

ON METAPHORS WE ARE LED BY

Colonel Christopher R. Paparone, Ph.D., U.S. Army, Retired

Reflection

Metaphor is one of our most important tools for trying to comprehend partially what cannot be comprehended totally: our feelings, aesthetic experiences, moral practices, and spiritual awareness. These endeavors of the imagination are not devoid of rationality; since they use metaphor, they employ imaginative rationality.

—George Lakoff and Mark Johnson¹

DESPITE PRINCIPLED ATTEMPTS to prosecute “information operations” and “strategic communications,” there is scant discussion in current military discourse about how people assign meaning to their perceptions. This essay investigates how the use of metaphor shapes understanding in an increasingly ambiguous world of meaning. Indeed, the rhetorical work of pundits, politicians, appointees, bloggers, academics, military doctrinaires, and flag officers (those I call “thought leaders”) is largely the management of meaning. That is, thought leaders engage in persuading the naïve, the obtuse, or those with different understandings to follow their narrative constructions, which are often riddled with metaphors.

In a world of vagueness and ambiguity, coupled with global interconnectedness, the range of possible meanings geometrically multiplies to unimaginable degrees. Some subscribe to the “information age” metaphor, suggest that objective “facts” are omnipresent, and wonder why the truth they see is not as clearly seen by everybody else. Yet global information media amplify the diversity of meanings and the expansion of useable metaphors. Without such a multiplicity, a greater shared understanding would be implausible; still, ever-changing expression creates frustration as well. Those aspiring leaders who seek to influence and indoctrinate others with their own sense of bringing verbal clarity have to be mindful of creating frustration and misapprehension. Wars, messy social problems, and disasters present ineffable complexities that metaphors only approximate. With the clever and often hidden use of metaphors, the most effective thought leaders indoctrinate others to grasp and communicate the intractable or inscrutable. This essay proposes a framework that can help military practitioners judge the appropriate use of metaphor and be more reflective about how indoctrination can work to shape their “sensemaking” in important ways.²

A Framework for Reflecting on Metaphor

The term metaphor is derived from the Greek word *meta-* which means “beyond,” and *-pherein*, which means “to bear.” Hence, metaphor takes us beyond surface textual meaning and serves as a substitute for literal

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Colonel Christopher R. Paparone, U.S. Army, Retired, is an associate professor in the Army Command and General Staff College's Department of Logistics and Resource Operations at Fort Lee, Virginia. He holds a B.A. from the University of South Florida; masters degrees from the Florida Institute of Technology, the U.S. Naval War College, and the Army War College; and a Ph.D. in public administration from Pennsylvania State University. On active duty, he served in various command and staff positions in the continental United States, Panama, Saudi Arabia, Germany, and Bosnia, in both peace and war.

or objective definitions of complicated matters. Non-Defense Department communities have often borrowed military words and phrases to convey meaning where otherwise impossible. For example, businesses and other public organizations borrow terms like “strategy” (from the Greek word for “generalship”); they declare “war” to “defeat” social problems like poverty, drugs, AIDS, and illegal immigration; and they employ “tactics” (from the Greek for “orders”) for negotiating deals and winning against competitors. For centuries, the military community has perhaps unwittingly drawn on language from other communities to reduce the ambiguity it faces: center of gravity (from physics), operational art (from the design studio), and enemies that operate asymmetrically and as networks (from the biological sciences). Here are some others that may be familiar: mapping human terrain (the logic of cartography applied to sociology), mission creep (like a sneaky arachnid or “slow-river-rising” analogy), global war on terror (an ecumenical story of the dichotomy of good vs. evil). In short, thought leaders in various knowledge communities “manage meaning,” that is, they employ metaphors as:

- Sensibility-on-loan (from other knowledge forms).
- Exemplars for the otherwise unfamiliar constituency (analogy is better than total ignorance).
- “Bridges” from what they tacitly know but cannot say (mysteries) to others’ quasi-comprehension.
- Implicit substitutes for inexplicit reality (symbols of reality).
- Purposeful ambiguities (equivocations) to gain support from otherwise conflicting interpretations (often used in political rhetoric).
- Euphemisms or hyperbole (defectively absurd if taken literally).
- Mind-imageable idioms (in-*sight*-ful ways of looking at things).
- Imaginative “frames” of reference (creative, and even poetic).
- Metaphysical explanations (permitting pseudo-awareness).³

Three primary sources of metaphor are at work in the contemporary Western military community of thought: Newtonian science (as portrayed by the knowledge disciplines of physics, engineering sciences, architecture, etc.); post-Newtonian science (complex biological sciences, physiology, etc.); and

the humanities and fine arts (history, literature, the performing arts, and so on).

Each primary source of metaphor reflects a dominant view of reality. When taken together, they form a synthetic concept of reality construction—that of sensemaking. These bodies of metaphor are best portrayed by crossing two continua, the “objective-subjective” continuum and the “simple-complicated” continuum. The resulting quadrants are: *objective-simple* (Newtonian science), *objective-complicated* (post-Newtonian science), *subjective-simple* (the humanities & fine arts), and the most conceptual of all, *subjective-complicated* (sensemaking). Although these categories of metaphor exist simultaneously, examining each category separately and with examples helps in understanding how thought leaders employ them as “sense-givers” (see Figure 1).

