of which operate subconsciously but nonetheless do more to affect the course of our reasoning than explicit arguments and premises do. Humans are emotional as well as rational creatures, and action occurs only when beliefs are conjoined with desires—the type of actions we want to deter lie at the cross-roads of reason and emotion, which means emotional subsystems like fear-and-pleasure inducing limbic structures must be factored in; "somatic markers" (those mental structures that tie together emotional reactions/gut-feelings with judgment and decision-making) are crucial for fully understanding individual and organizational decision-making.

The diachronic nature of human cognition has been the focus of recent work in dynamical systems approaches to human reasoning. TRC assumes that ratiocination takes place in a synchronic "timeless realm," unaffected by the dynamic complexities of the cognitive system; however, time matters as a component of our model of human cognition, and we should expand the assumptions of our deterrence theory to deal with the diachronic nature of decision-making and VNSA organizational development.

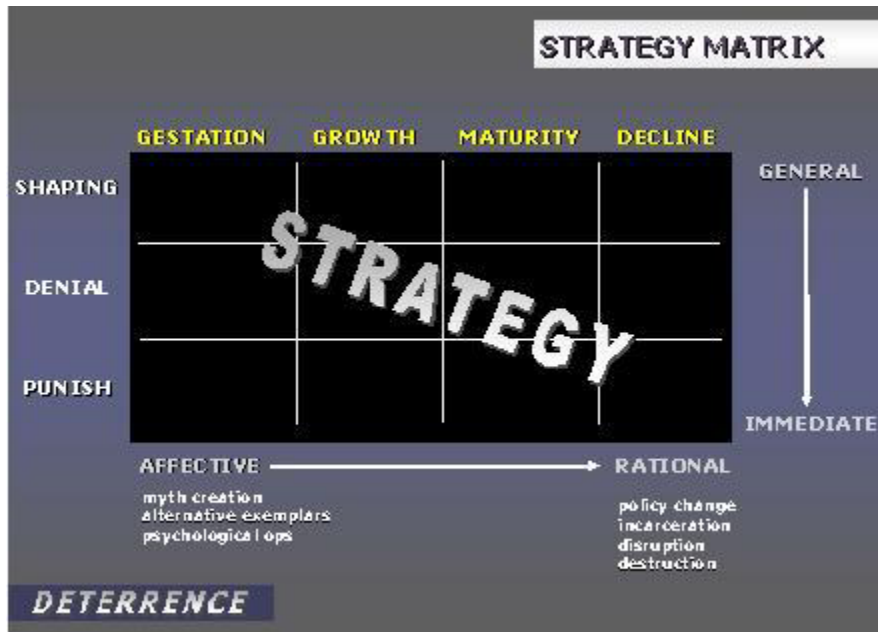
Other traditional "conceptual cuts" that can be made when talking deterrence are pertinent as well and can be accommodated using BBD. General deterrence versus immediate deterrence still matters. We have to adjust our strategy appropriately if we are looking to deter all species of VNSA from acting versus deterring a particular specimen of a VNSA from performing a particular action. Denial is still pertinent, although our position is that denial of goal achievement is a TRC move appropriate mostly in the mature phase of development; we need to think of denial along the lines of "species specific" goals. That is, any move we can make that can disrupt the eventual goals of the mature form of the VNSA in question should be thought of as disruptive deterrence; similarly for punishment. All these conceptual cuts need to be augmented by general environmental considerations, as the structure of the environment can have a dramatic impact on information processing. A broad conception of deterrence thus demands another axis of environmental shaping, which we define as actions taken to shape the environment so as to preclude the continued emergence of the organizational structures necessary to act on goals and intentions.

Deterrence Strategy

Our deterrent strategy should meet the following criteria:

1. It should be able to "capture" the successes of TRC theory as a subset of its domain.
2. It should be driven by the biological metaphors discussed in the "life cycle" section of this paper (gestation, growth, maturity, transformation).
3. It should be structured according to the useful conceptual divisions to be made between aspects of deterrence (general vs. immediate, denial vs. punishment, affective vs. rational considerations).
4. It should be supplemented with a recognition that the VNSA organism emerges from and interacts with an environment in a loosely coupled open system, and that such an environment can be shaped so as to prevent the VNSA from maturing or to perform a kind of "genetic engineering" whereby we shift the VNSA's nature so that it becomes peaceful.
5. Our deterrent strategy should be tested against empirically valid success measures; this means we have to be able to model the VNSA/environment interface so as to support a counterfactual prediction ("*if we hadn't intervened in this way, then the NSA would have become violent*").

Our deterrent strategy should thus be a function of three things: whether we are focusing on shaping, denial, or punishment; what stage of the life-cycle a given species of VNSA is in; and whether we are aiming at general or immediate deterrence. The following strategy matrix displays these relations.



Traditional rational strategies involve appealing to the utility functions of the organization and actors involved so as to affect their decision-making calculus. Affective interventions, on the other hand, will not be driven by rational actor considerations. Since they are more unusual than rational interventions, they require more discussion; examples include traditional psychological operations, myth creation, alternative exemplar cultivation, metaphor shifts, and manipulation of national/tribal/group identities.

Psychological operations often have as their goal the manipulation of sub-cortical systems, either by creating an irrational fear of certain actions or by drawing on somatic markers already laid down by previous experience to encourage defection and withdrawal from plans of action; positive psy-ops may have the effect of disrupting VNSA recruitment.

Myth creation involves the weaving together of the narrative elements of a story with facts about past and present situations so as to create an emotionally compelling background that very often directly influences the susceptibility of a population to manipulation by "myth mongers." The fanatical devotion shown by Al Qaeda operatives stems in large part not from any rational deliberative process but rather from the success Osama bin Laden and others have had in fashioning a coherent and appealing foundational myth.

