ABSTRACT

Title: METAPHORS WE KILL BY: RHETORIC AND CONCEPTUAL STRUCTURE IN U.S. ARMY DOCTRINE

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Analogical thought, thinking of one domain of experience in terms of another, helps us understand new ideas in relation to preexisting knowledge. This dissertation examines five parallel examples of analogical thought in United States Army doctrine in which various target domains are conceptualized in terms of traditional warfare.

The first chapter examines the way in which "information" is explained in terms of a construct called "the cognitive hierarchy," which is a blend of folk models of thought and the military command structure. Here, "information" is conceived of as a raw material to be refined to a useable state as it is processed by successively higher levels in the hierarchy. The second chapter analyzes the inclusion of "information" into the elements of combat power, a heuristic that staff officers use to plan operations. Unlike the first four elements, firepower, maneuver, leadership, and protection, which have independent but interrelated capabilities, "information" is characterized exclusively in terms of its ability to coordinate the effects of the other four.

The third chapter explores the term “information operations,” a blend of the domains of cognition and communication, and of combat, that “weaponizes” information. Chapter Four analyzes a startling metaphor that represents persuasion as a form of lethal firepower. Finally, the last chapter examines the difficulty of portraying success in peace operations, which comprise both peace enforcement and peacekeeping. Because the event shape of a successful peace operation involves reducing forces, relinquishing power, and withdrawal by the peacekeepers, it conforms to the event shape of a failed attack.

All five chapters share a rich and highly developed source domain, warfare that is used to explain the workings of relatively impoverished target domains, communication and thought. The result is that the target domains are distorted to the point that key elements in them are elided or altered beyond recognition.

This dissertation is unique in that it analyzes not only analogical thought, but also the corporate thought of a large institution that uses it to solve problems in the real world. The resulting actions have far-reaching impacts on both international security and countless lives across the world.

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By

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Dedication

To my husband Joe.

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Introduction

How people solve problems is a key topic in many fields. In the discipline of cognitive psychology, one researcher, Dr. A. S. Luchins, investigated the impact that success in problem solving has on a subject's ability to come up with new approaches. In this experiment, he gave the subjects three empty containers of specified capacities, with the goal of ending up with a given quantity of water. If a subject was given 21 ounce, 127 ounce, and 3 ounce jugs, with the requirement to end up with 100 ounces, he would fill up the largest jug, then fill up and empty the first jug once, and the second jug twice, to end up with the goal quantity. Subjects were given a series of problems, some of which required similar solutions, i.e., using all three jugs, while others required different ones, i.e., using only two jugs. What Luchins found was that if a subject could solve the problems with one type of solution, it became difficult for him to solve later problems with different solutions, even if those later problems were actually easier. The longer a subject had success with a particular type of solution, the harder it was for him to see other possibilities (Barsalou 335-336).

This is the challenge that the United States Army confronts today. It faces a radically different international security environment with a physical infrastructure and conceptual frame forged by decades of the Cold War. After the fall of the Iron Curtain, the American military was deprived of its primary purpose, and cast about

for an enemy that matched its own scale and focus. Missions such as peacekeeping and humanitarian aid were derided as "police actions," and were given the collective name "OOTWA," or Operations Other Than War (Department of the Army 1993 Glossary-6). The acronym itself demonstrates that these activities were considered peripheral to the Army's "true" mission. However, the events of September 11 2001 not only galvanized the nation as a whole, but forcibly thrust these disparaged missions into the Army's center stage.

This dissertation examines a critical aspect of the international security environment that has been termed "information." It involves aspects of human behavior and types of human activity previously ignored or underestimated in the Army culture, namely, thought, communication, and persuasion. An entirely new discipline, "information operations," has been formed around these activities, spawning changes to the fields of warfare, psychological operations, command and control, and OOTWA, now called Stability Operations and Support Operations (SOSO) (Department of the Army 2003a, Glossary-14). The Army has developed additional doctrine and extensively rewritten previous doctrine to explain how to conceive of and carry out these newly significant activities. However, while the disciplines and environment in which they are exercised might be radically different, the approaches to them are not. Upon close examination, one finds that these new texts depend heavily on conceptual structures recruited from the Army's institutional knowledge of warfare. The reliance is so profound that critical aspects of these disciplines are distorted or even lost. As a result, it is difficult to accomplish them

effectively, putting at risk entire operations, as well as the lives of those that carry them out.

The Corpus

The primary material I will be examining is selections from Army doctrine. The purpose of this literature is to lay down principles and techniques that its audience, the soldiers who plan and carry out warfare, can use in executing war and other missions as directed. It is hierarchical, divided roughly by specialty area (infantry, armor, intelligence, logistics) and by echelon (fire team to strategic level). It is also a truly corporate document, in that the field manuals and other documents that comprise it are often authored by multiple individuals. Once written, the manuals must then be disseminated to subject matter experts across the military to ensure that they conform to both the experiences of these other soldiers and any other doctrine they relate to (Department of the Army 2003d, paragraph 3-1). New manuals are relatively rare, being generated only when the need for them is clearly articulated substantiated (Department of the Army 2003d, paragraph, 13-7). Instead, most doctrinal literature is revised and updated on a predetermined schedule or as needed (Department of the Army 2003d, paragraph 13-8). Changing the basic doctrinal principles can be very contentious; the last update of Field Manual 3.0, Operations, the keystone manual of the doctrinal library, took eight rather than the normal five years because its authors had to respond to the dual impact of the end of the Cold War and the emergence of numerous unconventional entities that its demise unleashed (Department of the Army 1993, vi; 2001a, v). Because it both articulates and

disseminates the values, beliefs and assumptions of a large organization that has a major impact on the world we live in, Army doctrine merits close study.

The manuals examined in this dissertation are FM 3.0, Operations, updated in 2001, FM 6.0, Mission Command: Command And Control of Military Forces, initially published in 2003; FM 3-13, Information Operations, initially published in 1996 and updated in 2003; FM 3-05.30, Psychological Operations, updated in 2000; and FM 3.07, Stability Operations and Support Operations, updated in 2003. Of these five manuals, two of them, Information Operations and Mission Command, represent new doctrine published in the last eight years. Operations, while it is a long-time capstone manual, has more than tripled in length from its previous edition. The disciplines of the last two, Psychological Operations and Stability Operations and Support Operations, have gained newfound prominence in recent years. All these documents represent new doctrine, or new approaches to doctrine, and as such represent the Army's responses to the changing national security environment. Collectively they embody the Army's concepts of cognition, communication, persuasion, and cooperative activity, conceptualizations that depend heavily on the deep institutional knowledge of warfare and military structure.

Analogical Thought

The fact that the Army uses established approaches and frames to understand recent challenges is not surprising. Not only has the military extensively developed the art of conventional warfare, it is exceptionally good at it. The initial stages of the war in Iraq and the continuing success in Afghanistan demonstrate that the Army and

other military services have a high level of individual and institutional expertise. One of the principles of warfare that military professionals are taught is to reinforce success; an exploitation, for instance, is a type of offensive operation in which forces are committed into a breach in the enemy's defense, expanding it and taking advantage of the enemy's weakness (Department of the Army 2001, 6-1). On the conceptual level, the Army is relying on the success of its ability to execute conventional warfare to give impetus to its approaches to cognition and communication. However, this type of analogical thought leaves it in the same quandary as the subjects of Dr. Luchins' experiments, trapped by the restraints of its own success.

Analogical thought as defined by Deborah Gentner is "the ability to think about relational patterns" (Gentner, Holyoak, and Kokinov 2). Human beings have the capacity to relate often disparate domains of their experience and knowledge in ways that allow them to understand new experiences or reinterpret previously held beliefs. They are such experts at analogical thought that they rarely notice when they are performing it, making this ability seem insignificant. However, because a phenomenon is inconspicuous does not make it inconsequential. Scholars in cognitive linguistics and other disciplines have propounded theories that describe the origins and workings of analogical thought, known as conceptual metaphor theory and conceptual blending theory.

Conceptual Metaphor and Language

One assumption that many scholars of language have held is that language is only meaningful in terms of truth conditions, that is, that statements only have meaning if they can be proven true or false (Lakoff and Johnson 1987, 167). From this perspective, metaphor, which represents one thing in terms of another, is merely a literary device. An example might be the following lines of Romantic poetry: "But most thro' midnight streets I hear/How the youthful Harlots curse/Blasts the new-born Infant's tear/And blights with plague the Marriage hearse" (Blake 302.13-16). In this passage, the cry of prostitutes is seen as a metaphorical agent that causes marriages to deteriorate. Metaphor, therefore, has been seen as (1) phenomenon of language and (2) an exceptional use of language distinct from normal, truth-conditional uses (Lakoff 1997, 202).

However, theorists like George Lakoff, Mark Johnson, and Mark Turner have disputed this notion of metaphor. Their research demonstrates that metaphor, far from being exceptional, seems to pervade so-called literal or ordinary language. One example cited throughout Metaphors We Live By, is the conceptual metaphor, Argument Is War. Fluent speakers of English often refer to verbal disagreements in terms of physical combat:

> Your claims are indefensible.
>
> He attacked every weak point in my argument.
>
> His criticisms were right on target.
>
> I demolished his argument.
>
> I've never won an argument with him (Lakoff and Johnson 1980, 4).

Other persistent metaphors include Time is Money, in which minutes and hours are portrayed as material assets that can be saved, spent, or wasted, and Theories Are Buildings, in which systems of thought are conceived of as physical structure (Lakoff and Johnson 1980, 8; 46)

Cognitive linguists noted that not only do many people speak of argument as a form of warfare, but conceive of it in those terms as well. As Lakoff and Johnson observe, when people argue, they plan strategies for argument, see the person with whom they argue as opponents, and defend rhetorical positions (1980, 4). And even in carrying out an argument, people structure the performance of a verbal disagreement in terms of a physical battle, attacking, counterattacking, defending, and even declaring one opponent the winner (Lakoff and Johnson 1980, 4). It seems as if the expressions with which we talk about argument are tied to concepts of warfare in a systematic way (Lakoff and Johnson 1980, 7). Because of this systematic correspondence, Lakoff and others set off to uncover the generalizations that govern the phenomenon of metaphor (Lakoff 1993, 202).

The theory of conceptual metaphor holds that metaphor is not a linguistic phenomenon, but a cognitive one in which humans conceive of one experience in terms of another (Lakoff 1993, 206). Structures of relationships from bodies of knowledge people already possess serve as the means by which unfamiliar notions are understood, remembered, and acted upon. These domains of experience, or frames, and the correspondences between them, or mappings, are basic tools of human cognition.

Conceptual Domains

A metaphor like Argument Is War, embodied in the example "We battled it out over the mess in the living room," depends on understanding one domain of experience, argument, in terms of another, warfare, for meaning. The concept of a domain is best explained through the theory of frame semantics put forth by Charles Filmore in his 1982 article. His work proposed that theories of semantics that depended on aggregates of features to define a word seemed inadequate, and that the meaning in words lies in its connections to other concepts; together, these connections form a kind of frame (Filmore 131-132; 119). A semantic frame "provide[s] an overall conceptual structure defining the semantic relationships among whole "fields" of related concepts and words that express them," making a single term the tip of a semantic iceberg (Lakoff and Johnson 2000, 116).

As an example, the term "dog catcher" can be defined using an aggregate of characteristics, explaining the job as that of a civil servant whose primary function is to catch dogs. This definition begins with the core concept of "civil servant" and adds the characteristics of his duties. However, when one examines the role more closely, one sees that the notion of "dog catcher" actually depends on a large and complex body of background information and relationships not captured by the initial definition. The frame of a dogcatcher entails at base a dog, a person, a restraining device, and a way to confine the dog once caught. To be truly comprehendible, however, this basic frame also needs a motivating context, which Filmore defines as "some pattern of practices, or some history of social institutions, against which we find intelligible the creation of a particular category in the history of the language

community" (119). "Dog catching" entails not only the act of capturing a particular species of animal, but common concepts of dogs as domestic animals that are restrained by their owners; the notion that such control helps stem the spread of a deadly infectious disease; and the base assumption that such safety issues are a government responsibility. Within this frame, there are no bat catchers, since bats are not normally domesticated, or caterpillar catchers, since these insects don't pose a threat to humans, or freelance dog catchers, since this aspect of safety is a government responsibility.

The domain of warfare is similarly complex, as this dissertation demonstrates. In the most basic terms, it entails:

Two parties.

The parties are in conflict with one another.

They are fighting on a piece of terrain.

Each party seeks to destroy or defeat the other.

These goals are contrary, in that while it may be true that both could fail, only one could succeed.

Each has a variety of devices (weapons) and methods (tactics, techniques and procedures) that it employs against the other.

Like the notion of "dog catcher," war also entails a great deal of background information to be truly comprehendible. Conventional warfare depends on the existence of a nation-state that provides both the impetus and the material for the conflict, soldiers who are drawn from that country's population base, and an organized military institution that recruits, trains, equips and manages these soldiers.

These factors have an enormous impact on matters that might seem less central to the domain of warfare, such as conducting intelligence analysis.

Traditional intelligence analysis depends primarily on detecting and interpreting activities associated with weapons systems; because only nation-states have the resources to manufacture military hardware on an appreciable level, a piece of equipment like a main battle tank has indicators associated with every stage of its production, deployment, and use. Also, because more powerful weapons systems are more expensive to produce, there are fewer of them, and they are generally assigned to higher echelons. As a result, a primary way of determining a weapon system's importance, and therefore the size of the force it belongs to, is its rarity and size. Because these factors so heavily depend on the materiel and governing infrastructure of a nation state, they may not be directly applicable to other types of missions, such as peacekeeping, information operations, psychological operations, or counterterrorism.

Mappings Between Domains

The term "mapping" refers to "a correspondence between two sets that assigns to each element in the first a counterpart in the second," and is taken from the field of mathematics (Fauconnier 1997, 1). In mapping, thinkers identify correspondences between the source domain, the more familiar experience and the target domain, the domain that the thinker wishes to understand. They use the frame from the source to express the nature of concepts and relationships in the target domain. One type of mapping prompted by the metaphor Argument Is War might be as follows;

Two parties	Two rhetors
The parties are in conflict with one another.	The rhetors disagree with one another.
They are fighting on a piece of ground or terrain.	The rhetors argue over a common issue.
Each party seeks to destroy or defeat the other.	Each seeks to win by proving that his case is stronger than the other's.
These goals are contrary, in that while it may be true that both could fail, only one could succeed.	The rhetors have contrary or contradictory positions.
Each has a variety of devices (weapons) and methods (tactics, techniques and procedures) that it employs against the other.	Each has a variety of rhetorical devices (evidence) and methods (lines of argument) that she employs to prove that her case is stronger and/ or that the case of her opponent is weaker.

Fig 1.1 Mappings Between War and Argument

Conceptual metaphors are very productive; humans can conceive of endless mappings by finding different correspondences between the two frames. The linguistic expressions commonly referred to as metaphors are not themselves the cause of this phenomenon, but its effect, its manifestation in language. Language instead serves as a precipitating cause, prompting thinkers to construct these meanings, and while one can find the motivations behind a given meaning, one can't necessarily predict what that meaning will be. For instance, there are numerous meanings possible in the single linguistic utterance, "Here comes Napoleon," used by a speaker to refer to a colleague who is passing in the hallway. Depending on the mapping the listener creates, he could take the comment to mean that the referenced

person is an autocratic leader, has a complex about his physical stature, or is about to go into the boss' office to embark on yet another self-destructive quarrel.

Blending Theory

Another type of analogical thought is that of conceptual blending. Conceptual blending, or blending, theorizes that creativity is in part explained by the human ability to take knowledge they have about domains of experience, called mental spaces, and combine them to create new relationships between the elements of these spaces (Turner and Fauconnier 2002, 40). The difference between blending and metaphor is that in metaphor, one space provides the elements and the other provides the structure, while blending, structure and elements can come from any input space and combined in a number of ways. According to Turner and Fauconnier, "mental spaces are small conceptual packets constructed as we think and talk for the purpose of local understanding" (2002, 40). The information or ideas in them come from preexisting bodies of knowledge, but they themselves are small instances of creativity, recruiting information to make sense of ideas and situations (Turner and Fauconnier 2002, 40).

Like the domains of metaphor theory, these mental spaces can also depend upon frames, for instance, frames of physical action such as walking along a path. To use Turner and Fauconnier's example, this frame would recruit knowledge one already has about walking along a path to structure a memory of hiking on Mount Rainier (2002, 40). A thinker can recruit the information for many purposes, such as reporting the past ("When we climbed Mount Rainier last year") creating

counterfactual spaces (“If he had climbed Mount Rainer after his trip to Tibet”) or in discussing the beliefs of others (“He thinks you climbed Mount Rainier last year”) (Turner and Fauconnier 2002, 40). Mental spaces are only partial, since not all of the knowledge a person has about an event may be recruited for the local understanding; knowledge about the park regulations may not contribute to the blend being constructed.

Blends have as a minimum four mental spaces: two input spaces, a generic space, and the blended space itself (Turner and Fauconnier 2002, 41). They also have mappings between these spaces that connect elements and relationships to counterparts in other spaces. Source domain spaces, or input spaces, depend upon knowledge the thinker already has (Turner and Fauconnier 2002, 40). The generic space is a mental space that maps out the commonalities between the input spaces (Turner and Fauconnier 2002, 41). Cross-space mappings, like mappings in metaphor, connect counterparts in and between the input spaces that are often mapped into the generic space (Turner and Fauconnier 2002, 41). The term “vital relations” refers to the type of mapping that a thinker makes between elements both within a space called inner space relations and between spaces, or outer space relations(Turner and Fauconnier 2002 101). These relations include identity, cause and effect, part/whole, time, and change (Turner and Fauconnier 2002 101). The blended space, or blend, contains elements and structure from the input spaces, as well as the structure in the generic space, but has more specific detail, and often has its own emergent structure (Turner and Fauconnier 2002, 47). As in metaphor theory, not all possible elements

and structure are projected; thinkers recruit based on the meaning they wish to express.

In illustrations of blends, I will follow the standard set by Turner and Fauconnier in The Way We Think. Circles depict the different types of mental spaces, lines represent the cross-space mappings and relationships, and points are the elements in each space. The generic space represents the construction of the connections between two or more input spaces, while the blended space contains elements from all the spaces composed in a way to create emergent structure and relationships that don't exist in the other spaces (Turner and Fauconnier 2002, 101). Creativity comes from the composition of the elements in the blend as we redefine and change vital relations between the elements.

A popular quip from the D.C. area during the Monica Lewinsky scandal is a good example of blending theory. Upon hearing the sentence, "If Clinton had been the Titanic, the iceberg would have sunk," thinkers create a new understanding by recruiting from and rearranging the elements and relationships of several mental spaces (Turner and Fauconnier 1998).

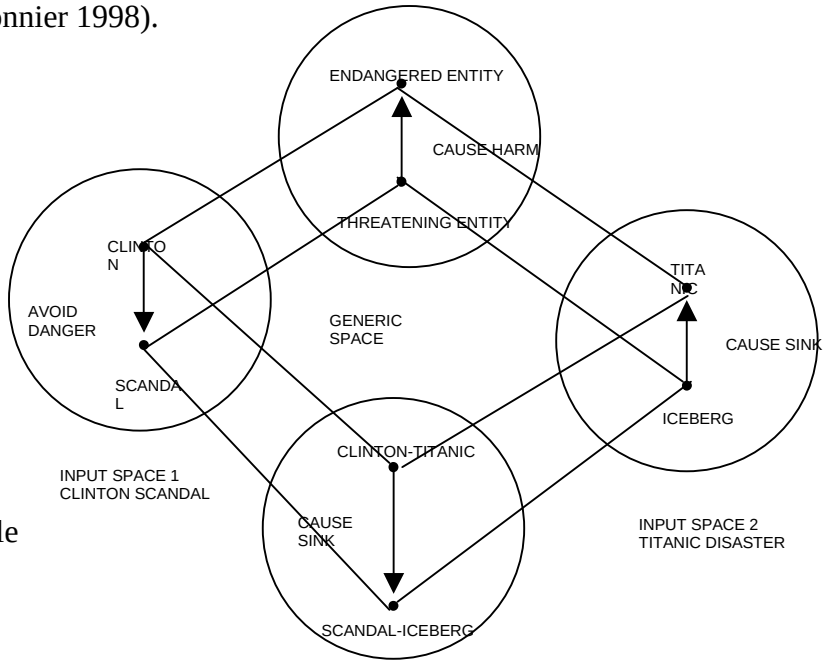


Fig 1.2 Blending Example

The blend has two input spaces. One input space contains knowledge about the Clinton scandal and its impact on his political career. In this space, the president is threatened by the scandal, but rather than being destroyed by it, he manages to survive. The vital connection between Clinton and the scandal is the potential harm that the affair could inflict on the President, but as we know, Clinton escapes disaster. The other input space contains knowledge about the Titanic and its fatal encounter with the iceberg, in which the harmful causal relation is actually effected, resulting in the destruction of the ship. In the generic space, the thinker connects Clinton with the doomed ship and the iceberg with the Lewinsky scandal, using the vital relation of identity. The creativity comes in the emergent structure of the blend, in which the Clinton-Titanic ship not only avoids destruction, but sinks the iceberg of political scandal, reversing the causal relationship between the ship and the iceberg (Turner and Fauconnier 2002, 222).

This creative activity, or elaboration, can go as far as the thinker wishes, perhaps making the vital relation between Kenneth Starr and a polar bear on the iceberg who is suddenly pitched into the ocean instead of the passengers aboard the doomed vessel. “Running the blend” allows the thinker to come up with many ways to create new meanings and concepts that don’t exist in any of the other mental spaces (Turner and Fauconnier 2002, 48). Furthermore, as in metaphor theory, in which one linguistic prompt can spark several different mappings between the target and source domains, one set of prompts can trigger the creation of multiple blends; a

"red pencil" can be one that has red lead, is painted red, or is used to record debts, for instance (Turner and Fauconnier 2002, 355).

Source Domains of the Army's Theories of Mind and Communication

In trying to characterize and understand the domains of thought, communication, and persuasion, the Army has created its own theory of the mind, found in both Operations and Mission Command. Although the Army is a clearly defined discourse community, like any such community it shares knowledge with the society from which it is drawn. Therefore this theory recruits both from some domains common to human thinkers as a whole, and from other, more specific domains containing knowledge available mainly to military professionals. The more general domains include those of physical movement through space, causation, thought, and communication. The more specific are warfare and the military chain of command.

Physical Movement and Causation

Physical movement is an especially rich domain because most human beings have direct, experiential knowledge of it. The frame of entails physical space, a body capable of movement, and a surface along which to move. Often, because human activities are goal oriented, other elements include a physical destination and a path on the surface along which the body moves to reach it. Because human beings share and experience this domain constantly, it serves as the basis for many other abstract

human endeavors and concepts, such as the thought process, the act of setting goals, and even the everyday understanding of time.

A subdomain of physical movement is that of causality, the notion that an event, factor, or condition makes possible another such entity. One of the most basic forms of physical causation is that of an object striking against another object, making the second object move or break. It serves as a readily available source domain not only because it has deep roots in common physical experience, but because it is conceptually very straightforward. There is one principle force, the kinetic energy of the first object, one causal mechanism, the transfer of that energy from the first object to the second, and a clearly defined result that is the direct effect of the causal mechanism, the movement or destruction of the second object. Causation in the real world is much more complex, however. There are many frames of causation, including the physical, emotional, social and epistemic; as well as different means of causation, including contributing, precipitating, immediate, remote, direct, and indirect causes. Because there can be multiple causes for a single phenomenon, different ways of construing the nature of each cause, as well as the degree and type of contribution it makes, causation can be difficult to characterize.

The Mind and Its Activities

The mind is an entity for which recourse to metaphor is inevitable, and is less an entity than a label attached to the aggregate of activities that cohere around perception, thought, and understanding, and the individual who carries them out. While the mind does have a closely associated physical entity, the brain, and while

cognitive scientists have managed to make some correlation between its physical activity and the unseen mental activity of the mind, it is difficult to characterize on its own terms. As a result, representations of the mind almost inevitably take the action and causation in the physical world as a source domain for metaphors of thought and thinking.

Cognitive psychology has identified several functions carried out by the mind, which Lawrence Barsalou has described in his work Cognitive Psychology: An Overview for Cognitive Scientists. The first is perception: while perception itself is not categorized as a cognitive process, the senses and the information they provide give thinkers the material for processes that are attributed directly to the mind (Barsalou 15). The next is categorization; dividing up the thinker's perceptions into classes that seem meaningful for his ability to function in the world, such as the ability that certain rodents have to categorize the shadows of birds as either predatory or nonpredatory (Barsalou 22-23). Categorization depends heavily on a third function, framing. As discussed above, people use frames to understand and contextualize an idea or perception in terms of its relationship to their experiences (Barsalou 276).

The next mental function, that of memory, is commonly divided into working and long-term memory. The division depends not on how long the thinker remembers the information, but upon how directly it contributes to the thought process at hand. According to Barsalou, working memory "consists of a set of mechanisms that work together to perform strategic processing" (Barsalou 104). Strategic processing works to achieve deliberately pursued conceptual goals, but can be applied to only one such task at a time (Barsalou 104; 62). Working memory contains the information needed

for each task, and as such can only hold a limited amount of information. Thinkers can use new information and input from their perceptions to think, but also rely on information from their long-term memories. Long-term memory contains a great deal of information that is not necessarily immediately relevant to the task at hand (Barsalou 116).

Barsalou defines thought as "involv[ing] a series of transformations performed on the contents of working memory, where these transformations and contents are conscious at least to some extent," and defines purposive thought as thought people perform to achieve a goal (275). He makes the distinction between formal thought and informal thought, the latter to which he allocates such activities as daydreaming and free association (275). Formal thought includes such activities as determining causation, solving problems, making comparisons, and inventing.

As thinkers categorize, frame, memorize, and think, they also control the flow of the information. Barsalou classifies this control of processing in two ways, whether something is innate or learned, and whether the processing is automatic or strategic (61). Some phenomena thinkers seem to be predisposed to noticing and process immediate, such as loud noises or large movements, which indicates that such immediate processing may be innate, and the choice to process them and assign some meaning to them is automatic. It would seem that learned processing is necessarily or primarily deliberate, but thinkers can learn to pay attention to some things and process their meanings automatically.

One interesting aspect of the above summary is that, while there are some functions that seem clearly prioritized in terms of temporality, such as perception, and

others in terms of complexity, such as thinking to solve a problem, in many instances it seems very difficult to determine what sort of causal, temporal, or functional relationships exist between these abilities. Framing, access, and categorization, for instance, seem tightly intermeshed, and perception can be affected by the frame or situation one is in. Similarly, problem solving may be hindered or assisted by the context in which it occurs; ways of getting people to contribute to a task in a work setting may be inappropriate in a more casual social environment. Any relationships we pose between these functions, like the language we use to speak about them, are as much an indication of our how we understand ourselves as they are about the workings of the mind itself.

Communication

Communication is a complex cooperative activity that involves conceptual as well as physical abilities. It is also a key input domain for information and psychological operations, and, as a cooperative activity, is critical to successful peace operations as well. How one conceives of communication depends heavily on one's theory of mind.

In order for communication to take place, most models agree that several elements are necessary: two parties, some sort of physical contact between them, and a means of expressing their thoughts that is mutually intelligible to both parties. Sperber and Wilson, in their book Relevance, give us an expert model that depends on folk models of communication. In this model, one party has a thought, encodes the meaning into words, and then sends his thoughts to the other party by speaking them.

The recipient hears the words and decodes the thought they contain. The second party then formulates his response, encodes it into language, and sends back his reply. In this process, one is either encoding and speaking, or listening and decoding; each phase of communication is a contrary process in which one is either receiving or sending (Sperber and Wilson 5). This theory is based on the Conduit Metaphor, in which meaning is conceived of as a physical object that is "packaged" into language, and then "transferred" or "sent" between the parties in a conversation; and interpreting a message is conceived of as removing the meaning from the container of language (Lakoff and Johnson 1980, 10).

While these models of language do capture physically salient aspects of the communication process, that is, the turn-by-turn nature of face-to-face conversation and the event of sound waves traveling through the air, like many representations, it fails to capture some other, equally significant features of the domain it represents. According to Herbert Clark in his book On Language, communication is a cooperative process that requires constant coordination between its participants at many different levels. He takes as his prototypical case the core experience of one-on-one conversation.

The turn-by-turn model in which one or the other of the two participants is active at a given time, and the other is passive, does have its basis in one aspect of the communication process, and that is the fact that we usually speak turn by turn, so that we can hear one another. However, this physical element is only one of many activities we carry on as we converse. According to Herbert Clark, communication is a joint activity in which two or more parties must both participate in order for it to

happen (58). Like the previous model, it too needs two people that have both physical contact with one another and a common means of communication, such as a spoken word language, as well as information each wishes to communicate. What Clark's theory highlights is the myriad processes that the two people must both carry out and coordinate as they converse. At its most basic, people continually coordinate on both the meaning or content they are trying to convey and are establishing, the goals of the conversation, and the process of communication itself (Clark 90).

Inherent in this discussion of communication is human cognition, the large range of intellectual capacities that speakers use as they speak and understand, and of which language use itself is one example. Interpreting the utterances of others, conceiving of our own replies, and drawing on information and knowledge we already possess are just a few of the abilities we employ during the course of any given conversation. Because thought is an individually exercised and subjectively experienced ability with little public presence, and because we as human thinkers do it constantly and well, theories of communication often fail to give it the prominence it actually holds.

The Army's Theory of Communication

In Mission Command, the Army articulates its own theory of communication. It is careful to distinguish it from the concept of communications, which are defined as "means of communicating, such as telephones" (Department of the Army 2003 paragraph 3-15). Like communications systems, communication itself is defined in terms of how it furthers the goals and objectives of the command it serves. Within

the Army, communication is an element of control, "the regulation of forces and battlefield operating systems to accomplish the mission in accordance with the commander's intent." (Department of the Army 2003b, 3-5). Because control is achieved primarily through sharing information, communication is described as actions that "use any means or method to convey information of any kind from one person or place to another" (Department of the Army 2003b, 3-5). The cooperative, joint endeavor that Clark has laid out becomes in the Army a means of ensuring control within its own organization to get the mission done.

One aspect of Clark's expert theory that Army doctrine does reflect includes the importance of feedback. Feedback, critical because it "provides the means to improve and confirm mutual understanding," is more formal than Clark's notion of continuous coordination, but addresses the same issue, that people who communicate must believe they share the same meaning (Department of the Army 2003b, 3-17). Another is the importance of nonverbal communication, in which the writers of the manual include "sounds, such as sighs and grunts, as well as voice tone and inflection" (Department of the Army 2003c, 3-17). They also address what they term "nonvocal means," which are "such things as gestures, body language, and facial expressions(Department of the Army 2003c, 3-17).

The writers also explain the importance of enculturation within a given discourse community. Termed "implicit communication," people that are part of a given community

> . . . have formed a familiarity of shared experiences and a common outlook. Implicit communication is a function of an individual's

> personal, military, cultural, and national expectations. It consists of personal and organizational styles, habits, experiences, beliefs, and values. Implicit communication takes place when members of a group internalize and share explicitly stated standards, norms, or values. It also takes place through individuals adopting the command's styles, habits, experiences, and beliefs as their own (becoming socialized) (Department of the Army 2003b, 3-17 through 3-18).

The Army's theory of communication finally emphasizes the importance of face to face interaction, discouraging commanders from relying too heavily on emails and memos: "Modern word processors provide the ability to produce vast amounts of writing, but effective commanders avoid this tyranny."(Department of the Army 2003d, 3-18). Clark's prototype of communication, the one-on-one conversation, stands as the Army's ideal.

Given the emphasis the writers put on socialization and mutual understanding, the limitations they in turn put on the communication process as a whole are sometimes surprising. For instance, "implicit communication" contributes to the mission not by fostering trust and a sense of cohesion; that is the commander's job. Instead,

> [s]ince such implicit communication reduces the time spent drafting and relaying messages, it reduces the problems of delay typically associated with information flow. Implicit communication helps maximize information content while minimizing data flow. It makes

organizations less vulnerable to communication disruptions

(Department of the Army 2003d, 3-18).

That is, it aids information management. And because commanders in most units receive their soldiers only after they have undergone at least sixteen weeks of constant, regulated, prescribed enculturation, the amount of further socialization a unit must impress upon the soldier is relatively small.

The problem with the frame of this notion of communication is that as a means of achieving and maintaining control, and as a process in which adjustment is mainly one sided, it is terribly incomplete. In all communication, both sides must negotiate and coordinate; what the Army describes is instead a process of conformity. As a result, it is less a theory of communication than one of compliance, and is too conceptually limited to support the challenges of psychological, information, stability and support operations.

Warfare and the Military Institution as Source Domains

The domains of physical movement, causation, thought, and communication are readily accessible for most human thinkers. In many societies, there also exists a shared cultural knowledge of warfare, derived from immediate experience or, in American society, from reports, fictional accounts, and other indirect sources. Even direct civilian experience of warfare, however, is not the same as the military's understanding of it. The United States Army's knowledge of warfare is a highly developed, extremely detailed domain that includes every possible operation on or off the battlefield that contributes to military victory, as well as the connections between

those operations and the national institutions that support them. This level of detail and development make it a ready source domain for many metaphors and blends.

There are three levels of warfare: the tactical, the operational, and the strategic. Tactical warfare is the level at which battles and engagements are fought, operational is the coordination of those actions to achieve operational and strategic goals, and strategic is the level at which military and national goals and actions are coordinated (Director for Operational Plans and Joint Force Development (J-7)). Of the three, the tactical domain serves as the richest source domain for concepts of other military action because that is where the most physical activity occurs; the other levels, while important and complex in their own right, focus on coordinating the resources to carry out these combat actions. The tactical level is also the basis of shared knowledge in the military; because all soldiers are trained in and expected to master basic tactical tasks, such as firing a weapon and moving to find cover and concealment, even the highest-ranking officers can speak in common terms with newly trained soldiers.

One reason the Army's knowledge base is so highly developed is that it does not prepare to merely fight wars, it prepares to win them. Although its mission focus, and now its force structure, are evolving, its perspective on what constitutes success has not changed. As FM 3.0 states, "Fighting and winning the nation's wars is the foundation of Army service—the Army's nonnegotiable contract with the American people and its enduring obligation to the nation" (Department of the Army 2001a, 1-2). Of the two major types of tactical operations, offensive and defensive, only the offensive wins wars. It is therefore the preferred form of warfare.

The Basic Structure of a Battle

The prototypical offensive operation is a deliberate attack against an objective on the ground. In the scenario depicted below, army forces are attacking Objective Rabbit, which is the hub of a road network. The attacking forces have split into two, with one conducting a frontal attack to engage and pin down the enemy's strongest forces, and the other conducting a flank attack to pit its strength against the enemy's weakness. Both prongs of the attack move swiftly so that the defenders cannot lay down a base of suppressive fire or commit their reserve, either of which would slow the attack and endanger its success. The operation ends with the attacking forces seizing and holding the objective with enough combat power remaining to repel possible counterattacks and quickly continue moving forward when ordered.

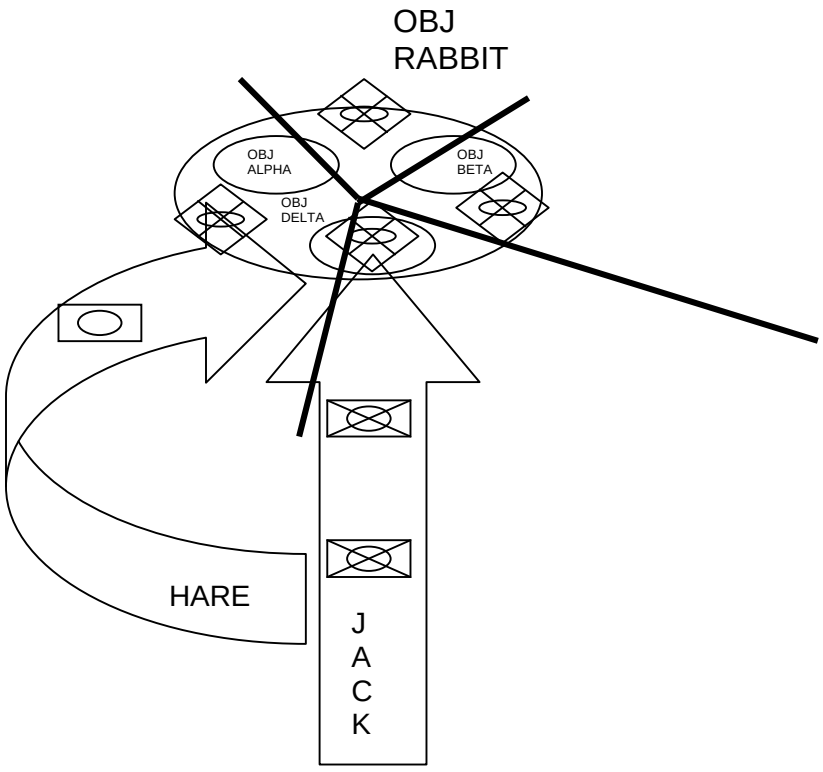


Fig 1.3
Offensive
Operation

Offense presupposes a defense, and a successful defensive operation thwarts enemy attacks. Although they are less complex than attacks, as the definition below explains, they is not the preferred form of operations:

> Army forces defend until they gain sufficient strength to attack. Defensive operations defeat an enemy attack, buy time, economize forces, or develop conditions favorable for offensive operations. Alone, defensive operations normally cannot achieve a decision. Their purpose is to create conditions for a counteroffensive that allows Army forces to regain the initiative (Department of the Army 2001a, 8-1).

Defensive operations seek not to change the relationship between the two sides but to maintain the current conditions until attack can be resumed. Unlike attackers, defenders don't normally move forward. Like the offense, defeating the enemy is a necessary but not sufficient condition for defenders to keep the terrain; the defenders might achieve that goal, but in the process reduce their own combat power to the point that they could not hold the terrain against a subsequent attack.

