Theory of Knowledge, and War

First Steps Toward A Unified Theory

by

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For every pronouncement on why battles and wars were won or lost, or how they may be fought and won in the future, it is the privilege of the skeptic to ask, "How do we know?" For every comparison between, say, Jomini and Mahan, or Clausewitz and Sun Tzu, that results in selection of one approach over another, the skeptic may rightfully ask, "Why?" This is not playing Devil's Advocate, but an attempt to establish knowledge qua knowledge as it relates to war and warfare; i.e., to understand what we know versus what we think we know.

What understanding we have of military affairs is the legacy of many great minds, many great warriors. They offer us histories and analyses of wars and battles too numerous to count. The history of war is rife with examples of leaders who did not learn from it, and leaders who defied it, but in this age that history has grown so long that few of us have read more than a speck of it. Our knowledge of war is fragmented.

Because of the exponential growth of general as well as martial knowledge, our studies are precisely focused. We develop specialists in the art of war--tacticians and logisticians, operators and support personnel--and our approach in toto becomes a combination of separate specialties. Our specialties, though necessary, separate us one from another. What we lack is common ground, a common thread between specialties, a theory compatible with our different fields.

THE POSSIBILITY OF A UNIFIED THEORY

A unified theory, by definition, takes elements of existing theories and ties them together to produce a complete picture. The epitome is the unified theory of physics that will tie together gravitation and electromagnetism and explain the formation and behavior of everything from quarks to quasars. Is a unified theory of war possible?

War, we recognize, is not physics--but as physicists collect observations about the mechanics of the world, so too we collect observations about the mechanics of war. And while war, being the clash of human-led forces, does not lend itself to mathematical certainty or even precision in the same way science does, it would be remarkable if the range of military theory, experience, and wisdom could be distilled into a single package.

So a unified theory of war may be possible, even if implausible. Combining existing theories into new entities may improve our ability to plan and execute, as well as predict the outcome of, campaigns and battles. And even if we do not reach that single overarching theory, the mental exercise may still benefit those of us whose natural aptitude for war will never measure up to history's great commanders. This exercise, even if it ultimately fails, may give us at least a glimmer of that quality known as coup d'oeil.

This "stroke of the eye," the ability of a commander to see through the trivial to the critical elements of a battle, was intimated by Japanese warrior Miyamoto Musashi when he wrote, "The principle of strategy is having one thing, to know ten thousand things."[1] Though Musashi did not know the term coup d'oeil, Carl von Clausewitz did, and appreciated the advantage it conferred on the warrior. He wrote: "If the mind is to emerge unscathed from this relentless struggle with the unforeseen, two qualities are indispensable: first, an intellect that, even in the darkest hour, retains some glimmerings of the inner light which leads to truth; and second, the courage to follow this faint light wherever it may lead. The first of these qualities is described by the French term, coup d'oeil; the second is determination."[2]

Jomini, in a rare instance of agreement with Clausewitz, also noted the importance of coup d'oeil. "In this important crisis of battles, theory becomes an uncertain guide; for it is then unequal to the emergency, and can never compare in value with a natural talent for war, nor be a sufficient substitute for that intuitive coup d'oeil imparted by experience in battles to a general of tried bravery and coolness."[3]

This ability to cut through the mass of incoming impulses is necessary to more than warfare: it is necessary to thought. What military thinkers know as coup d'oeil was discussed in more general terms by US philosopher C.I. Lewis: "Confronting any given experience, the first act of intelligent cognition is to discard all but a few items of what is presented as excess mental baggage irrelevant from the point of view of our predictive purpose."[4]

Coup d'oeil, then, is a necessary element to translating theory into reality. We plan and train based on the known, but war is full of unknowns that make themselves evident at the most inopportune times. A firm grasp on theory allows us to evaluate and act on the infinite inputs war presents us.

It may be argued that this exercise in theorizing is impractical or too intellectual. Perhaps so. Our intent remains otherwise, however, since "the ruling interest in knowledge is the practical interest of action."[5] We study and theorize in order to act, and in order that our actions will be effective.