Myth creation usually involves the effective use of narrative. As we formulate an "affective strategy," we should keep the elements of a narrative in mind, for it is only by disrupting the story that you can interfere with myth creation. Good stories need protagonists, antagonists, tests for the protagonist, a promise of redemption, and a supporting cast of characters (at the very least). Disrupting Al Qaeda's foundational myth may involve undermining the belief that we are the antagonists in bin Laden's narrative. We can either undermine the foundational myth being used to drive VNSA development, or we can construct an alternative myth that is a "better story" than the one being offered by the myth mongers. An example includes the foundational myths that supported the violent actions of *both* the Hutus and the Tutsis during the 1994 Rwandan massacres.

Closely related to myth making is the strategy of creating alternative exemplars. Members of an at-risk population often become at risk because of a failure to identify with a member of a *non-violent* non-state actor or a member of the *government*. VNSA "identity entrepreneurs" can exploit existing ethnic, racial, economic, or social-political differences by elevating someone who shares the same characteristics as the exploited class to a position of prestige or power. Members of the at-risk group then come to identify

with that exemplar and may feel compelled to adopt the violent strategies advocated by the exemplar's VNSA. Creating alternative peaceful exemplars can be critical.

Another affective strategy includes fomenting a metaphor shift that impacts the way in which at-risk populations or members of a VNSA frame their actions. Given the power of metaphor to shape human thought, it should come as no surprise that shifting metaphors people use to frame worldviews and guide decisions can cause a change in their reasoning about the situation (to convince someone that "cluster of cells" is a more appropriate metaphor for an unborn embryo than "young human" may very well change their stand on the issue of abortion).

Manipulation of existing identities is another affective strategy. This does not necessarily require creating new foundational myths or alternate exemplars; instead, skillful use of existing cleavages can decrease a VNSA's stock of negative entropy.

Critically, the strategy chart we have formulated points out that interventions that are effective at one point in VNSA development may be ineffective at another and vice-versa. The diachronic nature of VNSA development, and of the information processing that takes place at each stage, is reflected in the changing efficacy of particular strategies and in the affective to rational strategy elements ratio. Ideally, we would "flesh out" strategy charts for each of the eleven types of VNSAs we identify.

Conclusions

BBD promotes a fundamental shift in our thinking on deterrence, which should be founded in an interdisciplinary approach to VNSAs. Ultimately, it should involve retooling the intelligence architecture we use to support deterrence indications and warning, keying it to identify the conditions that engender VNSA growth with a reliable set of critical transition markers. This predictive capacity will be useful in formulating an effective deterrent strategy.

Our paper has made several important conceptual contributions to deterrence theory and practice. Nonetheless, there is much that remains to be done. Placing VNSAs squarely within an open systems framework, assessing their life-cycles, and formulating a concept of BBD with affective and rational strategy elements are all necessary to a re-design of deterrence theory that is intended to give it the capacity to cope with the emerging threats of our time.

For more topical analysis from the CCC, see our [Strategic Insights](#) section.

For related links, see our [Homeland Security & Terrorism Resources](#).

References and Related Reading

Barber, Benjamin (1996). *Jihad vs. McWorld: How Globalism and Tribalism Are Reshaping the World*. New York: Ballantine Books.

Bertalanffy, Ludwig von (1956). *General Systems*. Yearbook of the Society for the Advancement of General Systems Theory.

Connolly, Terry, et al (Eds.) (2000). *Judgment and Decision Making: An Interdisciplinary Reader*. New York: Cambridge University Press.

Damasio, Antonio (1994). *Descartes' Error: Emotion, Reason, and the Human Brain*. New York: G. P. Putnam and Sons.

Fauconnier, Gilles and Turner, Mark (2002). *The Way We Think: Conceptual Blending and the Mind's Hidden Complexities*. New York: Basic Books.

Gentner, Dedre; Holyoak, Keith, and Kokinov, Boicho (Eds.) (2001). *The Analogical Mind: Perspectives from Cognitive Science*. Cambridge, MA: The MIT Press.

Gigerenzer, Gerd (2000). *Adaptive Thinking: Rationality in the Real World*. New York: Oxford University Press, 2000.

Jervis, Robert et al (1985). *Psychology and Deterrence*. Baltimore: The Johns Hopkins University Press.

Kahneman, D., Slovic, P., & Tversky, A. (Eds.) (1982). *Judgment under Uncertainty: Heuristics and Biases*. New York: Cambridge University Press.

Katz, Daniel; and Kahn, Robert (1966/2001). "Organizations and the System Concept." *The Social Psychology of Organizations*. (John Wiley and Sons, 1966). Reprinted in *Classics of Organization Theory*. Editors Jay M. Shafritz and J. Steven Ott. Fort Worth, TX: Harcourt College Publishers, 5th Edition.

Lakoff, George and Johnson, Mark (1980). *Metaphors We Live By*. Chicago: The University of Chicago Press.

Rubinstein, Ariel (1998). *Modeling Bounded Rationality*. Cambridge, MA: The MIT Press, 1998.

Selznick, Philip (1948/2001). "Foundations of the Theory of Organization." *American Sociological Review* 13. As reprinted in *Classics of Organization Theory* (Ibid; see Katz entry).

Tetlock and Meller (2002). "The Great Rationality Debate," *Psychological Science*, Vol. 13, No. 1, Jan., pp. 94 - 99.

Turner, Mark (1998). *The Literary Mind*. New York: Oxford University Press.

Zagare, Frank (1990). "Rationality and Deterrence," *World Politics*, Vol. 42, #2, Jan., pp. 238-260.