As aforementioned, in this heuristic Newtonian science is associated with the objective-simple quadrant, post-Newtonian science with the objective-complicated quadrant, and the humanities and fine arts with the subjective-simple quadrant. This framework helps illustrate how thought leaders can feed on metaphors from potentially incompatible views of reality. Sensemaking about complex issues (“this is an insurgency”) can only offer an appearance of objectivity (“insurgency is a disease”) and in doing so can lead to crippling misapprehensions (“we can intervene to stabilize health”). To enable better understanding, the military practitioner can use this heuristic framework to reflect critically on the strengths and weaknesses of the metaphors used by thought leaders (“this insurgency is not really a disease, it has many incomprehensible complexities that exceed those of medical practice”).

Newtonian science metaphor. Newtonian science is underpinned by an empiricism probably best exemplified by the philosophical rigor of “logical positivism” (a term coined by the Vienna Circle in the 1920s). These positivists thought that true knowledge could only be discovered by removing all reference to metaphysical explanations of why things are the way they are. Logical positivists were more concerned about logic in language and set theory than about empirical science, but their technique has informed the way Westerners employ scientific metaphor for non-scientific endeavors. We can be “positive” about our “logic” of external

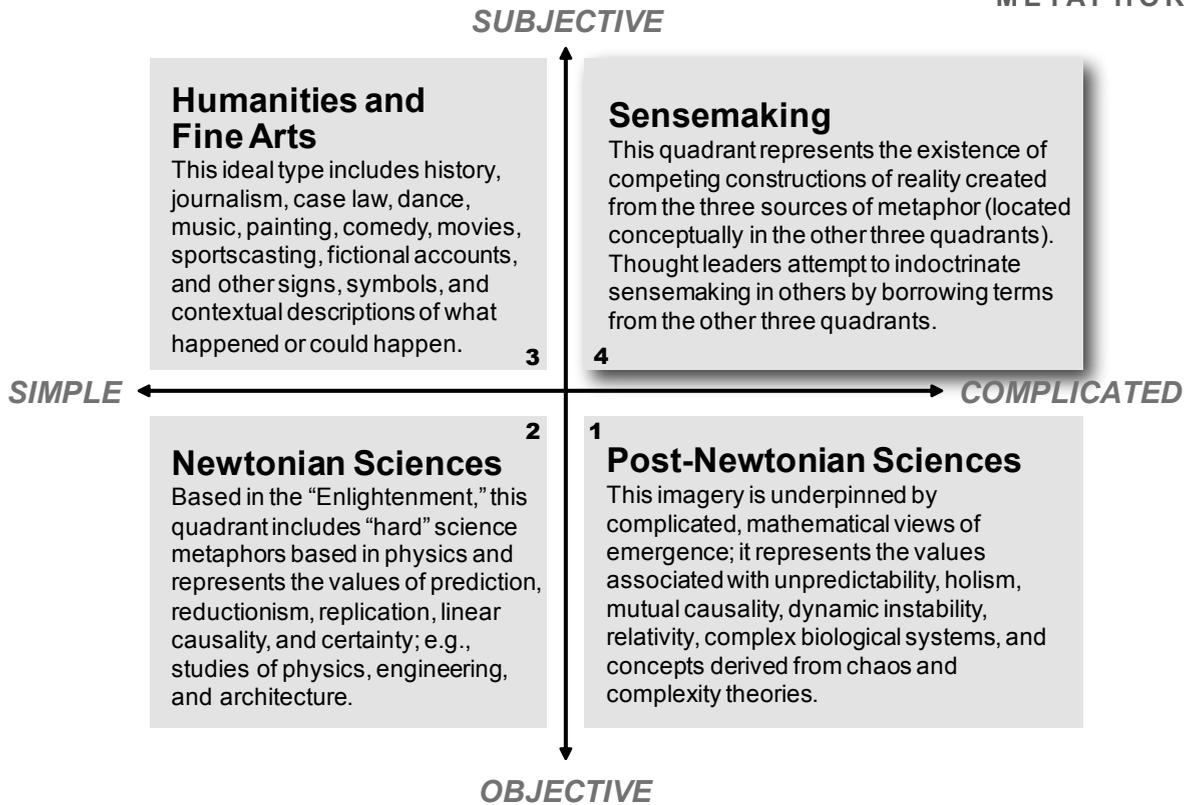


Figure 1. Framework for reflecting on metaphors.

reality as we experience it with our objective five senses. Hence, to understand the world, we isolate variables in terms of objective experience and reduce them until we think we can discern the simplest cause-and-effect relationships among them. In Western societies, thought leaders tend to use Newtonian mechanics to facilitate understanding of sense experience, and they resort to mechanics for metaphorical apprehension of complex meaning. Such a worldview can imply, erroneously, that even complicated human problems will yield to an empirical isolation and reduction process. These engineer-like metaphors thus impose an objective-simple sense of reality to evoke comforting images of “applied science”: prediction, problem reduction, finding one-way causality, and certainty in replicating these relationships between variables. Such intellectual comfort comes at the price of oversimplification.