THE NECESSITY OF THEORY TO KNOWLEDGE

Thorough understanding of how knowledge and theory relate to one another, as well as to war, is important to the search for an over-arching theory of war. A good first step toward that understanding is to describe what we mean by "theory." Once we have a common understanding, we can go on to consider whether a common thread may be drawn between popular martial theories.

Theory is our attempt to explain the causation of past events and predict the probable outcome of future events. This epistemology is presented in C.I. Lewis's Mind and the World Order, in which Lewis writes, "... it is impossible to escape the fact that knowledge has, in some fashion and to some degree, the significance of prediction."[6] By applying theory to warfare, we explain the results of past conflicts in ways that, hopefully, predict the outcomes of those yet to be fought.

Theory is not only useful for explaining the past and predicting the future: it is necessary to it. Only by applying a theory can we make the past more than a collection of facts, can we answer "Why did this happen?" instead of "What happened?" Indeed, development of theories (or concepts, to use Lewis' preferred term) is necessary to having any knowledge at all:

> In experience, mind is confronted with the chaos of the given. In the interest of adaptation and control, it seeks to discover within or impose upon this chaos some kind of stable order, through which distinguishable items may become the signs of future possibilities. Those patterns of distinction and relationship which we thus seek to establish are our concepts. These must be determined in advance of the particular experience to which they apply in order that what is given may have meaning. Until the criteria of our interpretation have been fixed, no experience could be the sign of anything or even answer any question. Concepts thus represent what mind brings to experience.[7]

"The given" are the facts with which we come in contact: they are either historical facts, or facts about our current situation. Without interpretation--conceptualization or theorizing--facts have no predictive power.

The fact, taken alone, that Iraq had in 1990 the world's fourth largest army gave no insight into the eventual overwhelming victory of the coalition forces. The fact--again, taken alone--that you are reading this article gives neither of us any insight into what you will do when you are finished. Only by interpretation can we satisfactorily take facts into account; only application of theory allows us to predict the future with any probability. "The theory of knowledge teaches us that a statement, if it conveys knowledge, predicts future outcome, with risk of being wrong, and that it fits without failure observations of the past."[8]

If we came to each new experience with no supporting theory, we would be unable to make sense of the new experience; it would be as if we had no memory. While Clausewitz warns that "as soon as preparations for a war begin, the world of reality takes over from the world of abstract thought,"[9] we still need theory in order to interpret the world of reality. The explanatory theory gives us insight into the past, and that insight aids our understanding of the present and gives us a basis upon which to predict the future: "... there is no knowledge of external reality without the anticipation of future experience. Even that knowledge implied by naming, or the apprehension of anything presented, is implicitly predictive, because what the concept denotes has always some temporal spread and must be identified by some orderly sequence in experience."[10] The explanatory theory thus lays the conceptual groundwork for the predictive theory.

Though important, the explanatory theory does not generate new knowledge; it only arranges existing knowledge. The predictive theory is necessary to generating new knowledge, to "[shed] light on problems and thus ... provide guidance for those who have the responsibility for solving them."[11] We bring to each new experience a theory of how we expect it to turn out, without which we would almost certainly be powerless to act, and would instead be acted upon.[12]

We develop our initial theories in rudimentary form, then refine them by comparison with actual experience either direct or vicarious. And as facts alone have no predictive power, so examples of experience by themselves do not comprise a theory; experiences, like facts, must be interpreted.[13] Examples of battles won or lost are useless without theories to explain the causes, and every battle plan or Air Tasking Order, though directive in nature, is implicitly a predictive theory of how events are likely to develop.

