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To Design or Not to Design (Part Two):

The There Is a Problem with the Word 'Problem;' How Unique Vocabulary Is Essential to Conceptual Planning

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Editor's Note: This is part two of a six part series on design. Part one can be found [here](#).

Costello: "Well then who's on first?"

Abbott: "Yes."

Costello: "I mean the fellow's name."

Abbott: "Who."

Costello: "The guy on first."

Abbott: "Who."

Costello: "The first baseman."

Abbott: "Who."

Costello: "The guy playing..."

Abbott: "Who is on first!"

Costello: "I'm asking YOU who's on first."

Abbott: "That's the man's name."¹

FM5-0 Chapter 3 Design discusses a critical component to conceptual planning and phrases it with "solving the right problem."² However, military doctrine and institutional culture already employ the word *problem* for an entirely different and valid reason. Should one ask any tactical-level member of a military unit what their understanding of the word *problem* is in a military setting, the majority will explain to you that a problem is 'something one solves.'³ The existing word meaning uses a short-term or tactical perspective that is divorced from the larger context in which design theory provides understanding on metaphysical processes. These processes exceed the artificial boundaries imposed by the military institution's valid definition of a tactical problem; the perspectives do not match.

Language is something usually taken for granted except for under reflection or metacognition. "Linguistic expressions are containers for meanings [and these] meanings have

¹ Excerpt of classic exchange between comedians Bud Abbott and Lou Costello (<http://www.baseball-almanac.com/humor4.shtml>) last accessed 28 December 2010.

² United States Army Training and Doctrine Command, *Field Manual 5-0; The Operations Process*. (Headquarters, Department of the Army, 2010), 3-26.

³ Gerald M. Weinberg, *Rethinking Systems Analysis and Design* (Boston: Little, Brown and Company, 1982) 10. "Looking carefully at these and related definitions, we discern that the 'problems,' in the sense of 'perplexities,' may be said to be 'solved' if the obscurity is removed." Weinberg refers to this as the 'problem-solution myth;" Jeff Conklin, *Wicked Problems and Social Complexity* (CogNexus Institute, 2008. <http://cognexus.org/wp/wickedproblems.pdf> Last accessed 05 January 2011) 7. "Moreover, what 'the Problem' is depends on who you ask- different stakeholders have different views about what the problem is and what constitutes an acceptable solution."

an existence independent of people and contexts.”⁴ While vocabulary functions in both detailed (tactical) planning and at the operational level (conceptual), the meanings contained within certain linguistic expressions may not translate between the two levels. Postmodernist Paul Ricoeur uses a sundial example in *Time and Narrative* to explain the interweaving of history and fiction, and his example lends itself to this point about language and meaning in military design applications:

“On the one hand, the sundial belongs to the human universe. It is an artifact intended to regulate the life of its constructor. On the other hand, it also belongs to the astronomical universe: the movement of the shadow is independent of human will. But these two worlds would not stand in relation to each other unless people were convinced that it were possible to derive signals relating to time from the movement of the projected shadow.”⁵

In the sundial description, the linguistic container that explains the sundial has different meaning based upon perspective and context. The humans that build the sundial consult the tool as a method of regulating their life. From their local perspective, their needs and desires concerning the future are in tension with the passage of time. Hence, human planners considering a raid on a neighboring village may consider ‘limited time’ something that interferes with their goals. Detailed planners at the tactical level could mitigate their ‘problem’ by addressing immediate issues of hours of sunlight, time of year, and distance to objective. These descriptive elements feature prominently in tactical applications.⁶ “When we say something, when we think in a certain way, we are usually following conventional patterns, patterns that will work out well if the situation remains conventional, which most of the time it will.”⁷

For much of human history leading up through the Industrial Revolution and the evolution of the operational level of warfare, these immediate tactical perspectives functioned for all necessary military planning considerations.⁸ Essentially, the development of the railroad provided the military with rapid transfer of troops and equipment over tremendous distances; time zones became necessary at the same time that true operational art emerged.⁹ ‘Time’

⁴ George Lakoff, Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980) 11; Jeff Conklin, *Wicked Problems and Social Complexity* (CogNexus Institute, 2008. <http://cognexus.org/wpf/wickedproblems.pdf> Last accessed 05 January 2011) 14. Conklin discusses social complexity and how complex organizations are composed of multiple actors, “each of these players come from a different discipline, with its own specialized language and culture.”

⁵ Paul Ricoeur (translated by Kathleen Blamey and David Pellauer), *Time and Narrative, Volume 3* (Chicago: University of Chicago Press, 1985) 182.

⁶ Colin S. Gray, *Modern Strategy* (Oxford University Press, 1999) 42. “The final dimension to be introduced, the temporal is, again, so obvious that it invites neglect by theorists. Every military plan at every level of war is ruled by the clock.”

⁷ Gerald M. Weinberg, *An Introduction to General Systems Thinking* (New York: John Wiley and Sons, 1975) 61; Jeff Conklin, *Wicked Problems and Social Complexity* (CogNexus Institute, 2008. <http://cognexus.org/wpf/wickedproblems.pdf> Last accessed 05 January 2011) 9-10. Conklin discusses ‘wicked problems’ and contrasts them with ‘tame problems’ that closely correlate with this paper’s position on tacticization. “A tame problem is one for which the traditional linear process is sufficient to produce a workable solution in an acceptable time frame... Tame does not mean simple- a tame problem can be very technically complex.”