One important aspect of conventional operations is that the domains of offense and defense have tight vital relations both within their own domains and to one another. In terms of outer space vital relations, offense and defense entail one another; one only defends in anticipation of an attack, and one usually attacks a force that is defending. As unlikely as it may seem, in some ways warfare is a cooperative activity in much the same way that communication is; both parties must participate in order for the activity to happen. When one party can no longer fight, combat

operations end. Together, offense and defense make up the overall frame of conventional warfare.

In terms of inner space relations, offense can be construed as maneuver combined with firepower, while defense is firepower combined with the ability to hold terrain. While each of these three operations, movement, firing, and standing still, is a distinct activity, within each domain they are inextricably linked. In the offense, one fires to maneuver, destroying an enemy occupying an objective, which enables the attacker to move forward and take the terrain made available by his destruction. Defense is firing and standing fast, destroying the enemy to prevent him from taking the terrain one holds. In both cases, destroying the enemy's ability to act through firepower is inextricably linked to one's ability to carry out one's own mission. Also, within each type of operation, impairing the enemy's ability to act enables one's own ability to act. Therefore, destroying a force's ability to move or hold terrain destroys his ability to fire, and destroying its ability to fire contributes to the ability to conduct one's own mission; it changes the relative combat power between the two forces.

The Military Hierarchy

Warfare is by nature an illogical, dangerous activity. Most people do not willingly put themselves directly in harm's way, or wish to harm one another. When they are in danger, their first instinct is to avoid harm. Because the military conducts hazardous operations at an enormous scale, they have trained their soldiers to operate under several forms of control that help them function both individually and

collectively on the battlefield. One of the most elementary of those is the military hierarchy.

The structure of the hierarchy is imposed on a soldier from the minute she enters the military, so that by the time she completes her training and must implement it, she is accustomed to having her actions regulated by both internal conditioning and external authority. That authority, known as the chain of command, is a hierarchy within which every soldier's importance, responsibility, and function can be mapped in the military.

Though technically referring exclusively to commissioned officers, for most soldiers, the chain of command begins with the noncommissioned officer (NCO) in charge of the smallest unit to which he belongs, often the squad leader, and continues up through the platoon sergeant and platoon leader, to the company leadership up through each successive echelon until the Commander in Chief, the President of the United States. Each echelon has command responsibility for the echelons below it, and has the duty to implement the orders of the echelons above it. The figure below, called a line and block chart, illustrates the hierarchical structure of a Stryker battalion, a unit whose major weapon system is an eight-wheeled armored fighting vehicle.

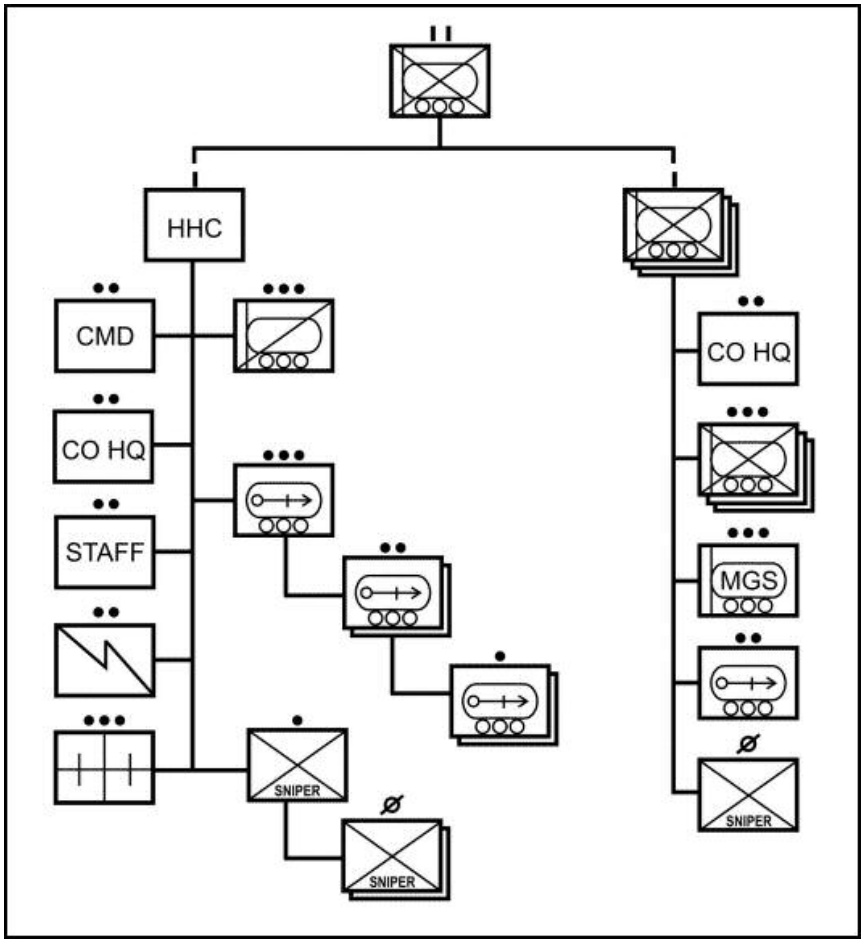


Fig 1.4 Stryker Battalion (Department of the Army 2003c, paragraph 1-2)

At the top of each rectangle is a small symbol indicating the unit's level; one dot is a team, two a squadand three a platoon (Department of the Army 1997, page 4-5). A company, composed of platoons, is one line, while the battalion itself is two (Department of the Army 1997, page 4-5). The smaller, subordinate units are at the bottom, while the larger commands are higher in the chart. Notice the lines that link the units to one another; they run from lower to higher, and vice versa, but do not connect same-sized units; the horizontal line below the battalion indicates the breadth

of control that this higher echelon maintains, not the connections between subordinates of the same level. Also, the lower echelon units at once support and comprise the higher level ones, indicating the higher level's dependence on them for existence, while the lower level ones depend on their connection to higher echelon ones for their place in the structure. Notice, too, that each unit, while comprised of the echelons below it, is self-contained, which emphasizes its autonomy from higher and lower as well as adjacent units.

Some of the entailments of this source domain are that the higher a unit is located in the hierarchy, the more units it controls, the more subordinates its decisions impact, and the wider its scope of responsibility is in terms of the mission. The subordinate units, in turn, have a smaller scope of responsibility, and the sum of their efforts comprises the efforts of the larger units, that is, the next higher unit divides its mission among and coordinates the efforts of its own subordinates. The commanding unit should have knowledge of all its subordinates' activities, and therefore should know more about the overall situation than they do individually. While adjacent units should and do coordinate with one another, their first responsibility is fulfilling the mission their higher headquarters gives them.

The military hierarchy clearly establishes the relationships between member units; moving outside this structure by, for instance, reporting directly to an echelon two levels up, weakens the hierarchy control by overstepping intermediate levels and interfering with unit's links to their subordinates. Within it, the role of the commander holds a unique position that probably has no real analogue in the civilian world. The power that he wields over his soldiers is more far-reaching than any his

civilian counterparts hold over their employees, but so is the responsibility he bears. "Command" is both a position and a legally binding responsibility, and is defined as

> the authority that a commander in the armed forces lawfully exercises over subordinates by virtue of rank or assignment. Command includes the authority and responsibility for effectively using available resources and for planning the employment of, organizing, directing, coordinating, and controlling military forces for the accomplishment of assigned missions. It also includes responsibility for health, morale, and discipline of assigned personnel (Director for Operational Plans and Joint Force Development (J-7)).

While a civilian manager might be charged with some of these duties, should he fail to meet them, he would most likely be demoted or fired; only in extreme circumstances might he be legally liable for failing to fulfill them. Also, unless it directly involved the company, it is unlikely he would be responsible for his employees' personal lives.

The military hierarchy and the concept of command upon which it depends delineates a network of relationships between individuals and organizations that is highly formal, very rigid, and linear in nature. It is also very centralized, and unidirectional in authority; control emanates from the top. While every element in the chain of command has a responsibility to every other element, the nature of that responsibility depends on the relationship between them; higher levels shape the mission of lower echelons, while lower level units are compelled to execute it. Every unit's mission

ideally makes a clear and direct contribution to that of its superior. This structure helps ensure cohesive action in the face of danger.

The Army's Theory of Mind

Warfare is a complex activity that depends on both brute force and keen intellect. It takes the combined efforts of thousands of minds to plan and execute operations at every level in a major campaign. It also presupposes that the only interactions one would have with the enemy's mind involve surreptitiously eavesdropping on him, deliberately deceiving him, and breaking his will. However, the changes in its mission have forced the Army to consider the nature of thought and communication, and therefore formulate its own theory of mind. It documents this theory in two key manuals, Operations, in a discussion of "relevant information," and in Mission Command, through a heuristic called "the cognitive hierarchy" that further develops that concept.

While the Army only recently came up with a formal theory of mind, philosophers have debated the nature of thought and the mind for centuries, and the discipline of cognitive science has made this study an interdisciplinary pursuit. In a sense, the Army's theory of mind is interdisciplinary as well, in that it draws heavily on the domain of its own military culture to explain the workings of thought. The Army's attempts are motivated by the proliferation of the new entity called "information" in its operations. In characterizing the nature of thought and information, the Army relies heavily on metaphors of causation and orientation derived from its own domain of experience, and does so in ways that make the link

between thought and action seem both predictable and controllable. However, this dependence is so excessive that it purges the domain of thought of the very aspects that make it both difficult to define and powerful.

Common Western Metaphors of the Mind

As the previous discussion of cognitive functions illustrates, it is difficult to discuss the mind without recourse to metaphor. Memory is conceived of as a form of physical storage, and contextualizing information is conceived in terms of affixing an object within the boundaries of a frame to enable the thinker to "get the whole picture." In Philosophy and the Flesh, Lakoff and Johnson discuss several metaphors of cognition, in which the target domains of the mind and thought are conceived of through the source domain of a physical body moving through space (235-236). These metaphors set up causal, temporal, and part-whole relationships between different aspects of thought that cognitive psychologists may not find accurate. But, because all human thinkers have constant, experiential knowledge of the source domain, these analogical relationships have great explanatory power.

The United States Army is a distinct discourse community from that of the nation it serves, but it is not wholly isolated from it. It comes as no surprise that the blends of "relevant information" and "the cognitive hierarchy" bear striking resemblances to common metaphors of thought. When the blends are examined in detail, they may seem like bizarre oversimplifications of the nature of thought. However, they are strongly motivated by the very productive mappings between

cognition and physical movement already entrenched in Western culture. Examining these metaphors can help illustrate that motivation.

> The common metaphors of the mind that Lakoff and Johnson report are:
>
> Thinking Is Physical Functioning.
>
> Ideas Are Entities With An Independent Existence.
>
> Thinking Of An Idea Is Functioning Physically With Respect To An Independently Existing Entity (2000, 235-236).

Lakoff and Johnson cite four major kinds of physical functioning that provide the basis for four special cases of the metaphor, which include moving, manipulating objects, perceiving, and eating (2000, 236). The two that most strongly inform the Army's theory of mind are those of physical motion and object manipulation.

In the Thinking Is Moving metaphor, the mind is a body, and ideas are locations towards which it moves, as in the expression, "He'll get to the main point eventually" (Lakoff and Johnson 2000, 236). The mind-as-body can think about these ideas, which thinkers represent as movement around the locations. Within this frame, reason is a force that causes thought, ("I was driven to the conclusion…") and rational thought is motion that is direct, deliberate, step-by-step, and in accord with the force of reason ("She took the most straightforward approach to the problem") (Lakoff and Johnson 2000, 236). Conversely, being unable to think is being unable to move, and thinking irrationally or illogically is moving erratically ("His ideas are all over the map") (Lakoff and Johnson 2000 236). A line of thought is a path along which the mind moves, and a person that communicates his ideas to his friend guides her along that path. If she understands his thought, she follows him, and if she

reconsiders the ideas, she is going over the path again (Lakoff and Johnson 2000 236-238).

These mappings are motivated by the vital relation of change that holds together the frames of both the target and source domain. In the target domain of thought, a thinker's mind "changes" in that, through the act of thinking, he discovers the relationships between new information and knowledge he already has, or understands new relationships between previously held concepts. Gaining new insight and understanding is normally conceived of as a kind of intellectual progress. The source domain of physical movement also entails the vital relations of change, but in terms of physical location and cause and effect. Movement changes the body's location in space, and takes place during a change in time. Also, each movement contributes both to the nature of subsequent movements and to the overall process of the journey as a whole.

The locational and causal changes of physical movement readily map onto the intellectual changes of thought, but their easy correspondence obscures an important disjunction between the two domains. In movement, the relations are linear and unidirectional; a step at the beginning of the journey makes a contributing cause to steps at the end of it, but the relationship cannot be reciprocal. However, in cognition, the functions are not as clearly distinguishable as steps are from one another, and events in one function can change or even negate conclusions reached through another function; if a person sees a tag attached to a dog's cage that gives its price in terms of its weight, his frame for the animal shifts from that of domestic pet to livestock, for instance.

Another common metaphor from which the Army representation of the mind inherits many of its entailments is Thinking Is Object Manipulation (Lakoff and Johnson 2000, 240). The mind as body manipulates ideas, which are represented as discrete physical objects. A particularly complex idea, for instance, can be "grappled with." When a person understands an idea, she "grasps" it, and when she cannot, she "loses her grip." Once she can "handle" them she "stores" these ideas in the "warehouse" of memory from which she "retrieves" them. She can also conceive of ideas not as discrete, solid objects, but complex structures that she analyze by taking them apart, as when we "build," "dissect," or "reconstruct" a theory (Lakoff and Johnson 2000, 240-241). A related metaphor, The Mind Is A Machine, represents the mind as a factory, ideas as products of its workings, thinking as an activity that proceeds assembly-line fashion, step by step and automated, and the thought process as the operation of a machine, subject to working smoothly, that is, thinking normally, or succumbing to various forms of disfunction (Lakoff and Johnson 2000, 247).

Thinking As Object Manipulation and The Mind Is A Machine both have some of the same vital relations of time and causation as in Thinking Is Moving. In addition, these metaphors highlight the vital relation of part-whole, in terms of both the composition of the thoughts, and the act of thinking of the thoughts themselves. Complex thoughts often involve integration of two or more ideas, and thinking about and integrating the ideas can be thought of as smaller actions that are part of the whole conceptual process. Like Thinking Is Moving, the ease with which object manipulation is mapped onto thought hides important disparities between the two

domains. Thoughts and ideas may cause thinkers to perform acts that in turn cause objects to exist independently in the world, but they themselves have no independent existence without a thinker.

Each of the above metaphors, if followed according to the logic laid out by the source domains, has a set of additional, more general entailments. Some of the entailments of the metaphors as laid out by Lakoff and Johnson in Philosophy In The Flesh are as follows:

Mind as Body

Thoughts have a public, objective existence independent of the thinker (248).

Thoughts correspond to things in the world (248).

Thought As Motion

Rational thought is direct, deliberate, and step-by step (249).

Thought As Object Manipulation

Thinking is object manipulation (249).

Thoughts are objective. Hence they are the same for everyone; that is, they are universal (249).

The Mind As Machine.

Each complex thought has a structure imposed by mechanically putting together simple thoughts in a regular, describable step-by step fashion (249).

In many ways these entailments contradict the actual experience of thinking.

Thoughts are subjectively experienced and often privately held, and even when communicated, those with whom one communicates must come to their own understanding of those ideas. Thoughts often don't correspond to things in the

worlds; if this were a necessary feature of ideas, it would be difficult to speculate about the future, imagine alternate worlds, or invent new concepts. Also, thought processes are not necessarily step-by step, nor do they always result in complex ideas whose complexity can be explained through the aggregation simpler ideas. However, the subjective, individual nature of thinking and thoughts directly contradicts a major feature of military culture, that a group as a whole must collectively share and understand a given idea (i.e., a plan of operations) in order for it to act

The Army has a good reason for relying on the notion that ideas have a public, independent existence that relates to real things in the world and that they are objective entities that can be "assembled" in a methodical, step-by step manner. As an institution, one of its major goals is to train large numbers of people in demanding tasks carried out under dangerous conditions. The Army needs ideas and methods that are easily communicated, retained, and implemented under the extreme stress of combat. And, because people often are incapacitated or killed, but the mission must continue, those who replace them must have the same concepts in mind to carry out the mission successfully. Hence, the Army's concept of cognition as embodied in both the concept of "relevant information" and the cognitive hierarchy recruits from and develops the Mind as Body and Mind as Machine metaphors, focusing on the manipulation of something called "information."

The Army's theory of mind is a blend that recruits from the source domains of physical action and the nature of cognition itself, but each of the two portrayals has another major source domain. The definition of "relevant information" recruits heavily from the frame of physical causation, specifically, that of change and

creation. The construct of the cognitive hierarchy also draws from this domain, but derives much of its structure from the source domain of the military chain of command.

Both the frame of physical causation and the military hierarchy share common traits. They have a public, objective existence that all thinkers can experience in the same way, that is, they are universal. There are clear, necessary relationships between the elements, and they exist independently of the actors involved. Thoughts, which necessarily depend on the people who think them, are too subjective and individual for an institution that relies more on the role a person plays in its organization than the individual human value that fills it. The Army, therefore, deals not with thoughts, but with "information."

The Nature of "Information"

Both the Army's theory of mind and Western metaphors of thought depend heavily on the concept of "information," one so pervasive in today's world that, like the notion of Enlightenment, an entire era has been named after it. Also like "enlightenment," it has developed to the extent that events and entities that seem to have little to do with the core concept have adopted the term as its label. Just as the storming of the Bastille, a brutal and violent event, is often hailed as a triumph of the age of Enlightenment, "information," whose most critical elements are human beings and the acts of thought and communication they carry out, often refers to electromagnetically recorded media that is indecipherable without a great deal of cultural knowledge and physical infrastructure.

When referring to “information” and where it comes from, one often says things like, “The information is in that book,” or “on my hard drive,” or even “hidden in the song.” “Information” seems to refer some sort of physical object. However, it has little independent existence outside the process of thought and the person who is actually thinking. In the course of a conversation, a friend might express an intriguing idea, which you later type into your computer. You would say the information is “in your laptop.” If someone were to be reading over your shoulder as you typed, she might say, “Where did you get that information?”, and you would reply, “From Rick.” You conceive of information as being contained “in” Rick’s words, or “in” the computer.

But actually happened is that you communicated with Rick, understood his ideas, and “placed” them in your own working memory. When you “type his idea” into the computer, you activate your long term memory, bringing your recollection of the conversation into your working memory, translating it into verbal form and creating a representation of the memory using your computer. The “information” “resides” in your memory as well as “on” the hard drive of the machine. So all those entities commonly characterized as “information” are really the representations of the contents of the working memory, that is, they are the public, independently existing records of thoughts that are metonymically conceived of as the thoughts themselves.

The tangibility of the record fulfills our expectation of the source domain of Thinking Is Object Manipulation. The association of thoughts with the media that records and transfers them also conforms to our expectation that thoughts, like language, have an independent public existence. In this form, the range and scope of

impact on other people, their actions, and their thoughts can be more easily traced, explained and accounted for by determining who had physical possession of the record. This abstraction also lays the foundation for the Army's theory of mind.

Information, Action, and Gradatio

The first explanation of the Army's theory of mind, the definition of "relevant information," is found in Chapter 11 of Operations (Department of the Army 2001a, 11-11 through 11-12). This chapter, titled "Information Superiority," explains how to gain "the operational advantage derived from the ability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same" (Department of the Army 2001a, 11-11 through 11-12). "Relevant information" is conceived of as a major contributing cause towards this advantage. The manner in which it enables a unit to accomplish its mission would be difficult to explain if it were conceived of as the subjectively experienced process of individual thought, especially since military missions are primarily physical in nature. The concept of "relevant information" aids this endeavor by making thought not only an independently existing entity, but one with its own agency capable of acting in its own right. This particular theory of mind makes a direct link between action and thought by making thought an actor.

The Category of "Relevant Information"

Given the number of people and events on the battlefield, there is bound to be a great deal of information available, including plenty that is too detailed, misleading,

or simply false. The sheer volume of reports flooding in from all directions in the course of an operation could easily overwhelm staffs and commanders. "Relevant information," however, seems to be a scarce resource. Because so much information can seem important, the writers of Army doctrine had to differentiate "relevant information" from other types. It is therefore defined as

> all information of importance to commanders and staffs in the exercise of command and control. To be relevant, information must be accurate, timely, usable, complete, precise, and reliable. Relevant information provides the answers commanders and staffs need to successfully conduct operations, that is, all elements necessary to address the factors of METT-TC (mission, enemy, terrain, time, troops, and civil considerations) (Department of the Army 2001a, 11-11 through 11-12).

"Relevant information" gives the commander and his staff the ability to manage the actions of their units so that they can achieve a mission. It must give a portrait of the situation that accurately and succinctly reflects reality, and provide that picture in time for the unit to act on it.[1] The goal of relevance is action.

"Relevant Information" as Agent of Action

The preceding paragraph explains the fact that information's value is determined by how well it contributes to a mission, but not the manner in which it

[1] The acronym (METT-TC), drawn from the context of conventional warfare, not only puts the desired actions of the military force, the mission, first, and places the civilian population last, but assumes a division between the two.

does so. The role of “relevant information” to action is explained in the paragraph that follows it. It details this process using the ancient rhetorical figure gradatio, which repeats elements in a regular fashion to create a syntactical link between them. This passage outlines the transformation of “relevant information” from object to actor.

> Relevant information results from assigning meaning to data to assist understanding. Processing changes raw data into information by assigning meaning to it. Analysis and evaluation transform information into knowledge, which is presented to commanders as relevant information. When commanders apply judgment to knowledge, it becomes understanding. Understanding enables making informed decisions with less-than-perfect data. Combined with will, understanding generates effective action (Department of the Army 2001a, 11-12).

This paragraph, which blithely answers questions that philosophers have pondered for centuries, makes the case that thought is a methodical, step-by step process that will result in effective action if the steps are followed in the order and manner described. It fulfills expectations for the metaphor Thinking Is Moving through both its meaning and form. By duplicating the elements at the beginnings and endings of each sentence and forging these links in the structure of the passage, the author of Operations implies that the elements also have a link in reality to one another. It creates a necessary connection between information and action,

"present[ing] a continuum where there were once divisions" (Fahnestock 97). The first sentence, "Relevant information results from assigning meaning to data to assist understanding," sets up a causal relationship between "relevant information," "analysis," and "understanding" in which "analysis" changes "data" into "relevant information," and "understanding" is the goal of this transformation (Department of the Army 2001a, 11-12). The remainder of the paragraph, following the pattern of topic/comment, proceeds to elaborate on links of this causal chain.

This paragraph as a blend recruits from several source domains. From the domain of "information" the blend recruits the thinker, the information itself, the act of cognition, and the resultant new thoughts. The domain of physical movement along a path provides the structure for the blend, which also recruits from the domain of physical causation.

However, the military contributes from yet another aspect of its domain, and that is the notion of corporate activity and the division of labor that supports it. Like any large organization with a complex mission, the Army also has layers of management that coordinate every aspect of an operation from originator to provider. A single supply request, such as requisitioning ammunition, which takes one person at the company level, might involve a total of three or more at each higher headquarters. The soldier who receives the ammunition is only the final link in a supply system that stretches up through his higher headquarters to the theatre and back to depots in the United States.

With a total of at least three source domains, the generic space of this blend, which draws together common elements from all spaces, bears the most resemblance

to the frame of causation. It contains an agent, a patient, an act, a means, a manner in which the patient and means interact, and the resultant state of the patient. While there are clear correspondences between this space and the source domains of movement and thought, one interesting vital relation is the decompression of the agent of causation in the generic space into the multiple agents of a military organization. That division of labor is key to the cognitive process as it is depicted both in the discussion of relevant information from Operations and the cognitive hierarchy in Mission Command.

As a blend, the passage from Operations not only recruits from multiple source domains, but also generates structure that does not exist in any of them. That structure can be found by analyzing each sentence in the passage in terms of the generic space. The generic space, structured by the causal frame of transformation, contains the elements of the agent and the patient, who are linked by the change the agent effects on the patient. It also contains the manner in which the patient is changed, and the end state of the patient. This causal chain helps knit thought and action in several respects.

The first sentence, as discussed before, is a topic sentence that summarizes the process discussed in the remainder of the paragraph. The discussion of the process as it is broken down begins with the second sentence; “Processing changes raw data into information by assigning meaning to it” (Department of the Army 2001a, 11-12).

The agent of this sentence is the gerund “processing,” which is the nominalization of the verb “process.” “Processing,” according to Mission Command, “includes filtering, fusing, formatting, organizing, collating, correlating, plotting,

translating, categorizing, and arranging," that is, classifying the data provided by the collectors (Department of the Army 2003d, B-1). "Processing" in this context primarily means categorizing, which is the first cognitive functions discussed. The patient "data" is not substantively changed, only sorted.

As the most basic cognitive function, the agent "processing" performs the act of "changing" on the direct object of "data" into the indirect object of "information," the result of the action. "Data" is defined as

> the lowest level of information on the cognitive hierarchy. Data consist of unprocessed signals communicated between any nodes in an information system, or sensings from the environment detected by a collector of any kind (human, mechanical, or electronic) (Department of the Army 2003d, Glossary-5)

The "collectors of any kind," be they human observers such as scouts, electronic sensors such as seismic monitors, detectors of electromagnetic emanations like radars or signals from communications themselves, are themselves amassed into one large group, which does not distinguish between any of them in terms of importance or type. The equation of the human with the various types of machines is not accidental, since the critical distinguishing point would not be what was used to gather the "data," but how relevant, timely and accurate it is. The key difference is that human beings "collect" by experiencing and remembering their perceptions, and have self-awareness of the acts of both perceiving and memory. By grouping humans as the first in a series of machines, the sentences emphasize the public, objective nature of the information gathered, eliding the human agency not only of those who

actually experience the perceptions, but those who plan and conduct the placement and operation of those instruments.

"Change," the act performed by "processing" on "data," is a very general verb because while it indicates that a change has taken place, it does not elaborate by what means it takes place (cutting or moving, for instance) or indicate what the change is (in terms of size, shape, or position). This could indicate that a variety of types of changes are taking place, but more probably points to the mystery of the mechanisms of cognition itself. The sentence does explicitly state how change happens in an adverbial phrase, "assigning meaning." To assign something is to give someone a task, or to designate a permanent association between two or more entities, as when a student is assigned to a class. In both cases there is a sense of addition, and in the latter, contextualization. In other words, to give "meaning" to "data" is also to give it a frame, which is actually how the cognitive function of framing relates to categorization. In the context of military doctrine, "data" is considered in terms of the mission, and so "data" is assigned a subframe within the larger frame of the military operation for which it is collected. The resultant state of the "data," "information," becomes the direct object of the third sentence.

The third sentence has both a main and subordinate clause, so each will be taken in turn. The main clause, "Analysis and evaluation transform information into knowledge," has as its agents "analysis" and "evaluation" (Department of the Army 2001a, 11-12). These agents are types of goal-oriented thought, mental activities performed deliberately and methodically to make a decision or reach an objective. Here, even before their contribution to action in and of itself is explained, the two

concepts are nominalized and made into metaphoric agents, as “processing” was in the first sentence. This practice of nominalizing cognitive functions that are subjectively experienced by individuals and conferring to them the agency they normally serve, which continues through the remainder of the paragraph, removes the individual thinker from thought, and further defines their status as separate entities with a public existence.

“Analysis” and “evaluation” make their contribution to this action by “transforming” “information.” The verb “transform,” like the predicate of sentence two, is also a ditransitive verb of change, but one that specifies the type of change that takes place, that is, a substantive or qualitative change. “Information,” the patient of this act, is defined as “(1) in the general sense, the meaning humans assign to data. (2) in the context of the cognitive hierarchy, data that have been processed to provide further meaning” (Department of the Army 2003d, Glossary-9). Although the categorization that takes place in sentence two does not seem like it would add much meaning, any “data” that makes it through that sorting process has been assigned a certain value of truth, making it eligible for further consideration.

In terms of the agents, to “analyze” is to look at something for its implications, and to “evaluate” is to think about it in terms of a larger frame, usually judging the value of it in relation to others in its class. The means by which the change is effected is inherent in the nature of these agents. So “information” becomes “knowledge” when the thinker makes connections between the information and his own previous ideas and memories, and assesses the information’s value. And, in fact, “knowledge” is defined as “in the context of the cognitive hierarchy, information

analyzed to provide meaning and value or evaluated as to implications for the operation," that is, it is the first step towards direct applicability to the mission (Department of the Army 2003d, Glossary-9).

The nature of this new entity "knowledge" is further explained in the subordinate clause of the third sentence, "which is presented to commanders as relevant information," wherein "knowledge" is the antecedent for the pronoun "which" (Department of the Army 2001a, 11-12). While no actual cognitive activity takes place in this clause, "knowledge" becomes the patient of the act of "present." Presenting is a kind of giving or transfer of possession, but one with some formality and ceremony that reflects its importance. The nature of the indirect object, the recipient of the object, "the commander" explains the reason for the formality of the transfer. A commander should only receive information necessary for him to make decisions, and its very presentation to him indicates its importance.

One interesting point of this last structure is the adverbial phrase, "as relevant information," which specifies not the manner of the verb, but the status of the transferred entity. It seems to imply that the act of presenting has some causal connection with the change. To consider what that role is, we should first look at the relationship between "knowledge" and "relevant information." "Knowledge" is defined in doctrine as "information analyzed to provide meaning and value or evaluated to implications of operations," while "relevant information" is that information "of importance to commanders and staff in exercising command and control" (Department of the Army 2003d, B-1 and 3-5). The progression seems to be

that of placing the information more firmly in terms of the mission's frame. "Relevant information" continues the change undergone by "knowledge."

This methodical process of affixing information more deeply into the frame of operations continues through the rest of the passage, but with a notable shift at the fourth sentence, "When commanders apply judgment to knowledge, it becomes understanding" (Department of the Army 2001a, 11-12). Instead of some abstraction of human mental capacity effecting an action, a human agent, the commander, takes charge of knowledge. However, this shift avoids the subjectiveness of individual thought because "the commander" does not refer to an actual human being. It denotes a role. As a role considered independent of a possible value, that is, an actual person who could fill it, the nature of his agency differs from previous agents only in degree of abstractness, not necessarily in kind. The role has the advantages of human agency with none of its disadvantages.

Just as the nature of the agent has changed, so has his action. Rather than effecting change in a relatively inspecific manner, the commander "applies judgment to knowledge" (Department of the Army 2001a, 11-12). The verb "apply" in the physical domain means to place a thinner, less substantial object onto a larger, more solid one. Here, "judgment" is yet another nominalization of a human cognitive capacity, but one that is noticeably more subjective in nature than abstractions of cognition that have formed the major links in this causal chain. When one "applies" something in the physical domain, such as paint to a wall, its appearance may change, but its substance does not. Similarly, while the commander's perception of

knowledge may have changed, as he recognizes its relevance to the mission, "knowledge" itself as an independently existing entity has not.

"Understanding" as the result of applying "judgment" to "knowledge," and as the agent of the last two sentences, deserves closer attention. It is defined as "knowledge that has been synthesized and had judgment applied to it in a specific situation to comprehend the situation's inner relationships" (Department of the Army 2003d, B-2). Defined as the highest level of conceptual activity in the cognitive hierarchy, "understanding" is not so much an activity as a stateof mind, an awareness of the complex possibilities and implications of some knowledge. It is one of the most subjective cognitive functions. At the same time, the more thoroughly one understands an idea or situation, the more thoroughly one has integrated it into one's own thoughts and memories, and the more effectively one can act in relation to it. This subjectivness is at once troubling and necessary; it threatens the metaphoric status of thought as an independent publicly existent agent, but it is absolutely necessary for the manner in which thought is finally tied to action.

The writers of Operations respond to this dilemma by yoking "understanding" to both decisionmaking, an act of "will," and to "will" itself. In the fifth sentence of the paragraph, "Understanding enables making informed decisions with less-than-perfect data," the agent "understanding" facilitates decisionmaking, one of the most important acts in the Army (Department of the Army 2001a, 11-12). This action is a break with the previous pattern; rather than effecting the change of one form of cognition into another, "understanding" assists the power to decide. In the sixth

sentence, “understanding” again makes change, but not independently; “Combined with will, understanding generates effective action” (Department of the Army 2001a, 11-12). In both instances, by helping create it, “understanding” makes a necessary but not sufficient contribution to action.

“Will,” the ability to make decisions and the power to carry them out, hovers between thought and action. “Understanding” as the final stage of thought assists it in two ways – assisting it in general, and assisting it to create the end product of the cognitive process and the standard for successful operations, effective action. While the repetition of the agent is obvious, the repetition of the factor of “will” is less obvious, since it appears first a capacity of “will,” i.e., “decisionmaking,” that is the beneficiary of understanding’s assistance, and then as itself, buried in an adjectival phrase that deemphasizes its necessary role in generating action.

One thing to note about cognition as explained in terms of “relevant information” is that while thought is doubly linked to action in terms of sharing the common characteristic of causation, and in terms of being a contributing cause, the manner in which it effects that cause is markedly different from the type of action central to military operations, war (Fahnestock 87). War relies on kinesthetic action, mainly striking and moving, to destroy and possess. It eliminates and displaces other objects.

However, if this same vital relation of cause were recruited directly into the blended space unaltered, it would be incompatible with the act of cognition, since destruction would result in ignorance, the opposite of cognition’s goal. The various gerunds of cognition, “processing,” “analysis,” “evaluation,” “judgment” and

"understanding" instead, "assign," "change," and "transform" and then, in conjunction with will, "enable" and "generate" action. The emergent structure of this blend is the transformation of "information" into an agent, and of the vital relation of cause and effect from damage and destruction, to transformation, and, eventually, creation.

The Cognitive Hierarchy

By making "information" an agent, the writers of Operations both yoke it to action and conceptually free it of its ties to the individual thinker. The concept of the "cognitive hierarchy" further ties the mind to the uses of military action by not only transforming thought into a corporate activity, but making "information" a means of control. "Control" is defined as

> within command and control, the regulation of forces and battlefield operating systems to accomplish the mission in accordance with the commander's intent. It includes collecting, processing, displaying, storing, and disseminating relevant information for creating the common operational picture, and using information, primarily by the staff, during the operations process (Department of the Army 2003d, Glossary-4).

Mission Command lists three elements essential to the art of control; information, communication, and structure (3-4). "Information" has already been defined, and "communication," the ability to communicate, is defined as "to use any

means or method to convey information of any kind from one person or place to another" (Department of the Army 2003d, Glossary-4). "Structure" is defined as "an element of control: a defined organization that establishes relationships among its elements or a procedure that establishes relationships among its activities" (Department of the Army 2003d, Glossary-13).

Because "information" inherently involves the individually performed and subjectively experienced act of thinking, not only is it difficult to link it to public, objectively existing action, it is also difficult to control; people can come to their own conclusions about a given piece of information, and, because thought leads to action, could act in ways that do not further mission accomplishment. It is not enough, therefore, to tie cognition to action, as the discussion of "relevant information" does through the figure of gradatio. The Army constrains the thought process in another way, through the third means of control, "structure." In the military, the most pervasive type of structure is the hierarchy.

The thought process as conceived of by the Army is flanked by not one but two hierarchies. The first is the military hierarchy, which is not only far more formal and rigid than almost any comparable civilian organization, but is enforced by the rule of law. Serious violations of the chain of command, such as fraternizing with a subordinate or flouting the authority of a superior, are punishable through the Uniform Code of Military Justice. It fosters obedience to the roles that each soldier fills in the organization, not to the person. In the figure depicting the cognitive hierarchy, the chain of command is on the right, with the lowest level being the

soldiers who collect and process data, and the highest level being the commander, the conceptual basis of the chain of command.

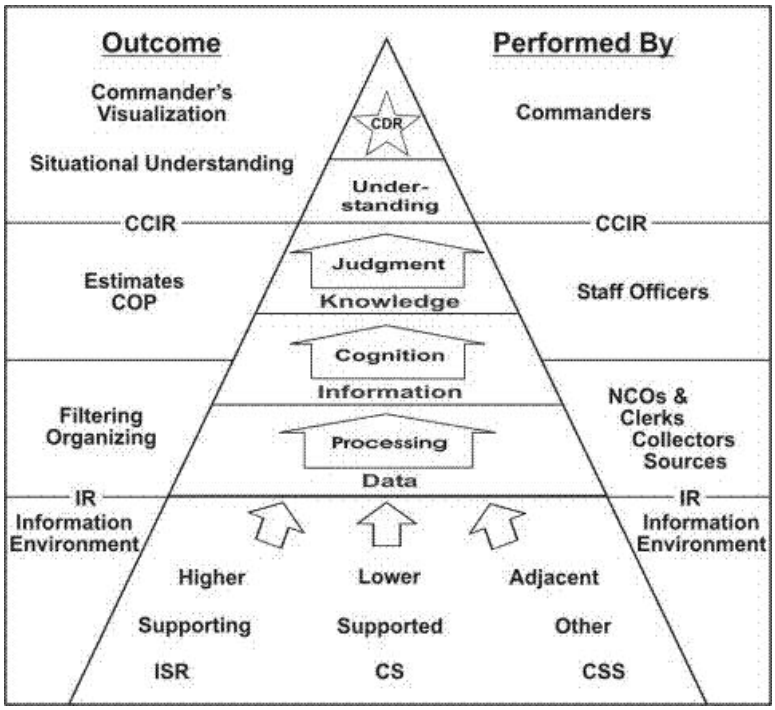


Fig1.5 The Cognitive Hierarchy (Department of the Army 2003d, 3-3)

The second is the hierarchy of the outcome of each successive thought process, beginning with filtered and organized information, progressing to estimates upon which the COP, or common operational picture, is created, leading then to situational understanding on the part of the commander, and culminating in the commander's visualization of the operation. Each level on the left is visually tied to the rank of the group on the right.