THEORY AND EXPERIENCE

When we test our theories against the evidence of experience, we sometimes find the need to change them. If the theory fails outright, it must be discarded in favor of a new theory. Examples of this process abound in the history of science, e.g., the abandonment of Ptolemaic cosmology in favor of Copernican. Again Lewis uses the word "concept" when he states, "When particular concepts fail, we merely abandon them--through analysis or organization or abstraction, and so on--in favor of corrected ones, which take cognizance of, and include the ground of, our previous failure."[14]

Sometimes our theories are incomplete, rather than fatally flawed, and fail only in a few cases. These theories can be refined rather than abandoned, as Albert Einstein refined and expanded his original Special Theory into his General Theory of Relativity. This comparison of theory to experience, with evaluation and possible alteration of the theory, is a continuous process, because "what experience establishes, it may destroy; its evidence is never complete."[15]

Critics may argue that the scientific method and this emphasis on generating knowledge through theory is not applicable to human enterprises, let alone to the chaos of war. The source of contention may be discomfort with a new way of describing the way we think about the world. Every action we take is based on some prediction we have made about the outcomes of that action; here we call that process theorizing. Note, though, that prediction does not mean absolute foreknowledge: the play of probabilities means knowledge may be erroneous and predictions incorrect.

Jomini, though he did not have this epistemology, argued against one of its basic tenets. He wrote, "... a single exception cannot disprove a rule based upon the experience of ages and upon natural principles."[16] Theory of knowledge teaches otherwise. Jomini failed to consider that exceptions require explanation, and explanations are innately modifications to the theory itself.

In another passage Jomini asked, "When the application of a rule and the consequent maneuver have procured victory a hundred times for skillful generals, and always have in their favor the great probability of leading to success, shall their occasional failure be a sufficient reason for entirely denying their value ...? Shall a theory be pronounced absurd because it has only three-fourths of the whole number of chances of success in its favor?"[17] Explaining "occasional failures" by modifying a theory is not equivalent to "entirely denying" the value of the theory; indeed, it would seem to enhance its value. And perhaps pronouncing a theory "absurd" is not in order when its failures reduce its probability of success, but neither is codifying and adhering to it as if it guaranteed success; when applying his maxims, some of Jomini's successors apparently missed his reference to the probability, rather than the certainty, of success.

PERIL AND PROMISE

Knowledge of any subject grows as we attempt new theoretical formulations and test them against recorded and current experience. To develop a single unified theory of warfare, we are required to attempt combinations of existing theories. We must, however, accept the possible outcomes of the attempt: we may fail miserably, we may succeed brilliantly, or, most likely, we may succeed only in part. As admitted above, the overall effort may ultimately be futile. Attempts to combine vastly disparate theories--Clausewitz with Jomini, perhaps--would probably meet with the same dismal results as attempts to combine the philosophies of Aristotle and Plato.[18]

But the effort itself has value, if for no other reason than it forces us to think about familiar subjects in new and different ways. Understanding the nature of theory was the first step, it is now time for the next: illustrating the process of combining theories with two simple and ubiquitous examples--the levels and media of war.

COMBINING THEORIES: LEVELS AND MEDIA OF WAR

When we divide the field and flow of battle into different levels--tactical, operational, strategic-- we are applying concepts to aid our understanding of how battles are to be fought.[19] The demarcations between the levels are neither smooth nor continuous, because they are artificial constructs rather than absolutes. The definitions and descriptions of the levels have changed over time; like most theories, this one has evolved to fit improved understanding of the reality it describes.

While the levels of war are somewhat ethereal, the media of war are more absolute. Land, water, and air all lend to battle their own unique characteristics due to their unique natures. Our strict adherence to doctrines applied to each medium, however, is less absolute, especially under AirLand Battle doctrine. Still, the Marines are the only service that has attempted to develop a warfighting pattern that addresses each traditional medium.[20] The new frontier of the fourth medium--the vacuum of space--poses interesting challenges as we come to grips with its promise and its peril.[21]