⁸ Michael Krause, Cody Phillips, *Historical Perspectives of the Operational Art* (Center of Military History, United States Army, 2007) 333. “The U.S. fought its wars for more than 200 years without needing an ‘operational level.’ *Strategy and tactics* were good enough for Clausewitz and Jomini- and for our fathers and grandfathers as they fought the biggest wars known to man.”

⁹ James J. Schneider, *Theoretical Implications of Operational Art; On Operational Art* (Washington: Center of Military History, 1994) 20. “Together the railroad and the telegraph would become the bones and nerves of operational art sustaining the first great manifestation of distributed free maneuver in 1864;” John L. Romjue, *American Army Doctrine for the Post-Cold War* (Fort Monroe: Military History Office, United States Army Training and Doctrine Command, 1997) 10-11. “The specific requirements and conditions of each of the wars [in the 18th and 19th centuries] in which the Americans were involved additionally shaped evolving Army tactical doctrine. So, too, did the rapid technological and weapon developments of the industrial age;” Colin S. Gray, *War, Peace and International Relations* (New York: Routledge, 2007) 58-59, 61. “The Industrial Revolution allowed states to equip, train, move, command and sustain logistically in combat armies of a size unprecedented in history...[railway] provides

changed from merely relating to immediate perspectives and tactical action into a new and broader perspective where campaigns of multiple military forces executed complex operations across space and time. As time required entirely new considerations at the operational level, so did the nature of tactical ‘problems.’ Design is now necessary in part, because science has been so successful that human society on this planet are not prepared to deal with the complex non-tactical problems that science and technology deliver.¹⁰

When humans built sundials and consulted them, it is unlikely they contemplated the movement of the sun and earth in respect to the astronomical universe other than to acknowledge a pattern they could adapt the synthetic concept of human time measured in minutes, hours, days, and so forth. It is even more unlikely that sundial-era humans contemplated from a global standpoint how astronomical positioning combined with the shape of the earth meant that the time of day was relevant only to humans within immediate travel distance of that civilization. Time zones did not matter, and the simple shadow movements could only crudely depict simple time measurements that would be inadequate in today’s global socio-economic society.

The tactical perspective at sundial level generates one expectation of how time is problematic. However, what is problematic at the sundial level does not simply extend beyond the familiar and known and exist at the higher systems level.¹¹ What was ‘unknown’ for sundial constructors was not problematic with regard to time considerations. “This is the fallacy of composition: a false belief that says what is true of the part is true of the whole.”¹² Tactical problems do not simply grow in scale to operational level problems; this logical fallacy persists in military organizations that hold to the mechanistic and reductionist principles of the Industrial era of warfare.¹³ “The main trouble with analysis comes when results drawn from one small territory are erroneously applied to another.”¹⁴

relatively speedy transport for men, animals, equipment, and food, but only if the lines connect places useful to war-making. Will not total dependence on the railway restrict operational choice?” Gray explores the pros and cons of what railways did to military operations in a manner most historians ignore. Many detrimental aspects came with railways that made military operations more difficult; Michael Krause, Cody Phillips, *Historical Perspectives of the Operational Art* (Center of Military History, United States Army, 2007) 335-336. “Battles had expanded in space and time because of the evolution of mass armies and railroads.”

¹⁰ Gerald M. Weinberg, *An Introduction to General Systems Thinking* (New York: John Wiley and Sons, 1975) 3; Australian Head Modernisation and Strategic Planning- Army, *Australian Army’s Future Land Operating Concept* (Australian Army Headquarters, Canberra, September 2009) 3.5 footnote 59. Australian doctrine stresses the difference between *complicated* and *complex* problems; that point should be reinforced here as well. “Complicated is a word which includes the Latin ending ‘plic’, meaning ‘to fold.’ Thus a system which is complicated can be unfolded into simpler components which can be more easily understood...complex on the other hand ends in the Latin ‘plex’, meaning ‘to weave.’ A crucial element for a system to be considered complex [in lieu of complicated] is the presence of nonlinear interacting feedback loops between variables.”

¹¹ Glenn K. Otis, *The Ground Commander’s View- I; On Operational Art* (Washington: Center of Military History, 1994) 44. “So time takes on a different dimension between the tactical and operational levels. It means that your thinking has to be different.”

¹² Shimon Naveh, Jim Schneider, Timothy Challans, *The Structure of Operational Revolution; A Prolegomena* (Booz, Allen, Hamilton, 2009) 7; Jeff Conklin, *Wicked Problems and Social Complexity* (CogNexus Institute, 2008).

<http://cognexus.org/wpf/wickedproblems.pdf> Last accessed 05 January 2011) 10. “There is a tendency to treat all problems as tame [Conklin contrasts ‘tame problems’ with ‘wicked problems’ in his paper], perhaps because tame problems are easier to solve, reinforced by the lack of understanding about wicked problem dynamics and the tools and approach they require.”