Politically motivated thought leaders may speak, for instance, of the *spread* of democracy that will

cause world peace. Military-minded thought leaders may indoctrinate the troops, similarly, to believe they are part of an *instrument of power* and will help solve the problem of rogue actors and terrorists by attacking their *centers of gravity*. The indoctrination of the term *military power* is taken for granted in the military community to the point of losing touch with its metaphoric basis of meaning in Newtonian physics (some would call this a “dead metaphor”). Yet, this model resurrects the root metaphor and exposes its reference to positivistic physical laws and their related images of force to symbolize *power* (as in armed forces), *mass* (as a recognized principle of war), and *speed* and *direction* (as in maneuver).

We find more subtle uses of Newtonian metaphor as well. Alexandr A. Svechin, the Russian “father of operational art,” provided this Newtonian, geological image of military planning in the late 1920s: “Actions will become ordered and coalesce into small streams flowing down to the goal and will form one broad stream as a result.”⁴ David Galula,

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in his classic book, *Counterinsurgency*, uses Newtonian states-of-matter metaphors to describe the asymmetry of the opponents: “The insurgent is fluid because he has neither responsibility nor concrete assets; the counterinsurgent is rigid.”⁵

Paradoxically, the use of Newtonian hard science analogies, such as “force of gravity,” can soften the realities of war, as indicated in a General Peter Schoomaker (former Army chief of staff) speech, when he said:

Last week I talked to one of our senior officers who lost his second son two weeks ago, a Lieutenant serving in Baghdad leading his platoon. So when I look at the rocks that some people are carrying in their rucksack, it makes our load seem relatively light.⁶

Thought leaders thus treat complicated situations as if they could be solved with something akin to “applied science” by unconsciously employing Newtonian science metaphors. They imply one-way causality, such as this “police-reduce-crime” analogy used by General Peter Pace to influence the public on how to think about counterinsurgency operations:

If you would use the analogy of a police department in a city, it’s not that the city itself is without crime, but that the police department itself is capable of keeping the crime level down at a level below which the society can function.⁷

Finally, the most recent Army Field Manual 3-0, *Operations*, quoted the secretary of defense using Newtonian metaphor when he spoke of:

...states enriched with oil profits and discontented with the current international order; and Centrifugal [*sic*] forces in other countries that threaten national unity, stability, and internal peace.⁸

In sum, these examples reflect the Newtonian-oriented, “Western” cultural proclivity to subscribe to an “objective-simple” reality. Today, the epistemological norms of logical positivism best express this approach.

Post-Newtonian science metaphor. Economist Kenneth E. Boulding suggests that revolutionary changes can occur when a new set of metaphoric meanings “converts” us, resulting in a “reorganization of the image” that can sometimes be spectacular.⁹ Some have argued that such a spectacular change in imaging has come from a major shift in metaphor—from Newtonian to post-Newtonian

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science—stemming from revolutionary ideas in biological sciences, quantum theory, and chaos and complexity theories. Thought leaders call on the language of these theories invoking objective-complicated images to create visions of complex or chaotic patterns and dynamic interactions.

Instead of valuing the inherent predictability associated with Newtonian mechanics, thought leaders attempt to indoctrinate others with post-Newtonian metaphors that allude to complexity. Post-Newtonian metaphors are more useful when addressing ineffable complexities in social issues such as war, poverty, world hunger, and so on. Such issues possess autonomous factors whose networked relationships exhibit adaptive qualities that will not yield to a mechanistic analysis. Where Newtonian metaphors (appropriate for mindless, physical models) have been used to understand complex and adaptive systems, understanding of the network’s emerging relationships has gone wanting. Biological, post-Newtonian models work better as metaphorical conceptions for understanding such emergent qualities in complex systems.

The biological model of a complex adaptive system serves as the basis for the *Capstone Concept for Joint Operations*. Here is an excerpt:

Military, political and social entities and situations are complex, adaptive “systems.” . . . Complex and adaptive adversaries will likely employ traditional, irregular, disruptive, and catastrophic methods singularly or in combinations that are intended to keep the future joint force from being successful across the range of military operations. While many events will be unpredictable and uncontrollable, broad patterns often emerge and systems respond to outside influences, purposeful or otherwise. Recognizing these patterns and applying integrated systemic actions across multiple domains enables

the joint force to achieve notable success in complex operational environments.¹⁰

Now here is a similar quotation from current doctrine, Joint Publication 5-0, *Joint Operation Planning*, that uses this objective-complicated type of metaphor:

Although the systems approach is helpful in understanding the complex nature and composition of a given system or subsystem, this approach cannot account for all variables. Most systems can often exhibit unpredictable, surprising, and uncontrollable behaviors. Rather than being an engineered solution, a military operation evolves as the joint force adapts responsively to systems that also are adapting.¹¹

Current discourse on the revolution of military affairs calls for developing so-called “networkcentricity” and “systems of systems” that match the complexity of the operating environment. Such approaches strive to look for emergent patterns and clues in conducting what have been termed “effects-based operations” by using methods akin to social network analyses. Revolution of military affairs discourse evinces numerous similar heuristics, such as the operational net assessment (ONA), associated with organic, holistic conceptions of stability operations. In at least one military publication, ONA has been reduced to these interrelating systems and their relationships: political, military, economic, social, infrastructure, and information (PMESII). Operational net assessment looks at how each might map to external manipulation to achieve holistic PMESII effects through interaction with other variables of diplomacy, information dissemination, military

action, and economics. The diagrams compared in Figure 2 illustrate process similarity between ONA and organic chemistry.