To the eye considering the broad applicability of theory, in search of a single theoretical construct that spans other theories, it seems curious that the levels and media of war have always been treated separately. We have yet to combine them into any coherent framework to understand their interactions (Figure 1).
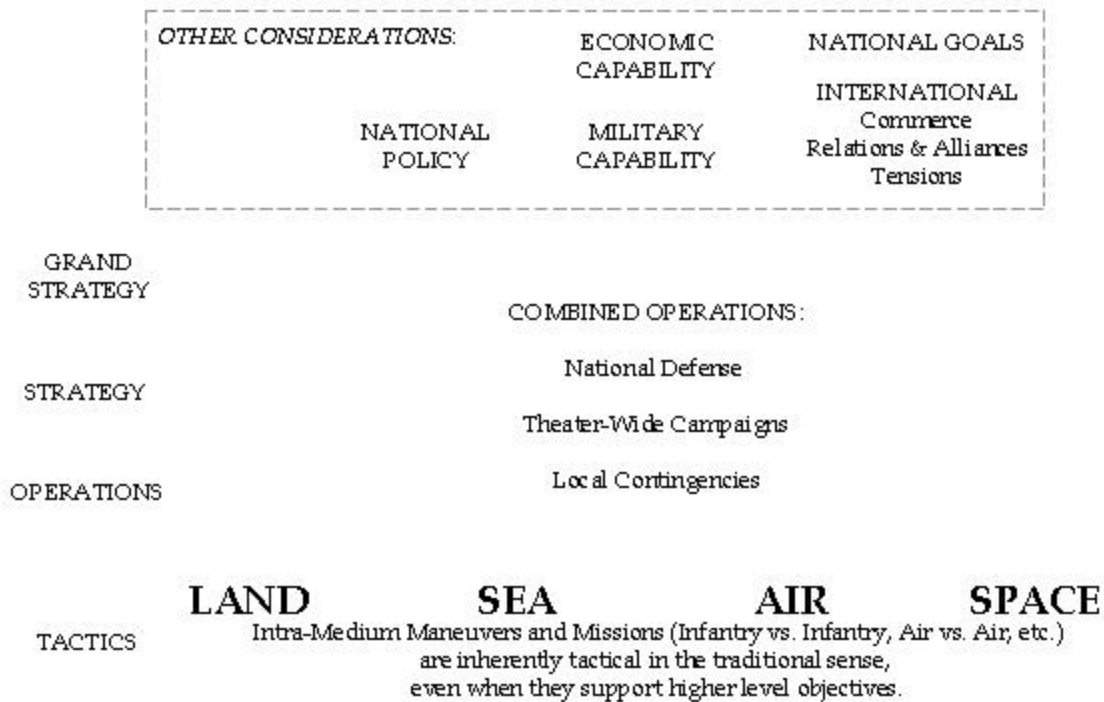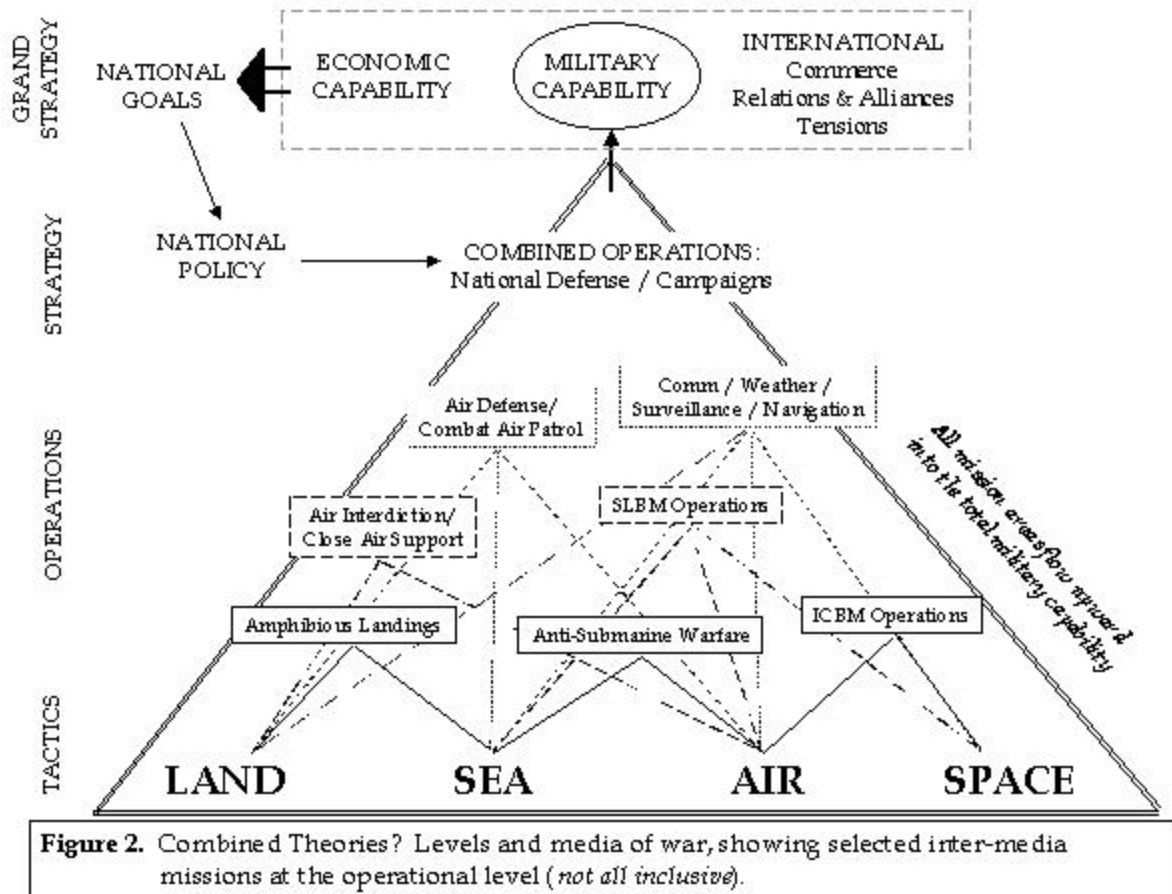
OTHER CONSIDERATIONS: ECONOMIC CAPABILITY NATIONAL GOALS