¹³ Gerald M. Weinberg, *An Introduction to General Systems Thinking* (New York: John Wiley and Sons, 1975) 121. “Reduction is but one approach to understanding, one among many. As soon as we stop trying to examine one tiny portion of the world more closely and apply some close observation to science itself, we find that reductionism is an ideal *never* achieved in practice.” Shimon Naveh, *In Pursuit of Military Excellence; The Evolution of Operational Theory* (New York: Frank Cass Publishers, 2004) xiii. “The longstanding failure to apply a systemic approach...led to the suppression of creative military thinking by a mechanistic mentality of attrition- a trend which has been reflected in the attempt to manipulate tactics on a major scale;” Mick Ryan, *Measuring Success and Failure in an ‘Adaptive’ Army*; *Australian Army Journal For the Profession of Arms, Volume VI, Number 3* (Duntroon: Land Warfare Studies Centre, 2009) 23; Ian Stewart, *Nature’s Numbers* (BasicBooks, 1995) 107.

¹⁴ Gerald M. Weinberg, *Rethinking Systems Analysis and Design* (Boston: Little, Brown and Company, 1982) 28.

Military institutions have a harder time employing linguistic containers in a dual-use mode for conceptual planning because multi-minded complex systems use different perspectives and different meanings. This problem occurs across academic and scientific fields where there are hierarchies of levels of organization; military science attempts to delineate by using the strategic, operational, and tactical levels of war.¹⁵ General Systems Theorist Peter Checkland used the analogy of an apple to convey how emergent properties are *meaningless* when used in the language appropriate to a lower level of organization. “The shape of an apple, although the result of processes which operate at the level of the cells, organelles, and organic molecules which comprise apple trees... *has no meaning* at the lower levels of description.”¹⁶ In other words, at the cellular level, it does not matter whether the apple is round, pear-shaped, or even square. Organizing processes at a higher level do not affect the tree’s cellular components; at the atomic level, the round shape of the apple does not affect similar processes involving the molecules comprising apple cells.

Similarly, disbanding the Iraqi military instrument of power in 2003 had no meaning at the tactical level for insurgent organization; those military personnel willing to resist did not need operational guidance, uniforms, central logistics, or other higher level elements associated with a nation-state’s military to continue resisting. This is a challenging concept to learn because humans are predisposed to categorize information in associated chunks, regardless of whether the chunking may be misleading in many regards. Humans seek patterns because a concept summarizes larger amounts of raw information. As Nassim Taleb explains in *The Black Swan*, “We, members of the human variety of primates, have a hunger for rules because we need to reduce the dimension of matters so they can get into our heads.”¹⁷ Part of understanding design theory requires an awareness of how humans ‘chunk’ tactical-level ‘problems’ with operational-level ‘phenomenon.’

We shall call such situations ‘problematical’, rather than describing them as ‘problem situations’, since they may not present a well-defined ‘problem’ to be ‘solved’ out of existence- everyday life is more complex than that!¹⁸

¹⁵ United States Army Training and Doctrine Command, *Field Manual 6-22; Army Leadership; Competent, Confident, and Agile*. (Headquarters, Department of the Army, October 2006), 11-18. Doctrine quotes General Edward C. Meyer on communication and leadership. “Too often we place the burden of comprehension on those above or below us- assuming both the existence of a common language and a motivation;” United States Army Training and Doctrine Command, *Field Manual 3-0; Operations*. (Headquarters, Department of the Army, 2001), 1-41. FM 3-0 explains how mission variables that function at a tactical level may not transfer to an operational or strategic level; “the degree to which each operational variable provides useful information depends on the situation and echelon.”

¹⁶ Peter Checkland, *Systems Thinking, Systems Practice* (New York: John Wiley and Sons, 1981) 78.

¹⁷ Nassim Nicholas Taleb, *The Black Swan*. (New York: Random House, 2007), 69; United States Army Training and Doctrine Command, *Field Manual 3-0; Operations*. (Headquarters, Department of the Army, 2001), 1-23, 2-13. Army doctrine makes an interesting comment while recommending operational and mission variables to guide military planning processes. While complementing the usefulness of PMESII-PT and other variables, FM 3-0 warns that “human societies are very complicated and defy precise binning.” Doctrine may have intended ‘complex’ instead of ‘complicated’ due to the Latin base root origins of those words and how they differ significantly. Human societies are complex; your car’s engine is complicated. Under *Operational Themes*, FM 3-0 explains *grouping* as “grouping military operations with common characteristics under operational themes [that] allows doctrine to be developed for each theme rather than for a multitude of joint operations;” Trent Scott, *Adapt or Die; Australian Army Journal For the Profession of Arms, Volume VI, Number 3* (Duntroon: Land Warfare Studies Centre, 2009) 119. Scott recommends to an Australian military audience that designers should “avoid the temptation to break the perceived problem down into manageable chunks. A predilection of the military, however, is to focus on ‘events.’ This in turn leads to ‘event’ explanations- who did what to whom.”

¹⁸ Peter Checkland and John Poulter, *Learning for Action; A short Definitive Account of Soft Systems Methodology and its use for Practitioners, Teachers, and Students*. (England: John Wiley & Sons Ltd, 2006), 3.