The pyramid is divided into multiple levels, each of which represents a different cognitive function. At the base are the collectors or sources of data. These

include higher headquarters, assets not organic to the unit but assigned to support it, intelligence, surveillance and reconnaissance assets, or ISR, subordinate units, supported units, combat support units such as signal, adjacent units, and combat service support, or CSS. The sources are listed from top to bottom, and then left to right, according to how much and what type of information they can provide.

The next four levels are different forms of information, respectively "data," "information," "knowledge" and "understanding," each of which is linked to the one above by a cognitive function. The structure is supported on the right by the agents who perform each function, and on the left by the information products that come out of the various processes. At the top of each hierarchy is the commander, who visualizes, has understanding, and makes decisions.

The depiction, like its source domain of the hierarchy, relies heavily on orientational metaphors, most obviously "Good Is Up" (Lakoff and Johnson 1980, 18). The term "good" means that it helps commanders and staffs make decisions and run an operation, as the definition of "relevant information" shows. The illustration also draws heavily on metaphors of size, but not from the most common metaphor of Size Is Importance; if that were true, the pyramid would be inverted (Lakoff, Master Metaphor List). Instead, smaller size indicates rarity, which in turn corresponds to importance. Therefore, the commander as the apex of the pyramid is the most important entity in the cognitive hierarchy. While his knowledge may not be as detailed as that of his subordinates, it is cumulatively greater, and, through the decisions he makes, has a correspondingly greater impact on the unit.

Such representations depicting the most authoritative element atop its subordinate units are not uncommon, as the line-and-block chart of the infantry unit illustrates. However, there is a notable difference between the cognitive hierarchy and a line and block chart. While both emphasize height and subordination, in the line and block chart, higher echelons are connected to but do not rest upon their subordinate elements; there is no visual dependence of higher levels on lower levels. Together, the units constitute the whole, but each is discrete. In contrast, each level of the pyramid shares a surface with the next, which at once separates it from and connects it to other levels, emphasizing the dependence of each echelon of information upon the lower levels. The levels share common boundaries and depend explicitly on one another for composition and position within the hierarchy.

It would be quite easy to disprove the implied notion that each level of personnel performed only certain cognitive functions; for instance, the person who emplaces a collection asset must obviously have an understanding of the mission and use judgment as she allocates them. The blend has more interesting emergent structure, however.

One of these is the divisions themselves. In most cases, the lines separating the levels do not cut across all three interdependent hierarchies. There are, however, two absolute barriers that cut across all three structures; information requirements, or IR, which separate the cognitive process from the information environment, and the commander's critical information requirements, or CCIR, which separate the commander from his staff. Information requirements are defined as "all information elements the commander and staff require to successfully conduct operations; that is,

all elements necessary to address the factors of METT-TC" (Department of the Army 2003d, B-15).

The positioning of IRs in the diagram has some interesting entailments. First, this separation of the thought process from the environment conveys a semblance of objectivity, with the entailment that the force collects information from but is not affected by the environment. Secondly, because IRs are driven by mission requirements, information that does not relate to the mission will not even make it into the cognitive hierarchy. While framing is a basic cognitive function, the frame provided by METT-TC is part of the challenge to today's Army, where "civil considerations" may not only outweigh the mission, but in many instances have become the mission.

The second barrier is the distinction between the commander and the rest of the cognitive process, the CCIR. These are PIR, priority intelligence requirements, "those intelligence requirements for which a commander has an anticipated and stated priority in his takes of planning and decisionmaking" and FFIR, "information the commander and staff need about the forces available for the operation" (JP 1-02; Department of the Army 2003d, B-15). PIRs are tied to actions of the enemy; for instance, should the enemy's artillery assets arrive at a particular point in time and space, the attack helicopters will take the target, whereas if they arrive fifteen kilometers to the west, multiple rocket launcher assets requested from higher will take it out. In contrast, FFIR are centered on the unit's own forces. FFIR are about "mission, troops and support available, and time available for friendly forces," such as the status of the aforementioned attack assets (Department of the Army 2003d, B-

15). PIRs and FFIRs are both subsets of IRs, but they are unique in that the commander personally approves them. In other words, the commander determines what is most relevant for him to know, giving him an additional barrier from the "information environment" and imbuing him with further objectivity.

The cognitive hierarchy, in both its explanation in terms of "relevant information" and its depiction in Mission Command, fulfills the expectations of the source domain of military culture. It transforms the thought process into a centrally controlled, corporate activity whose success depends on the division of labor between numerous individuals, and whose results are measured by the sum of the soldiers' collective efforts. Similarly, while the common understanding of war focuses on the individual soldier in the setting of close combat, warfare in reality depends on the combined labor of thousands of soldiers in noncombat military occupational specialties, troops who provide materiel, maintenance, communication, and intelligence support that makes that individual infantryman's efforts both possible and effective.

While close combat serves as a general organizing principle for a unit's collective efforts, the commander and his supporting chain of command provide both the concrete goal in terms of the specific mission and its execution, and the leadership and authority that get that mission accomplished. The line and block chart as a representation of military organization highlighted one aspect of that structure, the cohesiveness of each individual unit and the authority each commander has over it. A commander may give a mission to his subordinate units, but not direct how they accomplish it, reflected in the leadership maxim, "Tell me what to do, not how to do

it." Each unit is a model miniature of the one above it in terms of structure and authority, if not in terms of function.

The pyramid of the cognitive hierarchy represents a different, complementary aspect of that organization, the interdependence of the units' efforts, both vertically in terms of the overall mission, and horizontally in terms of enabling their counterparts to function effectively. If one unit in combat is the main effort in an attack, its ability to move forward, take terrain, and destroy the enemy depends on its counterpart's success in fixing the enemy forces and thereby protecting its own flanks. Similarly, the ability of analysts tracking the main effort of the enemy's operations depends on other analysts who trace indicators that confirm or deny possible alternative courses of action.

The blend of the cognitive hierarchy also has emergent structure not predicted by its inputs, in that it characterizes the thought process as one of continually sorting data, with the information moving up the pyramid and being slowly narrowed by a succession of increasingly stringent criteria. While this type of physical metaphor for thought actually comes from the domain of cognitive functions, specifically that of categorization, categorizing is only one of numerous other conceptual activities. Its emergence in the cognitive hierarchy as a paradigm for all thought processes is motivated by several factors.

The first comes from the domain of thought itself. As the bridge between perception and thought, it is both a necessary and contributing cause to all the other mental activities. The second is the simplicity of the principle itself. Based on a physical activity of which most human thinkers have deep experiential knowledge,

categorization as a ready model for thought as a whole comes easily to most audiences. Thinkers can make direct and easy correlations between placing like physical objects into groups according to a predetermined principle, and associating like bits of information with one another through a perceived similarity.

But one of the strongest motivations comes from the nature of staff work itself. During the course of any military operation, a staff can be inundated with information from both higher and subordinate units, a flood made possible by the proliferation of tracking and communication technologies on the battlefield. The sighting of a single enemy weapons system can be reported by several different sources, while reports spawned by the activities of a single unit can number in the dozens, increasing with every event. The situation is exacerbated by the fact that certain redundancies are built into any reporting system to ensure both the availability and reliability of information. Reducing the data is the only way to gain a clear perspective on an already complicated and everchanging situation.

Blends and metaphors are created constantly, but only those that seem to enhance understanding have staying power. The pyramid of the cognitive hierarchy gains from “relevant information” the necessary links of information to action, and from the chain of command hierarchy the orientational and physical metaphors and their entailments. While its power does come from fulfilling our expectations of common metaphors of mind and thought, what makes the cognitive hierarchy particularly persuasive is its reliance on action, both as its mode and objective, and on the chain of command.

Problems With The Army's Theory of Mind In The Real World

While the blend of the cognitive hierarchy seems to enhance the Army's understanding of thought processes, it actually serves to reinforce previously held knowledge rather than to explain the functions of the mind. Its heavy reliance on key aspects of military culture it elides critical aspects of the thought process.

One aspect frequently mentioned above is the individual, subjective nature of the experience of thinking itself. While the notion of "relevant information" does this by substituting cognitive functions for human agents, the blend of the cognitive hierarchy further develops this technique by recruiting from the source domain of a common metaphor used in many frames both in and outside the military, An Institution Is A Person (Lakoff, Master Metaphor List). Using the conceptual tool of compression, thinkers simultaneously condense the individual members of an institution and map the activities of certain individuals or groups within the institution onto those of a single human being (Turner and Fauconnier 2002, 116). It underlies such expressions as "That office is the brain of the company," "A strong laity is the heartbeat of every parish," or, in the Army, "The scouts are the eyes and ears of the unit."

Instead of compressing the members of a corporation into an individual, however, the cognitive hierarchy reverses that process, decompressing the cognitive activities of a single individual and mapping them onto the functions of an institution. The unity of an individual human being's subjectivity is replaced by the unity of common ground, in terms of both the mission and how to achieve it. The Army,

unlike other organizations, can actually count on its members sharing that common ground because it formally trains its soldiers in that knowledge as soon as they enter the military.

Another aspect of the thought process that the cognitive hierarchy distorts is the nature of the relationships between those functions. As Barsalou explains in his work, the functions can impact one another reciprocally. A change in frame can effect a change in category, and an unfamiliar concept may task the long-term memory. Such reciprocity cannot exist in the Army's concept of mind because it would disrupt the integrity of the hierarchy, violating the chain of command and undermining the authority upon which it rests. The stability of the cognitive hierarchy, visually reinforced by the image of the pyramid, provides a sense of predictability and permanence in the tumultuous activities of both thought and warfare. It does so, however, at the cost of the originality and fresh perspective associated with independent thought.

But one of the most significant misrepresentations that this model effects is how the mind relates to the world. In the cognitive hierarchy, the first separation made is between the hierarchy itself and the environment. The mind understands the environment by collecting huge amounts of data and processing it, but does so without entering the environment itself. In other words, not only does one not need direct contact with the world, one can't have objective knowledge about it unless one is separated from it.

Another important disparity is how the cognitive hierarchy portrays the processing of information. It does so simultaneously in two different ways. First it

characterizes the process as a kind of a formal, step-by step purification, in which "relevant information" is gradually extracted from the impure, redundant, or irrelevant information in which it is mired. In the same sentences, however, it also characterizes the activity as "giving meaning" to information to make it more relevant. This view has two interesting, but conflicting entailments. The first is that of the metaphor of extraction itself, which implies that there is a separate, objective reality about which the thinker can have direct knowledge when she separates it from impure data. The other is that meaning is something that thinkers "add" or "give" to information to make it better and more useful.

Their contradiction lies in the fact that if one seeks to "purify" a substance, one doesn't add anything to it, unless it is a catalyst that effects further purification. The entailment they both share is that the ability to think about and find meaning in the world can be separated from the nature of the thinker himself, and that the ways of getting that direct knowledge are as straightforward as the physical processes of smelting and assembly. This blend fulfills the expectation of common metaphors of thought. However, as the previous review of theories by Lakoff and Johnson, Turner and Fauconnier, and Clark have demonstrated, thought and communication are vastly more complicated that these activities.

Just because an assumption is inaccurate does not mean that it is not influential. This conceptual blend might suffice as a heuristic about the way the Army conceives of information management within its own institution. However, the Army created this theory of mind not because it wanted an introspective examination of how it communicates with its own members, but because the radically changed

environment of international security has forced it to deal with audiences it had never considered in ways it had never imagined. This concept of thought, a centrally controlled process of elimination that handles only data, and of mind, a corporate entity stripped of the individuality that makes possible original thought, severely limits the understanding of and effectiveness in the fields of information operations, psychological operations, and stability and support operations.

The Mind and Communication.

The very concept of Mind as an entity underlies Western philosophy. It conceives of the mind, the spirit, and the physical self as independent components of one's personhood that can act and be acted upon separately. A famous heuristic that depends on this construct is that of Aristotle's three rhetorical appeals, ethos, or credibility, logos, or reason, and pathos, or emotion. Each has a counterpart in this tripartite concept of the self, ethos in the person, logos in the mind, and pathos in the spirit or heart. It's such a common heuristic among students of language that it's often hard to see the way it which it cripples the Western approach to the nature of thought; by separating thought and emotion, it makes the implicit claim that emotions are not logical.

That separation, as damaging as it is, at least presupposes that one can look at the world other than through the lens of logos. The Army's concept of mind extends the reach of that damage by focusing almost exclusively on a theory of mind. It seems natural for a military organization to rely on thought and ignore emotion, because the West conceives of thinking as something one does, and emotions as something one

experiences. By concentrating on the rhetorical appeal that highlights its own agency, the Army fails to explicitly examine its own notions of credibility, or to understand the ways in which emotion impacts its own decisions.

A good example is the now notorious instance in which the Secretary of Defense Donald Rumsfeld was confronted very publicly by a soldier during a news interview. Specialist Thomas Wilson asked the Secretary why troops were forced to scrounge scrap metal from junkyards to uparmor their vehicles (Sherman 2004b). The confrontation received widespread media coverage in the United States. Within the Army itself, it sparked questions about the production rate of armor; the Army Times soon revealed that the contractor's factories were running at only 80 percent of capacity despite the fact that 85 percent of all trucks were underprotected (Sherman 2004a).

While the Army Times would probably have characterized both the incident and its response to it in terms of logos, it is easy to see how the military's unexamined notions of credibility and emotional impact have influenced the debate. The soldier had far more credibility not despite the fact that Rumsfeld vastly outranked him, but because of it; as a lower enlisted soldier, it was assumed that he would have far better direct knowledge of the situation "on the ground" than would the Secretary. His rank also underpinned the emotional appeal of the story. American soldiers often side with the underdog in a fight, and combined with the notion that every soldier deserves the best equipment that America can provide, the specialist's bravado tipped the sympathy scales vastly in his favor. Yet none of these factors have been brought to the forefront in discussions of the incident.

The inability to examine the realms of emotion and credibility has an even deeper impact in the current environment, in which the Army must constantly communicate with other audiences on the world stage of international media. In terms of concrete instances of rhetorical appeal, this means that factors of credibility that we as American soldiers take as given, such as formal rank and combat experience, may count for little to many audiences in the world. In terms of overall approach to the problem of communication, it means that we will try to communicate using a logos-based approach to audiences for whom this division between the heart and the mind may not exist.

The Dissertation Structure

In the chapters that follow, I will trace the impact of this theory of mind on the Army's approach to thought, communication and persuasion. Although much of the doctrine examined has been updated, changed, or created recently, it is not necessarily groundbreaking or new. In fact, Mission Command itself is one of the later creations. As its explicit link to the earlier manual Operations demonstrates, Army doctrine is not an innovative corpus. It records the evolution of Army thought; it does not lead it.

All the documents I will examine have attempted to deal with the introduction of the new entity of "information" in terms of the disciplines they represent. Because they all rely on the model of the mind and thought laid out in the cognitive hierarchy, all of them fail in ways that pose significant risk to the Army's soldiers and to the success of its operations.

Chapter Two examines a foundational conceptual approach to warfare, the elements of combat power. It incorporates "information" by making it the fifth element of combat power, placing it beside "maneuver," "firepower," "leadership," and "protection." However, it does so by relying on the notion of thought as something one "does," which makes it difficult to understand how it can be so powerful in the hands of noncombatants, civilian news agencies, and refugees, those who can "do" so little. Adding "information" to the confines of the theory of mind as it is laid out here restricts the concept of thought to processing of data and leaves the readers without an understanding of how others think. Combined with the vulnerability that a robust communications infrastructure presents, the fifth element of combat power remains confined to mainly an enabling, defensive role.

Chapter Three analyzes the new discipline of "information operations," (IO), one invented specifically to confront the challenges of thought, communication, and persuasion in the "information environment." It obviously relies heavily on many aspects of conventional operations, both in the way it categorizes different of functions of IO, which is modeled on the battlefield operating systems (BOS), and its division of IO effects into "offensive" and "defensive." Like the Army's concept of the mind, it reverts to the safe ground of action, and the type of action that the Army is best at is warfare. By conceiving of "information" explicitly in terms of warfare, the discipline of IO emphasizes activities that are peripheral or even damaging to successful communication and persuasion.

Chapter Four examines one of the most deliberate and detrimental uses of the source domain of warfare. In the manual Psychological Operations, the writers

promote the use of the four-step targeting model as a heuristic for understanding the arts of communication and persuasion. The model comes from the discipline of field artillery, in which it is used to plan ways to find and destroy the enemy. While it relies on the common conceptual metaphor Communication Is Sending, the extension of that metaphor into the realm of artillery leads the thinker to conceive of persuasion as firing a weapon at an audience. A major goal of persuasion is to get an audience to act, and conceiving of them as a physical target to destroy clearly eliminates that possibility.

The final chapter examines characteristics of peace operations as laid out in Stability Operations and Support Operations. The ultimate goal of peace operations is for the local nationals who are initially controlled by the peacekeepers to gain in strength, stability, and agency so that they can take charge of their own country, allowing peacekeepers to leave. The manual itself is a well-written, carefully considered examination of the complex nature of these operations. Its major issue is that it finds it difficult to clearly characterize the conditions for success in peace ops. Common metaphors of success include moving forward, moving upwards, and taking possession. Successful peace ops contradict these notions in that the peacekeeping force moves backwards, reduces in size, relinquishes control, and eventually leaves. That is, the physical event shape of success in peace operations conflicts with the common conceptualization of success in general.

In examining these documents, I want to challenge the Army's concept of what it means to "change the way we do business." That usually means training harder, training more, issuing new equipment, and writing new doctrine. These

changes are only skin deep. Not only do they rely on concepts of thought, action, and communication that underpin traditional doctrine, they expand upon and promulgate them. In order to make “new” thinking truly “new,” one must first understand what “old” is. This dissertation is a step in that direction.

CHAPTER 2 - The Elements of Combat Power

Introduction

One of the most notable impacts that "information" has had on Army is on the concept of the battlefield itself. In its discussion of the "battlespace," the authors of the manual Operations seem to signal a significant change in the frame of warfare. Just as the notion of the cognitive hierarchy indicated that the military now had to explicitly consider aspects of human abilities that it had previously taken for granted, so its discussion of the "information environment," and the inclusion of "information" as an element of combat power denote a new approach to battle. Upon deeper examination, however, this appears to be a very uneven expansion. While the numbers and types of agents that can impact military operations has multiplied, and the manner in which those agents can influence them has also increased, the ways in which the military can respond seem to have actually diminished. An awareness of the potential of "information" in all its meanings has at once increased the Army's responsibilities while reducing its freedom of action.

The elements of combat power comprise a radial category, that is, a set of concepts that share the common feature of being ways the Army conceives of its capability to destroy the enemy, but each represents a different way of doing so. In the 1993 edition of Operations, the four elements, "firepower," "maneuver," "protection," and "leadership," shared tight conceptual links framed by a clearly defined concept of the battlefield, one whose physical and conceptual boundaries were marked by the maximum effective range of a unit's most powerful weapon system. That is, it was based on a unit's ability to apply physical destructive power.

The “battlespace” and the “information environment,” tied to human thought and communication, have undermined brute force and sheer willpower as the basis for success in war, thereby forcing a reconstruction of the category of “combat power.”

Category Theory

Because classical category theory contends that the characteristics defining a category determine its membership, a logical outcome of this premise is that categories should not change; if something appears that does not fit into current classification systems, the thing would constitute a new category, rather than necessitating a change to the old ones, and categories should remain stable no matter in what context they are considered (Lakoff and Johnson 1987, 6). However, we do modify or negotiate category systems when we find things that don’t fit current criteria; the scientific community did with the discovery of the platypus, a warm-blooded creature that lays eggs instead of bearing live young. Categories can also change based on the frame from which one views a potential member; the domestic dog, for instance, is considered in many parts of the west a household pet, while in Asia some cultures view it as a form of livestock and a source of food.

As Lakoff and Johnson have demonstrated, categories are far more complex constructions than many had believed. Classical category theory holds that members of a given category are grouped together based on a shared list of common characteristics, such as mammals, who are defined as being warm blooded and producing live young (Lakoff and Johnson 1987, 6). Lakoff and Johnson show that instead categories are radial, that is, while there may be members that are more or less

central to a given group, the rest of the items may be included because they share one or more of the features of that central concept, but not all members may share a common set of traits (1987, 91).

Sometimes, however, these two motives for category negotiation can be related. Such is the case with the elements of combat power. In the 1993 edition of Operations, FM 100-5, there were four: "maneuver," "firepower," "protection," and "leadership" (Department of the Army 1993, 2-10). In the 2001 version, FM 3.0, there are five: "maneuver," "firepower," "leadership," "protection," and "information" (Department of the Army 2001a, 4-3)[2]. The three major changes in this heuristic are the marked expansion of "protection," the addition of "information," and the change in the position of "leadership" in the list's order. These modifications in content and organization result from the expansion of the battlespace to include the "information environment."

However, the incorporation of a new member does not mean that it can be completely homogenized into the rest of the category. Each of the elements of combat power is expanded from a core definition, comprising individual radial categories of their own. The differences between the elements manifest themselves in the various ways the individual subcategories develop. The four original elements, which are firmly based in a physical frame, retain those core frames as the motivating factors in the explication and organization of their respective subcategories, while the new element, "information," spends most of its time trying to establish that it does have a tangible relationship to the other members. This paper examines how, in their attempts to retain the surety of physical action that once served as the foundation for

[2] In this chapter, 100-5 will refer to the 1993 edition, and 3.0 to the 2001 edition.

that category, the writers diminish the concept of "information" as a force in the battlespace.

The Evolving Notion of the Battlespace

Conventional warfare has been the foundation of all U.S. Army operations, presupposing the existence of at least two technologically sophisticated armies of opposing nations that meet in combat, and whose primary target for their destructive energies is one another. Victory means that one army has physical possession or control of terrain that both nations desire, and that the other army is rendered physically incapable of further combat operations, or surrenders. This is the frame within which the original four elements of combat power was constructed.

Warfare has never been easy, but the concept of the battlespace in 100-5 Operations seemed much simpler than that of 3.0. The term "battlespace," which includes not only the physical dimension of the air, but the addition of time to the older, more terrain-based concept of "battlefield," is defined in 100-5 in this manner:

> components determined by the maximum capabilities of a unit to acquire and dominate the enemy; includes areas beyond the AO; it varies over time according to how the commander positions his assets (Department of the Army 1993, Glossary-1).

The AO is the area of operations, that is, "a geographic area assigned to an Army commander by a higher commander – an AO has lateral and rear boundaries which usually define it within a larger joint geographical area" (Department of the

Army 1993, Glossary-1). A unit's own capabilities define its area of operations. Larger units by design will usually have collection assets and weapons with longer ranges; a division will have both LRS (long range surveillance soldiers who are inserted deep into enemy rear areas to observe key targets) and attack helicopters, while a battalion will have scouts, whose range is determined by what kind of platform they are assigned (dismounted or HMMWV) and mortars. The assumption underlying the definitions of battlespace and AO as laid out in the 1993 edition is that the scope of a unit's responsibilities and mission directly corresponds to the distances it can see and kill.

The Interlocking Frames of the Original Four Elements of Combat Power

"Maneuver," "firepower," "protection," and "leadership" as defined in 100-5 were conceived of within this framework, one in which taking terrain while retaining the ability to continue to take more terrain was the measure of success in warfare. This 1993 edition emphasized the importance of their coordinated employment, which would "decide the outcome of campaigns, major operations, battles, and engagements. Leaders integrate maneuver, firepower, and protection capabilities in a variety of combinations appropriate to the situation"(Department of the Army 1993, 2-10). The primary frame for their employment was the battlefield, and the primary agent who ensured their skillful application was the leader. The four were defined as follows:

> Maneuver is the movement of combat forces to gain positional advantage, usually in order to deliver – or threaten to delivery of – direct and indirect

fires. Maneuver is the means of positioning forces at decisive points to achieve surprise, psychological shock, physical momentum, massed effect, and moral dominance over the enemy, rendering his reactions ineffective, and eventually leading to his defeat (Department of the Army 1993, 2-10).

Firepower provides destructive force; it is essential in defeating the enemy's ability and will to fight. It is the amount of fire that may be delivered by a position, unit, or weapon system. Firepower may be either direct or indirect, (Department of the Army 1993, 2-10).

Protection. Protection conserves the fighting potential of a force so that the commanders can apply it at the decisive time and place. (Department of the Army 1993, 2-10)

Leadership. The most essential dynamic of combat power is competent and confident officer and noncommissioned officer leadership. Leaders inspire soldiers with the will to win. They provide purpose, direction, and motivation in combat. Leaders determine how maneuver, firepower, and protection are used, ensuring these elements are effectively employed against the enemy (Department of the Army 1993, 2-11).

Each of these elements is based on a physical scene that is an important subframe of the larger frame of conventional warfare. They are embodied in the brief

tactical scenario described in Chapter 1. In both 100-5 and 3.0, the elements of "maneuver" and "firepower" are discussed together because successful maneuver exploits the effects of firepower, and vice versa. That is, damaging and destroying enemy forces is a necessary condition of movement, and movement enables firepower assets to get closer to enemy forces and thereby deliver fires throughout the depth of those formations. However, as I discuss the elements, I will pair them together in a slightly different way so that I can illustrate how their frames interlock.

The first element of combat power is "maneuver." It is based on the physical scene of a person moving through space towards a goal while avoiding obstacles in his path. In military terms, "maneuver" usually refers to movement conducted by a unit of soldiers towards an objective on the ground that is occupied by enemy forces they must destroy or pursue. As in the more general understanding of the concept, the soldiers do not move directly towards the objective, but make diversions in their route to evade detection by the enemy and enable them to approach him from a direction that will put him at a disadvantage.

No military unit exists without a leader; if only two soldiers survived out of a battalion, the more senior of the pair would take charge of the mission and be responsible for the mission and well-being of this one remaining soldier. "Leadership," the second element, does not exist in a vacuum; a leader needs followers, and a goal towards which to lead them. In the core physical scene of leading, the commander moves towards the objective in front of his unit. With the advent of more sophisticated communications technology, a leader no longer need be physically in front of his unit to direct them; he can move behind the formation,

maneuver through it, or even fly above it and still be intellectually and conceptually "out front." Even if he is "leading" them in their work repairing aircraft in a rear area maintenance facility, he shares the elements of soldiers and an objective with the element of combat power, maneuver.

The next two elements of combat power, "firepower" and "protection," are similarly related. Firepower is based on the physical scene of firing a weapon at a target, and in war that target is usually an enemy soldier or piece of equipment that is occupying the objective towards which the friendly unit and their leader is maneuvering. The most important element in the frame of firing is not the target, or even the weapon; it is the projectile that injures or destroys.

Of course, the ability to lead, maneuver and fire are to no avail if the unit constantly accrues casualties. "Protection," the fourth element of combat power, has as its core scene a soldier being fired at as he hunkers down in a foxhole, often with overhead cover, behind sandbags or logs that absorb the impact of the rounds, protecting him from the effects of firepower. The salient elements of the frame are the projectile, the barrier, and the soldier that needs protection. Many times, that soldier's position sits atop a desirable piece of terrain, one that is usually the objective for the enemy soldiers that are firing at him.

The original four elements of combat power are tightly connected both conceptually and temporally through shared elements in their overlapping frames, all of which cohere around the objective. The four elements are so cohesive a unit that they can be metaphorically conceived of as a single soldier.

Input space 1 is the soldier himself, and his component parts, the parts having a synecdochal relationship to the soldier. Input space 2 is the four original (and still doctrinal) elements of combat power. Input 1 provides not only the overall structure for the blended space, but direct material anchors for the concepts of space 2. In the blend, “maneuver” is the soldier’s legs, “firepower” is his weapon, “protection” is his body armor and helmet, and “leadership” is his head, which metonymically stands for the conceptual and decision-making capabilities of his mind.

By describing the respective parts of the soldiers metaphorically as elements of combat power, the inner space vital relations of the parts of the soldier to the soldier are no longer just synechdochal, but cause and effect (Turner 82). This entrenched material anchor is so powerful that the actions of enormous units, such as divisions of thousands.

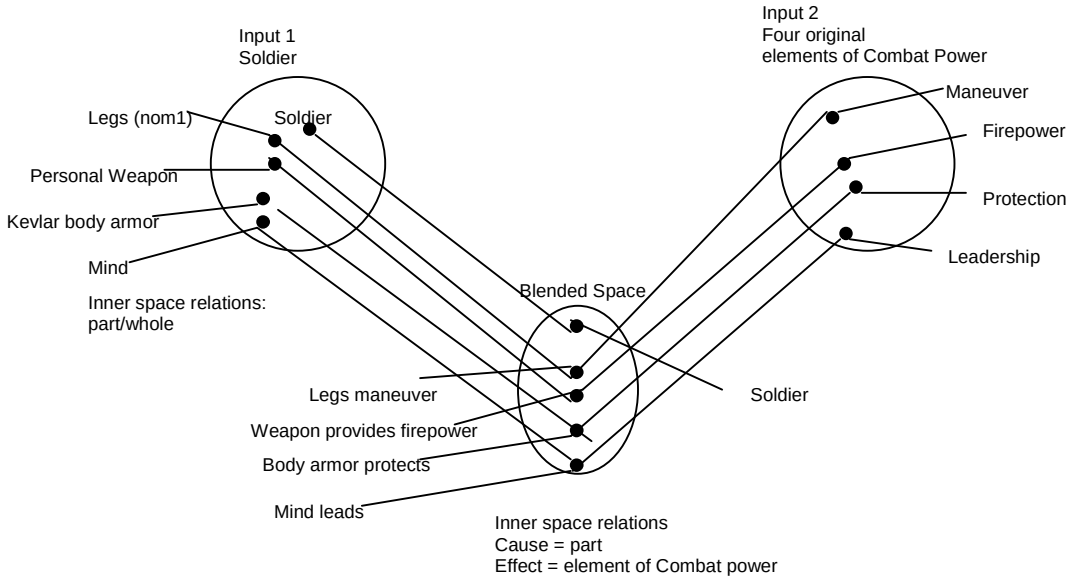


Fig 2.1 Soldier Blend

of soldiers and hundreds of weapons systems, can be compressed to human scale and described in bodily-kinesthetic terms. For instance, one way to conceive of an ideal offensive, combining the principles of war of "offensive," "mass," "maneuver," and "surprise," is to portray it in terms of a fist fight: "'Hit the other fellow as quick as you can, as hard as you can, where it hurts the most, when he isn't looking'" (Department of the Army 1993, 7-0). This compression is a powerful and highly productive tool of imagination, analysis, and planning that allows military leaders, and indeed any planner, to grasp the whole of a vast and complex operation while relating the impact of crucial details, such as the resupply of specific types of ammunition or fuel, to the success of the operation as a whole.

Besides bringing the vast scale of a military campaign down to human proportions, the blend has another conceptual advantage. It conforms to the expectations that thinkers have of the common metaphor, An Institution Is A Person, lending the unity of purpose we associate with a single human being to a corporate entity. It also parallels the compression and blend created in the Army's theory of mind, in which thought becomes a corporate activity. Given the complexity of current military action, unity is no longer only a conceptual metaphor, it is also an ideal towards which the Army strives:

> Unified action links subordinates to the combatant commander under combatant command (command authority) (COCOM). Multinational, interagency, and nonmilitary forces work with the combatant commander through cooperation and coordination. Regardless of the

> task or the nature of the threat, combatant commanders employ air, land, sea, space, and special operations forces, and coordinate with multinational and interagency partners, to achieve strategic and operational objectives. They formulate theater strategies and campaigns, organize joint forces, designate operational areas, and provide strategic guidance and operational focus to subordinates. The aim is to achieve unity of effort among many diverse agencies in a complex environment (Department of the Army 2001a, 2-1).

Conceiving of a force as a single human being allows military thinkers to unify their actions across the boundaries of echelon, military service, nationality, physical location, operational type, and conceptual strategy.

The Information Environment

The powerful core scenes of the original four elements and their shared frame of warfare make them ready source domains for both compression and metaphor. In the most recent edition of Operations, the discussion of each of these four elements retains these core meanings while being markedly expanded. The elaborations all seem intuitively sound, despite the fact that some of them seem to bear little resemblance to their originals. The ease and productivity with which these concepts are applied to other domains of human endeavor demonstrates how fundamental they are to human thought, and in turn serve the principle aim of doctrine: “to provide a common language and common understanding of how Army forces conduct operations” (Department of the Army 2001a, 1-14).

Doctrine, like any type of procedural discourse, is useful only if it can be read and understood by the members of its target audience, and give them enough information to carry out an act with particular results. The manual Operations is particularly crucial within the larger body of Army doctrine because as a keystone manual it lays down the principles according to which all other activities in the institution must operate (Department of the Army 2001a, 1-14). And, since the Army's mindset is predicated on success in combat, the conduct of all other operations conforms to or supports the principles of war and the elements of combat power.

As kinetically based as combat is, however, soldiers do actually think and communicate while they are fighting. Thought and communication are essential to warfare, in that soldiers must plan and coordinate battles and their supporting operations at every echelon, and must respond to the enemy's actions. The sheer volume of written material used to train for, plan, and execute warfare, as well as the sophisticated communication infrastructure that supports it, should be ample proof of this. Yet these conceptual activities remain backgrounded in this frame not because they are insignificant, but because the type of information needed and exchanged within a given force is, in many ways, conceptually homogenous in the same way that the elements of combat power themselves were. Just as those elements were bound by the common concept of destroying the enemy, so most information requirements concern the enemy's activities and what the friendly force must do to kill him. Combined with the facts that members of a given armed force normally communicated only amongst themselves, that they shared a deeply ingrained common

background, and were once able to exercise some control over what information reached the outside world, it is easy to understand why the activities of thought and communication have been taken for granted.

Military operations are no longer closed to the viewing public. In its discussion of the "information environment," the Army describes a frame of elements and relationships that hampers its ability to operate, but that it simply cannot address in the same way it would a physical threat. The defensive tone of this description sets the conditions for a transformation of the battlespace from an arena of action to a fishbowl, in which the elements of combat power can do more lasting harm to the force that wields them than the one that sustains the blow. 3.0 describes the "information environment" in this way:

> All military operations take place within an information environment that is largely outside the control of military forces. The information environment is the aggregate of individuals, organizations, and systems that collect, process, store, display, and disseminate information; also included is the information itself (see JP 3-13; FM 3-13). National, international, and nonstate actors use this environment to collect, process, and disseminate information. The media's use of real-time technology affects public opinion, both in the U.S. and abroad, and alters the conduct and perceived legitimacy of military operations. Now, more than ever, every soldier represents America—potentially to a global audience (Department of the Army 2001a, 1-12).

This paragraph struggles to reconcile the disparity between the kinetic power of conventional warfare and the rhetorical power that charges the "information environment," which is the source of the tension underlying the topic sentence. The rest of the paragraph attempts to explain the reason for this discrepancy, but succeeds only in describing the elements of the environment and the impact they have without being able to detail how they achieve it. By focusing on identifiable entities, that is, the infrastructure of information technology, the large number of actors in this sphere, and the recognizable impact that their opinions have, the writers of the paragraph can at least appeal to sheer volume as a partial explanation. But, as the semicolon that separates the "information environment" from the "information" demonstrates, the systems and the data are not the same; the infrastructure facilitates the activities of the mind and the cooperative activity of communication and persuasion, but it does not replace them.

The recognition of the "information environment" and its impact on war has also changed the concept of the battlespace. From a physical space dominated by kinetic power, the term now applies to

> the environment, factors, and conditions that must be understood to successfully apply combat power, protect the force, or complete the mission. This includes the air, land, sea, space and the included enemy and friendly forces; facilities, weather; terrain; the electromagnetic spectrum, and the information environment within the operation areas

and areas of interest (Director for Operational Plans and Joint Force Development (J-7)).

Here, the definition is more conceptual than physical, since the battlespace must be understood rather than dominated. Commanders and their staffs must now devote resources to addressing factors not of their own making, out of their control, and well beyond the physical boundaries of their AO.

The Impact of the New Battlespace on Combat Power

Despite this major shift in the definition of the battlespace, the four elements of combat power were retained, modified, and augmented, not wholly replaced. This is of course because traditional combat can and still does happen. The retention of these terms provides a useful opportunity for analogical thinking; it is an effective means of both explaining the further development of the elements and the impact these expansions have on the mission of today's forces. Their descriptions from FM 3.0 are listed below:

> Maneuver is the employment of forces, through movement combined with fire or fire potential, to achieve a position of advantage with respect to the enemy to accomplish the mission. Maneuver is the means by which commanders concentrate combat power to achieve surprise, shock, momentum, and dominance. (Department of the Army 2001a, 4-4).

> Firepower is the amount of fires that a position, unit or weapons system can deliver. Fires are the effects of lethal and nonlethal weapons (Department of the Army 2001a, 4-6).
>
> Leadership. Because it deals directly with soldiers, leadership is the most dynamic element of combat power. Confident, audacious, and competent leadership focuses the other elements of combat power and serves as the catalyst that creates conditions for success. (Department of the Army 2001a, 4-7).
>
> Protection is the preservation of the fighting potential of the force so that the commander can apply maximum force at the decisive point and time (Department of the Army 2001a, 4-8).
>
> Information enhances leadership and magnifies the effects of maneuver, firepower, and protection (Department of the Army 2001a, 4-10).

The "information environment" has not only added "information" as a force to be reckoned with, it has also physically and conceptually expanded each of the other four members of the category. Each element has become a small radial category in and of itself, with a core concept grounded in its previous definition in 100-5. While the first four have conceptually expanded, it does not mean that each has become necessarily more powerful, but rather that their use within the context of the information environment must be more carefully considered. However, this expansion does mean that the direct and concrete relationships between the elements may no longer hold as they did in the frame of the conventional battlefield.