Using complexity theory as a metaphor, authors of Joint Warfighting Center Pamphlet 7 created this system-of-systems diagram that they associate with effects-based thinking in systemic operational design. Academics in the business and public policy sciences are communicating with similar post-Newtonian imagery, including “disruptive evolution,” “unpredictable trajectory,” and “quantum leaps.” Examine this quotation from two University of Colorado researchers:

The terrorists attacks on September 11, 2001 demonstrated clearly the urgent need to develop the skills of complexity thinking—to recognize changes in the larger context; to take a big picture approach to intelligence-gathering and national security; to develop a deeper understanding of the system dynamics influencing regional politics and conflicts; and, most importantly, to enhance our understanding of complex sociopolitical human systems.¹²

Even the oft-used term “transformation” is borrowed from the logic of studying complicated biological systems and now permeates international military discourse (e.g., NATO’s Allied Command Transformation). Simply stated, biological transformation occurs when organisms, as open systems, adjust to the environment by changing the way they transform inputs from the environment into outputs back into the environment. Ideally, military transformation metaphorically expresses continuous change from one state to the next dependent on

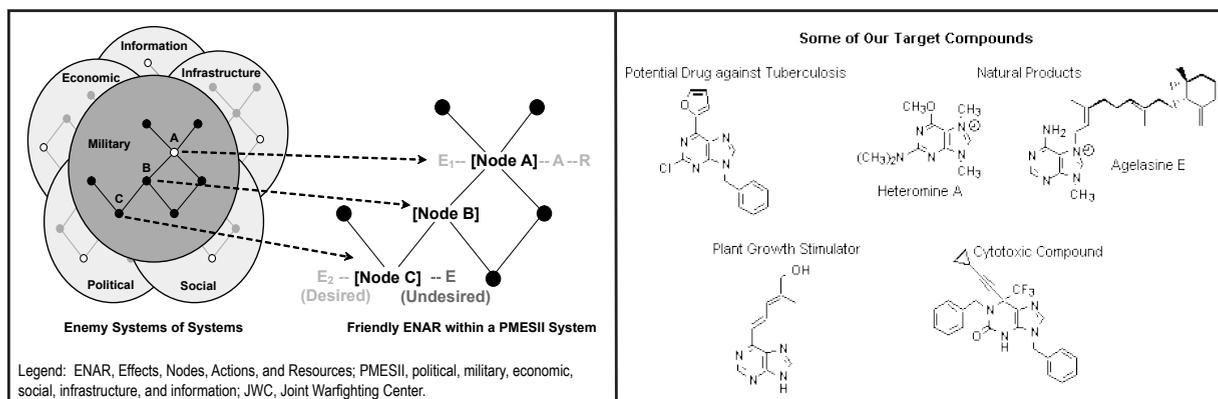


Figure 2. Conflict as a biochemistry metaphor.

environmental pressures, just as a species would evolve over time or an individual organism would adapt in responding to the survival needs in a given environment.

Thought leaders also use metaphors from the physiology of the human body to portray war and its complicated operations. For instance, consider this 2001 quote from Richard Haas, then director of the Office of the Policy Planning Staff, U.S. State Department, where he attempts to indoctrinate his listeners to a terrorism-as-disease metaphor to convey the complexity at hand in the War on Terrorism:

Another way of looking at the challenge is to view international terrorism as analogous to a terrible, lethal virus. Terrorism lives as part of the environment. Sometimes dormant, sometimes virulent, it is always present in some form. Like a virus, international terrorism respects no boundaries—moving from country to country, exploiting globalized commerce and communication to spread. It can be particularly malevolent when it can find a supportive host. We therefore need to take appropriate prophylactic measures at home and abroad to prevent terrorism from multiplying and check it from infecting our societies or damaging our lives.¹³

President Bush alluded to a post-Newtonian image of mutual causality (associated with complexity theory) in the dynamics of war when he reflected on the initial combat successes in Iraq:

Had we to do it over again, we would look at the consequences of catastrophic success, being so successful so fast that an enemy that should have surrendered or been done in escaped and lived to fight another day.¹⁴

The paradox inherent in Bush's explanation is that there was no way to "look at the consequences" ahead of time, but only in retrospect. Sometimes thought leaders mix up the unpredictability associated with post-Newtonian metaphors with the false determinism that mechanistic Newtonian metaphors permit.

Humanities and fine arts metaphors. Non-scientific communities of knowledge, such as humanities and fine arts, offer more nuanced metaphors that thought leaders can use to communicate understanding when mechanistic and biological models do not work as well. Such non-empirical metaphors reflect expressions with complex psychological implications.