What does ‘problem’ mean with respect to design theory and military organizations? Army doctrine’s definition of design implies that critical thinking is essential for understanding a complex, ill-structured problem.¹⁹ Yet ‘problem’ reflects a tactical perspective that fails to translate in scale or form at the operational level. Michel Foucault provides perhaps a clearer example of critical thinking and problems in his series of lectures at University of California, Berkeley in 1983 entitled *Discourse and Truth: The Problematization of Parrhesia*.²⁰ Foucault was a philosopher, and although the military has cultural abhorrence to intellectualism that includes discourses on these topics, Foucault’s concept of ‘problematization’ is essential for understanding design theory.²¹

Foucault defined the term ‘problematization’ as “how and why certain things (behavior, phenomena, processes) became a problem.”²² He differentiates the tactical term ‘problem’ as distinct and separate from the metacognitive term ‘problematization.’²³ The term ‘problematization’ also developed from ancient Greek sources into various other scientific fields such as education, business, and political ideology (socialist/Marxist movements).²⁴ This demonstrates problematization’s holistic appeal across a diverse range of academic and scientific fields. For design discussion, Foucault’s use of the term is sufficient to convey the concept effectively. Current design doctrine fails to establish the distinction between these distinct terms that understandably leads to institutional disarray over meaning. Foucault explored the concept of ‘problematization’ by exposing his audience to several other significant Greek philosophical terms, starting with ‘*parrhesia*.’

¹⁹ United States Army Training and Doctrine Command, *Field Manual 5-0: The Operations Process*. (Headquarters, Department of the Army, 2010), 3-1.

²⁰ Michel Foucault, *Discourse and Truth: The Problematization of Parrhesia* (originally covered in six lectures given by Michel Foucault at the University of California, Berkeley in October-November, 1983. Published online at: <http://foucault.info/documents/parrhesia/> last accessed 16 December 2010).

²¹ Shimon Naveh, Jim Schneider, Timothy Challans, *The Structure of Operational Revolution; A Prolegomena* (Booz, Allen, Hamilton, 2009) 9. “Finally, there is the institutional assault on theory. This is expressed in the military through a fairly unabashed anti-intellectualism.”; John Nagl, *Learning to Eat Soup with a Knife; Counterinsurgency Lessons From Malaya and Vietnam* (Chicago: The University of Chicago Press, 2002) 9. “Military organizations often demonstrate remarkable resistance to doctrinal change as a result of their organizational cultures. Organizational learning, when it does occur, tends to happen only in the wake of a particularly unpleasant or unproductive event;” Trent Scott, *Adapt or Die; Australian Army Journal For the Profession of Arms, Volume VI, Number 3* (Duntroon: Land Warfare Studies Centre, 2009) 121. “This understanding is only likely to be generated through deliberate and focused discourse that generates creative tension and allows synthesis.”

²² Michel Foucault, *Discourse and Truth: The Problematization of Parrhesia* (originally covered in six lectures given by Michel Foucault at the University of California, Berkeley in October-November, 1983. Published online at: <http://foucault.info/documents/parrhesia/> last accessed 16 December 2010) 65.

²³ Gerald M. Weinberg, *Rethinking Systems Analysis and Design* (Boston: Little, Brown and Company, 1982) 65. Weinberg uses a similar conceptual term ‘meta-question’ in lieu of ‘problematization.’ “One of the most effective anthropological techniques that I’ve observed is the *meta-question*. A meta-question is a question that directly or indirectly produces a question for an answer.” Weinberg’s *meta-question* continues with ‘why’ instead of ‘what’ processes of query.

²⁴ Marie Gallais, Remi Fabbri, Christophe Schmitt, *Problematization and Translation of the Vision: Toward New Entrepreneur’s Competences* (Colloque: En route vers Lisbonne, 4 et 5 decembre 2008,

[http://www.tudor.lu/cms/lu2020/publishing.nsf/0/FDECF548D12BC30BC12575140048AB73/\\$file/16h15_GALLAIS_FABBRI_SCHMITT.pdf](http://www.tudor.lu/cms/lu2020/publishing.nsf/0/FDECF548D12BC30BC12575140048AB73/$file/16h15_GALLAIS_FABBRI_SCHMITT.pdf) last accessed: 17 December 2010), 6. Gallais, Fabbri, and Schmitt apply problematization and design theory to business modeling in Europe for problem-solving structures that benefit entrepreneurial situations; Alex Lange, *From Problem-Solving to Problematizing; Questions in the Writing Classroom* (Fablex Linguas, Campina Grande, Paraiba, Brasil, 2009: <http://freireproject.org/forum/problem-solving-problematizing%3A-questions-writing-classroom> last accessed 17 December 2010) 1-5. Lange applies problematization to educational problems with writing and relies on the Socialist education specialist and Brazilian Paulo Freire; Freire used ‘critical pedagogy’ and a similar form of ‘problematization’ to address Marxist ideological concerns in South America with education, class warfare, and wealth redistribution under a Socialist dogma; Heinz-Peter Gerhardt, *Paulo Freire (1921-1997); Prospects: the quarterly review of comparative education* (Paris: UNESCO: International Bureau of Education, 1993) vol. XXIII, no 3/4, 439-458. Gerhardt provides a biography on Paulo Freire that includes the evolution of ‘critical pedagogy’ with problematization from Greek discourse to Socialist educational reform in South America.