This caution even affects the element that spurred the transformation of the battlespace. Although "information" seems a potent weapon that other agents can wield against U.S. military forces, the Army itself relegates it to the status of an "enabler," something that augments the capabilities of the other elements by helping them coordinate more effectively, but that in and of itself is not a form of power (Director for Operational Plans and Join Force Development (J-7)). The entire construct of combat power, instead of racing confidently into battle to crush the will of the enemy, seems rather to speedwalk, talking to itself frantically while furtively casting an eye over its shoulder at the cameras that shadow it into war.

Developments in Maneuver

"Maneuver," still the first of the new elements, remains grounded in physical movement over terrain. However, it has been expanded to include tactical maneuver, operational maneuver, and close combat, and "information's" major impact on the concept is that the three must be coordinated with one another as effectively as possible. The core concept of this category is tactical maneuver, which is related to the other two members of the categories in different ways. In relation to operational maneuver, it is both a continuation of the movement the forces make from their home stations to the port of debarkation and on to the battlefield, and the source domain to which operational maneuver is compared. In relation to close combat, tactical maneuver is the temporal predecessor and necessary cause for close combat, during which little or no movement of forces may actually occur. While it might be difficult

to trace how a unit's initial deployment strategy impacts its performance in close combat, the manner in which all three forms of maneuver are related in this element forces soldiers to consider how every stage of their movement might impact their combat readiness.

Tactical maneuver serves as the core concept because, of the three types, it is the once most closely grounded on physical scenes human beings experience through our bodies on an everyday basis. Tactical maneuver "wins battles and engagements by positioning forces to close with and destroy the enemy and continually poses new problems for him" (Department of the Army 2001a, 4-5). Successful tactical maneuver enables the soldier to approach the objective from a direction from which he can fire and move into it easily, ideally a direction from which the occupying enemy force has poor observation or fields of fire. The friendly force, which has a high ratio of firepower to the defender, moves as rapidly as possible while coordinating their movements. In an ideal tactical maneuver, the forces move so quickly onto the objective that the enemy forces are physically and psychologically overwhelmed, effectively disrupted without the attackers having to fire. Its key features are movement and positional advantage.

Of the two other types of maneuver, operational maneuver is the closest analogue to tactical maneuver. Operational maneuver "places army forces and resources at the critical place and time to achieve an operational advantage, such as when a unit is deployed overseas" (Department of the Army 2001a, 4-4). It occurs when a large number of army assets are moved to a theatre of operations, such as a war zone or location of a humanitarian mission, or within a theatre. The example

given in FM 3.0 is that of intratheater movements during Desert Storm, when two corps were moved west of Kuwait in order to attack Iraqi forces from their flank (Department of the Army 2001a, 4-4).

Operational maneuver requires movement of major assets for operational advantage; however, it does not require that those assets move under their own power. While it is a step in the preparation for ground combat, unlike tactical maneuver or close combat, the possibility of response to direct fire is limited, since most movement occurs well away from the battlefield, if it exists at all. An aircraft conveying soldiers of a mechanized brigade may be attacked by enemy air defense assets, but the forces themselves cannot participate in the response to hostile fire. Because it occurs outside the context of direct combat, operational maneuver may be difficult to comprehend as an element of combat power. However, two elements of the frame of tactical maneuver are retained that explain its importance, movement and positional advantage. Placing the huge distances a unit must travel to get to an area of operations in terms of these elements brings them down to a more human scale. They can be seen as operations in their own right that need the kind of detailed planning often applied to direct combat operations. This comparison also instills the need for soldiers to be as wary of their own protection during the entire length of a deployment, not just "in theatre." During a movement to contact with enemy forces in tactical maneuver, security is critical to ensure protection of the unit and secrecy of the plan until battle begins. Similarly, routes into a theater must also be chosen in these terms. In today's battlespace, there is no "rear area" in which a unit is completely unthreatened.

Instead of being a metaphoric extension of tactical maneuver, close combat serves as its goal. It is the feature of warfare that distinguishes it from other human activities. In this frame, soldiers from the opposing armies face and fight one another. Close combat "is carried out with direct fire weapons and is supported by indirect and air delivered fires, and defeats or destroys enemy forces or seizes and retains ground" (Department of the Army 2001a, 4-5).

The frame of close combat is best described using the experience of a single soldier. FM 3.0 gives a scenario from Vietnam in which soldiers are pinned down by an attack on their landing zone, apparently so quickly after exiting their aircraft that they cannot prepare foxholes and can use only the natural relief of the terrain for cover from hostile fires (Department of the Army 2001a, 4-5). Close combat occurs when enemy forces maneuver to the LZ and attempt to seize the terrain from the defenders. The defending soldier fires at the enemy while the enemy fires at him; as in tactical maneuver, they respond to one another's actions but do not react to them, so that they retain control over the execution of their respective plans. Success for the defenders occurs when they have destroyed sufficient numbers of the attackers to force them to end the attack; for the attackers, when they have destroyed or disrupted the defenders until they can clear the remaining defenders from the objective, move forward, and establish and maintain control themselves.

The distinguishing element of close combat is that the participants use direct fire weapons to engage the enemy and are engaged by those of the enemy. In successful close combat, the combatant responds to the danger by returning fire but continues toward his objective, or continues to maintain his position on the terrain.

This direct interaction with the enemy and the struggle to possess terrain are also the heart of ground combat, which is the frame for combat power. While close combat is classified as a form of maneuver, movement is not a necessary condition in that both the defender and attacker are considered close combatants; the example scenario was narrated by soldiers who had defended the LZ.

The three types of maneuver together comprise a radial category. The central concept, tactical maneuver, is an ideal that involves forces moving under their own power towards an enemy in the defense in order to conduct close combat and defeat the enemy. Operational maneuver shares with tactical maneuver the components of movement, and the notion of obtaining a position of advantage in relation to the enemy; but frequently precludes any engagement with the enemy, since the soldiers and equipment are not configured for combat. Although it contributes to successful ground combat, because it involves the use of assets from other services or allies, operational maneuver enters the higher level of war. The main motivating factors in their relationship are movement and advantage.

This relationship between close combat and maneuver explains the organization of the category, which, from the perspective of both classical and radial category theory seems odd. The expectation is that the elements be ordered by the degree to which they fulfill the prototype of the category. Logically, that would place tactical maneuver first, followed by operational maneuver and close combat. Instead, the elements go from operational maneuver to tactical and end with close combat. That is, they go in the order in which a unit or soldier would actually progress as he

moves towards combat itself. It follows an order that is based on the frame of moving towards a physical location, that is, the frame of maneuver itself.

Although "maneuver" has not been expanded to the extent that "protection" has been in the 2001a edition, the concept has been developed considerably from the previous edition. It represents the conceptual and physical expansion of the battlespace effected by the "information environment." The three levels of maneuver, which are never actually named in FM 100-5, are explicitly defined both independently and in relation to one another in 3.0. This differentiation, especially in the discussion of operational maneuver, highlights the causal link between the three types that had been overlooked in the previous doctrine. It also reflects the change in the operational threat; one that will use unconventional means to interdict a military force at any point in its employment, erasing both the line between friendly and enemy territory, and the distinction between politically and tactically sensitive targets. Every movement, from deployment from home station to moving on the battlefield, emanates "information" an enemy can collect and turn against the force.

Firepower and Its Relation to Maneuver

"Firepower" was previously tightly tied to maneuver; firepower created opportunities, and maneuver exploited them, while maneuver in turn positioned firepower to its best advantage. Like "maneuver," it has been divided into operational and tactical forms. In this instance, however, rather than creating continuity between three seemingly disparate forms, the "information environment" instead breaks the necessary link between the two types of firepower and, at the operational level,

between “firepower” and “maneuver” as well. Tactical fires, like tactical maneuver, remains the core concept of this element, and in its expansion to operational fires retains the effect of damaging enemy materiel, as well as the advantage that friendly forces gain through that destruction. Otherwise, operational fires have lost the direct conceptual link to both fires at the lower level and to maneuver at their own level.

Operational fires generally utilize more powerful, longer-range systems than tactical fires, but this is not what distinguishes the two. These fires target enemy forces and assets that might eventually be committed to the battle, but are not imminently or directly engaged in combat with friendly forces. The example given in FM 3.0 is another scenario from the Gulf War, in which the destruction of the Iraqi Army’s reserve set the conditions for the ground war (Department of the Army 2001a, 4-7). Operational targets can also be munitions factories or transportation or communications facilities that themselves don’t have any actual combat power, but support forces that do. Unlike tactical fires, however, operational fires do not normally enable operational maneuver in the manner that tactical fires enable tactical maneuver. Operational maneuver’s goal is to get forces to the battlefield, while operational fires’ goal is to reduce enemy resources that will contribute to enemy combat power.

Like “maneuver,” the members of the category of “firepower” are not organized with the most prototypical member first. Instead, they are organized in terms of type of causality in relation to close combat, with operational fires discussed first. Operational fires are a contributing cause to success in close combat, while tactical fires make a direct contribution. They are also ordered in terms of

temporality, just as maneuver is, since the larger operational fires that help facilitate close combat must destroy the enemy forces that will affect the battle before it begins.

Also like "maneuver," the category of "firepower" has been markedly developed since the last edition. While different levels of firepower are mentioned explicitly in 100-5, they are not differentiated, but discussed collectively. In this edition, strategic, operational, and tactical levels all share the common characteristic of needing to be "synchronized with other attack systems against the enemy," especially "maneuver" (Department of the Army 1993, 2-10). The number of types has been reduced to two, operational, but each has been discussed separately in relation to both one another and to "maneuver."

One of the more interesting changes in this category is the definition of operational fires. Its differentiation from tactical fires continues the principle started in "maneuver" in which the significance of actions outside the battlefield is emphasized. Operational fires take this decentralization of the battlefield one step further by undoing a central concept of combat power, the coordination of maneuver and firepower. Because operational maneuver and operational firepower are not necessarily linked, and activity outside the scene of close combat can determine success, operational fires are not necessarily as closely and directly linked to close combat as in the previous edition, reflecting the conceptual expansion of the battlespace through the "information environment." Commanders and their staffs must now be aware of operations whose direct link to their own mission may be tenuous at best, because they may influence the opinions of numerous agents on and off the battlefield.

The Changing Role of Leadership

Of the four original elements of combat power, "leadership" received some of the most marked changes in the updated manual. It was shortened, reconceptualized, and placed in a different position in the list. All of these modifications point to the fact that the "information environment" has so reduced the military force's agency on the battlefield that the control of its primary agent, the leader, is similarly diminished. The commander may have authority over his own troops, but his very position as a commander causes others to suspect his credibility as an honest broker.

FM 100-5 portrayed a combat leader as the ultimate deciding factor in success on the battlefield; "[t]he most essential dynamic of combat power is *competent and confident officer and noncommissioned officer leadership* " (Department of the Army 1993, 2-11). Every aspect of a leader's personality and ability was seen a crucial to his ability to lead, and his "moral character, firm willpower, and professional ability" at once galvanized soldiers and drove the other three elements of combat power. His charisma and ability were necessary, in fact nearly sufficient factors for victory; "Professional competence, personality, and the will of strong commanders represent a significant part of any unit's combat power" (Department of the Army 1993, 2-12). This characterization of leadership reflects a battlespace in which the leader is capable of perceiving and impacting every relevant aspect of the mission. It was positioned last in the elements of combat power to emphasize the fact that the leader wielded and enhanced the other three through the force of his will.

In view of the changing nature of the combat environment, the concept of leadership itself has had to adapt. The new discussion of leadership stresses continual self-development and fostering of relationships as more important than will and charisma. The leader accomplishes this by first honing his own cognitive abilities. He begins by studying and training in four basic skills; interpersonal, conceptual, technical, and tactical. (Department of the Army 2001a, 4-7). These are learning how to deal with people, how to understand and plan operations, what the capabilities of his unit are, and how to employ those capabilities in combat. That is, the skills progress from the smallest frame of interaction he will have in his capacity as a leader to the largest. The manual then discusses how he will impact his subordinates, which is by "instill[ing] their units with Army values, energy, methods, and will" (Department of the Army 2001a, 4-8).

The leader takes the knowledge he has gained through study, training and experience, and transmits it to his soldiers, making this knowledge a contributing cause to their own improvement. That is, he moves from honing his own conceptual abilities to communicating with his subordinates. Finally, the leader builds trust among his soldiers, which "encourages subordinates to seize the initiative. In unclear situations, bold leaders who exercise disciplined initiative within the commander's intent accomplish the mission" (Department of the Army 2001a, 4-8). From exercising his own cognitive functions through study, he learns to better communicate with his subordinates, and finally transforms his unit from a group of soldiers into a solid discourse community.

This process moves from the most central element of leadership, the leader himself, outwards to encompass larger and larger portions of the entire frame of leadership, and increasingly complex relationships within that frame. The metaphoric movement outwards is reinforced by the causal links between each of the three steps, just as the causal links are made between operational and tactical fires. They also encompass larger and more complex arenas of conceptual activity.

This more thoughtful and less charismatic concept of leadership reflects the fact that the new battlespace is so much larger and more complex than the original battlefield that the leader cannot dominate its entire scope through his will alone. The significance of his personal characteristics has been dramatically downplayed, making leadership no longer "the most essential dynamic of combat power," but "the most dynamic element of combat power" (Department of the Army 1993, 2-11; 2001a, 4-7). Today's leader must rely on his subordinates to accomplish the mission even without his direct presence.

It is also the only one of the four original elements whose discussion has actually been shortened in the update. When so many conflicting agents impact success on the battlefield in so many different ways, most of whom are outside the direct control of military authority, it is difficult to characterize the role of any single agent as being decisive, let along sufficient for victory. This displacement is literally reflected in the rearrangement of "leadership" from the final position in the list of elements, the position of emphasis that asserted its role as the coordinator of the first three, to the middle position, sandwiched between "firepower" and "protection," and subordinated to "information," which has taken on the function of synchronizing the

other four. A leader often metonymically represents his entire unit, and his reduction and displacement as an element of combat power reflects the fact that combat power itself is no longer the primary force in the "information environment."

Protection: From Passive to Proactive

The most complex of the original four elements in 3.0 is "protection," defined as "the preservation of the fighting potential of a force so the commander can apply maximum force at the decisive time and place" (Department of the Army 2001a, 4-8). The most basic form of protection involves a human being, a physical force that poses a danger or threat to him, usually an object moving towards him with the potential harm to him, and the barrier between the human and the threat that averts the harm. The category is defined as follows:

> Protection has four components: are force protection, field discipline, safety, and fratricide avoidance. Force protection, the primary component, minimizes the effects of enemy firepower (including weapons of mass destruction [WMD]), maneuver, and information. Field discipline precludes losses from hostile environments. Safety reduces the inherent risk of nonbattle deaths and injuries. Fratricide avoidance minimizes the inadvertent killing or maiming of soldiers by friendly fires (Department of the Army 2001a, 4-8).

Of the original four elements, "protection" was the most fully developed and expanded. The "information environment," by physically and conceptually

expanding the battlespace, has also increased the ways and opportunities by which a plethora of new agents can harm the force. In response, the notion of "protection" now encompasses more proactive measures, and places a greater emphasis on coordinating information within the force.

One of the most significant developments in "protection" was the concept of what needed protecting. In the previous edition, the soldier and the support functions that provided his most immediate needs for combat were the main object of "protection"; the "fighting potential of a force" as it was deployed into combat. Like "maneuver," the entities that contribute to that "fighting potential" now extend well past the battlefield, back along the entire route of his deployment and into home station. It includes "DOD (Department of Defense) personnel (to include family members), resources, facilities, and critical information," which means, aside from the soldier himself, the government civilians who support his deployment, his family, the installation from which he deployed, and all the facilities that provide every aspect of his logistical support, from the detail that delivers his meals in the field to the manufacturer that actually produces them in the United States (Department of the Army 2001a, 4-8).

The last element encompassed in "protection," "critical information," points to the conceptual expansion of the notion of "protected entity." Because the infrastructure that supports soldiers is so physically dispersed, there are far more potential targets to hit. But the first step to harming something is knowing that it exists, and what vulnerabilities it has. "Protection" now means not just physical security, but information security as well, about the soldier and his unit's operations,

and the logistical chain, and even about his family. Potential harm to a soldier's family further develops the notion of "protected entity" in another manner as well; the soldier's morale. While morale was addressed in the previous edition, it only occurred in relation to field discipline, again confining the soldier to the battlefield.

The number and type of entities that need "protection" generates a corresponding increase in the ways and agents by which they can be harmed. Threats are no longer just the enemy or the environment of the battlefield. They now include anything that causes a soldier to worry about his family at home station, everything from creditors to the strangling bureaucracy of the military health care system, any of which can convince a soldier that he needs to return home to take care of them. Just as dangerous is the potential for fratricide. Aside from the physical damage it causes to a unit's assets, few things can be as demoralizing as knowing that a soldier killed, or was killed by, one of his own.

"Information," therefore, along with its protection, dissemination, and control, holds the key to better "protection." By shielding both information itself and the systems that process it from potential enemies, the Army can shield the infrastructure it supports. By taking care of family members' needs, it can avoid problems that trouble the soldier's morale. By ensuring that all soldiers know how to avoid threats to their own safety and physical well-being, the soldiers become agents of their own protection. And by promoting good communication amongst and between units, they prevent the soldiers from inadvertently harming one another.

There is an interesting progression of the elements that can cause harm to the soldier that are addressed in the element of protection. The primary agents of harm

are the enemy through means other than direct combat, the environment, the soldier himself through carelessness, and the soldier through grave error. The agents decrease in intentionality to cause harm as they increase with the gravity manner in which he is harmed. While casualties resulting from enemy surveillance and other activity are grave, they are generally less likely to have the repercussions or as direct an effect as fratricide or even safety violations. The inclusion and organization of the types of fratricide avoidance reflects an increasing awareness that with limited resources thinly spread over a vast battlespace, the Army must put as much energy into avoiding failure as it does into winning the fight.

Information, the Fifth Element of Combat Power

The frame of "information" entails both cognition, in that it is seen as both the input to and result of thinking, and communication, in that these inputs and results are, in the context of the military, meant to be shared by members of an organization. Another aspect of "information" in both the Army and the general population is that it is heavily associated with the means to store and communicate it, especially automated equipment collectively known as "information technology." This metonymy of information to hardware helps address a problem particularly vexing in the military, how to handle a process that is inherently individual and subjectively experienced and give it the public, objective existence that would make it more suitable for military operations.

The inclusion of information as a form of combat power stems partly from several truisms about its role in military operations. If you know where the enemy is,

for instance, you can kill him. If you have good information about your own troops, you can direct their actions more effectively. The recent inclusion of "information" into the elements of combat power seems to originate from the proliferation of information systems fielded by Army forces, and the ability of the Army's actions to be impacted by the manner in which they are represented in national and international media. This vastly broadened scene has forced military professionals at every echelon to confront aspects of the theatre of war that had previously been the purview of strategic planners.

In the context of Mission Command, "information" in terms of "relevant information" and the cognitive hierarchy is framed within the very public and physical domain of warfare by linking it to "effective action" in two ways, by generating action, and by emulating action as a causative force in and of itself. Its inclusion as an element of combat power continues in that same vein. Here, "information" is discussed primarily in terms of its ability to enable the first four elements. The discussion is comprised of four paragraphs, none of which discuss "information" itself on its own terms.

The first paragraph discusses the changing relationship between information and combat power, characterizing "information" as a facilitator of their employment in terms of providing knowledge about the battlefield and as a way of impacting it. The second paragraph gives a more concrete instance of the assistance that it provides, concluding that more information received more quickly enables faster and better decisions. It ends by saying that information "enables Army forces to see first, understand first, and act first" (Department of the Army 2001a, 4-11).

The first strategy is a form of antimetabole (Lanham 14). The text states, “In the past, when forces made contact with the enemy, commanders developed the situation to gain information. Today, Army leaders use information collected by unmanned systems to increase their situational understanding before engaging the enemy” (Department of the Army 2001a, 4-10). The AB:BA logical form that these sentences take first sets up, and then reinforces the notion that there exists a relationship between the two. The first sentence states that fighting produces information, while the second reverses the relationship stating that information instead contributes to action. A common notion we have is that like contributes to like; if we add an element to an entity, and that entity becomes better, then somehow the addition has some characteristics either similar to or necessary for that entity. As an entailment of that notion, “information” must therefore bear some sort of similarity to the actions that comprise combat.

The same strategy we saw in the first chapter, the creation of a causal chain, drives the second paragraph about “information.” It employs the same conceptual logic we saw in the gradatio in the first chapter, though the figure is not as rigidly used here.

> The common operational picture (COP) based on enhanced intelligence, surveillance, and reconnaissance (ISR) and disseminated by modern information systems provides commanders throughout the force with an accurate, near real-time perspective and knowledge of the situation. Information from the COP, transformed into situational understanding, allows commanders to combine the elements of combat

> power in new ways. For example, superior understanding of the situation allows commanders to avoid enemy engagement areas, while concentrating fires and maneuver at the decisive place and time. This ability increases the survivability of the force without substantially increasing passive protective systems, such as armor. Modern information systems help leaders at all levels make better decisions faster. Better decisions rapidly communicated allow Army forces to mass the effects of combat power more rapidly and effectively than the enemy. This enables Army forces to see first, understand first, and act first (Department of the Army 2001a, 4-10 to 4-11).

Also as in the discussion of "relevant information," we see that this paragraph creates a causal chain consisting mainly of contributing causes that lead from information to action. The type of action the commander takes is significant; he does not just make decisions, but "combines the elements of combat powers in new ways" (Department of the Army 2001a, 4-10). So, while the nature of "information" differs from that of the other four, it tightens the relationship between them, enabling their more effective employment and affixing this new element into the frame of action more tightly. This causal relationship is reinforced by the explicit use of the rhetorical figure of auexis, which creates a series by linking the cola through a repeated element; "this enables Army forces to see first, understand first, and act first" (Department of the Army 2001a, 4-11). It is also illustrated in the figure below, taken from the manual, which shows the links and relationships of the elements to one another.

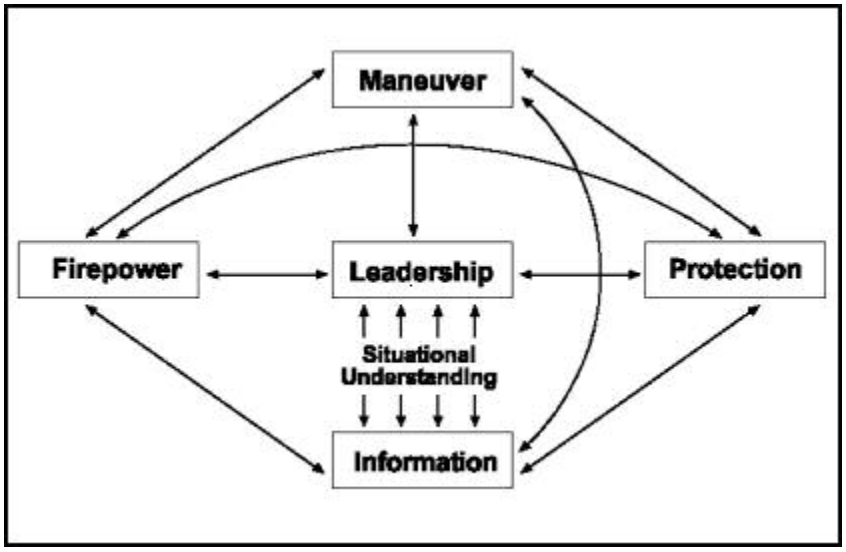


Fig 2.2 The Five Elements of Combat Power

After establishing that a causal and natural relationship exists between "information: and the other four elements, there still remains the need to explain exactly what the causal mechanism is. The third paragraph begins with the warning, "Information is not neutral; opposing sides use it directly and indirectly to gain exploitable advantages and apply them against selected targets" (Department of the Army 2001a, 4-11). The inherent neutrality of "information" seems to stem from the tendency to represent it as an independently existing entity, which has no loyalty to any one side of a conflict. Unlike "leadership," "maneuver," "firepower," and "protection," it is not an act that must be actually executed by members of actual armed forces.

In this sentence, we also see the first explicit use of analogical thinking, wherein "information" is compared to firepower; the passage continues, "Just as fires are synchronized and targeted, so is information" (Department of the Army 2001a, 4-

11). The choice is not accidental. It leads the reader to consider the causal mechanism of firepower as a conceptual metaphor for information, thought, and communication.

This comparison warrants a closer look at the source domain of field artillery. In the process of targeting, before the battle even begins, the targeting cell of the staff makes up a list of likely targets, which are also incorporated into the intelligence collection plan so that resources can be allocated to watch for it. When a target is located, the observer radios back to the fire control center, who direct assets to fire on the target. When the round itself is fired, the human agent pulls the trigger, which initiates a series of events, from the pulling of the trigger to the striking of the firing pin on the primer at the back of the round. This ignites the propellant, which burns and propels the round out of the barrel and towards the target. The round hits the target and damages or destroys it.

The human agent has direct impingement on the physical process at two points; aiming the weapon and pulling the trigger. The propulsion of the round downrange and the effect it has on the target are both effects of the design of the round itself, and both events, the movement and the effect of the impact, are predictable and relatively discrete in nature. This represents the dearest wish of those who design and implement PSYOP and other information campaigns; that the information be interpreted the same way by all members of the target audience (be discrete and predictable) that it be easy for any member of the military to deliver the message no matter what the means (impingement of the human on firing process) and that the effects be consistent with the intents of the designers (characteristics of the round). The final paragraph begins with a discussion of the new promise that

information and information technology holds for warfare, but oddly enough ends with a warning of its danger:

> While subordinates have access to the broader tactical situation, commanders have access to layers of tactical detail. Higher-level commanders yielding to the temptation to direct minor tactical actions could reduce the benefits of advanced information systems and the situational understanding they support (Department of the Army 2001a, 4-11).

This is where the comparison to the other elements of combat power seems to end. While there are always limits on the resources needed to move, shoot, and protect, and while sound leadership is always needed at every level, the amount of "information" available for communication, and therefore the time a commander could spend thinking about every level of an operation, is limited only by his own efforts to prevent himself from diving into those realms.

One thing to note is the position of "information" in the list of combat elements. As the last of the five, it occupies the place once reserved for leadership. This reinforces the notion that the agency of a human leader is no longer the decisive factor for victory. Instead, the collective ability to think and communicate by all members of the institution may be more important in the modern battlespace.

The Five Elements of Combat Power and The New Battlespace

The new battlespace reframes the elements of combat power and the manner in which they are implemented. One change is the increase in the span of time and space whereby the combat elements must be considered and employed. We see this most readily in the elements of "protection" and "operational maneuver," whose realms stretch well beyond the physical limits of the battlefield and now encompass actions at home station. Another, more telling change, is the conceptual expansion of all the elements to include the new element of "information" in a very limited sense, which seems to correspond to the dwindling impact of "leadership" on the battlefield. Both elements now concern the coordination of the force itself, and do not seem to include enemies, civilian local nationals, the media and other outside agents. Like the concepts of cognition and communication as they are outlined in Mission Command, "leadership" and "information" don't engage anyone outside of the force itself; there is no sense in the realm of combat power, that one should communicate and influence perceptions as a way of shaping the operation. This is despite the fact that these outside forces are the most powerful ones in the "information environment." But because their thoughts, interpretations, and reactions can't be predicted or controlled in the same way as members of the military discourse community, the Army chooses to avoid that interaction and retreats to enhancing the traditional approach of building combat power to protect itself from the effects of the "information environment."

CHAPTER 3 - Information Operations

Introduction

Army doctrine can be extremely cumbersome. As a repository of institutionally approved tactics, techniques and procedures that can take up to five years to update, it often seems to lag behind the requirements of the force it is intended to support. It is also enormous: comprised of hundreds of volumes, the manuals needed to understand and conduct merely a battalion-level operation could number in the dozens. Furthermore, they must be conceptually consistent with one another. As a corpus, they are theoretically conservative, relying on proven concepts that have stood the test of time. In most Army disciplines, these issues are mere inconveniences. In the field of information operations, they are a true menace.

"Information operations" is a blend of the domains of "information," the activities of thought and communication, and "operations," military actions or missions, recruiting from the same frames of knowledge as the metaphor Argument Is War. Unlike this more common conceptual metaphor, in which thinkers map corresponding elements between the two domains, in this instance, thinkers construct the blend by recruiting both structure and elements from one domain and combining them with elements from the other domain. However, the blend draws so heavily from the domain of "operations" that the most central concepts of "information," thought and communication, are either lost or distorted beyond recognition. The awkward process of doctrine revision, which inhibits innovation and demands consensus, has helped effect this damage; because of it, the doctrine on information

operations actually obstructs the Army's own efforts to effectively communicate with any party in the information environment except itself.

The heavy reliance on warfare as a source domain and the need for consensus in doctrine not only encumber the development of IO, it may actually have reversed it. The original manual, FM 100-6: Information Operations, came out in 1996, followed by the revised edition in 2003. In the intervening seven years, at least one final draft was published in 2000 (Department of the Army 2000, ii). Between this final draft and the officially published doctrine, there are several small but key differences between the sections on IO effects and IO activities and capabilities. The modifications that appeared in the official edition structured the doctrine more closely to the source domain of military operations, but in doing so eliminated concepts that would have incorporated more aspects of cognition and communication into the blend**.**

The Blend of Information and Operations

The term "information operations" is what Turner and Fauconnier call a noun-noun compound. These compounds blend the domains of each noun in a noncompositional manner that is motivated but cannot wholly be predicted by the conventional meanings of the nouns themselves, directing the thinker to sometime very peripheral aspects of the core concepts (Turner and Fauconnier 2002, 356). For instance, in their comparisons of "dolphin-safe," which denotes the ecological friendliness of canned tuna, and "child-safe," which refers to a container that prevents children from obtaining access to the contents, Turner and Fauconnier demonstrate

that in each instance the noun “safe” highlights different targets that are kept from harm, and different means by which each target is protected (2002, 354-355). In the first, the protected entity kept from harm is dolphins that hunt the tuna; they are kept safe when the human tuna harvesters use nets that prevent the animals from being entangled along with the hapless fish. In the second, the protected entity is a child who has found a container with dangerous contents such as medication, and the means of safeguarding is the lid of the container itself, which is designed specifically to ensure that children will have a difficult time opening it.

In both instances, the protected entity is drawn into the frame’s core concept via a very long and often circuitous conceptual route. Dolphins, as predators of tuna, are only accidental to the main purpose of nets, which is catching the tuna themselves, and children’s interactions with medications depend on their boundless curiosity. Similarly, the means of keeping them “safe” actually involves opposing mechanisms. The dolphins are allowed out of the net, while children are prevented from gaining access to the contents of the container.

“Information operations” also draws from its source domains in a comparable manner. It is a military operation carried out both by and against the use of means drawn from the domains of cognition and communication. However, it does not deal primarily with thought and persuasion themselves, but with the means used to aid them. These “information systems” are far more tangible and easily incorporated into the domain of war than the cognitive activities are.

If the “information” in “information operations” refers primarily to cognition and communication in terms of the hardware that supports them, then what does the term “operations” mean? In Army doctrine, “operations” are defined as:

> 1. A military action or the carrying out of a strategic, operations, tactical, serve, training, or administrative military mission. 2. The process of carrying on combat, including movement, supply, attack, defense, and maneuvers needed to gain the objectives of any battle or campaign. (Director for Operational Plans and Joint Force Development (J-7)).

While activities like postal operations and review of training can technically be “operations,” the prototypical Army operation is warfare, and the prototypical way to win a war is to attack. The first paragraph of FM 3.0 states,

> Army forces are the decisive component of land warfare in joint and multinational operations. The Army organizes, trains, and equips its forces to fight and win the nation’s wars and achieve directed national objectives. Fighting and winning the nation’s wars is the foundation of Army service—the Army’s nonnegotiable contract with the American people and its enduring obligation to the nation (Department of the Army 2001a, 1-1).

The noun-noun compound of “information operations” is attack and defense carried out via communication and cognition, and the systems that supplement them. Given this, it seems that the natural development of this blend would bear strong resemblance to the metaphor Argument Is War. In this metaphor, each side of a

debate is construed of as a military force whose success entails the failure of his opponent, and who carries out his activities through the use of words rather than weapons. Like conventional warfare, the ability to "fight" with words while arguing is leveraged against the enemy's same ability.

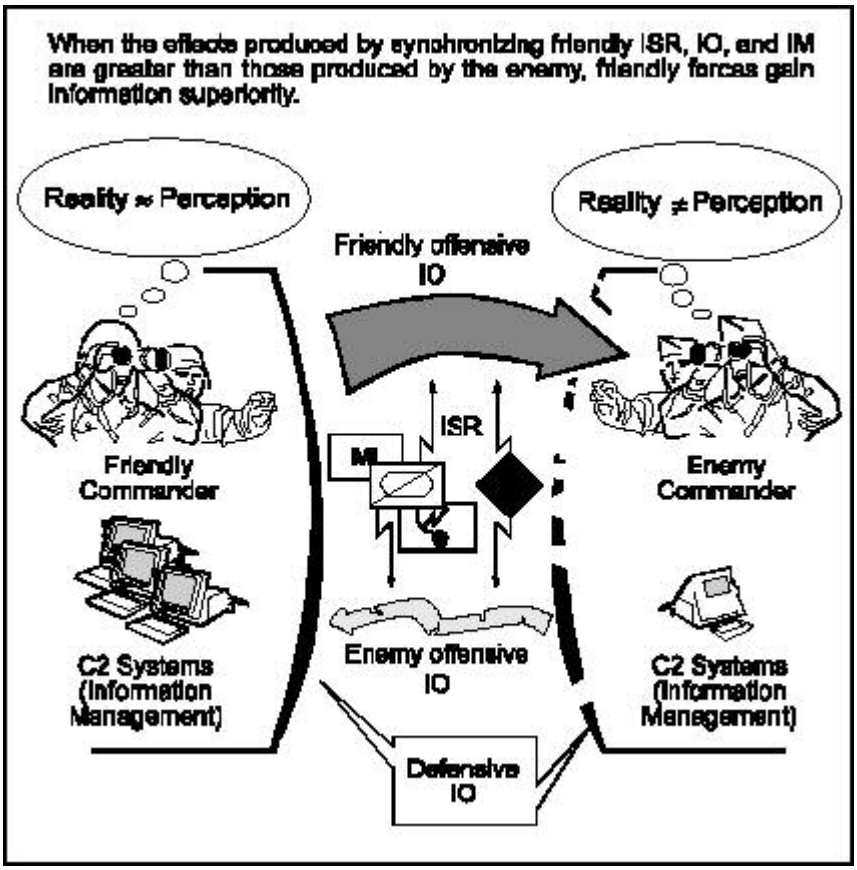


Fig 3.1 Information Operations and Information Superiority

(Department of the Army 2001a, 11-6)

That is not the case with "information operations." In "information operations," the objective is to gain and maintain information superiority, "the operational advantage derived from the ability to collect, process, and disseminate an uninterrupted flow of information while exploiting or denying an adversary's ability to do the same" (Department of the Army 2001a, 11-1). IO involves the ability to

carry out communication and information processing *within* each of the two sides. In terms of conventional operations, one attacks *to* prevent the success of the enemy's defense. In IO, one works hard to communicate and transfer information *while* preventing the other from doing the same. In information superiority, one party's ability to communicate and process does not usually impact the other party's "ability to do the same," except indirectly as a means of coordinating efforts to do so. Each party conducts its own communications among its own members, and in that way communication is still a joint activity, but that cooperativeness does not extend to any other party in the battlespace.

"Information operations" is therefore an odd noun-noun compound in which the cooperative aspects of both communication and warfare are superimposed upon the two distinct processes of communications that are carried out by the separate parties within their own groups. The difference in the effectiveness of each of those two processes is contrasted to make them relate to one another in the same way that offense and defense do in conventional warfare. In this way, the connection between the term "information" and the cognitive and communication processes it represents, runs through data and the systems that carry it, to the processes themselves. The source domain of conventional warfare, which has destruction of the enemy as a prominent element, motivates the highlighting of the hard targets of "information" and "information systems," which thrusts into the background the subjective cognitive experience and cooperative nature necessary to communication. The causal and temporal relationship between offense and defense in conventional warfare that

effects the widening disparity between the relative combat powers of the two sides is reduced to a merely temporal one.

The ease with which hardware can be targeted by conventional combat operations is one factor that motivates its centrality in the blend of IO. Another is the nature of discourse communities themselves. Within a given discourse community, the members can communicate effectively and easily because of their shared assumptions, perspectives, and vocabularies. This makes the communication process seem almost transparent, and leaves the information systems in higher relief in the blend. The only way in which the adversary is conceived of as participating in this communication process is by interfering with it, making these the systems the object of defense. When the friendly forces do communicate with the adversary forces, it is primarily to persuade them to surrender, which is a viable, but very limited, way of carrying out warfare through argument.

Background and Motivation

The discipline of information operations was developed by the Army in response to the changing nature of global conflict. Modern warfare is characterized by what are known as asymmetric threats, in which small, unconventional armed groups compensate for their lack of conventional combat power by using acts of terrorism to express their agendas, and by relying on international media and the power of the internet to disseminate their messages (Department of the Army 2001a, 4-31). Information operations "fights" the asymmetric threat of today's battlefield by

imposing the causal frame of kinesthetic warfare on human cognition, communication, and persuasion.

Other branches in the Army are identified primarily by association with a key piece of equipment, such as armor, which is centered on the tank, or single key capability within the dynamic of war, such as intelligence, the gathering and analysis of information about enemy capabilities and intentions. IO, in contrast, synchronizes preexisting capabilities within the military structure to leverage the fifth element of combat power, "information." Many of the capabilities it coordinates already belong to other branches or disciplines; OPSEC, or operations security, has long been the domain of the S3 or operations officer, while "physical destruction" is usually the responsibility of fire support. IO is defined as

> the employment of the core capabilities of electronic warfare, computer network operations, psychological operations, military deception, and operations security, in concert with specified supporting and related capabilities, to affect or defend information and information systems, and to influence decisionmaking (Department of the Army 2003b, 1-13).