As an example, Chris Matthews (of MSNBC's *Hardball* fame) used these stories to describe President Reagan's presidency:

He was the political street fighter who got up off the dirt to win the 1976 North Carolina primary when nearly everybody counted him for dead. He was the cold-blooded gladiator who strode to the podium of that year's Republican convention and delivered such a barnburner it made people wonder what Gerald Ford, the party nominee, was doing on the stage. He was the no-nonsense boss who fired thirteen thousand striking U.S. air traffic controllers. . . . When Reagan spoke about the boys who stormed Normandy, or the astronauts lost in the *Challenger*, he tapped into the deepest sentiments of his hero-worshipping compatriots. While he may never have fought in World War II, he evoked its aura with greater success than anyone who had ever lived on K-rations.¹⁵

Former Secretary of Defense Donald Rumsfeld used this World War II historic analogy to communicate meaning in aiming to develop a specific morale:

Take speed. After the attack on Pearl Harbor in 1941, Doolittle shocked the world by retaliating against Tokyo, some 4,000 miles from Hawaii, in just four months. In 2001 the United States struck a terrorist regime in Afghanistan, nearly 7,000 miles from the World Trade Centers, less than a month after September 11th.¹⁶

In another example, former Chief of Staff of the Army General Peter Schoomaker employed a sports analogy when he proclaimed that his officers must be more adaptable and less specialized in their careers:

We cannot afford, in my view, to specialize totally to units for single purpose any more, especially in this ambiguous environment, not only the contemporary operating environment, but the one that we're going to face in the future. So what we're looking at here is going from single and dual event athletes to decathletes and pentathlete kind of formations that allow us to be successful in a variety of events.¹⁷

This quadrant of the framework evokes a "sixth sense" that those viewing the world from the lower

quadrants may ignore—that is, the stories associated with a sense of retrospection (images of what has happened), aesthetics (images of what is beautiful), context (“with text,” to create a mental image), and the counterfactual (images of what could happen, could have happened, or what is perceived as possible right now or in the future).

Sensemaking. Human nature is often too complicated to ascribe meaning based on a single type of metaphor. The subjective-complicated quadrant from Figure 1 (“sensemaking”) represents a hybrid of types of metaphor already discussed. Sensemaking reflects how thought leaders seek to construct reality for others by drawing on metaphor from the other three types (Figure 3); hence, “making sense” often becomes the mixing bowl of metaphoric types. This analogical perspective illustrates how thought leaders aspire to indoctrinate others’ understanding of otherwise uninterpretable, incoherent, or disorderly discourse. Thought leaders create political rhetoric, psychological schema, opinions, arguments, judgments, and other metaphoric constructions of reality in attempts to formulate shared meaning. Within the

framework’s heuristic, all conceptual quadrants promote social constructions of reality. Whether or not such constructions correspond to an objective world depends on how effectively these constructions serve to replicate it. One or more quadrants may dominate over others at various points in time and may vary across and inside various knowledge communities (i.e., the effectiveness of these blends has cultural implications).

Thought leaders feed on metaphors from the other three views of reality while they attempt to impose their view of reality (upper-right quadrant), their sensemaking, on others.

Implications of the Framework

From the “post-positivist,” multiple perspectives that this model permits, the basis of professional military knowledge seems to heavily favor the sensemaking quadrant. A major implication is that military doctrine and “future concept” discourse seldom seem to adhere to the positivist communities’ standards (i.e., the exactness required of academics and professionals engaged in the empirical sciences). Positivist discourse entails austere norms