Parrhesia appeared in Greek philosophical discourse in the works of Euripides [c.484-407 BC] and essentially meant ‘to speak the truth freely.’²⁵ In philosophical discourse between Greeks, this concept put significant value on a combination of truth, brevity, and absolute communication of the message from speaker to the audience. From a design theory perspective, FM 5-0 Chapter 3 Design essentially paraphrases ‘*parrhesia*’ when it calls design a “methodology for applying critical and creative thinking to *understand*, visualize, and *describe* complex, ill-structured problem (emphasis added).”²⁶ This important Greek philosophical term conveys the critical relationship between understanding and concise explanation to others, but it also contains another distinct meaning.²⁷

“*Parrhesia* is a form of criticism, either towards another or towards oneself...[it] is linked to courage in the face of danger...in its extreme form, telling the truth takes place in the ‘game’ of life or death.”²⁸ Therefore, this concept of questioning for truth has a component of heresy in it; seeking understanding and meaning requires one to explore a line of questioning that may go against institutional norms, doctrine, and values. As Naveh, Schneider, and Challans explain in *The Structure of Operational Revolution*, the military resists heretical thinkers because questioning core beliefs are socially subversive. Yet by doing so in design, the heretic “offers a novel logic that becomes the basis for a new paradigm.”²⁹ Problematization requires critical thinking that emphasizes exploration into why things are the way they are in a system, and subsequently is in opposition with codified principles, institutional biases, and prescriptive doctrine that dominate mainstream military form and function. Institutional resistance to heretical questioning is not just limited to the military; academic institutions and other hierarchical organizations are slow to change the subjects they teach, and the traditional methods that have long histories of success resist replacement.³⁰ Human social organizations shun heretics out of self-interest, self-preservation, and other perfectly human motives.³¹

²⁵ Michel Foucault, *Discourse and Truth: The Problematization of Parrhesia* (originally covered in six lectures given by Michel Foucault at the University of California, Berkeley in October-November, 1983. Published online at: <http://foucault.info/documents/parrhesia/> last accessed 16 December 2010) 2.

²⁶ United States Army Training and Doctrine Command, *Field Manual 5-0; The Operations Process* (Headquarters, Department of the Army, 2010), 3-1.

²⁷ Foucault, 44. Foucault explained in his lecture *Discourse and Truth* that the Cynic tradition, these Greek philosophical terms incorporated Cynic principles that differed from Platonic, Aristotelian, and Stoic traditions. The Cynics did not rely on doctrine and text, but on “exemplary lives... [where] personal examples became the starting point for Cynic reflection and commentary.”

²⁸ Foucault, 4.

²⁹ Shimon Naveh, Jim Schneider, Timothy Challans, *The Structure of Operational Revolution; A Prolegomena* (Booz, Allen, Hamilton, 2009) 26; Australian Head Modernisation and Strategic Planning- Army, *Australian Army's Future Land Operating Concept* (Australian Army Headquarters, Canberra, September 2009) 4.7 The Australian Army's design doctrine contains something similar to Boyd's OODA Loop that they call the *Adaptive Action Cycle*. Within this cycle under the *adapt phase*, the Australian designers are instructed to “challenge understanding.” Essentially, this is heretical thinking- *Parrhesia* for an institution attempting to “know when to change” and “learn how to learn.” The Australian design doctrine goes much further than U.S. Army in FM 5-0 by embracing the confrontational aspects of *problematization*; Trent Scott, *Adapt or Die; Australian Army Journal For the Profession of Arms, Volume VI, Number 3* (Duntroon: Land Warfare Studies Centre, 2009) 126. Design requires “a sceptical posture that continually challenges accepted beliefs and perceptions.”

³⁰ Draper L. Kauffman, Jr. *Systems 1, An Introduction to Systems Thinking* (The Future Systems Series: T. Lance Holthusen, 1980) 1-12.

³¹ Carl H. Builder, *The Masks of War; American Military Styles in Strategy and Analysis* (RAND Corporation: John Hopkins University Press, 1989) 17. Builder describes service personalities through “alters of worship, concerns with self-measurement, preoccupation with toys versus the arts... and insecurities about service legitimacy and relevancy;” Russell F. Weigley, *The American Way of War* (New York: Macmillan Publishing Co., 1973) 391. On MacArthur's heretical exclamation that there was ‘no substitute for victory,’ he was “voicing a view of the nature of war that was not only a commonplace among Americans since the Civil War and the Indian wars but that could readily seem a reasonable extension of the American military's own now customary strategy of annihilation.” Weigley provides MacArthur as an example to how military heretics confront the military institution, and like MacArthur, many are cast into exile.

There is another critical Greek term that Foucault introduced in his lectures; the notion of ‘*athurostomia*.’ This word translates from Greek to the expression ‘one who has a mouth without a door.’³² The *athurostomia* line of questioning stands in polar opposition to *parrhesia* and denotes the tension between asking descriptive questions (What is?) and explanatory questions (Why is? How is?). Foucault provided the Greek account of an encounter between the Cynic philosopher Diogenes and a crowd at an athletic contest. This example illustrates how *parrhesia* contrasts with *athurostomia* in a manner that explains the concept of problematization.