The Structure of the IO battlefield

In conventional and other types of warfare, the Army has what are known as BOS, or battlefield operating systems. The BOS are defined as "the physical means (soldiers, organizations, and equipment) used to accomplish the mission. The BOS

group related systems together according to battlefield use" (Department of the Army 2001a, 5-15). They consist of intelligence, maneuver, fire support, air defense, mobility/countermobility/survivability, combat service support, and command and control (Department of the Army 2001a, 5-15). Like the military branches, each is generally associated with particular units or types of equipment. Some exceptions do exist, however, as with aviation units, which can be a form of fire support when sent to attack deep targets, combat service support when their lift capabilities are employed, or even countermobility if used to plant minefields. This heuristic enables a commander and staff to look at available resources in terms of potential use rather than designated type.

To parallel this common heuristic, the discipline of information operations includes the IO elements, which are divided into the core capabilities, the supporting activities, and the related activities (Department of the Army 2003b, 2-1). Unlike the BOS, which have concrete equipment and established units with clear chains of command and domains of responsibility, these elements can range across more than one unit, even throughout all the subordinate units of a larger structure, as is the case with the core capability of operations security. The job of the information operations officer and his staff is to coordinate these activities and capabilities across the entire unit rather than command them.

Also unlike the BOS, the elements of IO are divided into three distinct categories. While the organization is never explicitly explained, the names of the categories themselves, "core," "supporting" and "related," suggest that the motivation for the division is how central the contribution each activity is to the goals of IO as a

whole. They also suggest that the elements as a whole are a radial category, with "core" capabilities being the prototypical instances of IO and "supporting" and "related" being progressively less so.

The organization of these capabilities and activities, both within and across their respective subcategories, demonstrates how heavily the conceptual blend "information operations" relies on the domain of military operations for its structure and concept. The order and division prioritize those aspects of "information" that fit most easily into the framework of warfare, privileging hardware over communication and cognition. In terms of the agents within the domain of warfare, the elements deal first with those most central to conventional combat, the friendly and enemy military forces, and lastly with those traditionally seen as peripheral. IO concentrates primarily on the ability of the two combatant sides to transfer data among themselves. It deals lastly with communicating with and persuading of civilian local nationals and other noncombatants. This is despite the fact that how these parties feel about the U.S. military's efforts can now make or break the success of the mission.

IO Capabilities and Activities

The core capabilities are operations security (OPSEC), psychological operations (PSYOP), military deception (MD), electronic warfare (EW) and computer network operations (CNO), which consist of computer network attack (CNA), computer network defense (CND), and computer network exploitation (CNE) enabling operations (Department of the Army 2003b, 2-1). As the names of the core capabilities indicate, four of the seven focus on hardware, either employing and

protecting friendly systems or attacking the enemy's assets. Of the other three, two impede the enemy's ability to perceive the battlefield accurately. Friendly forces do communicate with other parties in the remaining one, but only in a very limited sense, in terms of both manner and content.

> The first capability, operations security, or OPSEC, is defined as a process of identifying essential elements of friendly information and subsequently analyzing friendly actions attendant to military operations and other activities to
>
> • Identify those actions that can be observed by adversary intelligence systems.
>
> • Determine indicators hostile intelligence systems might obtain that could be interpreted or pieced together to derive essential elements of friendly information time to be useful to adversaries.
>
> • Select and execute measures that eliminate or reduce to an acceptable level the vulnerabilities of friendly actions to adversary exploitation (Department of the Army 2003b, 2-2).

An example of OPSEC measures would be concealing the position of an artillery regiment relative to the unit it supports; normally, it is placed directly behind the main effort. While a unit that large cannot be concealed completely, it can be made difficult to detect through the use of good camouflage, strict noise and light discipline, and careful placement of emitters such as signal nodes, thus concealing its mission from the enemy. OPSEC most directly impacts adversary collection efforts by denying them information, directly affecting collection systems, and less directly

affecting the collective cognitive efforts of the enemy (Department of the Army 2003b, 2-2).

Psychological Operations, or PSYOP, the next core capability, is unique among the elements of IO in that the friendly forces intentionally communicate directly with the enemy and other foreign audiences. They are defined as

> planned operations that convey selected information and indicators to foreign audiences to influence their emotions, motives, objective reasoning, and ultimately to influence the behavior of foreign governments, organizations, groups, and individuals. The purpose of psychological operations is to induce or reinforce foreign attitudes and behavior favorable to the originator's objectives (Director for Operational Plans and Join Force Development (J-7)).

Typical PSYOP campaigns include such aims as urging soldiers to surrender, and are implemented through leaflet drops or loudspeaker speeches. Here, unlike for OPSEC, the means is not given, but like OPSEC, the aspect of the adversary's domain the military wishes to reach is also the cognitive and emotional. Influencing these is not the final goal, since they are the first link in a causal chain that ends with the target's behavior. Although PSYOP does involve communication, it highlights only the agency of the friendly side, and privileges its objectives, just as conventional warfare does.

Military deception, like OPSEC, also seeks to shape the enemy's perceptions of the battlefield, but does so by deliberately portraying a false picture of the friendly forces instead of limiting the enemy's access to information about it. They are

> actions executed to deliberately mislead adversary military decisionmakers as to friendly military capabilities, intentions, and operations, thereby causing the adversary to take specific actions (or inactions) that will contribute to the accomplishment of the friendly mission (Director for Operational Plans and Join Force Development (J-7)).

The first three capabilities do deal with activities central to the domain of "information," but do so within the framework of conventional warfare. They assume that the other party is hostile and that destroying its capacity to think leads to friendly success on the battlefield. By focusing on the friendly actions, on damaging the enemy's cognitive capabilities, or on changing a foreign party's behavior, these first three elements distort cognition and communication in ways that make them almost unrecognizable.

Electronic warfare (EW) involves "any military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy," and includes electronic protection (EP), electronic warfare support (EWS), and electronic attack (EA) (Department of the Army 2003b, 2-7 through 2-8). EP consists of actions taken to protect a friendly unit that involve its electromagnetic emissions, to include masking or reducing them. EWS detects enemy emissions for targeting and exploitation purposes, while EA involves both preventing the enemy from using the electromagnetic spectrum, such as by jamming, and using electromagnetic energy as a weapon, such as lasers and radio frequency weapons (Department of the Army 2003b, 2-7 through 2-8). All either protect friendly

capabilities to use the electromagnetic spectrum or destroy the enemy capability to do the same. EW, as a core capability of IO, parallels the structure of the conventional battlefield in its implicit division into offensive and defensive capabilities, and in its focus on the hardware rather than the human capabilities they support.

Not surprisingly, the next three elements of computer network operations (CNO), computer network attack (CNA), computer network defense (CND), and computer network exploitation (CNE), have the same type of focus and structure as EW, with CNO being comprised of CNA, CND, CNE (Department of the Army 2003b 2-9). CNA consists of those operations designed to "disrupt, deny, degrade, or destroy information resident in computers and computer networks, or the computers and networks themselves," and, though it can include what is known as kinetic attack, i.e., firepower, usually refers to activities like hacking and the spreading of computer viruses. CND comprises those measures designed to protect friendly systems against similar attacks by the enemy (Department of the Army 2003b, 2-9 through 2-10).

CNE is "enabling operations and intelligence collection to gather data from target or adversary automated information systems or networks" (Department of the Army 2003c, 2-11). While it does target enemy computer systems, unlike the first two elements of CNO, it does so in order to enable friendly understanding of the battlefield by providing intelligence. Intelligence is information about an enemy that enables one to destroy or otherwise harm him. As a result, it too retains the motive and structure of the source domain of conventional combat.

The seven core capabilities, then, address mainly the enemy's physical infrastructure, and those that do involve cognition and communication do so within

fairly limited means, that is, construing as them as corporate activities whose "input" or information will determine a certain "output." These elements demonstrate how heavily the writers of this manual recruit from the source domain of physical combat. In contrast, almost the reverse is true of the supporting and related activities; they tend to deal less with hardware and systems and more with communication and cognition, and, in terms of agents, with noncombatants. The more they address these abilities and audiences, the further down they are on the list of their respective categories, that is, the less central they are to information operations.

The Supporting Activities

The six supporting activities are physical destruction, information assurance, physical security, counterintelligence, counter deception, and counterpropaganda (Department of the Army 2003b, 2-11). Like the core capabilities, the first half of this category deals with hardware, while the second half addresses cognition and communication. The last three of this group, like the first three core capabilities, presuppose hostile intent and thereby again confine thought to the battlefield and elide the cooperative aspect of communication.

The first, physical destruction, is recruited almost wholesale from the source domain of combat, differing only in that within the domain of IO its targets are specifically information systems. Defined as "the application of combat power to destroy or degrade adversary forces, sources of information, command and control systems, and installations," it oddly enough has a rhetorical dimension as well; the manual tell us that it "can be employed as an additional means to influence

decisionmaker or groups, or to target INFOSYS in support of information superiority" (Department of the Army 2003b, 2-11). In both the physical and psychological domains, then, destruction displaces the enemy. While it is not a core capability, its position as first of the supporting activities and its twin roles of physical and psychological coercion both emulates the nature of the core capabilities and sets the tone for the activities that follow.

> Information assurance, the next supporting activity, is defined as: information operations that protect and defend information and information systems by ensuring their availability, integrityauthentication, confidentiality, and nonrepudiation. This includes providing for restoration of information systems by incorporating protection, detection, and reaction capabilities (Department of the Army 2003b, 2-12).

By focusing on the integrity and purity of data and the systems that store and transmit it, IA enables cognition, but does so by assuring the quality of the "input" to the cognitive hierarchy, that is, something that has a public, objective existence apart from the subjective experience of cognition itself. It does this not by analyzing the information itself, but by safeguarding the hardware that processes it. Physical security is similarly object-based; defined as "physical measures designed to safeguard personnel; to prevent unauthorized access to equipment, installations, material, and documents; and to safeguard them against espionage, sabotage, damage, and theft," like physical destruction it directly parallels its conventional warfare counterpart (Department of the Army 2003b, 2-15).

The next three supporting activities, counterintelligence (CI), counter deception, and counterpropaganda, again turn to the adversary, focusing on thwarting their efforts to understand the battlefield, to interfere with our understanding of it, and to conduct PSYOP. CI is defined as:

> information gathered and activities conducted to protect against espionage, other intelligence activities, sabotage, or assassinations conducted by or on behalf of foreign governments or elements thereof, foreign organizations, or foreign persons, or international terrorist activities " (Director for Operational Plans and Joint Force Development J-7).

CI frames intelligence operations by the enemy as a type of offensive whose effects must be blunted. While its target is enemy intelligence operations, interestingly, CI does not attack the enemy's collection systems, as physical destruction and CNA do, but gains knowledge and understanding of them. In a way, the cognitive abilities of the two sides go head to head within the frame of this element. Pitted against each other in their efforts to gain a fuller understanding of the other side's intentions, this element mirrors the competitive nature and binary structure of the conventional battlefield.

That structure is apparent in the last two of the supporting elements, counter deception and counterpropaganda. The first of these, defined as "efforts to negate, neutralize, diminish the effects of, or gain the advantage from a foreign deception operation," like CI, counteracts the actions of the enemy by gaining a more thorough

understanding of the battlefield and all aspects of enemy operations (Department of the Army 2003b, 2-17).

Counterpropaganda, defined as "programs of products and actions designed to nullify propaganda or mitigate its effects," is an interesting deviation from the previous elements, in that its target is not the enemy, but the targets of enemy propaganda (Department of the Army 2003b, 2-18). It breaks from the structure of the conventional battlefield by acknowledging the existence of an audience that is not the enemy, but retains it in that it entails competition with the enemy for the "hearts and minds" of the people. It most closely evokes the connotations of the metaphor Argument is War in its entailment of two sides with agency. Because it focuses on a means central to communication and an audience peripheral to conventional warfare, it is dead last in the list of supporting activities.

The Related Activities

The last two elements, the related activities of public affairs and civil-military operations, seem to be designated as peripheral because they do not have an enemy system as a target, or because they do not employ some information system in their implementation. Public affairs, "those public information, command information, and community relations' activities directed toward both the external and internal publics with interest in the Department of Defense" is not directed towards a particular audience, and is not doctrinally directed to influence them in any specific direction (Department of the Army 2003b, 2-22). While it is the element of IO that best

parallels Clark's theory of communication, it cannot be a core element of IO because it lacks the directive to have a tangible impact on a military target.

> Civil-military operations are defined as:
>
> the activities of a commander that establish, maintain, influence, or exploit relations between military forces, governmental and nongovernmental civilian organizations and authorities, and the civilian populace in a friendly, neutral, or hostile operational area in order to facilitate military operations (Department of the Army 2003b, 2-24).

They also cannot be a core element because they do not specifically deal with a component of an information system or the cognitive hierarchy. However, its inclusion in the elements of IO demonstrates the understanding of the relationship between action and persuasion expressed in "physical destruction," that physical acts are forms of communication as well, in that they have rhetorical impact.

The Relationship Between the Capabilities and Activities of IO

Of the seven core capabilities, then, operations security (OPSEC), psychological operations (PSYOP), military deception (MD), and computer network exploitation (CNE), deal with cognitive and communication abilities of both the enemy and friendly, while the remaining three, electronic warfare (EW), computer network attack (CNA), and computer network defense (CND), protect or attack hardware systems. The supporting activities show a similar division, with the first three, physical destruction, information assurance and physical security, dealing

primarily with hardware and information, and the last three, counterintelligence, counterdeception, and counterpropaganda, focusing on cognition and communication. The related activities continue this logic by placing public affairs, which is an explicit form of communication, before civil-military operations, whose rhetorical impact is secondary to its primary mission.

The radial category of the elements of IO encompasses military capabilities that address most dimensions of cognition and communication, almost evenly divided between focus on hard systems and human capabilities. The more central ones seem to have the most destructive effects on the enemy as part of their frame, and only one, PSYOP, presupposes any direct, overt interaction with the enemy. The adversarial intent of combat is preserved in almost all the elements, but the joint interaction exists only in PSYOP and the two related activities of public affairs and civil-military operations. Even in these elements, the notion of cooperative activity is limited, portraying communication as conveying information. The joint interaction central to the source domain of conventional warfare is therefore placed into lower relief in the blend "information operations," diminishing the agency of the enemy in the frame of IO.

The organization of the IO capabilities and activities also conceptually parallels that of the original BOS upon which they are modeled. Just as OPSEC, PSYOP and deception, ways of interfering with the enemy's ability to think, head the core capabilities, so intelligence, information about how to kill the enemy, heads the conventional BOS. And just as civil military operations and public affairs are conceived of as related to but not of IO, so combat service support and command and

control, which support and coordinate but do not provide combat power, are the last, and least prototypical, of the BOS.

The Frame of the Conventional Warfare and the Information Operations Effects

While the IO elements are modeled on the battlefield operating systems, the IO effects stem from the two major conventional military operations, offense and defense. Although, like the elements, the effects are a blend of the domains of "information" and "operations," they have a significant disjunction with both sources. Unlike communication, which is a joint activity, the IO effects focus on unilateral activities designed to prevent the other parties from acting. Unlike warfare, whose activities of offense and defense entail one another, the IO offensive and defensive effects do not interact in this manner; destroying the enemy's ability to communicate and think does not necessarily enhance the friendly side's ability to do either.

Neither of the causal linkages central to each of the source domains inheres in the relationships between offensive and defensive IO effects. However each retains one aspect of their respective source domains as a motivating factor in the makeup of their respective categories, in terms of both the inclusion and organization of their members. The offensive IO effects are motivated by the prototype of causation in both the domain of warfare and the physical domain as a whole, that of an object striking upon another object and destroying or moving it. The defensive effects are motivated by the event shape of the ideal defense, in which a defending force anticipates, recognizes, and then neutralizes an attack, then presses its advantage and

conducts a counterattack to regain the initiative. Warfare conceptually permeates both of these sides in several different ways.

Offensive Information Operations Effects

Comprised of "destroy," "disrupt," "degrade," "deny," "deceive," "exploit," and "influence," offensive IO effects are defined as "the integrated use of assigned and supporting capabilities and activities, mutually supported by intelligence, to affect enemy decisionmakers or to influence others to achieve or promote specific objectives" (Department of the Army 2003 paragraph 1-61). They are ordered from the activity with the most clearly defined causal frame to that with the most ambiguous one. The seven effects form a radial category whose first member and causal prototype, "destroy," is the primary effect of field artillery. The first four effects, as well as the sixth, are based on physical or military definitions whose polysemy is motivated by the domain of "information." The objects of these effects are primarily the systems that support cognition and communication rather than the human agents themselves. Except for the final effect, all of them damage the enemy's ability to think or communicate, but only the last, "influence," exercises the friendly ability to do either. Yet even this last outcome of communication is conceptually structured in terms of the causal frame of "destroy."

According to FM 3-13, offensive IO "facilitates seizing and retaining the initiative by creating a disparity between the quality of information available to friendly forces and that available to adversaries" (Department of the Army 2003b, 1-

16). Of its two source domains, the more well-developed in the Army community is that of offensive operations. The purpose of these missions is to:

> . . . seize, retain, and exploit the initiative to defeat the enemy decisively. Army forces attack simultaneously throughout the area of operations (AO) to throw enemies off balance, overwhelm their capabilities, disrupt their defenses, and ensure their defeat or destruction. (Department of the Army 2001a, 7-2).

Both IO and conventional offensive actions involve two parties, the adversary and the friendly sides. In both, the friendly side conducts some activities that advance its own objectives, and others that prevent the adversary from attaining his. As discussed previously, in a conventional attack, one of those activities is firepower, a key means by which one can "overwhelm their capabilities [and] disrupt their defenses" (Department of the Army 2001a, 7-1). By destroying the integrity of the enemy's operations, the friendly forces create conditions to "seize, retain, and exploit the initiative" (Department of the Army 2001a, 7-1). The means by which one defeats the enemy are the same method that directly contributes to one's own success. The prototypical way of attaining both in conventional operations is through firepower.

Firepower therefore serves as the model for attaining success in information operations because its agent, object, means, activity and effect are apparent. It inherits most of its frame from the more general domain of physical causation discussed above. In terms of military operations, the agent is the firer, the object is the target, the means of destruction is the munition, the act is firing, and the endstate is destruction. There is no question about the kind of causal mechanism, about how or

whether the firer's actions contributed to the endstate, or whether the endstate has been reached. Because of this certainty, "destroy" serves as the prototype for the six other effects, and as such it is the first effect discussed in the manual.

In terms of IO, "destroy" is defined as

> . . . "to damage a combat system so badly that it cannot perform any function or be restored to a usable condition without being entirely rebuilt (FM 3-90). Destruction is most often the use of lethal and nonlethal means to physically render adversary information useless or INFOSYS ineffective unless reconstituted (Department of the Army 2003b, 1-16).

The manual referred to in the definition, FM 3-90, is titled Tactics, and the definition itself refers to a degree of damage so thorough that the target can no longer function, and is also used as a term to describe the desired endstate of the target after a fire mission (Department of the Army 1996, 1-2). The IO offensive effect of "destroy" has an almost identical frame as the more conventional understanding of "destroy," but has two specific targets, the information itself and the information system that conveys it. The only modification from its source frame is that viruses or other malicious software, rather than projectiles, are the primary means of destroying information. While the means and the target are changed the target's resulting endstate remains.

The disturbing aspect of this effect is that it retains nothing of the source domain of "information" except the most peripheral aspect, the hardware. The agent himself does not think or communicate within this frame, and intervenes in the

patient's abilities to do so by making sure he never will again. One can, of course, use the term "destroy" metaphorically to refer to a particularly effective counterargument used in a debate, by saying "I completely destroyed his strongest point." The key difference is that in doing so, one would not walk over to one's opponent and shoot him in the head, or even rip up his reference material. In IO, not only would both the opponent and his sources be gone, as would any possibility of ever communicating with him again, but communicating to him would actually jeopardize the mission of destroying them. Communication is therefore eliminated as a possibility as a requirement for and result of the action.

The next offensive effect, "disrupt," has its roots in another kinetic combat capability, obstacles built by combat engineers, known as countermobility measures. It is defined as "a tactical mission task in which a commander integrates direct and indirect fires, terrain, and obstacles to upset an enemy's formation or tempo, interrupt his timetable, or cause his forces to commit prematurely or attack in a piecemeal fashion" (Department of the Army 2001b, 5-16). In relation to IO, the term means "breaking or interrupting the flow of information between selected C2 nodes," and is effected primarily through electronic attack, or jamming (Department of the Army 2003b, 1-16).

The frame of the core meaning of "disrupt" includes the attacker, the target, and the obstacle. The target is an enemy unit comprised of several subelements that are moving in coordination with one another towards an objective, and the movement itself is planned and timed so that the units are able to converge their combat power and conduct a successful attack. For instance, an enemy conducting a two-prong

attack should have both the main and supporting efforts reach the objective at the same time so that the defender will have to choose where to commit his reserve. If obstacles are placed so that the flanking force is slowed down and does not arrive at the kill zone at the same time as the direct attack does, the defender can then focus his resources on fending off only one attack at a time. This means that any advantage of numbers or combat power that the attackers had possessed is negated by their inability to coordinate their forces.

The importance of maintaining movement through space and the negative impact of its disturbance are key features of electronic attack, and the primary means of effecting disruption in IO. In this frame, the agent is the electromagnetic attacker, the patient is the target who is the intended recipient of electromagnetic emissions, the means of causation is the emanation of competing electromagnetic energy by the attacker, and the result is that the target cannot receive the intended emanations by his counterpart, and therefore can't accomplish his plan.

"Disrupt" in IO has as clear a frame of action as does physical destruction, since the actors are easily identified, and the means and result are almost as definite. Like "destroy," the only aspect of "information" that it retains is the hardware, entailing nothing of the friendly sides' ability to think or communicate, and engaging the enemy's ability only in terms of the electronic emanations that facilitate them.

In contrast, the offensive effect "degrade" has a much less clear correspondence between the target and source domains, complicated by the fact that there are multiple target domains in a single definition. In IO, it is defined as

> using nonlethal or temporary means to reduce the effectiveness or efficiency of adversary command and control systems, and information collection efforts or means. Offensive IO can also degrade the morale of a unit, reduce the target's worth or value, or reduce the quality of adversary decisions and actions (Department of the Army 2003b, 1-16).

"Degrade" in the field artillery realm is to fire at a target until it is reduced in effectiveness rather than catastrophically damaged. It uses the same the frame of causation as "destroy," differing mainly in terms of the degree of damage it causes, not the type.

Unlike the two previous effects, in which there was only one, primarily physical target domain, in "degrade" the target domains are more rampant, and more truly metaphoric, than those of "destroy" or "disrupt." The five targets of "degrade" are adversary C2 (command and control) systems, information collection efforts or means, the adversary's value, his morale, and his decisions or actions (Department of the Army 2003b, 1-16).

The first two objects of "degrade," adversary C2 systems and information collections efforts or means, involve mainly hardware systems, although information collection means can include human spies. Degrading C2 involves jamming or other types of electronic warfare, and degrading collection efforts, OPSEC and deception measures, and counterintelligence. In each case, information is "transferred" from one location to another. C2 systems "move" information from one radio or computer to another. In collection efforts, information "moves" from the target of collection to the

collector, and into the systems that process them. Even though there are obvious differences between human and electronic collectors, the means of degrading them can be similar – putting out false or conflicting indicators.

An interesting metaphoric extension of "degrade" is the notion of "degrading" the morale of an enemy. The IO effect conceives of this aspect of human personality as an independently existing object that functions physically, and whose functionality can be impaired. The recipient of the action is the morale of the target. The agent is the attacker, the patient is the emotional dedication of the enemy to his cause, the means by which the degradation is effected is psychological operations, and the effect is a lessening of commitment. This is a very tight compression, because it elides the entire communication process between the attacker and his intended victims, the means of physical contact, the receipt of the information and its interpretation by the target, his response, and the attacker's ability to monitor the response. The whole coordination process and, most importantly, the cooperative aspect of communication, are eliminated in this metaphoric extension.

"Degrading" the morale of a target is easy to describe in terms of desired effects, but more difficult in terms of means and explication of the causal of chain. To say one's morale is degraded is to conceive of the emotional state in terms of physical functionality that can be higher or lower. But because the cause and effect mechanism of cognition and emotion are less easily determined than physical causation, the means and resultant effect are correspondingly difficult to determine.

This indeterminacy applies also to degrading the quality or effectiveness of a decision, and a target's value. These aspects of a decision, like the value of a target,

can apply to so many aspects of a person or organization, from the physical to the mental and emotional, that determining how to degrade it rests primarily on what feature to focus on. This notion of a decisionmaking ability being a separate, independently existing function conforms to the characterization of cognition as collective activity carried out by corporate entity, one that does not depend on the contribution or agency of any one individual human being for its effective execution.

The next effect, "deny," is more straightforward. In common civilian usage, it means to state that an accusation is not true. In its core military sense, to "deny" the adversary is to prevent him from using an asset critical to his own success. While it is not defined explicitly, its meaning can be derived from that of "denial measure," defined as "[a]n action to hinder or deny the enemy the use of space, personnel, or facilities. It may include destruction, removal, contamination, or erection of obstacles" (Director for Operational Plans and Joint Force Development (J-7)). One can "deny" an enemy the use of a bridgehead by damaging it, setting up obstacles covered by fire that prevent him from reaching it, or even using nonpersistent chemical agents. "Deny," in information operations, entails "withholding information about Army force capabilities and intentions that adversaries need for effective and timely decisionmaking" (Department of the Army 2003b, 1-16). It returns to the common civilian definition in that it entails communication, but instead ofactively refuting an accusation, one prevents the release of any information at all. In this frame the agent and patient are the same as in other offensive effects, but the means conceives of information as an object or force that emanates from the military's own activities and forces, and the desired effect is the ignorance of the adversary about

friendly activities and resources. OPSEC, one of the core elements of IO discussed previously, is a key means of denial.

"Deceive," the fifth offensive element, like deny, closely resembles its civilian origins. Military deception (MD) "seeks to mislead adversary decisionmakers by manipulating their understanding of reality. Successful deception causes them to believe what is not true" (Department of the Army 2003b, 1-16). Its frame in terms of agent and patient is the same as that of "deny," but the causal means is emitting false indicators rather than quashing of all information. It has no corollary in combat operations, since its domain is primarily conceptual in nature. Though it does involve some "transfer" of information, it requires that the recipient be unaware that such a transfer, let alone distortion, has occurred. This intentional reduction of the agency of the recipient makes it a completely unilateral act.

"Exploit," on the other hand, is a metaphoric extension of the core military sense, which involves both offense and defense. In the source domain of combat, the attacker is attacking, and his target is the defensive line of his enemy. He wants to cause a breach in those defenses, which he does by the traditional kinesthetic means of firepower. When the line breaks, the attacker pushes his forces into the opening and wreaks havoc in the defender's rear area. To "exploit," then, is to break through a barrier and move into the area it protects.

"Exploit" in IO terms, means "to gain access to adversary command and control systems to collect information or to plant false or misleading information," and has clear metaphoric correspondences to its source domain in combat (Department of the Army 2003b 1-16). The attacker is still the same agent, but the

initial target is the metaphoric barriers the defenders have set up around their information, such as firewalls and other security measures, while the two subsequent targets are the information system and the perceptions of the enemy. The means is a variety of methods of hacking, and the result is twofold. One, the attacker "gains entrance" and recons the enemy's information system. Two, the attacker "plants" bad information into that system. The IO sense maintains the elements of a barrier, a break in the barrier, and movement into the barrier. In the source domain, the movement is carried out by the attackers, and the break in the barrier necessarily entails failure of the defense and destruction of the defending forces. The defenders are also aware that such a breach has taken place.

In the target domain, the " break" in system security exists, but the enemy's information system actually must keep running for the attacker to be able to "recon" it, meaning that the element of movement is mapped onto both the access of the attacker into the system and the continued functioning of the defended system. It is enabled by the defender's lack of awareness that the system has been breached; once he knows it has happened, he can very effectively end the attacker's exploitation of the information system by shutting down or diverting his own operations. The attacker harnesses the activity of the defender, rather than breaking his ability to act as he must in the kinetic scenario. It therefore has definite causal relationships like those of its source domain, though the elements in the causal frame are slightly different.

The final offensive IO effect is "influence." To influence is to:

> cause adversaries or others to behave in a manner favorable to Army forces. It results from applying perception management to affect the target's emotions, motives, and reasoning. Perception management also seeks to influence the target's perceptions, plans, actions, and will to oppose friendly forces. Targets may include noncombatants and others in the AO whom commanders want to support friendly force missions or not resist friendly force activities. Perception management achieves the influence effect by conveying or denying selected information to targets (Department of the Army 2003b, 1-16).

The more common civilian use of "influence" involves the agent, the patient, the usually undetermined means of causality, and the undetermined result. It focuses mainly on the *fact*that some sort of causation action has taken place rather than explicating the means or results. In terms of the IO offensive effect, the agent is the attacker, and he has multiple targets. Unlike its civilian counterpart, the military term specifies the causal mechanism; like "deceive" and "deny," it is effected by controlling the information the target does or does not receive. By conceiving of communication as transferring or sending a physical entity or force, it not only conforms to common metaphors of communication, it fulfills the expectations set up by the frames of the other offensive IO elements.

Of the seven offensive IO effects, the first two, "destroy," and "disrupt" employ primarily physical means, differing mainly in degree of damage, and have the most concrete link between cause and effect. The next one, "degrade," is far less definite in its causal mechanism, though the result, lower functionality, is easier to

define at least in its physical sense. The last four effexts deal primarily with conceptual abilities and communication. The striking point about these elements is the emphasis of the physical over the conceptual and communication domains, which conforms to the expectations set up by the definitions of the IO elements.

That emphasis continues in the organization of the offensive effects. In general, they seem to be ordered from the one with the most clearly defined causal frame "destroy," to the one with the least easily discernable causal mechanism and most ambiguous resultant state, "influence." It is plausible that since either the beginning or the end of a grouping is a position of emphasis, that "influence" as the final element of offensive effects is actually the most important. This is supported by the fact that "information," is the last and most important of the five elements of combat power. However, the dominance of the physical domain in the IO capabilities and activities, followed by the same trend in the defensive IO effects, makes that unlikely.

Defensive Information Operations

Defensive IO is defined as:

> the integration and coordination of policies and procedures, operations, personnel, and technology to protect and defend friendly information and information systems. Defensive information operations ensure timely, accurate, and relevant information access while denying adversaries the opportunity to exploit friendly information and

information systems for their own purposes (Department of the Army 2003,1-63).

Defensive IO are primarily concerned with protecting system integrity and resisting adversary attack, that is, maintaining the status quo rather that advancing a capability. In that sense, it recruits heavily from the source domain of conventional warfare. However, conventional defensive operations are focused more on beating the enemy to the punch than waiting for an incursion into their domain. Their purpose is outlined as follows;

> The purpose of defensive operations is to defeat enemy attacks. Defending forces await the attacker's blow and defeat the attack by successfully deflecting it. Waiting for the attack is not a passive activity. Army commanders seek out enemy forces to strike and weaken them before close combat begins (Department of the Army 2001 paragraph 8-2).

Just as in offensive operations, the source domain of defensive operations in conventional warfare is far more fully developed than that of communication and thought. It is also heavily based on offensive principles, since it is conceived of as little more than a interim phase between offensives, defeating enemy attacks rather than simply withstanding them. In fact, in an ideal defensive, one conducts counterattacks not only to spoil an enemy attack, but, if the enemy is sufficiently surprised and weakened, to exploit the opportunity and resume the offensive. It consists of several components; preparation of the defense, contact with the enemy, massing of effects/counterattack, and reconsolidation of the defense. Like offensive

IO and the IO elements, the four defensive IO effects, “protection,” “detection,” “restoration,” and “response,” mirror many aspects of its source domain of combat. Unlike the other effects and elements, it exclusively addresses hardware and completely elides the cognitive abilities of any party on the battlefield.

> The first effect is “protection,” defined as:
>
> all actions taken to guard against espionage or capture of sensitive equipment and information. In IO, protection occurs at the digital perimeter to control access to or mitigate the effects of adversary access to friendly decisionmakers and INFOSYS (Department of the Army 2003b 1-17).

It applies exclusively to the digital systems rather than to indicators of activity. Its closest correspondence to conventional defense would be the preparation of the defense, since its focus is ensuring that the electronic “terrain” is held securely. Activities such as reinforcing overhead protection, digging foxholes deeper, and placing observation posts map onto constructing digital firewalls, nesting information systems behind multiple security barriers, and installing programs that warn of hacking attempts.

The next element is “detection,” “to discover or discern the existence, presence, or fact of an intrusion into information systems,” and it too occurs at the “digital perimeter” of a system (Department of the Army 2003b, 1-17.) While collecting information about an attacker is certainly key to any defense, it is not a distinct phase, since there is usually little doubt in conventional ops that an attack has occurred. This is because human soldiers, unlike hardware, have awareness.

However, it is important to detect an attack early enough to respond effectively; realizing that the enemy is conducting his initial reconnaissance allows the defender much more time to prepare than if he discovered their plans as the enemy artillery preparation was striking throughout the depth of his area of operations.

The difficulty of detecting digital "attacks" makes the next phase, "restoration," challenging as well. Restoration is "to bring information systems back to their original state. Restoration is reestablishment of essential capabilities of INFOSYS damaged by enemy offensive IO" (Department of the Army 2003b, 1-17). To do so, the information manager must recognize the extent of damage and understand the system's previous capability, in addition to as recognizing that an attack has taken place. "Restoration" has a counterpart in some forms of defense, such as the mobile defense, in which an enemy is deliberately permitted to move into the defensive lines to put him in a more vulnerable position for a counterattack (Department of the Army 2001b, 5-35). However, that penetration is planned for, and the defender is careful to position recon assets to ensure that he is aware of the enemy's movements at all times, so that he can reconsolidate his previous position.

That planned counterattack is the conventional equivalent of "response." In IO, "response" is "to react quickly to an adversary's information operations attack or intrusion. Timely identification of adversaries, their intent and capabilities, is the cornerstone of effective response to adversary offensive IO" (Department of the Army 2003b, 1-17). Like "attack detection," in conventional ops it's not normally a separate phase, since either the lines are never meant to be penetrated, or if they are meant to be "breached," as in the mobile defense, the means of defeating the enemy

attack entails reconsolidating the position. The counterattack in a mobile defense, and the forward movement of the counterattacking force to restore the original front line, map onto the efforts of information managers to destroy hostile programs, repair the damage, and bring the system back to full operating capacity.

What is striking about IO defensive operations is that they all deal exclusively with attacks on hardware systems and not even metaphorically with similar "attacks" on the force's collective ability to think or communicate. This is despite the fact that several IO supporting activities, counterintelligence, counterdeception, and counterpropaganda, deal with those efforts explicitly. Defensive IO effects elide any cognitive activity by all possible parties in the "information environment."

Conclusions

Together, these three categories, elements, offensive effects, and defensive effects, reflect the heavy recruitment of IO from the concrete, physical domain of operations, and motivate a reliance on the systems aspect of "information." It therefore limits the structure available to understand and analyze thought and persuasion. By doing so, the manual clings to the domain with which its authors are most familiar, allowing them to dodge the difficulties of addressing these activities.

Further evidence of this evasion emerges in the differences between the final draft of this manual, released in September 2000, and the actual published version, which came out in April 2003. During the initial and final draft stages, other schools and agencies within the Army are invited to review the manual; the final draft incorporates any comments the schools make during the initial review. As is civilian

publication, the military tries to keep the review process as short as practically possible to ensure the work is still relevant, and therefore, customarily there is little difference between the final and published versions, so the time lag between the two is correspondingly short. Two and a half years indicates that at least one agency had major issues with the publication.

I believe that the changes made to the IO offensive and defensive effects in the published version reveal those contentions. While each of the individual effects was explained more fully, key changes were made to the frames of several of them. In "degrade," the morale of the enemy was added as an object of the effect, broadening its frame into the psychological realm. The other changes, however, reveal a sharp narrowing of the scope of IO, and therefore a more prominent role for conventional capabilities.

In the offensive IO effect "disrupt," the writers dropped the line, " Additionally, disrupting adversary C2 by providing truth and factual information about friendly forces and intent." (Department of the Army 2000, 1-13 to 1-14). This sentence presumes that the enemy or adversary would be attempting to discredit friendly forces by issuing propaganda about them. It also entails several potential audiences; the adversary's own forces, local civilian populations, overhearing audiences such as those of other countries interested in the outcome of military action, and, most troubling, the friendly forces themselves. By eliminating this line, the writers avoid having to explain how persuasion works, and can steer clear of the disquieting possibility of American troops succumbing to enemy propaganda.

They continue to sidestep this issue in the next deletion to this section, with the lines "The primary IO elements used to conduct defensive IO are counter deception, counterpropaganda, and information assurance (IA). Counterdeception and counterpropaganda aid protecting the decision maker and the friendly forces" (Department of the Army 2000, 1-15 through 1-16). While IA, in dealing with information systems, conforms to the expectations set by the defensive IO effects, and draws on preexisting conventional capabilities, counterpropaganda and counterdeception indicate potential weaknesses in the psyches of the friendly forces best left untouched.

In contrast, both discussions on offensive and defensive IO in the published version state that their definitions purposely omit part of the joint definition (Department of the Army 2003b, 1-16; 1-17). In relation to offensive IO, the writers deleted this statement:

> These capabilities and activities include but are not limited to operations security, military deception, psychological operations, electronic warfare, physical attack and/or destruction, and special information operations[3], and could also include computer network attack (Director for Operational Plans and Joint Force Development (J-7)).

In relation to defensive IO, the writers deleted this sentence:

> Defensive information operations are conducted through information assurance, physical security, operations security, counterdeception,

[3] Special information operations, or SIO, require an additional review process, and are not explicitly discussed in the manual.