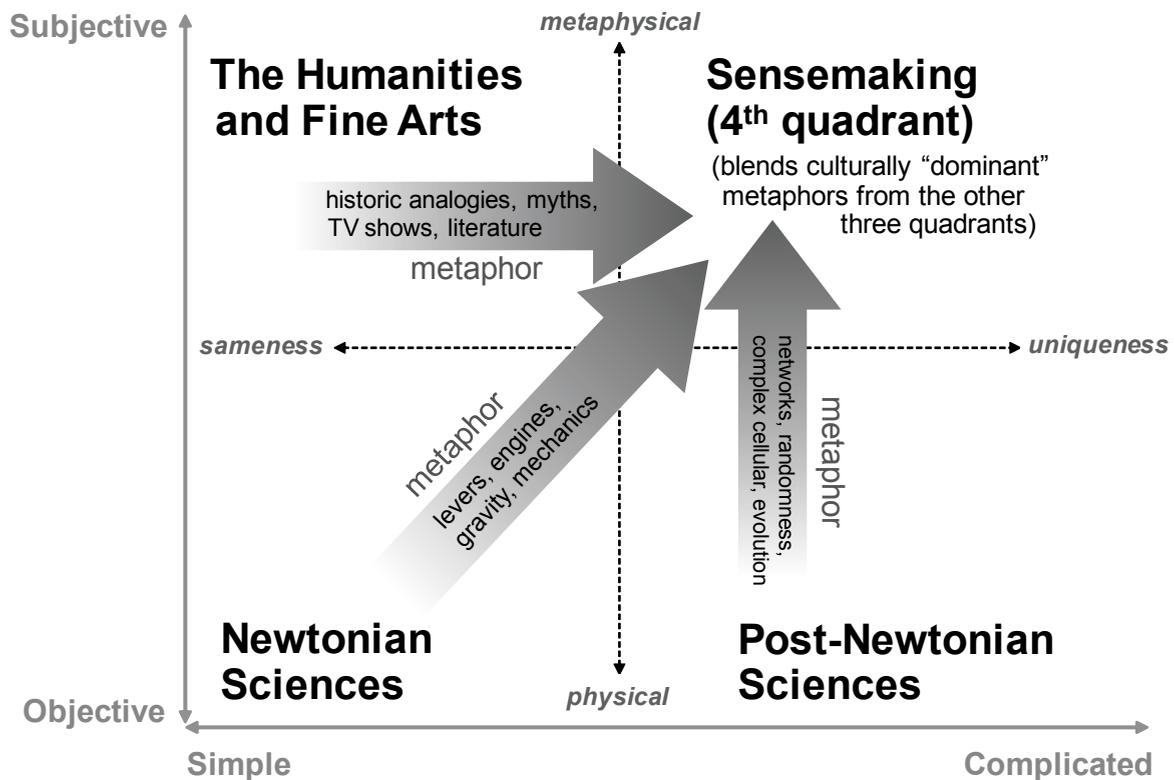


Figure 3. Three sources of metaphoric sensemaking.

and values of intellectual argument found, for example, in peer-reviewed applied science journals and textbooks. Such standards include attributing authorship to individuals, adhering to a custom of making citations, documenting a rich audit trail of intellectually rigorous discussion, and socializing a revulsion toward plagiarism. The absence of strictness in military indoctrination efforts should underscore that doctrinal and future concept texts are only weakly supported by a façade of scientific metaphors and therefore do not reflect knowledge values of the applied sciences. They are rarely, if ever, subject to the rigor of scientific knowledge management. More often, they are founded on received wisdom from sense-givers who are rarely subjected to critique. In that regard, military doctrine and so called “futures concepts” should not warrant recognition as a professional body of knowledge when compared to the natural sciences.

The framework above is a heuristic for critical thinking. It can help one recognize and discern

metaphor to be on guard against the influencing process of thought leaders and the specious logic they may employ, knowingly or not. One might even conclude that military thought leaders’ reliance on Newtonian and post-Newtonian metaphor reveals a pretense of knowledge because it implies predictions about events and environments that are inherently intractable. A case in point is the three levels of war (tactical, operational, and strategic) metaphor produced under the sense-givings of key 1970s, post-Vietnam, military thought leaders, Generals William E. DePuy, Donn A. Starry, and Creighton Abrams. The three levels of war present a façade of Newtonian-style empiricism that eventually became enshrined as categorical truths for study of complex military organizations and their operations.

The military’s professional community has largely lost track of Newtonian root-metaphors. Conceptions of truth have commensurately spiraled into objective-simple images that often inappropriately reflect mechanistic (i.e., dangerously

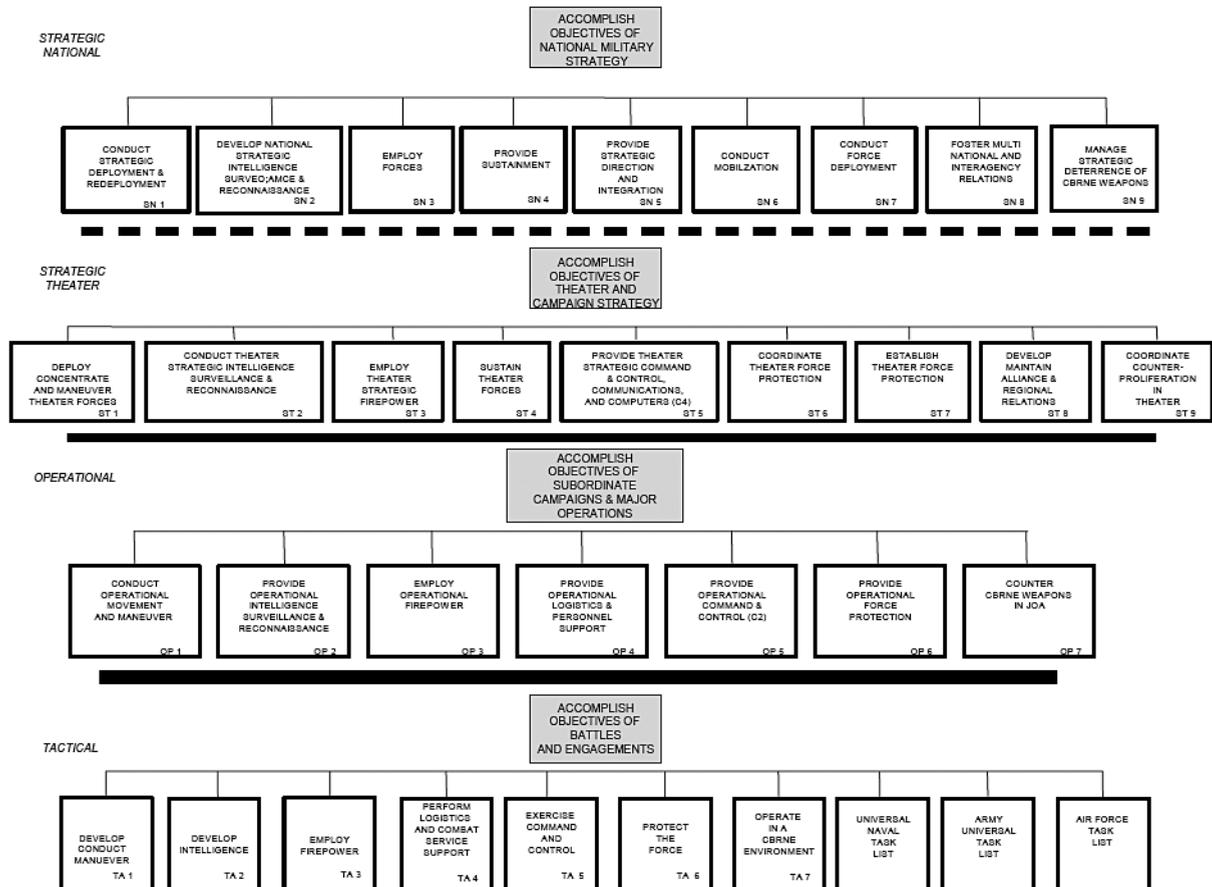


Figure 4. War as hierarchy.