Once, during the athletic contests and horse-races of the Isthmian festival, Diogenes—who was bothering everyone with his frank remarks— took a crown of pine and put it on his head as if he had been victorious in an athletic competition. And the magistrates were very happy about this gesture because they thought it was, at last, a good occasion to punish him, to exclude him, to get rid of him. But he explained that he placed a crown upon his head because he had won a much more difficult victory against poverty, exile, desire, and his own vices than athletes who were victorious in wrestling, running, and hurling a discus. And later during the games, he saw two horses fighting and kicking each other until one of them ran off. So Diogenes went up and put a crown on the head of the horse who stood its ground.³³

In this example, Diogenes played the role of the heretic and questioned the meaning behind Greek society’s value of competition as well as their symbolism in awards such as crowns. Diogenes did not explore this through *athurostomia* or endless descriptive questioning. That line of discourse would have centered on who won what matches, how far were discuses thrown, and what the rules were for winning these competitions.³⁴ Similar to Greek *athurostomia*, Nassim Taleb explores the accumulation of descriptive knowledge in *The Black Swan* with his term, ‘naïve empiricism.’ Taleb explains that a series of corroborative facts “is not necessarily evidence...sometimes a lot of data can be meaningless; at other times one single piece of information can be meaningful.”³⁵ A current example of military *athurostomia* occurs with popular military graphic depictions commonly known as ‘mind maps.’

‘Mind maps’ have recently gained notoriety through association with the Afghanistan ‘mind map’ depicted below. This graphic made international news and demonstrates how description quickly descends into pedantic gibberish devoid of explanation. Upon viewing the slide, General Stanley McChrystal declared, “When we understand that slide, we’ll have won the

³² Foucault, 23.

³³ Foucault, 46.

³⁴ Glenn K. Otis, *The Ground Commander’s View- I; On Operational Art* (Washington: Center of Military History, 1994) 39-41. General Otis (USA, retired) discusses his experience as an Army Group Commander; he takes a conventional position on operational art that reflects the ‘tacticization’ that military institutions perform at the operational level of war. “In getting to the practical aspects I’ll focus at the operational level. The old formula of METT-T, *mission, enemy, terrain, troops available, and time*, is a good way of thinking it through...understanding enemy doctrine is critical to knowing the enemy...to determine what is probable you apply enemy doctrine, and if you know enough about the enemy’s proclivities for doing different things you can narrow those possibilities into likely probabilities.”

³⁵ Nassim Taleb, *The Black Swan* (New York: Random House, 2007) 56-57; Valerie Ahl and T.F.H. Allen, *Hierarchy Theory: A Vision, Vocabulary, and Epistemology* (New York: Columbia University Press, 1996) 190. Ahl and Allen state that complex systems require two levels of explanation for both science and history. “There is structure, and how it behaves. Structural behavior requires an account of lower-level mechanism and upper-level purpose. Lower-level dynamics drive structural behavior...*How* the muscle contracts can be found at the lower level, but the reason *why* it contracts can be found only in the animal’s goals;” Jeff Conklin, *Wicked Problems and Social Complexity* (CogNexus Institute, 2008). <http://cognexus.org/wp/wickedproblems.pdf> Last accessed 05 January 2011) 10. “Pure study amounts to procrastination, because little can be learned about a wicked problem by objective data gathering and analysis. Wicked problems demand an opportunity-driven approach.”

completely different line of questioning that centered on explanation. Why did Greek society award a crown to a victorious athlete for exhibiting superior physical strength? Why did Greek society *not* award the same crown to a beast that performed the same feat? If winning the Isthmian games represented a moral victory that only a human was capable of, then why didn't society also crown those citizens that accomplished significant moral victories that, in comparison, made discus throwing seem shallow? This line of questioning challenges the very structure of the system itself, and by exploring these tensions, achieved a state of 'problematization' that descriptive (*athurostomia*) questioning could not.⁴¹ This illustrates the primacy of meaningful explanation over pedantic description.

Within the military science discipline, there is a collective understanding of 'tactical problems' that is universally indoctrinated at the start of military careers in basic training environments and reinforced throughout one's service. Most military professionals spend the vast majority of their cumulative planning experiences conducting *detailed planning* at the tactical level.⁴² The Military Decision Making Process, the Joint Operations Planning Process, and the universal five-paragraph operations order all focus organizations towards a linear 'ends, ways, and means' structuring where they solve the identified problem through a series of actions resulting in the desired end-state.

Detailed planning uses a teleological approach where the entire process is purpose driven; the 'ends' is determined first and then directed by action (ways) with means.⁴³ Systems Theorist Gerald Weinberg uses the term *heuristic device* as another way to describe mechanical and purpose-driven methodology based upon prior success. He observes that the longer an institution uses a heuristic device and finds success, the less that institution notices that the idea or principle is still just a device.⁴⁴

Adaptive Campaigning (Edinburgh: Australian Department of Defence, Defence Science and Technology Organization, 2007)

13. "Investing too heavily in analytic justification for action can be counterproductive because it encumbers and slows adaptation;" Alex Ryan, *The Foundation For An Adaptive Approach*; *Australian Army Journal For the Profession of Arms, Volume VI, Number 3* (Duntroon: Land Warfare Studies Centre, 2009) 71. Ryan explains how individual disciplines focus on reductionism, they are inferior to comprehensive system understanding for purposes of military action.