> counter-psychological operations, counterintelligence, electronic warfare, , and special information operations (Director for Operational Plans and Joint Force Development (J-7)).

The purported reason for the omission is that the Army does not want to limit how the different elements are used. Another possibility is that these sentences undermine conventional warfare as the primary conceptual source for this new and very fashionable discipline.

For instance, in the joint definitions, both defensive and offensive IO include electronic warfare and operations security. If these elements can be used both offensively and defensively, this overlap blurs the boundary between the two types of effects, and forces the reader to reconsider the relationship of warfare to "information." Also, since electronic warfare involves mainly jamming systems, and operations security means denying information, it opens the question of how physical actions impact cognitive activity.

Looking closely at the domains of communication, persuasion, and cognition leads one to reconsider the relationship between the frames of warfare and "information" as it is laid out in this manual. A PSYOP message intended to counteract false claims by hostile forces can be either defensive, in that it may prevent the local population from retaliating against the friendly forces, or offensive, in that it can undermine the credibility of the false messages. A hostile force, despite the falsity of its claims and its lack of combat power, can dominate the "information environment" and weaken the U.S. position without firing a shot. Claiming that all IO capabilities and activities can be used in both ways could be interpreted as

removing unnecessary constraints on their use. But it also allows the writers to avoid confronting the nature of thought and communication, leaving soldiers on the ground with inadequate and sometimes dangerous tools to deal with the hazards of the "information environment." At a time when U.S. forces are losing the "information war" around the world, such evasion is not only irresponsible, it can be deadly.

Chapter 4: PSYOP and The Four Step Targeting Process

Introduction

While Lakoff and Johnson examine the metaphor Argument Is War because it illustrates their theory well, they do take issue with it. As they explain the mappings between the target and source domains, the authors also consider alternative metaphors for argument. Conceiving of argument as a dance, for instance, would highlight its cooperative nature and imbue it with the grace of the target domain. Conceiving of it as a journey would underscore its character as a process of exploration (Lakoff and Johnson 1980, 90-91). Conceiving of it in terms of warfare, however, depicts it as an inherently hostile activity in which one party wins at the expense of the other, and also instills it with the deadly violence and destruction of its source domain. Lakoff and Johnson would therefore be surprised to find out that there is actually a worse metaphor, one currently used to train soldiers whose military occupational specialty is persuasion.

One of the most difficult struggles that the writers of Army Psychological Operations, or PSYOP, doctrine face is explaining their discipline to the Army at large. Because communicating with and persuading other audiences is a cognitive rather than a physical process, and because it is difficult to quantify its effects, conventional forces have often ignored or disparaged its contributions. Although their field has risen in prominence due to the emergence of Information Operations, PSYOPers find that they must persuade members of their own team before they can even begin to address other audiences.

To achieve this, they have incorporated a key planning formula of conventional operations into their own capstone manual. The four-step targeting process, a heuristic used to select, prioritize, engage, and assess targets for kinetic destruction, is the subject of its own manual, FM 6-20-10, produced by the Army Field Artillery School at Ft. Sill Oklahoma (Department of the Army 1996, 2-1). By mapping the source domain of field artillery onto the target domain of communication and persuasion, the PSYOP writers conceive of persuading an audience as firing a weapon at a target. When taken to the logical development of its source domain, the conceptual metaphor Persuading An Audience Is Firing A Weapon At A Target culminates with the death of the audience.

On the face of it, this metaphor is so absurd that it seems hardly plausible that it be taken seriously, let alone be incorporated into doctrine. However, it has its roots in very productive metaphors that have been extensively studied by many cognitive linguists. When one compares Persuading An Audience Is Firing A Weapon At A Target (Persuading Is Firing) to the metaphors Argument Is War, Communication Is Sending, and Thinking is Moving, and analyzes the source domain of persuasion itself, the conceptual motivations behind the PSYOP metaphor become clearer. Unfortunately, the entailments and connotations of its source domain so thoroughly shape and permeate the target domain that it cripples the further development of PSYOP in military thought.

Argument Is War

This metaphor, so pervasive in our language and foundational to our current understanding of rhetoric, has as its target domain a form of communication, argument. Like Persuasion Is Firing, Argument Is War highlights the conflict between the two parties. In an argument, two people who hold differing positions on a given issue try to persuade one another that the position each holds is more viable and the one their fellow arguer holds is erroneous. Each arguer has evidence to support his view, and has followed a path of reasoning to reach his or her conclusion. Each instance of communication centers on an attempt to state his or her own position, support or prove that position, or to disprove the other person's.

Because argument is a form of communication, however, the parties often have far more commonalities than not. First, they have obviously both agreed that the topic over which they are contending is important enough to risk conflict over. Secondly, they both agree to participate in the process. And thirdly, though they have differing viewpoints, they both believe that they share enough of a common understanding of their language that they can comprehend one another's meanings. These foundational commonalities are often overlooked because we focus on the differences that spark the argument rather than the commonalities that make it possible.

These differences are also the focus of conventional warfare, which is what makes it a productive source domain for metaphors of argument. Like communication, it requires two parties, and oddly enough, it is also a cooperative endeavor in the sense that both parties must be fighting one another for combat to

take place; should one refuse to fight, the resultant surrender or retreat effectively ends the battle. During the battle, the offense moves and fires at the defense. The objective of the attackers is to take ground, and the defenders, to hold ground. While it is not absolutely necessary for the attackers to kill the defending forces in order to take terrain, it usually is, so that forward movement entails this destruction. Even when the defenders give up of their own will, they are physically displaced. The terrain over which the two forces are fighting is often conceived of as being necessarily occupied by one party or another, even though it could be occupied by neither. It is therefore a contrary posing as a contradictory, whose false contradictory status rests on our preference for oppositional pairs (Turner 1991, 73-74). Some, like Lakoff and Johnson, might be discouraged by the productivity of this metaphor, because it seems to indicate that we are predisposed to viewing an activity as fundamentally human as communication and discussion as a form of combat. However, its productivity is not necessarily a result of its hostile connotation, but of the basic metaphors that compose it. Battle and its constituent subframes combine aspects of argument as both a process and a product. Attacking, demolishing, and shooting are all metaphors that describe one particular act in the process of argument, namely, the discrediting of the claims of one rhetor by the other. They are also ways of transferring kinesthetic energy to an object, in a manner similar to, but more violently than, such actions as “push,” “kick,” or “move,” and with the added element of destruction.

The metaphor Argument Is War also draws on several metaphors of mind and cognition, including The Mind is a Body (“She’s been training hard for this debate”),

Thought Is Object Manipulation ("Uh-oh, they're pulling out the big guns of Marxist thought") and Thought Is Movement ("He retreated and agreed to a plea bargain when he saw the evidence"). Its correspondence with these already established metaphors for conceptual activity helps account for its productivity in the domain of argument. However, as intricate as human thought itself is, argument is an even richer and more complex domain. Because it involves the interactions of two thinkers and their efforts to communicate, as well as the subject matter they discuss, it offers a wider array of potential mappings between it and the source domain of war.

As an example, in argument, "thought" can correspond to both the subject matter of the debate, and the intellectual "position" of the opponent. The physical movement towards the objective in the source domain of war can therefore map onto two different elements of the target domain of argument, the intellectual "ground" of the debate's topic, which the arguer wants to possess, and the will of the opponent. One can "gain ground" by demonstrating wider knowledge of the topic, which often corresponds to one's ability to make one's opponent "change his position." These and other multiple mappings also make Argument Is War so productive.

Its appeal seems to lie not only in the productivity with which it can be mapped onto the target space, but the manner in which its inherent violence seems a fitting metaphor for the passion with which people argue. Strong emotions such as anger and love are often expressed in terms of heat, as Lakoff has already demonstrated (1987, 380-415). A powerful buildup of heat often results in a violent explosion, and since arguments over important topics evoke vigorous emotional responses both in relation to the topic itself and the desire to be right, the destruction

of warfare seems a fitting expression of that passion and the heat of the disagreement it sparks.

Speech Acts And The Target Domain of Communication

The hostility of the source domain of warfare obscures the cooperation necessary for argument to take place. Another cooperative aspect it conceals is the successful achievement of the individual joint acts, or speech acts, that comprise an argument. These speech acts have both a physical and a conceptual dimension. While the physical dimension is the most noticeable, it is only a necessary, not sufficient component of speech acts. A close examination of the nature of speech acts typical to arguments reveals another critical difference between the target domain of argument and source domain of war.

While a common way of distinguishing argument from other forms of conversation is through the anger and hostility often associated with it, that feature is really an accidental, not a necessary, characteristic. What distinguishes argument from other types of discourse is the goal each participant has in entering into the conversation, to persuade the other person to change his view on a given topic, as well as the speech acts each utilizes. Searle lays out his theory in his book Speech Acts, in which he describes the elements of a speech act and their contributions to its effect. Some characteristic speech acts of argument are "argue," "persuade" and "convince."

Speech acts are unique among human activity in that people actually consider something that someone says as an action whose existence and effects are as real and

valid as any physical activity (Searle 22). A speech act includes both the utterance, such as "Sam smokes habitually," and what the speaker intends to do with the utterance, that is, what impact he wishes to effect (Searle 22-23). In this case, the utterance could be a statement, or, with differing emphases or tones, a lament or an order.

Searle's examination of the speech act describes the frame mainly from the speaker's perspective. In his work, he examines what makes a given utterance a speech act as opposed to merely a statement. Central to his theory is the distinction between the illocutionary act, that is, the kind of act that the speaker is performing, and the perlocutionary that, is, the impact that the act actually has on the hearer (Searle 23, 25). The parts of the speech act are the utterance, its propositional content, the preparatory conditions for the illocutionary act, the element of sincerity on the part of the speaker, and the essential elements that define the act (Searle 66).

While speech acts are usually described primarily from the perspective of the speaker, the speech act must be understood and accepted on those same terms by the hearer in order to be complete. Let us take the speech act of a sarcastic insult, in which the speaker S responds to the suggestion that he buy his teenage children a new car to share, the utterance U, "Great idea, how about I buy one for each of you?" If the hearers take the meaning of utterance U as congruent with its conventional association, then the mock hasn't happened, that is, it has failed as a perlocutionary act. The hearer must also not only understand the fact that he has been insulted, but actually feel insulted for the act to be truly complete, and must also accept the speaker's ability to insult him. While even a three year old might be capable of

attempting an insult, almost any adult who might be the target would probably not be truly insulted, taking the act rather as evidence of the fact that the child needs a nap.

This represents a key difference between speech acts and physical acts. A person can carry out a physical act without the consent, participation, or knowledge of any other human being. A physical act, such as building a house, also leaves physical evidence independent of the memory of the builder. The tangibility of the results, the indisputability of its occurrence, and the absolute agency of the builder make this type of act appealing as a model for speech acts. The power and magnitude of combat, its risks, and the prizes of victory make warfare an especially compelling source domain not only for argument, but many other domains of human endeavor, such as sports competition ("They battled it out for the title") or problem solving ("They declared a war on poverty"). While a speech act can initiate actions that have a tangible effect, as when a speaker requests that the hearer close a door, their immediate impact is mainly conceptual.

Because a speech act depends for its success on participation by and impact on the hearer, how a speech act is classified is at least partly dependent on how she reacts to the speaker's utterance. A successful argument, in the sense that both its participants understand it as an argument, includes the speech acts "argue," "convince" and "persuade." A close examination of these speech acts reveals not only that they have an impact on the hearer, but also how the hearer must participate in each act in order for it to be complete.

When a speaker argues, he states the utterance U, "Ms. X is the best candidate for senator." It has the propositional content P, concerning a judgment about a given

situation. As preparatory conditions for the utterance, the speaker S has evidence for truth of P, and wants H to believe P. Also, it must not be obvious to either S or H that H believes P. Its condition of sincerity is that S believes P to be true, and an essential component of this speech act is that it count as an attempt by S to get H to believe P. While these are the components that define an argument, they do not determine the quality of an argument, and that factor depends on whether the hearer H believes concedes that the argument is good or valid.

In order to be complete, "argue" requires only that the hearer H acknowledge that the speaker attempted to carry out the speech act. "Convince" and "persuade," however, also require that the hearer conduct a conceptual act of his own for their successful completion. "Convince" entails that the hearer firmly believes what the speaker is saying. Taking the same utterance U and the same propositional content P, this act has the preparatory conditions that S wants H to believe P, and that S has evidence for worthiness of P. Also, it must not be evident that H will believe P of his own volition, and its condition of sincerity is that S believes P and wants H to believe P. It is essential that the act count as an attempt by S to get H to believe P. However, no matter how often S states the utterance U, "Ms. X is the best candidate for senator," that act is not complete until the hearer H agrees with it. The act requires H's agreement, a conceptual act of will, for its success.

"Persuade" is another central speech act of argument, with the propositional content P involving the future act A of H. This act could be stated in an utterance U such as "You should vote for Ms. X for Senator." Preparatory conditions for this act are that S wants H to do A, and H does not want to do A. Also, it must not be

obvious to either S or H that H will do A of his own volition. The conditions of sincerity involve both participants, in that S must sincerely desire H to do A, and H must sincerely not want to do A. It is essential that as a result of S's attempt to persuade H that H performs act A as a direct result of the speech act by S. As for "convince," the success of the speech act "persuade" depends on an act of volition on the part of P, that is, he must perform the act that S attempts to persuade him to.

Unlike "assert," the speech acts "argue," "persuade" and "convince" have as necessary conditions the resistance of H to the truth of the proposition, not just his ignorance of the proposition itself. All three must be recognized by H as attempts by S to change his mind on the topic. However, "persuade" and "convince" have a further feature that distinguishes them from "argue." In order for "convince" to be complete, H must change his own inclination to disbelieve P, not just acknowledge S's attempt to persuade him as sincere, and must do so as a direct result of S's statement. The act of "persuade" entails not just a cognitive act, an act of will, but an additional act on the part of H. H must both agree to perform an act and then actually carry it out. Whether it be inclination, belief, or action, the speech acts central to argument depend on an act of will on the part of the hearer to be counted as a success.

This will is critical even in terms of defeating the enemy in the domain of warfare. FM 100-5, Operations, the previous edition of FM 3.0, defines "will" as "the disposition to act toward achievement of a desired end state" (Department of the Army 1993, 6-7). "War," it tells us, " is a contest of wills. Combat power is the product of military forces and their will to fight…Ultimately, the focus of all combat operations must be the enemy's will. Break his will and he is defeated" (Department

of the Army 1993, 6-7). As history has shown in numerous instances of unconventional warfare, from Vietnam to Iraq, superior firepower on the part of American forces cannot overwhelm poorly equipped forces with strong resolve. Although physical violence and action are what make war a rich target domain for many activities, a surprising correspondence between the two domains is the importance of a psychological element. It comes as no surprise that the will of the hearer is necessary for success in domain of argument and persuasion; it's less apparent that changing it is a necessary, and even sufficient condition for success in the target domain of warfare.

The Conduit Metaphor

The complex mappings possible between the domains of argument and war are not the only motivation behind the continued use of the metaphor Persuading Is Firing. Another metaphor with which it shares many correspondences is The Conduit Metaphor. Joe Grady's analysis of it demonstrates that this metaphor, long considered a single concept, is actually a compound comprised of several basic metaphors. Each of these constituent metaphors is productive for a number of target domains, not just communication. Each also expresses important understandings thinkers have about key elements of the communication process. The fact that they have been understood as comprising a single, larger complex metaphor is a product of the target, not the source domain. However, the unity that thinkers map backwards from the source to the target domain itself expresses a key understanding we have about communication, that despite its complexity and the numerous activities that we

carry on both simultaneously and in sequence, we carry them out effortlessly, experiencing them as a single, seamless endeavor, oblivious to the endless coordination and thought processes that make it possible.

The Conduit Metaphor, first presented by Michael Reddy in 1979, is discussed by Lakoff and Johnson in Metaphors We Live By to demonstrate the manner in which one domain can highlight or hide aspects of another (Grady 205). Reddy bases his analysis on comments he collected made by professors on students' papers, using examples such as the following:

It is very difficult to put his concept into words.

Harry always fills his paragraphs with meaning.

His words carry little in the way of recognizable meaning.

The passage conveys a feeling of excitement.

John says he cannot find your idea anywhere in the passages.

I have to struggle to get any meaning at all out of the sentence.

You know very well I gave you that idea.

Your feelings are finally getting through to me.

The man's thought is buried in these terribly dense and difficult passages (Grady 206-207).

In Reddy's analysis, these and other examples illustrate that thinkers believe language is a conduit, through which speakers can transfer what Reddy calls repertoire members to one another (Grady 206). When they communicate, writers and speakers "place" their repertoire members, or RMs, into the medium or signal,

enabling the reader or listener to find them and place them in their own minds (Grady 206).

Lakoff and Johnson break Reddy's analysis into the following mappings, finding the following systematic correspondences between the domains of communicating and transferring of objects:

Ideas Or Meanings Are Objects.

Linguistic Expressions Are Containers.

Communication Is Sending (Lakoff and Johnson 1980, 10).

Grady, however, has pointed out that there are several problems with this account of Reddy's examples. One is that the idea of "sending" something as a way of conceiving of communication has little basis in experience (Grady 208). While people do send packages and letters through the mail, the postal system is not central to most people's experience of communicating with one another (Grady 208). Also, if the postal system were the primary source domain, then it should be far more productive than it is; significant aspects of that frame simply can't be mapped onto the target domain; no one speaks of "opening" an essay, "sealing" ideas in a poem, or using express delivery, postal workers or envelopes in metaphors of communication (Grady 209). Finally, Grady notes that Lakoff and Johnson's analysis does not account for other ways in which similar metaphors are used (Grady 209-210). Information or ideas can be "contained" in music (Bach packs many ideas/moods, etc., into a piece of music), or physical indicators (My doctor couldn't get a lot of information out of the x-rays; the crime scene contains very little evidence) (Grady 209).

Grady, based on his early work on primary or primitive metaphors with Sarah Taub and Pamela Morgan, proposes that Reddy's example is composed of at least five separate, more basic metaphors (Grady 210-216). Each of them accounts for some of the examples that Reddy and Lakoff and Johnson use, and each is independently motivated (Grady 210). They are Constituents Are Contents, Achieving A Purpose Is Acquiring A Desired Object, Information Is Contents, Transmission Of Energy Is Transfer, and RMs Are Possessions/Learning Is Acquiring (Grady 209-216). Although these metaphors have many correspondences with one another, when applied to communication, each highlights important aspects of our experience of the process.

All the metaphors share correspondences with Thinking Is Physical Functioning, especially its major submetaphor, Thinking Is Object Manipulation. These five constituent metaphors all depict the speakers and listeners as inserting, extracting, or struggling with RMs, highlighting the agency and activity of the participants in the communication process (Grady 209-216). As a group, they make a fairly complete portrayal of communication process as a whole.

In Constituents Are Contents, the utterance or other form of communication maps onto a physical container, while the RMs map onto its contents (Grady 211). The metaphor is used in such expressions as "His website does not have a lot of content," or, "Emily Dickinson can pack a lot of meaning into a single line." It highlights critical aspects of the speaker's agency, representing the enormous conceptual work speakers do when they express an idea, revise a piece of writing, or shape a sentence.

An entailment of this metaphor is that if a writer "puts" a lot into a work, a reader will "get" a lot out of it. This corresponds to the metaphors, Achieving A Purpose Is Acquiring A Desired Object, and RMs Are Possessions/Learning Is Acquiring RMs, which highlight the work the listener must do in the communication process (Grady 212-213). They are the basis of such expressions as "I had to struggle to get meaning out of his paragraphs," and "I got the gist of what she was saying." These representations of communication emphasize the fact that the author has something of value to say, that the reader wants to hear it and learn it, and that he benefits from having done so. Together, they highlight both the reader's involvement in the process, and his motivation for that involvement.

Information Is Contents, while related to Constituents Are Contents, enables yet another metaphor, Becoming Accessible Is Emerging (Grady 213). While the Constituent metaphor emphasizes the fact that we believe meaning is compositional, Information Is Contents emphasizes the fact that, in complex expressions, the meaning may not be readily apparent. Because the container that holds them hides contents, those contents must often be removed before they can be fully perceived. This entailment motivates Becoming Accessible Is Emerging, which is the basis of such expressions as "Her ideas aren't unearthed in just one reading," or "Modern students must scrape away layers of obsolete vocabulary before Shakespeare's genius becomes apparent to them" (Grady 214). It also emphasizes the fact that communication is not automatic, and that the parties must coordinate extensively on many levels for it to be successful.

Transmission Of Energy Is Transfer underlines the most important characteristic of communication, its cooperative nature (Grady 215). This metaphor motivates such expressions as, "We have to be careful how we word this, since we want to send a positive message," and "His enthusiasm just radiates off the page and inspires me to follow his example." Because transfer between people entails both a sender and a recipient, and because both sending and receiving entails an act of will, transferring information entails the agency of all participants and the causal connection between their activities.

This final metaphor also reveals yet another motivation behind Persuading Is Firing. The domain of transfer involves two physical entities, a third entity that passes between them, and the force necessary to effect the transfer, as when a child throws a rock at a target. The important difference between this scene and that of persuading or convincing someone is that the impact of the rock on the target and the damage it effects happen as a direct result of the thrower's will, but completely independently of the target's will. If the target is inanimate, it has no will. If it were human, he would desire not to be hit by it; it would happen despite his own desire. Persuading and convincing require an involvement by the "target" that the scene of physical transfer does not.

However, that will is apparent in other parts of the Communication Is Sending metaphor. Collectively, these five metaphors portray many aspects of the communication process as both Searle and Clark explain it. They also highlight the conceptual effort both participants must exert for successful communication to take place.

Firepower and Communication

The two factors of will and cooperativeness that characterize warfare and communication, and the agency on the part of all participants that they entail, are precisely what is missing from the source domain of Persuasion is Targeting. Firepower is a critical subcomponent of the domain of warfare, and the sheer destructive capability it contributes is what distinguishes warfare from other forms of human conflict, employing firepower is not merely warfare on a smaller scale. The scene of firing a weapon entails relationships between the elements of its frame that differ markedly from warfare itself, ones that necessarily exclude will and joint activity between the two parties.

There are some metaphors for communication that do recruit from the source domain of firing a weapon, including the aforementioned "big guns" example. Others are

She took aim at his weakest evidence.

He fired a parting shot.

He hit the bull's eye with that last comment.

These, however, are limited uses of the source domain of firing that highlight very specific aspects of an argument, examples more along the line of, Argument Is An Artillery Battle, or perhaps, Argument Is A Gunfight. In these examples, both parties are "taking aim" and "firing" at one another, and any "injuries" their cases sustain seem to be the results of their own ineptitude. In other words, both sides have agency in the frame of this particular source domain. The first refers to important evidence, the second to a final comment intended to be a stinging shot, and

the last denotes a particularly astute argument, in the limited sense of a specific claim supported reason, or assertion. Their small scope means that other elements within the larger frame of firepower and the relationship between them are not as easily recruited, which means that these entailments don't interfere with the effectiveness of the metaphor.

Extended metaphors present more opportunity to observe the disparities between the target and source domains because they recruit from larger areas of those domains. With skill the different aspects can be woven together so that the highlighted elements of the target domain are seamlessly blended in through the relations in the source domain. Without skill, the gaps turn into chasms, making one more aware of the disparities between the target and source domains than their similarities.

These gaps appear in the doctrinal definitions for both "target" and "targeting" in the source domain of firepower, and in the definitions of these same terms in the target domain of PSYOP. The writers of PSYOP doctrine attempt to make numerous complex mappings between these two domains, and their efforts are at least partly explained by the many metaphors of mind, thought, and communication whose source domains come from the physical world. Their expert theory of war far outweighs their inexpert knowledge of communication and persuasion, resulting in mappings whose impoverishment can only be explained by this imbalance.

PSYOP and Its Integration into Military Planning

The metaphor used in Army PSYOP doctrine, Persuading Is Firing, is expressed in the explicit comparison of the target domain of PSYOP to the source domain of targeting in FM 3-05.30, Psychological Operations, which states, "Just as in indirect fire planning, PSYOP must be truly integrated into the targeting process and its functions of decide, detect, deliver, and assess" (Department of the Army 2000, 7-32). The PSYOP mission is unique in the Army, differing markedly from the more conventional BOS discussed earlier, and there are comparatively few PSYOP units in the active duty force. As a result, until recently most conventional units have had little opportunity to work with them and understand the contributions they can make.

Using a metaphor with a source domain firmly grounded in conventional Army culture, then, gives the PSYOP community the opportunity to explain its mission, assets, and employment to the Army as a whole. In the limited connotations prompted by the cited passage, such a comparison could be instructive. The four-step targeting process is the result of centuries of collective experience planning battles and the effective integration of fires into the maneuver portion of an operation. Because assets on the modern battlefield can move very quickly, their movements must be closely coordinated both to ensure their efficient employment and prevent possible fratricide. The level of detail and shared awareness entailed in the targeting process would provide an appropriate platform for PSYOP soldiers to explain the nuances of their discipline and promote the contributions their craft can make to an operation.

Unfortunately, the comparison does not end here. Further into the document, the authors advise the reader that PSYOP soldiers must adopt the heuristic of the four-step targeting process to ensure that their assets and capabilities are fully integrated into the the Military Decisionmaking Process (MDMP):

> FM 101-5 states that 'targeting is closely related to the MDMP,' but where and how they are integrated or related is not always clear. PSYOP targeting must help the battle staff to integrate the targeting functions into the existing MDMP and must reflect the results of the targeting process. The requirements of the PSYOP targeting process at the unified or JTF level and below must be achieved within the MDMP and must be achieved *without separate processes or additional sets of phases (or steps)* (Department of the Army 2000, 7-32; italics mine).

Because PSYOP's integration into the military planning process is limited to only those aspects that most clearly map from the source domain of indirect fire planning, the resulting extended metaphor in the continuation of the passage, which details how to use the four-step targeting process as a heuristic for PSYOP planning, cannot consider two necessary elements of the frame of a successful argument, the audience's agency and their will.

The Source Domain of the Targeting Process

The targeting process is motivated by certain ongoing conditions of modern warfare; the increasing number of enemy targets available on the battlefield, and the

limited number of assets available to engage them. These conditions are exacerbated by the facts that collection assets needed to locate them are comparatively scarce, and that any asset that engages a target risks revealing its own position and becoming a potential target itself. The four-step targeting process is a method of efficiently selecting targets on the battlefield and matching them with both the available indirect fire assets and collection systems needed to ensure they are accurately detected, decisively engaged, and appropriately damaged at a time and place that best serves the needs of the friendly mission. It is a highly specialized method that, while it entails some common understandings of the use of artillery and draws from normal decisions that people must make as they prioritize needs, is not found outside the military.

The immense number of possible targets on a battlefield is confirmed by the definition of a "target" used by both joint and Army forces. According to Joint Publication, 1-02, Department of Defense Dictionary of Military and Associated Terms, a target is

> a geographical area, complex, or installation planned for capture or destruction by military forces. Targets also include the wide array of mobile and stationary forces, equipment, capabilities, and functions that an enemy commander can use to conduct operations.

One of the first things that a targeting cell must do is narrow the range of possible targets for consideration in the planning process. In the Army, the first consideration is what the enemy needs, which is the basis for the definition of high value targets, or HVTs, defined as

> a target the enemy commander requires for the successful complete of the mission. The loss of high-value targets would be expected to seriously degrade important enemy functions throughout the friend commander's area of interest" (Director for Operational Plans and Joint Force Development (J-7)).

While this definition eliminates many potential targets, those remaining must still be rated according to how much their destruction will aid the efforts of the friendly side. So, for instance, while both the enemy's field artillery units and his reserve force may be necessary to his success, the friendly side may not be able to engage them both effectively at the same time. A high priority target is therefore defined as

> a target whose loss to the enemy will significantly contribute to the success of the friendly course of action. High-payoff targets are those high-value targets, identified through wargaming, that must be acquired and successfully attacked for the success of the friendly commander's mission (Director for Operational Plans and Joint Force Development (J-7)).

In having to choose between the two targets discussed above, then, the targeting cell would probably put the artillery group higher on the high priority target list, or HPTL, because its firepower would be necessary to create the breach in friendly lines that the enemy reserve would exploit.

These, however, are just the first of many decisions a military staff must make. Not only are the assets available to locate and engage targets limited, they also

have a set range of capabilities, and, depending on what unit they belong to (organic or requested from higher) and the kind of down time they need for maintenance to function properly, may not be available at the time needed. The procedures for aligning needs to resources are know collectively as the targeting process:

> the process of selecting targets and matching the appropriate response to them on the basis of operational requirements and capabilities. The emphasis of targeting is on identifying resources (targets) the enemy can least afford to lose or that provide him with the greatest advantage, then further identifying the subset of those targets which must be acquired and attacked to achieve friendly success (Department of the Army 1996, 1-1).

The targeting process consists of four steps: decide, detect, deliver, and assess. They are defined as follows.

> DECIDE - The decide function, as the first step in the targeting process, provides the overall focus and sets priorities for intelligence collection and attack planning. Targeting priorities must be addressed for each phase or critical event of an operation (Department of the Army 1996, 2-1).

> DETECT - Detect is the next critical function in the targeting process. The G2 or S2 (the intelligence officer, who is responsible for determining the possible enemy courses of action and also controls the collection assets dedicated to finding him) is the main figure in

directing the effort to detect HPTs identified in the decide function. To identify the specific who, what, when, and how for target acquisition, the G2 or S2 must work closely with all of the following (Department of the Army 1996, 2-10).

DELIVER - The deliver function of the targeting process executes the target attack guidance and supports the commander's battle plan once the HPTs have been located and identified.(Department of the Army 1996, 2-12).

ASSESS - Combat assessment (CA) is the determination of the effectiveness of force employment during military operations. CA is composed of three elements: BDA. Munitions effects assessment (MEA). Reattack recommendation. (Department of the Army 1996, 2-14)

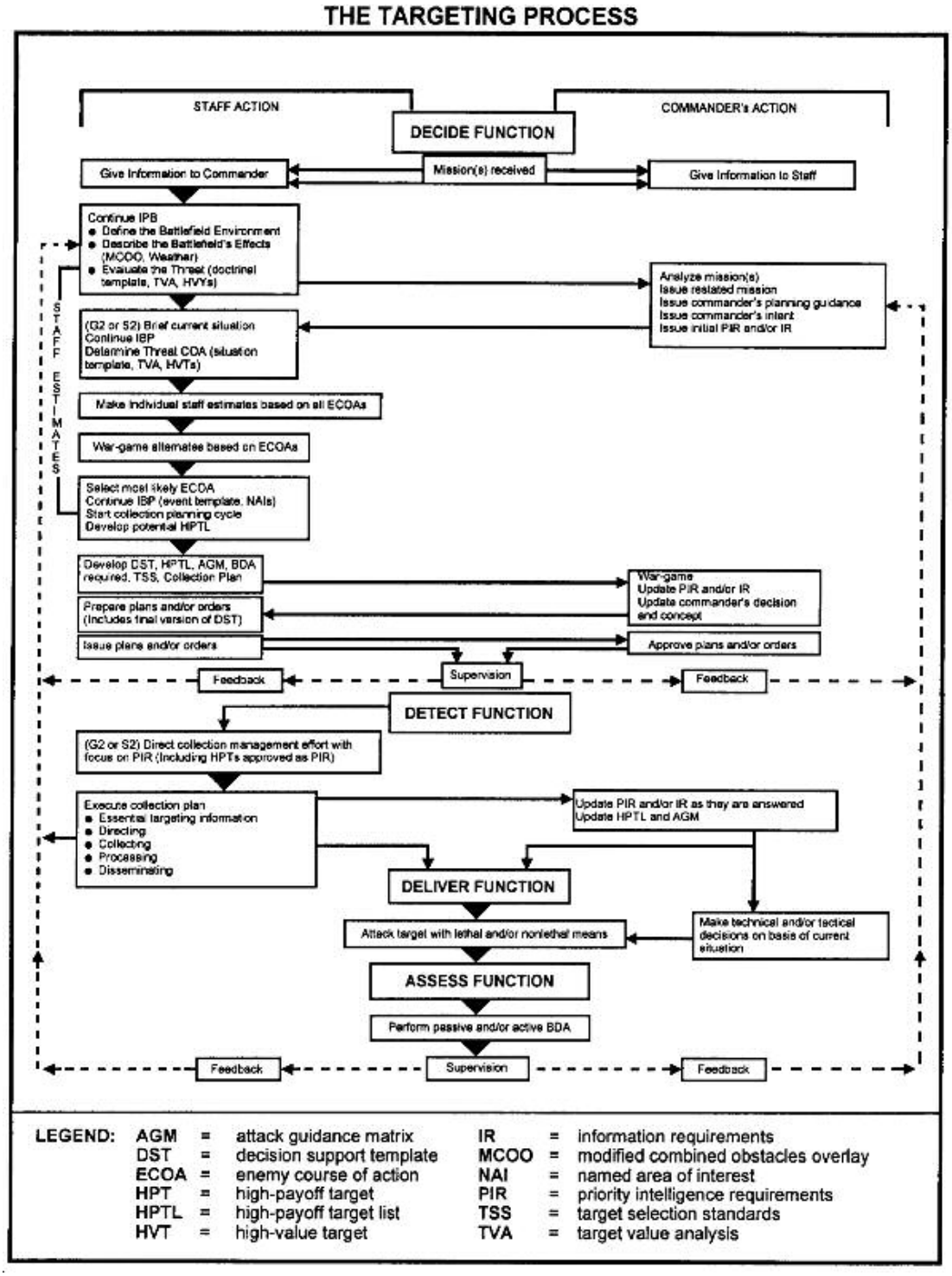


Fig 4.1 The Four-Step Targeting Cycle (Department of the Army 1996, 1-5)

This process works best in traditional warfare with two opposing armies that are state-supported and have established organizations, identifiable equipment, and

published doctrine and tactics; that is, a situation in which there is a certain amount of predictability in terms of what is on the battlefield, where it is going to be, and what it is going to be doing. To prepare for the targeting process, the intelligence soldiers of a unit make a situational template of the enemy's forces (Department of the Army 2004, Glossary-15). That is, they take a sketch of what an enemy force's assets are and how they are arrayed on the battlefield according to doctrine, superimpose the drawing on a map of the actual terrain, and, adjusting for terrain considerations, determine where the enemy's forces are most likely to be at what time. For instance, let us say that in a given scenario the enemy's main effort in a defense will be to the east. Doctrinally, the field artillery unit that supports it should be located directly behind that main effort, so that it will be able to range out as far forward as possible in front of those troops. If, however, the terrain in that area is too hilly for artillery forces to lay their guns out level, that fire support unit may be located behind the supporting effort instead.

The first function of targeting, "decide," is based on this templating; it presupposes a great deal of fairly detailed knowledge about the enemy organization, equipment, and functions, as well as a similar level of information about the terrain. In this step, targets are determined, then prioritized based on both their usefulness to the enemy and the ability of the friendly side to impact them, that is, according to the criteria of both HVTs and HPTs.

The targets themselves are mainly physical in nature and have discrete spatial boundaries and identifying characteristics. They also have a clear role within the organization they support, as well as apparent causal relationships between this role

and how they contribute to the unit's mission; ordnance, for instance, provides both ammunition handling and mechanical repair capabilities, while armor and mechanized infantry units provide maneuver. Every military unit has what is termed a center of gravity, or COG, an asset that is key to its combat power and without which that power will be lost (Director for Operational Plans and Joint Force Development (J-7)). In most Soviet-style formations, this is usually the artillery, since Soviet doctrine emphasizes its use through all phases of combat. In an air defense artillery unit that targets enemy aircraft from a distance, that COG is the target acquisition radar, which acquire aircraft at a distance sufficient to allow the weapons system to engage them effectively, somewhere between the weapon's maximum effective range and the distance at which they pose a threat to the ADA unit's own and supported troops.

In fact, most of the intelligence discipline within the frame of conventional warfare can be reduced to determining two things about elements within enemy forces, size and rarity. Size, whether in terms of numbers of soldiers or actual caliber of gun tube, is an easy predictor of the kind and scope of impact the force; a larger caliber artillery piece can deliver more munitions farther, and can deliver a wider variety of munitions, such as chemical and nuclear. Rarity is a factor because valuable weapons are resource-intensive, and therefore difficult to support.

Because scarce resources that can leverage large amounts of combat power are often well protected, this protection is a major factor in deciding how to attack them. For many targets, attack helicopters are a preferred method because human pilots can search for individual elements, such as vehicles and other pieces of

equipment, and destroy or damage them more with more certainty than indirect fire might. However, as attack helicopters move out to and engage a target, they must have their own protection, called suppression of enemy air defense, or SEAD, which entails additional resources and coordination (Department of the Army 1996, Glossary-8). They are usually reserved for targets higher up on the HPTL; lower priority targets, or those that need only be damaged or suppressed, may be allocated to indirect fire.

Once the targets are selected and matched with means of engagement, the staff planning the attack, called the targeting cell in many organizations, must ensure that sufficient means are available to determine and confirm the target's location at the planned time of attack. Each of these means, called collection assets, is capable of detecting one or more types of indicators emitted by the target, such as its movement, its heat, or its electromagnetic or seismic emissions. Some kinds of collectors provide more accurate or detailed types of information; LRS, or long range surveillance units, are units of specially trained observers that infiltrate deep into enemy territory to gather information about high-value, difficult to access enemy targets. While they are a scarce asset, because they are human observers rather than passive collectors, they can provide a wider, more detailed range of information, and can offer their own assessments of the situation as well. The reliability of the information collected during the detect phase of the targeting process is not just a matter of allocation of resources; every time a weapon is fired or an asset is launched, that action is an indicator of the unit's own activities, and potentially exposing them to detection and harm.