INTERNATIONAL
Commerce
NATIONAL POLICY   MILITARY CAPABILITY   Relations & Alliances Tensions

GRAND STRATEGY

COMBINED OPERATIONS:

STRATEGY

National Defense

Theater-Wide Campaigns

OPERATIONS

Local Contingencies

LAND   SEA   AIR   SPACE

TACTICS   Intra-Medium Maneuvers and Missions (Infantry vs. Infantry, Air vs. Air, etc.)
are inherently tactical in the traditional sense,
even when they support higher level objectives.

Figure 1. Combined Theories? Examining the levels and media of war, looking for relationships.

At the tactical level, the four media remain separate: land forces primarily contend with enemy land forces, air forces primarily fly and fight against other air forces, et cetera (space being the current exception).[22] Joint or cooperative missions, however--those that support other services, e.g., air attacks on advancing troops, naval missiles directed at ground targets, special forces troops taking out airfields, space-based sensors detecting tactical missile launches--may be considered to entail the higher levels of operations and strategy (Figure 2). Combined operations on a theater-wide scale certainly require that the media be considered together.

Figure 2. Combined Theories? Levels and media of war, showing selected inter-media missions at the operational level (*not all inclusive*).

Considering this generates a new way of thinking about strategic issues. Looking at strategy as it relates to the media of war is different from traditional outlooks, such as "the use of engagements for the object of war"[23] or operations against the enemy's ability to prosecute the war.[24] Synthesis of the levels and media of war results in the strategic level being reserved for combined operations necessary to prosecute a comprehensive campaign (on the order of the Allied campaign against Nazi Germany, or, to a lesser extent, Operation Desert Storm), as well as the plans and programs to support our complete national defense effort. This removes one by-product of the nuclear age: the linking of strategy to particular enemies or targets.[25]

The operational level, in this construct, is reserved for intra-theater rather than campaign activities.[26] Applying this interpretation strictly, and focusing on how the media of war interact, nuclear weapons then fall into the category of operational, rather than strategic, systems. This conception is not new, though it is not widely explored: "The general concept of the operational level of war does not exclude nuclear weapons, but neither does it explicitly incorporate them."[27]