⁴¹ Marie Gallais, Remi Fabbri, Christophe Schmitt, *Problematization and Translation of the Vision: Toward New Entrepreneur's Competences* (Colloque: En route vers Lisbonne, 4 et 5 decembre 2008,

[http://www.tudor.lu/cms/lu2020/publishing.nsf/0/FDECF548D12BC30BC12575140048AB73/\\$file/16h15_GALLAIS_FABBRI_SCHMITT.pdf](http://www.tudor.lu/cms/lu2020/publishing.nsf/0/FDECF548D12BC30BC12575140048AB73/$file/16h15_GALLAIS_FABBRI_SCHMITT.pdf) last accessed: 17 December 2010), 8. Gallais, Fabbri, and Schmitt's entrepreneur model, while oriented towards business, supports the argument that description does not necessarily lead to explanation. "Indeed, it's not about developing significant knowledge, i.e. on the substance and generating tools suitable to specific situations, but to develop knowledge about process;" Julien, Marchesnay, *Des procedures aux processus strategiques dans la PME* (Piccola impresa 1, 1992) 13-41.

⁴² Michael Krause, Cody Phillips, *Historical Perspectives of the Operational Art* (Center of Military History, United States Army, 2007) 440. "Most senior American leaders of Desert Storm had little exposure to the operational art in the Army educational system."

⁴³ James J. Schneider, *Theoretical Implications of Operational Art; On Operational Art* (Washington: Center of Military History, 1994) 25-29. Schneider takes a teleological and techno-centric view of Operational Art in his conclusion. "The future of operational art depends on today's officer corps understanding the historical and theoretical basis of the concept. Only by knowing what has gone before can it hope to build a doctrine for the future which takes full advantage of the fruits of technology." John L. Romjue, *American Army Doctrine for the Post-Cold War* (Fort Monroe: Military History Office, United States Army Training and Doctrine Command, 1997) 48-49. TRADOC's précis, titled 'The Evolution of Doctrine for the Strategic Army of the 1990s and Beyond,' was directed by General Frederick M. Franks, Jr. and when disseminated to the military community received a strong reaction. "The strong reaction to the précis was *also a reaction to the mechanistic, operations-by-stages concept* of the AirLand Operations pamphlet, with its emphasis on the operational continuum of military actions (emphasis added);" Ian Stewart, *Nature's Numbers* (BasicBooks, 1995) 28. "Goal-oriented research can deliver only predictable results."

⁴⁴ Gerald M. Weinberg, *An Introduction to General Systems Thinking* (New York: John Wiley and Sons, 1975) 55.

Nassim Taleb offers a more provocative metaphor for the same concept in *The Black Swan* using the daily life of an American farm-raised turkey. “Consider a turkey that is fed every day. Every single feeding will firm up the bird’s belief that it is the general rule of life to be fed every day by friendly members of the human race...on the afternoon of the Wednesday before Thanksgiving, something *unexpected* will happen to the turkey. It will incur a revision of belief.”⁴⁵ Like a turkey, military institutions cannot fall victim to *heuristic devices* and the conceptual dangers of tacticizing operational-level design. Critical thinking and design theory relies on an ontological instead of a teleological approach to problem solving to avoid becoming dinner, metaphorically.

An ontological approach to problem solving reflects ‘problematization’ and requires abandonment of FM 5-0’s tactical vocabulary. Design cannot use dual-use terminology that already functions in detailed planning.⁴⁶ The second article of ‘To Design or Not to Design’ addresses how problematizing transforms the system to a desired state, however unlike FM 5-0, design cannot apply the term ‘end-state’ with the same level of specificity implied. Like ‘problem,’ the term ‘end state’ is another detailed planning example of dual-use vocabulary employed by FM 5-0. The presence of tactical vocabulary in conceptual planning illustrates Army doctrine’s ‘tacticization’ of design.⁴⁷ Meanings contained within certain linguistic expressions do not translate when leaping from the tactical immediate perspective into the operational and cognitive worldview.

FM 5-0 Chapter 3: Design presents several logical fallacies concerning operational art and military design theory. Designers do not solve problems; they problematize and seek understand through explanation over description. “To be a successful generalist, one must study the art of ignoring data and of seeing only the ‘mere outlines’ of things.”⁴⁸ Designers, by problematizing with general explanations over reductionist description, represent antithetical processes of query to traditional information requirements and exhaustive description typical of detailed planning processes. However, complexity and simplicity are not scalable to merely levels of war. Suppose a military commander had to write a narrative explaining core motives of behavior between two feuding tribes within one Iraqi village. Task another to describe financial transactions of insurgent cells throughout the entire nation of Iraq. Volumes of description exist

⁴⁵ Nassim Taleb, *The Black Swan* (New York: Random House, 2007) 40.

⁴⁶ Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory* (New York: Frank Cass Publishers, 2004) 2. “The methodological difficulties mentioned above are compounded by the lack of precise terminology and definitions for the specific laws and phenomena within the operational level of war;” Chris Smith, *Solving Twenty-First Century Problems with Cold War Metaphors; Australian Army Journal For the Profession of Arms, Volume VI, Number 3* (Duntroon: Land Warfare Studies Centre, 2009) 103. Smith argues that Australian design doctrine must “reconcile two different logics based in two different approaches to warfare” when describing the divide between conceptual and detailed planning in the Australian Army.