During the course of the battle, the third function, "deliver" is executed. While the targets and means of detection and attack have all already been designated, ensuring that the attack guidance is executed in an effective manner is no simple task. Despite all the efforts of the plans staff, targets may not appear at the time and place predicted, or they may be more heavily protected than anticipated. As a result, lower priority targets may move up the HPTL. To fulfill the intent of the mission, the attack helicopter may engage the enemy's reserve rather than its artillery group. Targets of opportunity may also present themselves, which would require the staff to include them on the HPTL.

The impact on the target, and whether it was achieved, are the basis of the last step, "assess." The preferred method of assessing is to send collection assets out to the target and determine if the desired effect was achieved or not. The damage is assessed from two perspectives, battle damage assessment or BDA, which is defined as "the timely and accurate estimate of damage resulting from the application of military force, either lethal or nonlethal, against a predetermined objective" and munition effects assessment, which determines the relationship between the damage and the munition used to inflict it (Director for Operational Plans and Joint Force Development (J-7)). However, since assessment does not contribute directly to ongoing combat operations in the same manner as the first three steps, if the friendly side was able to achieve its objectives, no matter what level of damage the target sustained, it is unlikely that this follow-up would be undertaken. Throughout the entire targeting process, the ability of the friendly force to carry out its own mission is the imperative that determines and prioritizes any actions taken.

The Gap in the Targeting Process

The four-step targeting process is mainly a heuristic for planners who must integrate firepower into a larger scheme of maneuver, and, as such, it considers firepower from two perspectives; how it supports the plan, and what resources it requires. While it does consider actual execution during the "deliver" phase, this is mainly in terms of execution of the overall operation, not in terms of the tactics, techniques, and procedures involved in destroying the target.

The actions on the objective, however, are as important to the domain of the targeting process as a source for the target domain of persuasion. The actions of a gun crew as they execute a fire mission will help illustrate those elements. Before the crew ever fires its mission, it has a list of the targets it is assigned to engage, giving the expected time of engagement, the position of the target, which gives them an estimate of the distance, and the type of munition they must use, some of which are more effective against armor than personnel, for instance. Upon receiving the order to fire, the crew orients the weapon in the proper direction and angle to reach the target, and also loads up the round with the required number of bags of propellant to ensure it travels the needed distance. Following established procedures, the crew initiates the firing sequence.

This frame of action and the relationship of its different elements are a critical portion of the source domain, one that serves as the defining structure in the metaphor. This frame includes the human agent, the firer, the means of effecting the act, which are the weapon and the round, the patient or recipient of the act, the target,

the effect on the target, its destruction, and the act of firing itself. The firer, having aimed the weapon, pulls a trigger or lanyard, which ignites the propellant, pushing the round out the barrel towards the target. Its trajectory has already been conceptually determined by the scheme of maneuver that the fire mission supports, and physically determined by the angle and orientation of the gun tube, as well as by the amount of propellant used.

Firing partakes of the general frame of causation in which there is an agent, a patient, an act, and a change that the agent effects. By way of comparison, a simpler act of causation is that of pushing. In it the agent applies continual, sustained force on the object, prototypically with his hand. As a result, the object typically moves. Notice that in pushing the agent is active throughout the entire act, from the time his hand impinges on the object, during the initiation of motion, and throughout the entire duration of movement. He is directly involved in the entire process.

The act of pushing serves as a good comparison for some of the important points about the scene of firing. In this causal frame, the firer aims the weapon and pulls the trigger, initiating the first event in a causal chain that sends the round to the target. One important difference between the frame of firing and that of pushing is the duration and manner of impingement. In pushing, the agent makes direct contact with the object and is active during the entire movement, both in providing the force and guiding the direction of the movement. By contrast, in firing, the firer is active only during the opening point of the sequence, initiating the causal chain and providing guidance by aiming the weapon. He may direct visual contact with the target, but never physical contact. The object that does directly impinge on the target,

the round, travels under its own power towards the target. Its effect on the target is predetermined by the type of munition loaded. Given that all other factors (the trajectory, the weather, etc.) hold true, the nature of that effect is absolute; the target will be destroyed when the round hits it.

There are some key points about this source domain that structure the relationship of the elements in the metaphor. First, the mission in terms of the objectives and goals of the planners, is paramount, and determine all other planning considerations. Second, the manner of detecting and engaging the target is predetermined well before any actual physical contact with the target. Third, at least in the core scene of firing an artillery round, the person who engages the target has no direct physical contact with it. Fourth, the act of firing is unilateral and irrevocable; once the round is out the tube, there is no recalling it. Fifth, the nature of its result is also absolute; the target will or will not be hit, and if it is, it will be destroyed. Finally, within this frame, the target is completely passive. Its only possible "action" is to undergo a change of state.

The Relationship of the Core Scenes in the Source and Target Domains

The discipline of targeting is complex and difficult, and involves the contribution of many individual planners who each have broad domains of expertise in equally difficult professions. It is also one that every soldier is immersed in during the entire time he or she is in the Army; one of the most important skills a soldier learns in basic training is marksmanship, which gives him personal, subjective experience in a frame common to military culture as a whole.

Given both the pervasiveness of the frame and the range of professional expertise involved in it, it is no surprise that as a source domain it is readily available to contribute to many metaphors and blends used in daily military life. One can say, "I'll take the HEAT round for this," when deciding to take responsibility for a difficult or unpopular decision. Another expression is to say one has "eyes on (a target)," to indicate that one has direct knowledge of a person or situation. Finally, if the boss is having a bad day, his subordinates may warn one another to "stay out of his kill zone."

PSYOP, whose soldiers are also part of the discourse community of the Army, has also recruited from this domain in explaining itself as a discipline both to members of its own discourse communities and to the Army at large. Its version of the four-step targeting process imposes a great deal of the structure of the original onto the target domain of communication. In its manuals, though there are numerous references to other military manuals and documents, there are no references to any work on communication or rhetoric. The writers of the manual have only inexpert models of communication and persuasion to draw on in the writing of the text, making the contributions from this domain less well defined and relatively impoverished compared to the source domain.

One of the most readily apparent mappings between the source and target domains is that of the "target." In terms of the source domain, the military has a well-developed notion of what a target is and how it relates to the battlefield, with technical definitions for not only the target itself, but for at least two other subcategories of targets, high-value and high-priority. That is, targets are considered

three ways; in the frame of the overall mission, in the frame of the enemy commander's mission, and in terms of the ability to engage the target effectively.

In contrast, no formal definition exists for the term "target audience" in any Army PSYOP field manual, or in the joint manuals related to it. An informal definition does exist in FM 3-05.20, Psychological Operations. It states:

> The key to all PSYOP is to ensure that the messages, themes, and actions are directed at the correct individual or group of individuals who possess the ability to take, or refrain from taking, the action desired. Key decision makers are individuals who may have the ability to achieve a U.S. national or military objective. They are natural targets of U.S. influence involving the use of one or more elements of national power, to include the military and informational pillars of national power. While key decision makers are one avenue to pursue in reaching the commander's objectives, many other audiences are equally as important. PSYOP can and frequently do target the people that influence the leaders, the individuals carrying out decisions made by the leaders, and the individuals that collect information or intelligence. The analysis usually boils down to these questions: What do we need to accomplish? Who can help? Who can hurt? How do we influence them? (Department of the Army 2000, 7-32)

The definition of a target audience, then, has several entailments. They are people responsible for making decisions, and those who can impact the mission, and that impact is the result of some deliberate action. The analogy to both targeting and the

military hierarchy, discussed in Chapter One, are clear. The primary "targets" are "decisionmakers," that is, leaders of groups of people who decide what their organization will do and how their subordinates will do it. This presumes that other groups of people are organized to the same degree and in the same manner as the military. As in the definition of the "target," the first consideration is how the actions of that group or decisionmaker can impact the friendly mission. In contrast with the source domain, the mission, organization, desires, motives and objectives of that "target" are not explicitly considered when selecting them.

One aspect of the audience that seems to be taken for granted is that the major way that it will affect a mission is either by acting or not acting. Within the domain of targeting, and indeed in the military as a whole, action is prototypically considered in terms of physical combat; a target is chosen because it can maneuver or provide firepower, or directly aid those who shoot and move. There is a partial mapping of this purpose in the passage's description of other parties that PSYOPers target; "the people that influence the leaders, the individuals carrying out decisions made by the leaders, and the individuals that collect information or intelligence"(Department of the Army 2000 7-32). This group forms a small radial category whose prototype is the decisionmaker; all others are seen as contributing to his decision, either by influencing it, executing it, or informing it, but the power is still seen as residing with a key leader, as it does in the military. Those who execute the decisions are analogues of those who maneuver or shoot, while those who influence and provide intelligence parallel the staff and the collection systems, and are not agents in their own right.

The last four questions in the passage firmly set the framework for the selection of the target audience. The thing they "hurt or help" is the ability of the friendly force to carry out its own mission, that is, "what we need to accomplish." The primary way of influencing them will also be determined in that frame.

As much as this passage obviously draws from the domains of both targeting and military decisionmaking, there are some interesting disparities between its assertions and these source domains. Returning to our primary source domain of targeting, one of the critical aspects of a high value target is that the enemy commander needs it to accomplish his own mission. That is, the frame presupposes that the enemy commander has such an asset, and that it will not contribute to the friendly side's objectives. This passage does entail through the use of the term "decisionmaker" that the organization he heads may have their own goals and objectives, but unlike those of the enemy commander in the scene of targeting, those goals and objectives are never considered on their own terms.

In any discussion of rhetoric and persuasion, the needs and objectives of the target audience are the primary considerations. The audience's perspectives are the key to determining the terms of the argument as a whole, whether one should address a given audience, and if so, what lines of reasoning, types of evidence, and nature of rhetorical appeal one uses in the construction of the argument. The goals and objectives of the rhetor are of course also key, but they too can be modified based on the considerations of the target audience.

Such modification of a goal presupposes that argument, as a form of communication, is a cooperative effort, and that both sides have agency in relation to

it. As our examination of the PSYOP targeting process progresses, what emerges is that the lack of independent agency gradually begins to hamstring the heuristic itself; in the long run, it can no longer be productive on its own terms.

The PSYOP Four-Step Targeting Model

The PSYOP targeting process, while having its roots in both military and civilian discourse, starts out seeming reasonable, but deteriorates as the heuristic is developed. The first function is the "decide" function, which is described as follows:

> "What specific target audiences, nodes, or links must we attack and what objectives must we achieve with specific PSYOP assets to support the commander's intent and the concept of the operation?" (Department of the Army 2000 7-32).

The problems begin with the direct objects of the first question of this compound sentence, "target audiences, nodes, or links" (Department of the Army 2000 7-32). The Army's consideration of the target audience starts out at a deficit, since there exists no formal definition in doctrine for "target audience," and the closest discussion available in Army doctrine fails to consider that audience as a full agent with its own goals and concerns. This sentence diminishes the concept even further; the "target audience" is grouped together with two other physical objects, with no real differentiation between the three.

Perhaps because they are physical objects, "node" and "link," do have established definitions in doctrine. The first, "node," is defined as "the physical and functional grouping of communications and computer systems that provide

terminating, switching, and gateway access services to support information exchange," while a "link" is defined as "in communications, a general term used to indicate the existence of communications facilities between two points" (Director for Operational Plans and Joint Force Development (J-7)). These terms are clearly defined because they have easily defined roles to play in the communication process. However, they are also pieces of the physical infrastructure supporting communications, not agents who carry it out. By grouping the audience with these pieces of equipment, the doctrine writers have reduced its functionality to two activities; it enables a mission, either the enemy or friendly, and it is "targeted."

In the "decide" phase, all three of these targets are candidates for attack. "Attack" means prototypically to engage with firepower in order to destroy, and within that frame, "nodes" and "links" seem appropriate targets. In this passage, there seems to be no indication that the term might be a metaphor for the manner of engaging a target audience, no indication that different means might be considered for any of the three targets. Even if "attack" did serve as a metaphoric extension of the concept into the domain of persuasion, it still retains the hostile intent, passivity of the target, and destructive endstate connoted by the core concept.

The second major clause of the sentence, "what objectives must we achieve with specific PSYOP assets" is odd mainly in terms of the copulative used to connect it with the first clause, "and" (Department of the Army 2000, 7-32). In physical targeting, attacking a target *is* achieving an objective; targeting is process of matching each target to an asset, so the fact that the two clauses would not be linked with a copulative that establishes that relationship seems odd in this context. It highlights

the desire that the writers have that the same kind of clear causal relationship at the center of the act firing a weapon to exist in the frame of PSYOP

> The next step of the targeting process is "detect," which asks the questions: What resources are necessary to determine the vulnerabilities, susceptibilities, and accessibility to reach the desired targets and audiences? How do we assess attitudes and impressions, and how do we design products to overcome censorship, illiteracy, or interrupted communications?" (Department of the Army 2000, 7-32).

"Detection" in conventional targeting is a fairly straightforward matter, based entirely on determining indicators associated with enemy actions and equipment. The most pressing issue is availability of assets, not what indicators can be detected. The notion of "detect" in PSYOP seems to question the existence of these fundamentals.

In the first question, the notions of "target" and "audience" seem to be a bit more fully developed that they had been in "decide," in that they are given particular attributes, "vulnerability," "susceptibility" and "accessibility." However, since they are construed in terms of weakness or usability, it's not a great development. "Vulnerability" is how open an object is to harm, "susceptibility" is the weaknesses that enable it being either attacked or influenced, and "accessibility" is how easily an object is used and reached. While "susceptibility" does entail some notion of agency, it does so only in terms of its frailties. Overall, however, this question frames the "target" entirely in terms of its flaws and frailties, and never seems to acknowledge that the "target" may have ideas, desires, and abilities of its own. It also

differs markedly from the source domain in that it seeks a particular aspect of the entity to target, rather than indicators that help determine its location.

The next question, “How do we assess attitudes and impressions?” seems to have no real corollary in the domain of physical targeting, since the methods of assessing a target are well established, so that to the extent that one asks “how,” one questions which assets are available, and what level of resolution of information about the target can they provide (Department of the Army 2000, 7-32). This “how” seems to be much broader in scope, asking, “How do we gather objective information about what are essentially subjective, individual experiences?” It indicates a serious gap in the mappings between the target and source domains.

The final question of “detect,” like the association of target audience to physical links and nodes, is interesting in the manner in which the three factors it addresses are equated; “How do we design products to overcome censorship, illiteracy, or interrupted communications?” (Department of the Army 2000, 7-32). While all three can present difficulty when considering how best to address any audience, they are vastly different issues. Censorship, which entails the deliberate oppression by a government or power to keep people from communicating from outside parties whose views might endanger its own stability, is a sociopolitical force. Illiteracy can also have social roots and impacts, but is at base the lack of a certain cognitive skill. Finally, interrupted communications is an infrastructure problem. This is perhaps the most tangible issue in communicating with a foreign audience, but none of the three factors considered are nearly as difficult to at once define and overcome as the sociocultural issues that stand between the speaker and his intended

audience. This list does not even address the most insurmountable obstacle, outright hostility and refusal to accept the credibility of the speaker, factors that, again, lie within the agency of the listener.

The next function, "deliver," continues the deterioration of the concept of the "target." In the source domain, the planners are concerned mainly with managing the delivery of predetermined effects and redirecting assets to previously identified targets. However, while that kind of in-process adjustment is routine during normal human conversation, most PSYOP campaigns produce media such as posters and radio spots that require much more time to revise, and in fact cannot be revised once they have been distributed. Instead, PSYOPers mirror that concern in the question, " How (with what assets) and when will we attack these enemy 'targets'?" (Department of the Army 2000, 7-32).

The disturbing aspect of this question is not that it lacks the element of coordination central to spoken communication, but that it overtly characterizes the interaction as an assault. The quotation marks around the word "targets" are true to the original text. Quotation marks used in this manner generally indicate that the term enclosed is not being used in the most literal sense, and that the speaker wants to ensure the audience knows this. The writers acknowledge that the "targets" in the sense of "target audiences" should not be destroyed in the same sense as physical targets. Unfortunately, no such modification is indicated for two equally troubling terms, "enemy" and "attack." The hostility conveyed by these terms in the context of an act of communication makes the act under consideration seem more likely to produce verbal abuse than persuasion.

In the source domain of targeting and artillery, the "deliver" function used as a planning heuristic is more a matter of choice among known assets than the brainstorming prompt it seems to be in the realm of PSYOP. "Assess" seems to have the same problem. In targeting, the "assess" function has three components, battle damage assessment (BDA), munitions effectiveness assessment (MEA), and reattack recommendation. The first two assess the extent of the damage from the perspective of first, the impact on the target, and secondly, the efficiency of the munition. If the target did not sustain a sufficient amount of damage, the battle captains must decide whether to reattack the target; it may be too late in the battle to do so effectively, since any further advantage gained may not be able to contribute to mission success. In the end, however, if the mission can be achieved without reengaging the target, reattack will not be recommended.

In PSYOP, "assess" also refers to results of the attack. Unlike its source domain, however, this function questions fundamentals by asking a series of questions that would have already been answered in the first stage of planning by the targeting cell: "What defines success for the PSYOP objectives and how will we assess the impact? Is there an effective method to establish a direct link between a message and a specific attitude?" (Department of the Army 2000, 7-32). The first question is answered in conventional operations fairly easily, since the determining factor is how long the target is inoperable. One example is the SEAD mission mentioned earlier, which is fired at enemy air defense units to keep them from engaging attack helicopter sorties during ingress, egress, and time on target. A certain amount of fires dropped on any ADA position will force the operators of the

system to take cover and prevent them from operating the system. Although PSYOP does attempt to base its mission on the behavior of its target audiences, the link between message and behavior is far less tangible, as the second and third questions indicate.

The difficulty in determining a cause and effect apparent in "deliver" and "assess" stems from the insistence in forcing the frame of a fire mission onto that of persuasion. In PSYOP, the sole agent is the speaker, the means are prepackaged and determined almost exclusively by the rhetor's needs, and the audience's sole action, like the action of the target of an artillery strike, is to undergo a change of state. In the core speech acts of argument and persuasion, the acts of the rhetor are necessary, but not sufficient for its success. The ability of the audience to understand, and the act of will they perform in actually agreeing to be persuaded or convinced, are absolutely necessary components for the success of the speech act. To the extent that the manual views the target audience as human with will, it does so only in terms of their weakness and ultimate utility.

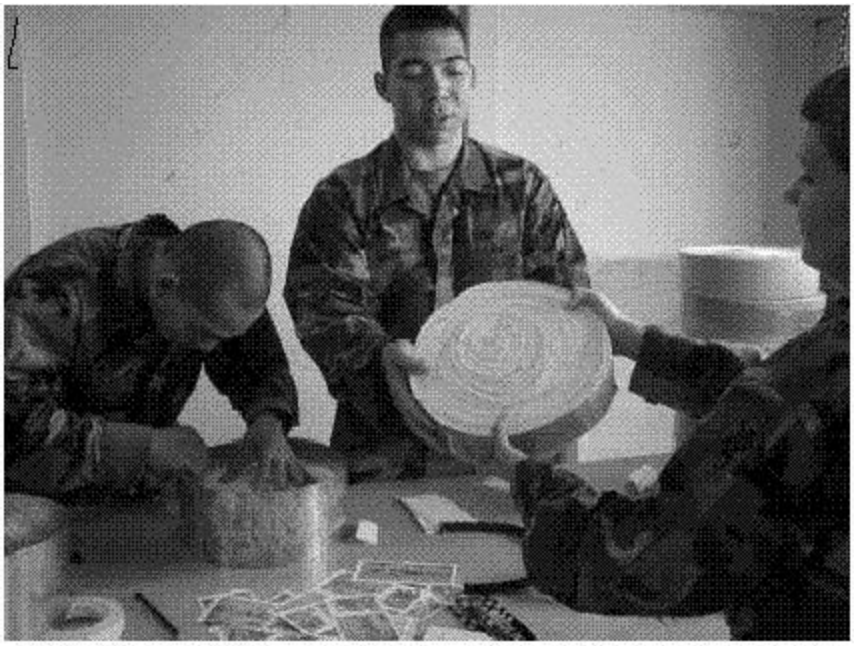
The Inadequacy of the Four--Step Targeting Process as a Heuristic for PSYOP

While the metaphor of Persuading An Audience Is Firing A Weapon At A Target is clearly motivated by mappings between the physical aspects of the communication process and the event shape of a round being fired towards its target, it has obvious problems. These are unfortunately exacerbated by one of the primary means of disseminating PSYOP products, leaflets that are dropped from aircraft. Delivering leaflets differs from a bombing run only in the nature of the payload, not

the actions of the crew, which only reinforces impoverished mappings between the target and source domain.

The most palpable shortcoming of this metaphor is its very partial portrayal of the communication process, which focuses only on the agency of the speaker. It covers only a small portion of the process that the Conduit metaphor does, in which two of the five metaphors highlight the role of the listener or reader, two focus on the relationship of thought or RMs to the message, and the last on the relationship of the speaker to the hearer. In contrast, the four step targeting utilizes only this last metaphor, Transmission Of Energy Is Transfer (Of Ideas).

The extremely limited account of persuasion and communication curtails any real ability to analyze the audience in terms of their own needs, perspectives, and reactions. It leaves absolutely no framework in which to discuss the audience's own possible actions. By construing of a target audience as an enemy whose only action is to die, this construction is both hostile and contemptuous, equating rhetorical power with kinetic power, and thereby vastly underestimating the might of the pen over the sword. Unfortunately, this metaphor receives reinforcement from the physical domain of PSYOP, in which leaflets containing PSYOP messages are often delivered by bombs.



Leaflet rolls being packed at Fort Bragg, NC for loading on to PDU-5/B leaflet bombs that eventually will be dropped in support of Operation ENDURING FREEDOM.

Fig 4.2 Loading leaflet bombs (Director for Operations (J-3), IV-6)

There are other, less apparent, but no less deadly disanalogies between the target and the source domain. If an artillery mission or an air sortie misses its target, there are often redundancies built into a fire plan to ensure it is taken out, if necessary. If there is a "miss" with a PSYOP campaign, there can be other more pressing problems.

A misfire by an artillery battery rarely comes back to land on the firers. A poorly planned PSYOP campaign can backfire, not only failing to persuade its target audience, but also perhaps angering them. The PSYOPer can become the subject of tirades, or, even worse, parody and ridicule. These "misses" undercut the credibility of the firer, and can actually hamper his ability to persuade again. Even worse, a "misfire" in the information environment can undo previous gains, by placing the

PSYOPer's credibility in doubt or even put him in a worse position that he had been before he attempted to speak. All these possible results depend on the understandings and actions of the target audience, who, because they have little kinesthetic power, have more and different kinds of rhetorical power available to them in the information environment. By failing to account for these possibilities, the PSYOP targeting process does not help defeat anyone but its users.

Chapter 5 – Metaphors of Success And Failure In Peace Operations

Introduction

Every morning in recent memory, Americans have awoken to news of the fighting in Iraq. The first order of business is usually the number of U.S. troops killed or wounded, with media coverage especially intense when landmarks such as the 1000th soldier killed in combat are reached. The death of a soldier is always a somber event, but the focus on those deaths seems disproportionate to the number of troops in country. If hundreds have been killed in combat, and thousands engaged in direct combat, what are the other 140,000 soldiers in the region doing?

The U.S. Army's Army Knowledge Online website gives insight into what many soldiers believe they are helping to accomplish in the region. The site, which features news, useful links to sites that deal with career and financial management, and an email system, features on its main page a picture from current operations that changes on a regular basis. This image usually depicts soldiers providing services to a local national, such as bandaging a wound or distributing food or toys to children, activities involved in the larger, vastly underrepresented civil affairs efforts in the region. For instance, the picture featured on 14 June 2004 features a young specialist sharing apply jelly from his MRE with Afghani children during a Coalition Medical Assistance (CMA) (U.S. Army 2004). Even troops who may question or disagree with the motives for going to war do take heart in knowing that they can provide some benefit to peoples who have suffered under the Taliban and Saddam Hussein.

Many soldiers believe that the popular media's focus on soldier deaths stems from their prejudice against the military. However, the problem may not necessarily

be political or ideological in nature. Conventional combat operations, which are primarily physical activities, are not only a good source of dramatic news footage and emotional appeal, they also fulfill our expectations for the source domains of metaphors for success and failure. Peacekeeping operations, which include providing stability, building the local infrastructure, and relinquishing power to a local government, not only fail to conform to those expectations; they contradict them by reversing them. While these missions have many salient physical components, their most critical activities are actually rhetorical in nature. Success in peace operations is therefore difficult to portray because its most important effects are conceptual rather than kinetic, and, in both its physical and conceptual dimensions, the events resemble the conditions for failure in conventional operations. An examination of the doctrinal principles that govern both peacekeeping and conventional operations reveals how the Army itself recognizes this difference, and struggles to reconcile it.

Common Metaphors of Success and Failure in the Event Structure Metaphor

Success and failure often involve long-term endeavors in both physical and non-physical activities. Describing the individual acts involved in a project like a dissertation, or an event like the French Revolution, would not give most people an understanding of the overall process, and why it was or was not successful. The Event Structure Metaphor is a dual metaphor that imposes human understanding of physical causation onto intellectual, historical, psychological, and group events, giving a unity to multiple events with otherwise ambiguous relationships. Its source domain is physical movement, and its target can be any endeavor whose scale in time

and space is beyond human perception. By compressing or expanding these events in time, bringing them to human scale, and instilling them with the certainty of physical causation, this metaphor allows us to grasp and contemplate major events or phenomena that would otherwise be too vast or complex in their own right. Some of its major submetaphors are:

> States are Locations
>
> Changes Are Movements
>
> Causation Is Forced Movement (from one location to another) (Lakoff and Johnson 2000,179).

The source domain for this extended metaphor, movement through physical space, is one people encounter and participate in on a daily basis, making it easily activated as a structuring mechanism for a variety of other activities, such as falling in love, conducting a political campaign, or undergoing medical treatment. This domain structures both the individual activities we undertake to become successful and the condition of being successful (or of being a failure).

States Are Locations is a common way in which we represent the state of being successful (Lakoff and Johnson 2000,180-181). This very productive metaphor includes examples like the following:

> He's at the top of his game.
>
> That department is at the cutting/bleeding edge.
>
> She really thinks ahead.
>
> He rose above his physical disability to become the first paraplegic awarded a commercial driver's license.
>
> His vision is vastly more far-reaching than that of any of his peers.

These common expressions represent success as being above and in front of others in the same field of endeavor. These physical frames entail things behind and below the achiever, which can be both the actions he took to attain this position, such as lower paying jobs that are "rungs" on the "corporate ladder," or other, less accomplished people in the same field. The concept of success as a location relative to others complements another component of the Event Structure Metaphor, Changes Are Movements (into and out of bounded regions), (Lakoff and Johnson 2000 183).

She led the crusade for a smaller class size in this district.

She's reached the pinnacle of physical fitness.

He's in the inner circle now.

While conceiving of success in terms of being higher than and in front of others is already competitive in nature, these metaphors add the dimension of exclusivity to the condition. In the first example, only one person can be in the lead, while in the second, the successful person is perched in a relatively small space that is difficult to access. The last example of the inner circle combines the aspects of exclusivity and difficulty of access in a small space that can only be reached by moving through larger, nested, and presumably impediment-filled outer spaces. Our everyday experience fulfills our expectation of this structure, so much so that to say of someone, "He's in the corner office on the top floor" or "She's got a key to the executive washroom," is almost metonymic with the head of a large firm. Exclusivity reinforces the notion of competition entailed in many representations of success.

Many long-term activities are subject to causes beyond the control of the individual agents. Causation Is Forced Movement portrays those causes in terms of

the ability to move through space, that is, to move themselves or other things into and out of a given location or bounded region (Lakoff and Johnson 2000, 184). It's the basis of such expressions as:

> The number of applications to the university skyrocketed with the basketball team's success.
>
> He hitched his star to the oil boom
>
> The cancer demolished her strength.

Here, long-term events with numerous possible agents and causes are construed of as single physical forces, combining Causes are Forces with External Events Are A Large Moving Object, another component of the Event Structure Metaphor (Lakoff and Johnson 2000; 184, 192). This kind of compression unifies the disparate agents and homogenizes the numerous potential causes into an actor and cause with human scale. A successful person either harnesses the movement for his own uses, or avoids the potential harm by moving out of its path.

This last discussion focused on one branch of the Event Structure Metaphor, the States Are Locations Branch (Lakoff and Johnson 2000,180-183). The other half of this dual metaphor, Attributes Are Possessions, is also highly productive for success and metaphor, both in representing the rewards of success (She held onto that job with both fists) and the state of being successful itself (He snatched victory from the grasp of his opponent). The two branches can even be combined, as we see below:

> Janice fought her way through the pack of her colleagues to take the lead in research early. She avoided the twin pitfalls of lack of funding and poor focus by making connections with others in the field early

and often. Her drive earned her head of the division, a position she clung to with both hands and used to further the careers of those who had aided her in her climb.

This rather mixed metaphor easily conforms to the expectations we have of both branches of the Event Structure Metaphor, but also highlights other important submetaphors in our understanding of success. First, success is a location both higher than and in front of others, recruiting from the metaphors Up is Good and Physical Progress is Career Progress (Master Metaphor List). Both branches also represent success as the result of an inherently competitive endeavor, in which others are left behind. This restrictive sense of victory has correspondences with another metaphor, Acquiring A Desired Object Is Achieving A Purpose, since only one person can hold onto an object at a time (Lakoff and Johnson 2000, 197). Success, then, is moving forward and up while dodging obstacles, beating competitors, and harnessing opportunity to arrive at an exclusive location to acquire a prize.

However, we can and do conceive of success and failure in noncompetitive terms. A couple can have a successful marriage, a teacher can be successful because he creates a good environment for learning, and a scientist can be successful by achieving a research goal. This model of achievement, which measures accomplishments on their own terms, allows for more than just one "winner"; if anything, the more participants that achieve their goals, the greater the success is. Failure in these terms is more difficult to gauge than in a competitive scenario, since in the noncompetitive model any measure of progress means a step towards success.

The Force Dynamics of Competition

Our common understanding of success depicts the successful person as struggling against forces that are rallying to prevent his progress. Talmy's notion of force dynamics, in which he explains the relationships between opposing forces in the physical world, and our metaphoric extension of those dynamics onto such domains as the psychological and the social, is useful here. In this model, there are two force entities, the agonist and the antagonist. Each has an intrinsic force tendency, either towards action or towards rest, and a level of strength in relation to the other, stronger or weaker. The total interaction of the force tendencies and relative strengths result in the system as a whole either moving, or remaining at rest (Talmy 413-414). Four basic force dynamic patterns, taken from Talmy, are illustrated below (415-416). They demonstrate some possible relationships between the agonist and antagonist, and the resulting state of the system:

1. a. The ball kept rolling because the wind was blowing on it.

   b. The shed kept standing despite the gale wind blowing on it.

   c. The ball kept rolling despite the stiff grass.

   d. The log kept lying on the incline because of the ridge there.

   (Talmy 416)

The four systems are related in terms of the agonist's and antagonist's innate tendency, their relative strengths, and the resultant motion. In a and b, the agonist's tendency is to remain at rest, but in a the antagonist's greater strength prevails, so that the system is in motion, while in b the agonist's strength prevails, so that the system remains at rest (Talmy 416). Similarly, in c and d, the agonist's tendency is to move,

but in c its tendency overcomes the predisposition of the antagonist, resulting in the overall motion of the system, while in d the antagonist prevails, resulting in the system remaining at rest (Talmy 416).

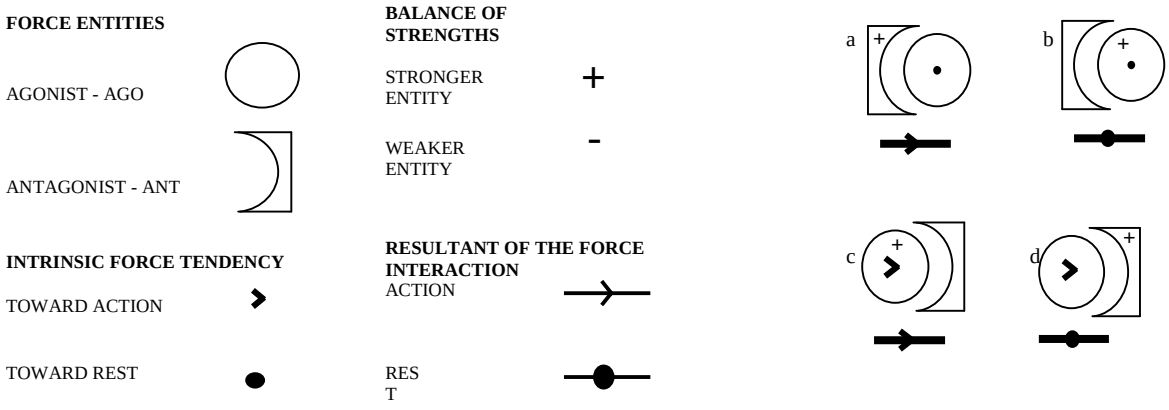


Fig 5.1 Talmy's Force Dynamics

These examples illustrate steady-state systems, but in the real world, entities often increase or decrease in strength, and systems can change their overall movement. Such is the case with common understandings of success. Success is a fairly complex pattern of force dynamics, one that Talmy illustrates in three phases; an initial phase in which the agonist exerts force but is initially weaker than the antagonist, a second stage in which the agonist gains in strength relative to the antagonist while continuing to exerts force, and a final phase in which the agonist prevails, the antagonist succumbs, and the system moves in accordance with the agonist's exertions (Talmy 436). These phases are also related to what Talmy calls factivity, or how much knowledge a speaker has about what phases have occurred and what the final outcome is when reporting it (Talmy 436). For instance, if we say "John tried to buy a car," the statement entails that we know that phase 1 occurred,

but not necessarily that we know of the later phases (Talmy 436). The statement "John succeeded in buying a car" entails knowledge not only of the outcome, phase 3, but the initial effort and changes of system state in phase 2. Our understanding of a successful person involves her initial efforts, her continued persistence, and her eventual triumph.

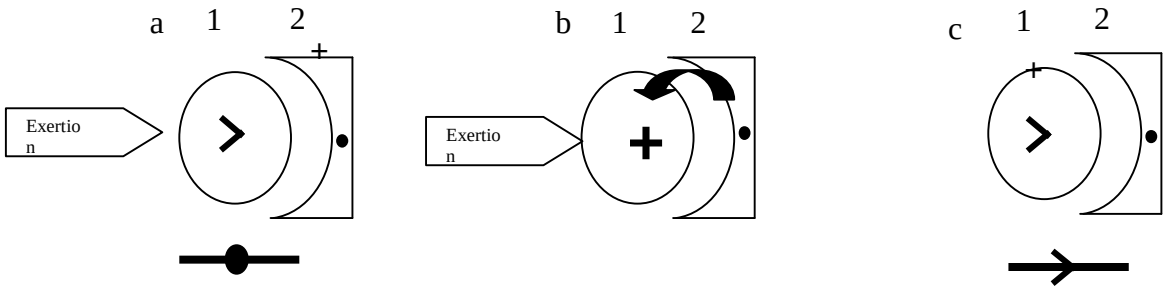


Fig 5.2 Success

The Principles of War, Offensive Operations, and Metaphors of Success

Army offensive operations embody both the event shape of the source domain for the metaphors and the force dynamics of success. While this is most obvious in the physical domain, the concepts by which war is conducted have extended those properties metaphorically into the conceptual and psychological domains. There is a unique congruency between the source domain for success and the physical actions that achieve it in warfare that does not exist in many other human undertakings. Success in warfare is moving faster getting further, arriving first and taking possession with both the mind and the body, dominating the enemy in every possible dimension.

To demonstrate this, we can return to the attack in chapter 1, in which forces were using a two-pronged scheme of maneuver to take Objective Rabbit. This

embodies several of the nine principles of war laid out in FM 3.0; offensive, objective, maneuver, mass, economy of force, unity of command, simplicity, security and surprise (U.S. Army 2001a, 4-11 – 4-12). The manual states:

> The principles are the enduring bedrock of Army doctrine. [They] are not a checklist… Rather, they summarize the characteristics of successful Army operations. Their greatest value lies in the education of the military professional. Applied to the study of past campaigns, major operations, battles, and engagements, the principles of war are powerful tools for analysis (U.S. Army 2001a, 4-12).

All of the principles are based on some physical phenomenon common in conventional warfare, but each is a metaphoric extension of its core meaning into the conceptual and psychological realms. This polysemy transforms physical activity into heuristics for conceiving of and planning for battle, methods of conceptualization and analysis that at once enable victory while fulfilling our expectations for the source domain of success. The ones most important for the attack are “offensive,” “maneuver,” “objective.” and “surprise.”

The first principle, “offensive,” means to “seize, retain and exploit the initiative… the essence of successful operations to dictate the nature, the scope, and tempo of an operation, forcing the enemy to react and impose their will on the enemy adversary or situation” (U.S. 2001a, 4-13). “Offensive“ is not only a principle of war, but the technical term for an attack. Its value as a heuristic lies in this core concept, which presupposes the primary goal of moving forward to inflict harm on an opponent, with the secondary purpose of preventing him from harming you. In its use

as a planning concept, the initiation of movement that defines the relationships between offense and defense has now been extended to mean initiating any action, whether it is physical or mental. “Initiative” in the context of the definition is a metaphorical object that the person who acts first can manipulate and use for his advantage one that he can “seize, retain and exploit” (U.S. Army 2001a, 4-13). That is, it has become a particular type of object, a tool or enabler that must not just be possessed but used to give its owner an advantage.

“Initiative” enables one to set conditions optimal for completing the mission, “to dictate the nature, the scope, and tempo of an operation” (U.S. Army 2001a, 4-13). The attacker makes decisions about the terms under which he will fight the defender, making him first in terms of both authority and logic in the frame of the battlefield. The side with “initiative” defines the type of battle to be fought, how much of the enemy force he wishes to engage, and how quickly the process of battle unfolds. “Offensive” as a tenet means being first to move and act in almost every dimension of an operation.