oversimplified) implications of applied science's empirical methodology. The indoctrinated practitioner has taken these implications to extrapolate further and produce extreme analytical diversification (and rendering a wholly factitious genera and species). This diversification is common; doctrinal artifacts such as the table at Figure 4 demonstrate this. The table, taken from Chairman of the Joint Chiefs of Staff Manual (CJCSM) *Universal Joint Task List* (CJCSM 3500.04, 1 July 2002), demonstrates graphically how a metaphor associated with a hierarchy can enhance further objectification by this science-like categorization of military discourse.

This diagram possesses further diversified layers of sub-tasks under these tasks later in the manual. It represents an architectural engineering metaphor of warfare that may be counterproductive by promoting the reification of its categories.

Armed with the framework for deciphering types, reflective military practitioners can evaluate such a metaphor's efficacy. Instead of an architectural-level analogy of tactics-operations-strategy (similar to an organization's "block and wire" diagram signifying most important to least important), the reflective professional can perhaps examine war with a more nontraditional and more aesthetic metaphor borrowed from the humanities and fine arts—through interpretive narratives or creative processes like painting, composing music, poetry, and so on. For example, should generals "orchestrate" operations like conductors, or should they be more like jazz musicians who allow the music to flow more freely, permitting other members of the band to assume the "lead" where it feels right? The same critical reasoning can reflect on other cases of Newtonian metaphor still used in modern military discourse. Examples for scrutiny might be "culminating point," "decisive point," "friction," "control measures," "center of gravity," and so on.

In an unpublished manuscript, two researchers, Mary Jo Hatch and Dvora Yano, propose that painting can offer rich metaphor to stir new imaginations and possibilities when it comes to dealing with ambiguity:

Our metaphorical use of painting . . . adds an aesthetic channel for communicating about [differences in how we make sense]. Used as a supplement to verbal argumenta-

tion, the visual, artistic material opens the discourse . . . not only to other avenues of understanding complex philosophical ideas, but also to greater aesthetic appreciation of its phenomena and to acts of theorizing about them.¹⁸

Military practitioners often hear from thought leaders about the "art of war," or the "operational art," yet where is reflection on the aspects of this metaphor encouraged in professional military education and self-development?

Note how the following description employs both Newtonian (machinelike) and Post-Newtonian (complicated, holistic) patterns to indicate the need for adjustments when working in the interagency:

The DOD is like clocks and the interagency is like clouds. Clocks operate in an orderly way. The actions of each component are predictable from the other, synchronized, and unified. The interagency is more like clouds. Clouds lack the orderliness of clocks. Clouds change form, grow and shrink, and are strongly affected by environmental conditions. The movement of molecules and particles making up a cloud are nearly impossible to predict precisely. The interagency is highly responsive to contextual influences while absent neat orderliness. Just as understanding some of its "molecules and particles" does not give us an understanding of the entire cloud, so do we fail to appreciate the nature of the National Security Council, Departments of State, Justice, Homeland Security, etc. or an interagency working group when we focus only on its elemental members. The actions and attributes of one group member do not accurately predict another's. The behavior of the interagency does not unfold like clockwork. Rather, variation is the rule.¹⁹

Notice also how the eloquence of my short paragraph can convey a richness of meaning about the cultural peculiarities of interorganizational relations. In lieu of managing the military body of knowledge as one would an applied science, perhaps military practitioners should, as University of Michigan Professor Karl E. Weick suggests, learn to manage the eloquence of meaning as inherent to professional development.²⁰

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Conclusion

Thought leaders' sense-givings are so prevalent that it is easy to mindlessly treat a metaphor as a certain "truth" rather than as a shadowy image for communicating only dimly perceived realities. Unawareness of metaphor can grow and work to anesthetize professionals from feeling and understanding the implications of truth as it is socially constructed into a makeshift correspondence with fact. Unreflective indoctrination can thereby seductively serve to reduce anxiety and confusion while encouraging complacency about knowledge. In uncritical practitioners not tuned to reflection, a leader's over-simplified representations of truths can be crippling. Given a framework for evaluating metaphors, the reflective military practitioner can adjust to the ambiguity prevalent in complex

operational environments. This discussion and its proposed framework seek to promote the post-positivist logic that has been suppressed (and often stigmatized) by a long-standing façade of logical positivism in military doctrine. Professional debate about whether prevailing operational metaphors can be appropriately modified, diminished in use, or wholly discarded is needed. Some other form of sensemaking that works better to convey complexity and emergence as shared meaning is required. Barring such reflection, professionals may easily become too comfortable by following the influence of inappropriate thought-leader metaphors and fail to employ their own imaginative rationality.