⁴⁷ Shimon Naveh, Jim Schneider, Timothy Challans, *The Structure of Operational Revolution; A Prolegomena* (Booz, Allen, Hamilton, 2009) 7. Naveh, Schneider, and Challans use this effective term ‘tacticization’ that describes how military institutions generate tactical bias which guides military professionals towards taking a tactical perspective at operational and even strategic concepts; Crosbie Saint, *The Ground Commander’s View- II; On Operational Art* (Washington: Center of Military History, 1994) 47-49. General Saint (USA, retired) theorizes that at the tactical, operational, and strategic levels of war, there are “fighters, integrators, and shapers...these are not scientific terms, but they carry special meanings...sometimes it is difficult to stop being a fighter and stick to being an integrator or shaper. I think army group commanders are sometimes frustrated squad leaders...Commanders always seem to revert to what they know how to do well; they just cannot keep their hands off it. Senior-level commanders must develop the mental discipline to stay away from the temptation to interfere with the lower-level fighters.” General Saint essentially describes ‘tacticization’ and the military institutional bias that drives it.

⁴⁸ Gerald M. Weinberg, *An Introduction to General Systems Thinking* (New York: John Wiley and Sons, 1975) 37; Trent Scott, *Adapt or Die; Australian Army Journal For the Profession of Arms, Volume VI, Number 3* (Duntroon: Land Warfare Studies Centre, 2009) 119. “Typically, we ignore the deeper, more fundamental questions associated with the structure of the system or systems with which we interact.”

on every recorded enemy financial transaction linked to Iraqi insurgent activities, yet most military professionals would consider between the two the former more ‘complex’ and difficult to perform than the latter.

Problematizing avoids doctrinal codification due to the heretical function inherent in the method of questioning. The term ‘*ill-structured problem*’ or ‘*wicked problem*’ is misleading for the same consideration.⁴⁹ Tactical end-states do not correspond to similar terminology at the holistic level; designers instead use an ontological approach instead of a teleological (purpose driven) method because complex systems continuously learn and adapt. Instead of a finite and fixed ‘end-state,’ designers consider the holistic and complex nature of the system while emphasizing the prominence of learning within design evolution.

The third article of ‘To Design or Not to Design’ deals with ‘holistic vision’ and how it is routinely confused with tactical end-states. However, simply changing vocabulary in design doctrine will not make it any easier for the military audience to understand. For instance, Systems Theorist Gerald Weinberg criticized books for aiding businesspersons with interviewing clients that advise readers to not use “special language, or jargon that clients won’t understand.” Weinberg then explains, “It’s not the language the client *doesn’t* understand that kills you. It’s what the client *does* understand, but in some other way.”⁵⁰ Like entrepreneurs and their clients, military organizations using dual-use language to describe different concepts perpetuates the divide between design methodology and tactical applications through subsequent detailed planning.

Brevity and linguistic ambiguity are just two components of why Army design doctrine risks becoming a discredited jabberwocky of military methodology.⁵¹ Whereas this initial section dealt with why vocabulary must be unique and conceptually tailored to design methodology, subsequent sections of this six article series on Army Design expand on how metacognition, problematization, and non-linear approaches can potentially transform the observed system towards the desired state.

⁴⁹ T.C. Greenwood and T.X. Hammes, *War Planning for Wicked Problems; Where Joint Doctrine Fails* (Armed Forces Journal: <http://www.armedforcesjournal.com/2009/12/4252237/> last accessed: 03 January 2011). Greenwood and Hammes explore the term *wicked problem* and how Joint Doctrine, specifically *operational design* is problematic with complex systems; Jeff Conklin, *Wicked Problems and Social Complexity* (CogNexus Institute, 2008. <http://cognexus.org/wpf/wickedproblems.pdf> Last accessed 05 January 2011). Conklin explains and discusses the term ‘wicked problem’ throughout this paper.

⁵⁰ Gerald M. Weinberg, *Rethinking Systems Analysis and Design* (Boston: Little, Brown and Company, 1982) 67-68; Jeff Conklin, *Wicked Problems and Social Complexity* (CogNexus Institute, 2008. <http://cognexus.org/wpf/wickedproblems.pdf> Last accessed 05 January 2011) 19. Conklin uses the term ‘coherence’ to explain how to organize effective collaboration, shared understanding, and the ability to learn how to adapt to ‘wicked problems.’ He essentially supports this paper’s emphasis on unique vocabulary “Coherence means that stakeholders have shared meaning for key terms and concepts;” Mick Ryan, *Measuring Success and Failure in an ‘Adaptive’ Army; Australian Army Journal For the Profession of Arms, Volume VI, Number 3* (Duntroon: Land Warfare Studies Centre, 2009) 29. Ryan argues that design concepts “should be described in simple, accessible language without resort to an overly academic and complicated lexicon;” Trent Scott, *Adapt or Die; Australian Army Journal For the Profession of Arms, Volume VI, Number 3* (Duntroon: Land Warfare Studies Centre, 2009) 126. Scott identifies the possibility that the Australian military institution, in attempting to implement design into organization-wide doctrine, may overreact and ‘dumb down’ design “to the extent that it becomes a new set of buzz words without a solid educational foundation.” The U.S. Army faces a similar challenge; that it figured fifteen pages of design doctrine could prevent such conceptual dilution seems a bit naïve.

⁵¹ Australian Head Modernisation and Strategic Planning- Army, *Australian Army’s Future Land Operating Concept* (Australian Army Headquarters, Canberra, September 2009) glossary. Australian military doctrine published in 2009 deserves additional praise in that for their conceptual planning product, they placed their glossary in the front of their doctrine after the foreword and executive summary. Such prominent positioning of conceptual terminology at the front of the doctrine indicates that the Australian military accepts the importance of cohesive understanding through unique and clear vocabulary and terminology.

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