EVALUATION AND CONTINUED EVOLUTION

Even the casual reader will notice that the combination in Figure 2 does not include the sub-levels of low-intensity conflict or terrorism, nor does it specifically address the latest fads, information warfare and "military operations other than war" (MOOTW). Insurgencies, revolutions, and terrorism primarily operate within the bounds of nations and the medium of

land; e.g., terrorist attacks on surface vessels or aircraft, while well publicized, are nowhere near as frequent as those against ground targets, and most insurgents' capability against naval or air forces is usually confined to sporadic missile attacks rather than fully fielded forces.[28] MOOTW, on the other hand, may include many of the traditional intra- and inter-media mission areas. The big exception is information warfare, which is not strictly confined to any medium and which may affect different levels. This is not, then, the unified theory we seek--indeed, topics like these may indicate that the unified theory is forever out of reach because of new developments.

Nevertheless, this concept may have its uses. First, it illustrates linkages between forces that may be good places to apply doctrinal analysis and development; e.g., operational use of ballistic missiles. Second, by showing how combinations of forces become more pronounced as we progress upward from the tactical level, it gives new meaning to the idea of a "bottom-up review" and the development of the nation's grand strategy. That raises a disturbing implication, one that cannot be explored here because of lack of space: it calls into question our separation of military services, and questions the wisdom of interservice rivalries.[29]

Finally, this combination is more complex than treating the levels and media separately, and we often prefer simplicity, even when it does not fully explain. For the purpose of building a unified theory, this raises another question: whether we can combine more numerous or complex theories to produce anything other than a confused jumble of conflicting ideas. This challenge is the aim of further study and synthesis.

CONCLUSION: THEORY, LIFE, AND WAR

Even if these first steps toward unifying the various theories of war have been halting, they may not have been without merit. We encounter and use theory in every facet of our lives, but often discard the theoretical in favor of the practical without recognizing the utility and necessity of building and testing new concepts. So natural is theorizing to our knowledge of the world that we rarely recognize it; even so, theorizing drives all our knowledge.

Thus, the framework theory provides is indispensable to understanding the reality of war. "The difference between the theory and the reality of war, just as the difference between the theory and the reality of anything, is like that between a skeleton and the living man with all his flesh and blood. Compared with a man, the skeleton appears strange; but we could not understand how his limbs cohere and function if we did not penetrate his skin to the skeleton and its joints."[30] With further analysis and synthesis, we may build a more integrated theoretical framework that gives us a more complete understanding.

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1. Miyamoto Musashi, Go Rin No Sho (A Book of Five Rings), Translated by Victor Harris (Woodstock, NY: Overlook Press, 1974), p. 44.

2. Carl von Clausewitz, On War, Edited and Translated by Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), p. 102 (emphasis in original).

Clausewitz continued, "Coup d'oeil therefore refers not alone to the physical but, more commonly, to the inward eye.... the concept merely refers to the quick recognition of a truth that the mind would ordinarily miss or would perceive only after long study and reflection."

3. Antoine Henri Jomini, The Art of War, Translated by G.H. Mendell and W.P. Craighill (Westport, CT: Greenwood Press, Publishers, undated), p. 185. Originally published in 1862 by J.B. Lippincott & Co., Philadelphia, this volume contains the Summary of the Art of War as well as additional works.

For an interesting, if somewhat disjointed, discussion of the need for developing coup d'oeil in Air Force officers, see Charles T. Barco, "Valuing Leadership in an Era of Prophets, Politicians, and Pugilists," Airpower Journal, Volume VIII, Number 3, Fall 1994, especially pp. 5-7 and 11-13.

4. Clarence Irving Lewis, Mind and the World Order: Outline of a Theory of Knowledge (New York: Dover Publications, Inc., 1956), p. 390.

5. Lewis, Mind and the World Order, p. 85.

6. Lewis, Mind and the World Order, p. 44 (emphasis in original).

See also W. Edwards Deming, The New Economics for Industry, Government, Education (Cambridge, Massachusetts: MIT Center for Advanced Engineering Study, 1993), pp. 104-10.

7. Lewis, Mind and the World Order, p. 230.

8. Deming, The New Economics, p. 105.

Also: "In general there must be the possibility of arguing from past to future; not with certainty, but with probability." Lewis, Mind and the World Order, p. 346.