This essay has proposed a framework that can assist in needed reflection and help professionals decipher whether specific metaphors are imaginative enough. The mindless tyranny of defunct metaphors in Western military knowledge has already proven its liabilities. Mindfulness of the inherent potential for such domination can serve to motivate imaginative ways to explore breakthrough sense-makings. Such reflection could lead to inventions of breathtakingly rich eloquence in postmodern military discourse. **MR**

NOTES

1. George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980) 193.

2. Hence, the common metaphor of "worldview." Several prominent social psychologists, such as Karl E. Weick (University of Michigan) have studied the concept of sensemaking. Paraphrasing his and others' work, sensemaking is using, modifying, rejecting and creating new paradigms or mental models when dealing with situations of incoherency and disorderliness. Is this not the work of thought leaders when they employ metaphorical reasoning? See Karl E. Weick, *Sensemaking in Organizations* (Thousand Oaks, CA: Sage, 1995).

3. I synthesized this list from the ideas of multiple writers in Andrew Ortony, ed., *Metaphor and Thought*, 2d ed. (Cambridge, MA: Cambridge University Press, 1993).

4. Alexandr A. Svechin, *Strategy*, 2d ed., original published in 1927 (Minneapolis, Minnesota: 1991), 74.

5. David Galula, *Counterinsurgency: Theory and Practice* (New York: Praeger, 1964) 12.

6. General Peter J. Schoomaker's remarks at the Association of the US Army convention, 4 March 2004, <www.ausa.org/webpub/DeptHome.nsf/byid/CTON-6FUSYZ> (25 May 2007).

7. General Peter Pace, Chairman of the Joint Chiefs of Staff, National Press Club Luncheon, Washington, DC, 17 February 2006, <www.jcs.mil/chairman/speeches/060217NatPressClubLunch.html> (28 May 2007).

8. These remarks (quoted in Army Field Manual FM 3-0, *Operations*, February 2008, 1-1) were originally delivered in a speech by Secretary of Defense Robert M. Gates, Manhattan, Kansas, 26 November 2007.

9. Kenneth E. Boulding, *The Image: Knowledge in Life and Society* (Ann Arbor, MI: University of Michigan, 1971), 148. Boulding suggests that continuous development of general-purpose metaphors for sensemaking, especially those borrowed from the natural sciences, should constitute an entirely new field of study he calls "eiconics." He used "general systems theory" for his case study of how systems theory can be applied as a biological metaphor to explaining the nature of human social systems. For an excellent critique of how almost two centuries of metaphorical reasoning has led to a distorted and biased view of the field of sociology, see John Hassard, *Sociology*

and Organization Theory: Positivism, Paradigms, and Postmodernity (Cambridge, UK: Cambridge University, 1993).

10. Chairman of the Joint Chiefs of Staff, *Capstone Concept for Joint Operations*, Version 2.0. <www.dtic.mil/futurejointwarfare/concepts/approved_ccjov2.pdf>.

11. Chairman of the Joint Chiefs of Staff, Joint Publication 5-0, *Joint Operation Planning*, <www.dtic.mil/doctrine/jel/new_pubs/jp5_0.pdf>.

12. T. Irene Sanders and Judith A. McCabe, *The Use of Complexity Science: A Survey of Federal Departments and Agencies, Private Foundations, Universities and Independent Education and Research Centers*, Washington, DC: Washington Center for Complexity and Public Policy, October 2003, 12, <www.hcs.ucla.edu/DoEreport.pdf> (23 May 2007).

13. Richard N. Haass, "The Bush Administration's Response to September 11th—and Beyond" (remarks to the Council of Foreign Relations New York, NY October 15, 2001).

14. Dana Milbank, "At GOP Convention, Echoes of Sept. 11," *The Washington Post*, 30 August 2004, A01.

15. Chris Matthews, "Ronald Reagan Was a Political Warrior and Hero: The Actor Who Had Spent Decades Playing Heroes Transcended the Back Lot and Its Illusions," <www.msnbc.msn.com/id/5146472/> (28 May 2007).

16. Donald H. Rumsfeld (speech delivered at the award ceremony for James "Jimmy" Doolittle, Hudson Institute, Washington, DC, May 13 2003), <www.defenselink.mil/speeches/speech.aspx?speechid=401> (3 May 2007).

17. Schoomaker.

18. Mary Jo Hatch and Dvora Yanow, *Methodology by Metaphor: Ways of Seeing in Painting and Research*, unpublished manuscript, October 2007.

19. The Interagency images of clockwork and clouds were adapted by the author based on ideas presented by Richard A. Guzzo and Gregory Shea, "Group Performance and Intergroup Relations in Organizations," in Marvin D. Dunnette and Leaetta M. Hough, eds., *Handbook for Industrial and Organizational Psychology*, vol. 13, 2d ed. (Palo Alto, CA: Consulting Psychologists, 1992), 273.

20. Karl E. Weick, "The Management of Eloquence," in David R. Hampton, Charles E. Sumner, and Ross A. Webber, *Organizational Behavior and the Practice of Management*, 5th ed. (Glenview, IL: Scott Foresman and Company, 1980), 581.