Being first is important because of another element of the source domain of the attack brings to the definition, the restrictive economy of physical occupation. Because only one party can be positioned on a given piece of ground, and therefore only one party can hold it, getting there first gives one an advantage. It also seems that having the initiative makes one’s desires primary as well. This restrictive economy continues in another aspect of offensive, “impos[ing one’s] will on the enemy, adversary or situation” (U.S. Army 2001a, 4-13). Will, like initiative, is another metaphoric entity that is placed “on top” of a person to prevent him from

acting. It can also be placed "on top" of a situation, to prevent it from changing in a manner disadvantageous to the attacker; both the will of the enemy and possible "will" of the situation need to be restrained because they are either incompatible with or directly opposed to the attacker's wishes.

Because the meaning of "offensive" extends metaphorically well beyond the physical domain, it makes the principle of occupying a piece of terrain first, which is what actually happens when one is defending, no longer necessary. The principle of "offensive," then, means to dominate a situation physically, intellectually, temporally, and psychologically, and presumes the incompatibility of other party's objectives with one's own. Its elements of forward movement, possession, and restrictive economy conform to our expectations for many metaphors of success.

Inherent in "offensive" is the principle of "maneuver." In its central sense, "maneuver" means to move in relation to obstacles on the ground, as when one maneuvers one's way through a crowd. It also entails a goal beyond those impediments. As a principle of war, "maneuver" means moving in such a manner that one can

> place the enemy in a disadvantageous position through the use of flexible combat power or through the employment of forces through maneuver and fire/fire potential to accomplish the mission. Place and keep him at a disadvantage and keep him off balance (U.S. Army 2001a, 4-43).

Attacking the enemy from two different directions to prevent him from focusing his force, as depicted in the scenario above, is one way of employing "maneuver."

Placement of forces in relation to their target is almost as important as the assets themselves.

Like its companion "offensive," "maneuver" has developed a polysemy that extends aspects of its core meaning to the domains of planning and mental dominance. In the definition above, this metaphoric movement takes place in several subtle moves in two different parts. The first part involves employing maneuver "through the use of flexible combat power or through the employment of forces through maneuver and fire/fire potential to accomplish the mission" (U.S. Army 2001a, 4-14). From movement of actual forces, maneuver has been extended to fire, in which the element of movement is transferred from the firing unit to the ammunition moving towards its target, and then to fire potential, which is planned firepower; this means that one can adhere to the principle of maneuver by simply intending to fire, eliminating actual movement as a necessary element of the principle of "maneuver".

In another component of the definition, maneuvering in relation to an enemy has developed into the principle moving to "place the enemy in a disadvantageous position"; that is, though the enemy may actually be stationary in the defense, the attacker "moves" not himself, but the defending forces into a state of disadvantage, which leaves the attacker in the state/location of advantage (U.S. Army 2001a, 4-14). Because the frame of warfare is a contrary posing as a contradictory, thinkers often assume that anything that constitutes an enemy's disadvantage is automatically an advantage for the opposing force.

One attacks and maneuvers in order to get somewhere, and in the military, as in other communities, that place is the "objective." The term, like its counterparts in the principles of war, has evolved beyond a spot on the ground. "Objective" is "the principle of direct[ing] every military operation toward a clearly defined, decisive and attainable objective" (U.S. Army 2001a, 4-12). The central meaning of the term is a place on the ground that one does not have that one wants to occupy and possess. A piece of terrain is valuable, or decisive, if it has some feature that will give the occupier the ability to continue to move forward again, such as a hilltop, which would afford observation and fields of fire over the terrain below, or a road network, as in the scenario described in the first chapter, which would provide quick access to, and thereby control of, other parts of the terrain.

"Objective" has clear correspondences with the event structure secondary metaphors of States Are Locations, Change Is Movement In And Out Of A Bounded Region, and another component of the Event Structure Metaphor, Purposes Are Destinations, because it is a bounded region into which a force moves that is the destination of a movement (Lakoff and Johnson 2000, 179). "Objective" also has correspondences with Achieving Success Is Acquiring A Desired Object, because an objective is metaphorically taken from the defender (Lakoff and Johnson, 197). Like "offensive" and "maneuver," it continues the restrictive economy and contrary logic of the physical domain, imposing it on the intellectual domain of planning for war.

Another principle of war foundational to the military's approach to war and the world is "surprise." "Surprise" means to "[s]trike the enemy at a time or place or manner for which he is not prepared so that he cannot react effectively" (U.S. Army

2001a, 4-14). A classic case would be the invasion at Normandy, which took place in weather conditions so poor that the defenders did not expect the attack. Surprise, however, is rarely absolute; in a war one expects to be attacked, but doesn't often know when and where it will happen.

When dealing with matters of deception and surprise, the mind is often portrayed as a container. In this metaphor, the human mind "holds" thoughts and ideas and lets them "out" by communicating them, intentionally or inadvertently, to other people. The material of which the container is made is solid; if a person's thoughts are known to another, his mind is transparent, and if they remain hidden, his mind is opaque. The notion of transparency is often a metaphor for truth and honesty; in the context of war, it means vulnerability.

In the principle of "surprise," military planners construe the mind as a selectively opaque container; ideas and plans about deception are just as real as ideas and beliefs about reality, but an appropriately cautious planner will either attempt to conceal his plans completely from the enemy, or modify the enemy's perceptions enough to prevent him from acting effectively on his own behalf. "Surprise" is a conceptual principle, but like "offensive," "objective" and "maneuver," its aim is dominance over the enemy.

The ideal attack, then, is one with a preplanned, clearly defined goal in which the attackers move forward towards a key piece of terrain, attacking along a route or in such a manner that the defenders are physically or psychologically placed at a disadvantage. This enables the attackers to kill the enemy or drive them off the objective and seize it while retaining enough of his own strength to continue forward

movement. The attacker dominates the defender physically, conceptually, and psychologically.

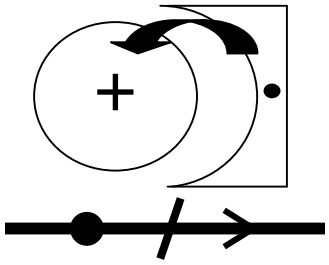


Fig 5.3 - We overcame the enemy at his border. (Talmy 420)

In terms of Talmy's force dynamics, a successful attack is the result of a shift in the relative strength between the agonist, the attacker, and the antagonist, the defender. Talmy cites a particular usage of the word overcome as exemplifying this dynamic, as illustrated above. Like the second phase of the force dynamics of success, the agonist's relative strength increases, and, like the final phase, the system as a whole moves in accordance with the agonist's tendency. Also like our understanding of the source domain for success, the greater the force the agonist must overcome, the more overwhelming the victory. However, unlike the target domain of actual success, in which others would not necessarily fail as a result of one person's success, in this understanding of combat, the enemy's failure is a necessary, and almost sufficient condition of your own success.

There is another key difference between military and civilian concepts of success. While many people *conceive* of success in terms of physical movement, in most instances, they don't usually *act* in accordance with those concepts; someone endeavoring to learn Spanish does not physically relocate closer to Spain every time

he achieves a new level of fluency, or take textbooks from other language students and carry them around. In the successful execution of a conventional offensive operation, however, a military force actually does move forward, displace an enemy, and take possession of his terrain. Army offensive operations fulfill common expectations for the source domain of metaphors of success in a concrete and material way that other kinds of goal-oriented activities do not, bringing a whole new dimension of meaning to the concept of "a metaphor we live by."

The Event Structure Metaphor and The Event Shape of Failure

Failure, like success, is usually the result of a series of concerted efforts, not a single attempt at a given endeavor. These efforts are compressed into a larger, single event in which a person is moving through space but, rather than moving forward and up quickly, the one who fails either moves very slowly, stagnates, or even travels backwards and down. Hence, the metaphor produces such sayings as:

He's at the bottom of the heap/pecking order/food chain.

She's behind the times, behind the power curve.

Their relationship is going nowhere.

These expressions participate in the metaphor, States Are Locations, in which failure is a location behind and below others who are more successful (Talmy 179). The process of failing as moving into these bounded locations in such expressions as, "He's drifted to the back burner." The actions of the failing person are often construed as being weak and ineffectual, with the result being that the metaphoric force he exerts is insufficient to "propel" him forward or up, as when we say, "She's

just floundering, and barely keeping her head above water." Events and other actors are also portrayed in terms of force, but in this instance, they are powerful forces that shove the actor out of desired locations, into undesirable ones, or push him down or back:

The reorganization kicked him out the door.

She was shoved downhill to make way for his cronies

Finally, those who fail are unable to either acquire or retain a desirable object are also failures, those who "let opportunities slip through their fingers," or who "can't get a grip on their careers," some one who metaphorically loses a valuable possession. In fact a "loser" is a metaphoric synonym for someone who fails.

The event shape of failure is of someone struggling to move forward and up, but moving slowly backwards and down in relation to others, who has insufficient strength to continue moving, and who as a result cannot acquire or retain a desired object, and ends up motionless and empty handed. This representation of failure, like a common notion of success, entails two parties who are competing, and while the success of one does not require the failure of the other, it entails it, in that successful is a small number small space, and relative to other places.

The force dynamics of failure have the same three phases as success, as illustrated below. However, there are two possible outcomes. Either the agonist fails to overcome the strength of the antagonist and the system remains at rest, as in A, or the agonist is overpowered by the antagonist himself, as in B.

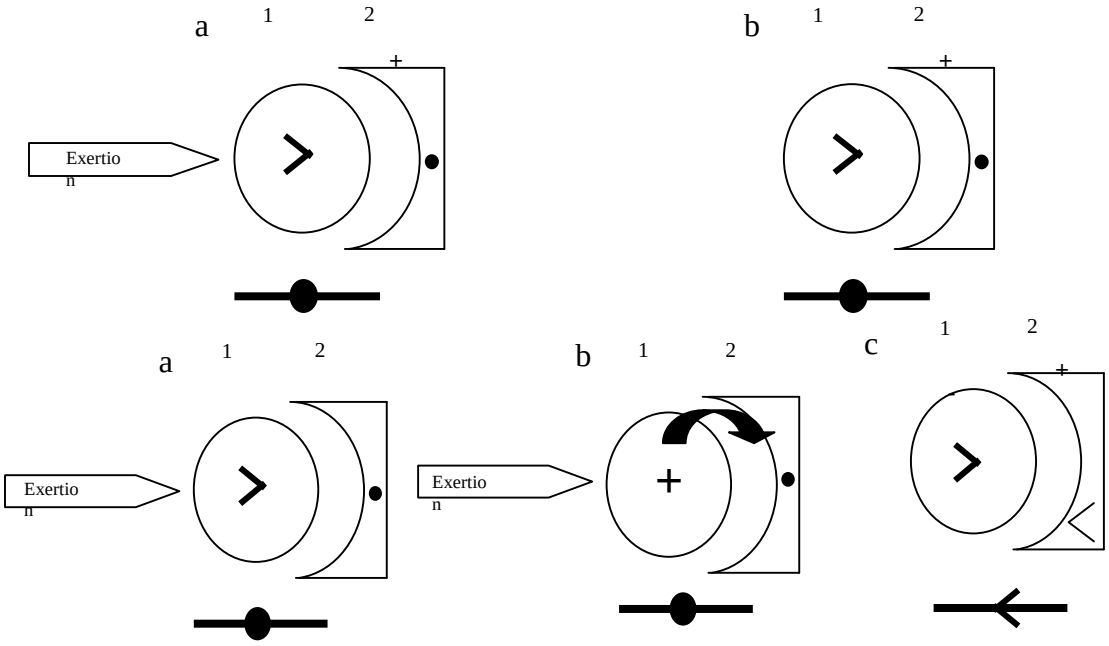


Fig 5.4 Force Dynamics of Failure

The first is the force dynamic of a stalled offensive, while the second is that of a successful counterattack by the defense. In either case, the defender retains possession of terrain, and the attacker is weaker in both relative and absolute terms. Both spell defeat for the attacker.

Like the principles of war previously examined, the logic of the image schema, namely the restrictive economy and presumption of contradictory outcomes, is expressed in the fact that the failure of the competition necessarily entails the success of the victor. Similarly, being in front entails someone in the rear, and being on top entails someone else on the bottom. However, just as in common metaphors of success, these are necessary parts of the frames of the source domains, not of the target domain. Because the contradictory image-schema logic of being on top, in front, and in possession are so heavily ingrained in our conceptual systems, it is difficult to represent success for activities such as peacekeeping operations.

Peace Operations and our Expectations for Metaphors of Success and Failure

Peace operations are part of stability operations and support operations, or SOSO. SOSO includes such activities as humanitarian aid, arms control support, support to foreign internal defense, noncombat evacuation operations, and peace operations. These and other operations are the subject of FM 3.07, Stability Operations and Support Operations. Because the aim of peace operations is to make the inhabitants of the occupied country self-sufficient, these missions contradict our expectations for metaphors of success.

Peace operations are defined as

> multiagency operations involving diplomatic and humanitarian agencies, with military support. They may be conducted to prevent or control a conflict, in support of a peace settlement, or in response to a complex emergency" (U.S. Army 2003b, 4-2).

They include peace enforcement, peacekeeping, and civil-military operations. The distinction between enforcement and keeping is important; while peace enforcement bears more resemblance to conventional combat, peacekeeping is closer to the ultimate conditions for success in peace operations. A typical scenario illustrates both the differences and commonalities between the two.

Peacekeeping forces ideally move into a country only after the belligerent parties ask for outside assistance. To stabilize the situation, the military force will use its power to separate the belligerent factions, conduct inspections of weapons storage

facilities, launch raids of suspected terrorists, and enforce the terms of any peace agreement that is in place. While these peace enforcement actions are going on, the Army often concurrently works with local national and international organizations to establish the physical and governing infrastructure with the goal of building them up to the point that they can handle the affairs of the country without external support. Over the course of time, as the local government assumes more responsibility for the country's affairs, the peacekeeping force reduces its presence in the country, by both relinquishing responsibilities and decreasing the number of troops. Once the local nationals can maintain the stability and infrastructure, the military force leaves.

Peace enforcement, defined as "the application of military force, or the threat of its use, normally pursuant to international authorization, to compel compliance with resolutions or sanctions designed to maintain or restore peace and order," consists of those combat-like operations the military carries out in the course to establish order, while peacekeeping, defined as "military operations undertaken with the consent of all major parties to a dispute, designed to monitor and facilitate implementation of an agreement . . . and support diplomatic efforts to reach a long-term political settlement," consists of activities such as patrols and support to the local government that help maintain the order necessary for the development of national infrastructure (Director for Operational Plans and Joint Force Development (J-7)). In many instances, the activities differ primarily in terms of degree of force used rather quality of action, and can happen simultaneously in closely collocated positions. A military force can find itself conducting a raid in one part of a city while building a school in another.

Successful peace operations, like successful offensive operations, have several characteristics that serve as a heuristic in Army doctrine. This section will examine seven of the ten; "restraint," "civil-military operations," "credibility," "legitimacy," "impartiality," "transparency," and "consent," (U.S. Army 2003b, 4-13 – 4-14). These are all vital considerations in peace operations, but they make understanding success in these operations very difficult. First, they entail the peacekeeping force's deference to the local nationals in the physical domain. Second, unlike the principles of war, whose core concepts are kinetic, most of these characteristics are conceptual in nature, with only tenuous origins in the physical domain. Finally, all entail deference to the local nationals in the conceptual domain, since many of these characteristics depend on their perceptions and understandings of the situation, not those of the military force. The ultimate endstate of a successful peace operation is a self-sufficient country with a government capable of ensuring the order and safety of its people. Because the peacekeeping forces ultimately leave, the overall operation has the physical and conceptual event shape of a withdrawal. It thereby conforms to the expectations for failure in both these dimensions, so that even while a force is succeeding in its peacekeeping mission, it carries out actions congruent with failure.

In the physical domain, peacekeepers must practice "restraint" and conduct "civil-military operations," both of which involve curbing a force's ability. "Restraint," the more immediate form of this confinement, is defined as "the prudent and appropriate application of military power. Restraints on weapons, tactics, and levels of violence characterize the environment of peace keeping operations" (U.S. Army 2003b, 4-16). Because peacekeeping missions involve setting the conditions for

peace, the soldiers must avoid any activity that might spark an outbreak of violence. From the core physical meaning, restraint entails two forces. The agonist force attempts to move forward, but the antagonist force, the restrainer, is exerting more force in the opposite direction to make the antagonist move more slowly, move backwards, or stop.

Metaphorically, in both Army and common usage, "restraint" means for an individual human to prevent himself from using a capability or power already in his possession. The agonist and the antagonist are the same agent conceived of as divided in two, with one part thwarting the impetus of the other. An example of this might be a rule of engagement. A rule of engagement, or ROE, defined as "a directiv[e] issued by a competent military authority that delineate the circumstances and limitations under which United States forces will initiate and/or continue combat engagement with other forces encountered," is a legal constraint placed upon a soldier that dictates how much force he may use, and under what conditions he may use it (Director for Operational Plans and Joint Force Development (J-7)). While a soldier always has the right to defend himself, she might have the following ROE imposed on her actions; "Use the minimum force necessary to accomplish your mission" (U.S. Army 2003b, C-5). This limitation is in direct contradiction to the overwhelming firepower normally used in a conventional operation. The Army definition of "restraint" in peace operations adds another factor to complicate the issue. While the agonist force and the antagonist force are the same agent, they are two different kinds of force – the physical violence emanating from actions and weapons, and the self-imposed, mental discipline to keep oneself from using it.

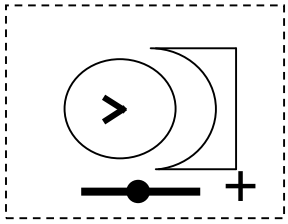


Fig. 5.5 Restraint

Talmy refers to this situation as an instance of intrapsychological force (431). It depends on a common metaphoric understanding of the self as a divided self, two entities that compete for mastery of the actions of the self as a whole. During a peace operation, soldier might not fire his weapon in a situation that, were he in war, would warrant him doing so. One could then say, "SGT McGuin restrained himself from firing." As illustrated in the force dynamic system illustrated below, the NCO's psyche is divided in two; the agonist is his predisposition to fire, while the antagonist is his conscious effort not to do so. In effect, the soldier is preventing himself from taking actions that might result in a tactical victory, taking the role of the defeated self and triumphant enemy at once. "Restraint" runs counter to the principles of both offensive and maneuver, forcing the peacekeeping force to move more slowly, to stop, or even withdraw rather than fight. This system not only fulfills expectations of the divided self metaphor, it conforms to our understanding of a failed attack and our expectations for the source domain of failure.

Although civil military operations consist of military forces working to help rebuild a country, in the long term, as in "restraint," the ideal is for those forces to stop their reconstruction efforts despite their ability to continue. This mission is a critical part of any peacekeeping operation, since it sets up the conditions of stability

that underlie long term peace in a region. It consists of such activities as building of physical infrastructure and utilities, initiating and training governmental institutions such as hospitals and police forces, and advising the heads of financial and educational institutions. These operations

> should focus on empowering civilian agencies and organizations to assume full authority for implementing the civil portion of the peace effort. As the operation progresses, civil organizations should assume greater responsibility for civil functions and require less assistance from the military force (U.S. Army 2003b, 4-18).

This means that in the beginning of a peace operation, there are more troops moving forward, taking terrain, and seizing control. The event shape of the beginning stages of a peacekeeping operation is very close to that of conventional warfare, and therefore fulfills our expectations for our conceptualizations of success. Unlike conventional attacks, these operations are not designed to further the continued forward movement over the opposing force, only to temporarily impose order and permit civil affairs soldiers to do their work. As the mission progresses, the peacekeepers' focus gradually changes from conducting preemptive raids to more regular presence patrols, from confiscating weapons to training local groups in hospital administration. The empowerment of the local government leads to the need for fewer and fewer occupying troops, who relinquish more and more control to their counterparts. In the process, they lower their physical profile, give up terrain, and eventually redeploy back to their home bases.

This is a particularly complex force dynamic pattern, with at least five phases. The agonist is the peacekeeping force and the antagonist is the local nationals. In the first phase, the agonist is stronger than the antagonist, and the system as a whole moves in accordance with his tendency. In the second phase, his strength diminishes relative to the antagonist's, slowing the system's movement. In the third phase, equilibrium is reached between the two entities, and the system comes to a rest. In the fourth phase, the antagonist gains in relative strength until, in the final phase, the system moves in accordance with his tendency, and the agonist is the one overcome.

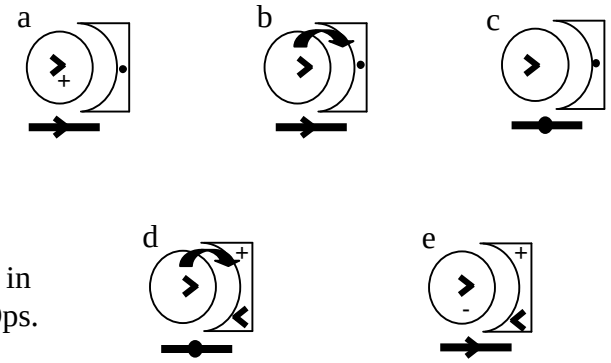


Fig 5.6
Success in
Peace Ops.

This event shape poses two serious problems for those carrying out peace operations. First, as operations in Bosnia and Kosovo demonstrate, completing a peace operation often takes years, during which time the soldiers may repeat many of the same tasks over the same terrain, making visible progress in the lives of the local nationals difficult to discern, and making the soldiers feel as if they, and the mission that they carry out, are stagnating. That is, they believe they are failing. Secondly, over the long term, a successful civil military effort has the physical event shape of a withdrawal, which fulfills our expectations of the source domain for failure yet again.

In the physical domain, “restraint” mirrors the force dynamic of a thwarted attack, while “civil military operations” enable a withdrawal.

The conceptual dimension of peace operations involves a similar sort of capitulation, relying on the preconceptions and will of the local nationals for their success. While traditional warfare does consider the views of the enemy, it does so only in terms of limiting, distorting, or destroying his ability to understand the battlefield. Both “impartiality” and “legitimacy” contradict that aspect of war, in that both depend on the perceptions of the local nationals. They also contradict the principles of “offensive” and “maneuver,” because instead of out thinking the warring factions and placing them at an intellectual disadvantage, these characteristics emphasize the dependence the peacekeepers have on them. The FM defines “legitimacy” as

> required to sustain the willing acceptance by the people of the right of the government to govern, or a group or agency to make and carry out decisions. It is a condition growing from the perception of a specific audience of the legality, morality, and correctness of a set of actions (U.S. Army 2003b, 4-19).

“Impartiality” is defined as

> a fundamental of peace operations that distinguishes PO from offensive and defensive combat operations. Impartiality requires the PO force to act on behalf of the peace process and mandate, showing no preference for any faction or group over another (Department of the Army 2003b, 4-20).

In both these definitions, not only is the peacekeeping force dependent on the perceptions of the group over whom it has physical dominance, it must attempt to cultivate that view among several different, disparate groups, none of which individually may be nearly as homogenous as a conventional enemy. This means that the perceptions of multiple, physically weaker parties have a direct impact on the physical activities of the militarily stronger party.

The characteristic of "transparency" furthers this dependency by requiring the peacekeepers to make themselves vulnerable to the very parties over which they must exercise control. The FM explains its importance in this manner;

> Transparency means that the peace operation force must communicate its intentions and capabilities to all audiences inside and outside the area of operations. This differs from offensive and defensive ops where you conceal your intent and capabilities (U.S. Army 2003b, 4-15).

When commanders apply this principle to their actions in a peace operation environment, they strive to ensure that all segments of the local population and the overseeing audience of the international community who are closely observing them know what they plan to do, how they plan to do it, and what means they have available. In terms of the metaphor of The Mind Is A Container, rather than representing the mind as an opaque container, which aids in deceiving the enemy, the principle of "transparency" is intended to convey honesty and openness by making the peacekeeper's means literally and their motives metaphorically visible and "up front" to the various parties they are trying to control.

While being visible in the mental domain connotes honesty, in the physical context of combat it means being exposed to the enemy and thereby vulnerable to physical attack. "Transparency" in motive and capability entails relinquishing mental dominance over the opposing force. This means that, in direct contradiction to the principles of conventional war, where physical and conceptual vulnerability of the force directly contributes to its failure, in the mission of peacekeeping, transparency is a necessary element of success.

Together, "impartiality," "legitimacy," and "transparency" highlight the fact that peace operations are as much about communication and persuasion as they are about physical force. In fact, the writers of the FM make "credibility" key to the operation's success. It is defined as follows;

> Credibility reflects the warring faction's assessment of the capability of the PO force to accomplish its mission. The force must have the proper structure and resources with appropriate ROE to accomplish the mandate. It discharges its duties swiftly and firmly, leaving no doubt as to its capabilities and commitment. All personnel consistently demonstrate the highest standards of discipline, control, and professional behavior on and off duty (Department of the Army 2003b, 4-17).

Although the writers equate "credibility" primarily with combat power and discipline, the important factor in this discussion is that, like "impartiality," "legitimacy," and "transparency," it depends on the perceptions of the local nationals. In fact, in the broader rhetorical sense of "credibility," these last three factors contribute to this

factor. Peace operations depend as much on a force's ethos, its ability to engage others fruitfully in the "information environment," as they do on their kinetic capability. If anything, overuse of combat power can undermine that ethos, making any amount of firepower a liability in direct proportion to its amount. This is an example of what military planners now call the asymmetric battlefield, one in which physical and technological force is countered, often quite successfully, by psychological or rhetorical force, powers to which military might may have little appropriate response.

The characteristic "consent," continues this trend. Unlike the principles of war, "consent" is never explicitly defined. Instead, it is discussed in terms of its effects on peace operations. "Consent," according to FM 3.07, "determines the levels of operation, and can be at different levels among the different parties and at different levels. Closely linked to consent is compliance with an agreement or mandate" (U.S. Army 2003b, 4-14). As intangible as this factor is, without it, no amount of combat power can make the peacekeeper's mission a success.

"Consent" can be understood in terms of one party giving permission to another party to execute an action. It is a speech act, like agreement. It can be conceived of as a metaphoric object that one possesses. Its ability to act as a direct object aligns it more closely with some of our expectations in regards to both success and combat, and with common metaphors of thought. "Consent," like many objects, can be given:

They handed her that promotion

The enemy relinquished the hilltop without a fight.

The village elders gave their consent to the food distribution plan.

In the second case, the enemy's relinquishing of the hilltop is a surrender rather than a bestowal, but still entails an act of will on his part. However, unlike other objects, "consent" cannot be taken:

Helen took the position that came open in accounting.

Alpha Company took the hill.

?The salesman took the consent of his customer.

Also, objectives cannot be received:

He received that corner office.

The task force received the consent of the mayor to divert the convoy through the town.

?Bravo company received the hilltop from the enemy.

In conventional operations, the opposition of wills and the agency of the victor are foundational to the concept of war. This is why, although an enemy can "give up" an objective, the friendly side does not "receive" it; the victor is always the agent, not the patient. In peace operations, however, the peacekeepers are the patients, since they must have consent given to them by the local nationals. Their will, the will of the militarily weaker party, is paramount. In conventional operations, while the mission and situation might impose some limitations on the type of action the soldier takes, the one restriction not imposed is the will of the adversary; if anything, destroying his will can be sufficient for success.

An Unfortunate Example

Peace operations defy our understanding of success and failure in conventional combat in three ways. First, they are far more complex operations, having more conceptual than physical factors that ultimately contribute towards success. Second, of these factors, it is the conceptual characteristics that matter most and set the context for the physical ones; this means that, unlike in combat, a physical act can never be considered solely on its own terms. And finally, in both dimensions, the peacekeeping force must relinquish the initiative to the local national factions. What this means is that all the signs of failure in conventional warfare (diminishing, withdrawing, relinquishing, and surrendering) and all the actions that contribute to that failure (giving the adversary the initiative, restraining power, and exposing your intentions) are the hallmarks of a good peace operation. In a peacekeeping operation, one's physical failure means the enemy's physical and mission success, and oddly enough, one's mission success as well.

In addition, the event shape of a successful peace operation, moving backwards, lowering of profile, and relinquishing physical and rhetorical "ground" slowly over a long period of time, is exactly the opposite of that of a successful offensive, moving forward, increasing in presence, and taking terrain quickly. Together, what this means is that the event shape and conditions for success in peace operations conform to our understandings of the event shape and conditions for failure in conventional operations. The contrast in conditions between the operations for both parties is summed up as follows:

Local Nationals In Peace Operation	Military Force In Successful Attack	Military Force In Peace Operation	Military Force in Failed Attack
Possession of terrain	More terrain	Relinquish terrain	Less terrain
More power	More troops	Fewer troops	Fewer troops
Progress in development	Has moved forward	Redeploys stateside	Has moved backwards
Possession of control	Can continue to move forward	Give up control	Can no longer move forward

Fig 5.7 A Comparison of Peace Operations and Conventional Combat

What this means is that the conditions for success for local nationals in peace operations conform to the conditions for success for a military force in offensive operations, while the conditions for the military force in peace operations conform to the conditions for failure for a military force in offensive operations.

The physical event shape for peacekeeping fulfills so many of our expectations of the source domain for failure that even people who clearly advocate the mission have difficulty expressing what success looks like. In a recent edition of the Army Times, Donald Rumsfeld's strategy for U.S. forces to move the Iraqi government was quoted as a headline: "Leading From Behind; U.S. security forces gradually passing baton to Iraqi authorities"(Crawley 10).

The text of the story has a perfectly legitimate explanation for this seeming paradox. The strategy involves putting the responsibility for maintaining order in major Iraqi cities on the shoulders of the newly trained local police forces; U.S. troops in the form of quick reaction forces would be prepositioned at strategic locations that would enable them to deploy quickly to support the local police in case the situation becomes too large for them to handle (Crawley 10). This way, the U.S.

would “lead” metaphorically by instituting the strategy and training the host nation police force, but would be “behind” literally by being physically located away from initial contact, and metaphorically by having the local authorities respond to any situation first.

Despite its perfectly valid and laudable intention of giving the Iraqi police forces authority over their own people and responsibility for their own actions, Rumsfeld’s characterization of his plan has many other problems. Besides being oxymoronic, another issue with his characterization is the many ways in which “being behind” as a source domain maps onto different target domains.

In the domain of courage, being “behind” is a metaphor for both physical cowardice (“He’s hiding behind his mom’s apron”) and moral cowardice (“She hid behind the regulation to avoid taking responsibility for her actions”). Whether the danger is physical or emotional, concealing oneself is not just a matter of self-preservation; it entails doing so and (or even worse, by) allowing someone else to take the brunt of the blow instead. Also, as has been discussed, to be behind is to be the loser (“He’s behind the times,”) or the injured, weaker, or disadvantaged party (“No child left behind”).

What is particularly striking is that so poor a metaphor is invoked by the leader of the U.S. Department of Defense, and quoted by a newspaper serving the needs of the American soldier, in other words, in a context that is as supportive of the mission and the troops as anyone could find anywhere. In fact, the metaphor reverses the intention of the policy it expresses by highlighting the role of the American forces rather than that of the Iraqis.

Conclusions

When planning any operation, the first items the military normally considers are physical - troop strength, unit position, and logistical support. Factors like psychological operations and public affairs are regarded as enablers to the concrete activities of conducting patrols and building infrastructure. In fact, these types of activities are often disparaged by both soldiers and Americans as "mere rhetoric," considered dishonest and manipulative. As a result, the military has found itself losing the "information war" in situations even where it has superior combat power.

Yet the use of persuasion and communication actually dovetails well with the desired endstate of peace operations. For what else is the goal of a peace enforcement mission except to develop an environment in which the battling factions can build peace? Once the factions are no longer fighting amongst themselves, they have the larger tasks of negotiating truces, discussing common goals, and forming accords for the long-term stability of their country. Establishing an "information environment" conducive to these aims is the main mission of a peace operation; indeed, as the FM itself has stated, such a mission depends on this kind of environment for its initiation, let alone success. Given these factors, it seems clear that good communication with the "enemies," not firepower leveled against them is the key to decisive victory in peace operation.

The Way Ahead

As I write this, the historic election in Iraq has concluded, and the world watches in anticipation as the political power structure in the country begins to emerge. In the weeks leading up to the vote, the media continually wrung its hands over the increasing violence that terrorists launched as they attempted to deter the Iraqi people from participating. On election day itself, when the citizens turned out in enormous volume in the face of relatively minor violence, the media shifted its focus to the heroism of the people who voted in defiance of the terrorist threats. Despite the voluminous coverage of the drama between the terrorist attacks and the people's courage, the media missed a humbler, but more profound miracle; the fact that a vote, which is essentially a speech act, can be more powerful than a car bomb.

The Army has made that same sort of oversight as it struggles with the role of "information" in its own operations. The military recognizes the fact that thought, communication and persuasion are not only necessary for effective combat power, but in some situations can supplant it, which it formally acknowledges by devoting doctrine, training, personnel, and other resources to the new discipline of "information operations." Unfortunately, in institutionalizing this latest element of combat power, it makes the assumption that because "information" can be as potent as firepower, maneuver, leadership and protection, it can be controlled and employed in the same manner. This belief has led it to instruct its soldiers to conceive of thought as the actions of a corporate entity whose aim is to purge information of

inconsistencies, of communication as the transmittal and receipt of data, and of persuasion as firing at and killing a target audience.

In imposing the more familiar frame of conventional combat onto conceptual acts, the Army has simplified these endeavors, but it has also robbed them of both their complexity and their power, and this mistake is expressed in the way that it has approached and invested in "information operations." The military spends billions on those aspects of "information" that are less critical to thought, communication, and persuasion, but that fit more readily into the frame of physical movement and causation upon which war is based. In contrast, they appear to expend nothing on understanding the nature of those acts themselves. As a result, the Army has a vast inventory of computer hardware and software, as well as communications equipment ranging from secure radios to GPS satellites, all of which help enhance the speed and distances over which communication can take place. However, in all three psychological operations manuals, whose purpose is to teach soldiers how to communicate and persuade, there are ample references to other military publications, but not a single reference to a work on rhetoric, persuasion, communication, or language theory. Despite massive investment in structures that merely enhance the activities of thought communication, there is no attempt to actually understand them.

This neglect has directly contributed to the difficulties the force has had in the Middle East, instances in which the Army can easily dominate the kinetic environment but has repeatedly found itself hamstrung in the "information environment." The combined firepower of all the Army's infantry fighting vehicles is impotent in the face of the rhetoric of Al Jazeera news and the infamous pictures of

prisoner abuse from the Abu Gharib scandal. At the same time, paradoxically, there were few kinetic battles that generated more "combat power" than news coverage of the dramatic capture and heroic rescue of a single, low-ranking logistics soldier, Private First Class Jessica Lynch.

This continued reliance on traditional conceptual structure, in both the investment in communications hardware and imposition of the frame of warfare on persuasion and argument, is not just bad for the Army's public image. It is bad for its soldiers, who must confront and contain the violence aggravated by the military's public relations blunders. It is bad for the peoples of the nations that it attempts to help, who are so often the real victims of these attacks. And it is bad for world peace and stability; because the United States military far outstrips any other in its ability to organize, project, and apply its combat power and logistical resources across the globe, it contributions and errors will shape the outcome of every major crisis for the foreseeable future.

Perhaps one of the most telling facts about the Army's doctrinal approach to the domain of "information" is that one of the best discussions about it is not in the manuals that are actually dedicated to it. It's in FM 3.07, Stability Operations and Support Operations, which explains numerous military missions that confound the frame of conventional combat. In the chapter on peace operations, one of the most formerly derided of military operations that has now become the Army's main mission, the writers stress the fact that information operations is the key to success in peacekeeping and peace enforcement. The discussion is neither complete, in that it does not engage theories of persuasion and communication, nor is it instructive, in the

sense that it does not give explicit directions on how to carry out these activities. But it does touch on some key points that the PSYOP and Information Operations manuals seem to elide or ignore.

FM 3.07 acknowledges that the "information environment" is paramount to its success; ("Information is the peace operations commander's primary means to influence groups of people to change attitudes and behavior. IO can affect the center of gravity directly") and that it is often outside the peacekeeper's ability to understand, let alone control; ("The PO force will be a latecomer to a situation that has a long, complex, and convoluted history" (Department of the Army 2003, 4-24)). It also states that the rhetorical situation impacts, and can overrule, tactical success:

> The commander must carefully consider the effects of IO before taking action. Destroying a belligerent's electronic warfare capability may bring favorable tactical results, but it may also have a destabilizing effect on the peace process (Department of the Army 2003, 4-24).

and that, in the information environment, events have effects vastly disproportionate to their tactical contributions:

> Individuals, by interacting directly with the media or on-line, can become a powerful source of information that can challenge the more traditional sources. Local events and the immediate impressions of individuals about those events can have international significance as the gloal media broadcasts them (Department of the Army 2003, 4-24).

It also emphasizes that despite these difficulties, the Army cannot afford to avoid the "soft" disciplines of persuasion and communication; "the fundamentals of

transparency and legitimacy demand that he [the commander] engage openly within this complex environment" (Department of the Army 2003, 4-24).

For better or worse, the United States is now the leading military power in the world. It has been, and, for the foreseeable future, will continue to be called to deal with conflicts and crisis situations all over the world. And because the military, especially the Army, is the only large, deployable infrastructure to which the United States government can order to carry out its will, its ability to engage and negotiate the "information environment" will shape the fates of people across the globe. Because it deals with massive numbers of soldiers that it must control during the course of enormous operations, this institution has often taken the path of least resistance by explaining complex operations using the most common denominator. It continues to do so at its peril. The Army therefore has the duty and obligation to its soldiers, its country, and the world to look outside the conceptual confines of its own institution and understand and engage the disciplines of thought, communication, and persuasion on their own terms.

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