9. Clausewitz, On War, p. 79.

10. Lewis, Mind and the World Order, p. 195.

11. Henry E. Eccles, Military Concepts and Philosophy (New Brunswick, NJ: Rutgers University Press, 1965), p. 26. Rear Admiral Eccles also wrote on p. vi: "... while theory does not solve problems nor make decisions, it clarifies, explains, illuminates; and in important matters it may contribute greatly to fundamental intellectual harmony while still allowing room for great diversity of ideas and action."

In the same vein, Jomini wrote, "It is true that theories cannot teach men with mathematical precision what they should do in every possible case; but it is also certain that they will always point out the errors which should be avoided; and

this is a highly-important consideration, for these rules thus become, in the hands of skillful generals commanding brave troops, means of almost certain success." The Art of War, p. 295.

12. "What lies on the surface can be taken as ultimate only so long as there is no problem to be solved, or else no solution to be hoped for. Without analysis, there can be no advance of understanding." Lewis, Mind and the World Order, p. 54 (emphasis added).

13. Deming, The New Economics, p. 107.

14. Lewis, Mind and the World Order, p. 385.

15. Lewis, Mind and the World Order, p. 195.

16. Jomini, The Art of War, p. 112.

17. Jomini, The Art of War, pp. 293-4.

18. "... numerous attempts were made to produce a harmony or a synthesis of their systems .... The characteristic elements of the two may be juxtaposed; they cannot be fused." David Knowles, The Evolution of Medieval Thought, Second Edition (London: Longman Group, 1988), p. 4.

Indeed, "the attempt to reconcile opposites may lead to madness as well as to philosophy." Will and Ariel Durant, The Story of Civilization, Vol. 10: Rousseau and Revolution (New York: MJF Books, 1967), p. 486.

19. See "Three Levels of War," in Basic Aerospace Doctrine of the United States Air Force (Air Force Manual 1-1, Volume II), March 1992, pp. 43-9.

20. Billy M. Knowles, "Hold, Withdraw, or Advance: The Role of Tactical Airlift in the Equation," Airpower Journal, Volume III, Number 2, Spring 1989, p. 47 (emphasis in original).

21. For a thorough discussion of this, see Michael R. Mantz, The New Sword: A Theory of Space Combat Power (Maxwell AFB, AL: Air University Press, 1995).

22. Land warfare has been touted as an exception by its dependence on air and sea for transport and logistical support. "Wars isolated to space, the sea, or even the air, are at least conceivable. The isolation of warfare to the land is now credible only at the most primitive levels in situations in which both sides have no other resources." Carl H. Builder, The Masks of War: American Military Styles in Strategy and Analysis (Baltimore, MD: Johns Hopkins University Press, 1989), p. 90. Builder's arguments, however, seem to indicate a higher level of war than the purely tactical.

For reference to space-to-space combat, see Mantz, The New Sword, especially pp. 31-35.

23. Clausewitz, On War, p. 128.

    See also Peter Paret, "Clausewitz," in Peter Paret, Editor, Makers of Modern Strategy: from Machiavelli to the Nuclear Age (Princeton: Princeton University Press, 1986), p. 190.

24. Phillip S. Meilinger, Ten Propositions Regarding Air Power (Air Force History and Museums Program, 1995), p. 8.

25. It also removes the linking of levels of war with particular weapons. See Eccles, Military Concepts and Philosophy, p. 18.

26. This is vastly different from the accepted division of responsibilities. See "Three Levels of War," in AFM 1-1, Volume II, p. 43.

27. Steven Metz, "The Operational Level of Nuclear War Fighting: Missing or Unnecessary?" Airpower Journal, Volume VII, Number 1, Spring 1993, p. 14.

28. "Even low-intensity conflicts ... are likely to involve sea, air, and without speculating too far, even space operations." Builder, The Masks of War, p. 90.

29. See Builder, The Masks of War, especially p. 91.

30. Eccles, Military Concepts and Philosophy, p. 27.