SYNTHESIS AND U.S. ARMY DOCTRINE

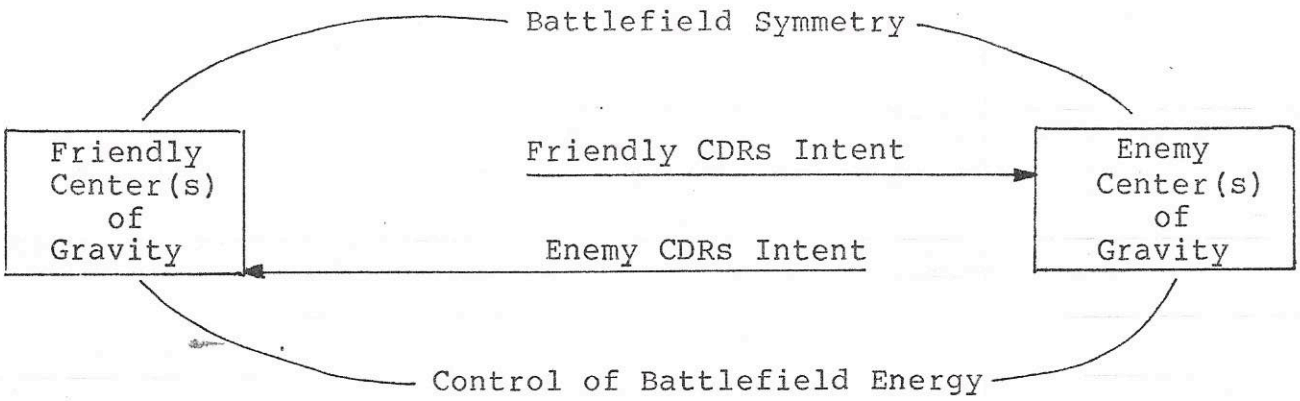
> We have no rights to isolated acts of any kind: we may not make isolated errors or hit upon isolated truths. Rather, do our ideas, our values, our yeas and nays, our ifs and buts, grow out of us with the necessity with which a tree bears fruit -- related and each with an affinity to each, and evidence of one will, one health, one sail, one sun.
>
> F. Nietzsche

We cannot fully exploit the power of the ideas in FM 100-5 because we don't synthesize well. Indications of our ineptitude abound. First, at the division and corps levels, we habitually become "tar-babied" with company, battalion, and brigade commanders' fight or the forward line of own troops (FLOT) at the expense of paying attention to our rear, the enemy's rear, and the nexus between what we are doing and what our higher commander's concept of operation is. If we think instead in wholes and their relationship to activities in our rear and the enemy's rear to the FLOT fight, and how we relate to other levels of command, we would understand the great danger of isolated analytical thinking such as the FLOT fight.

Second, we can adroitly mass artillery, bring in close air support, mass attack helicopters, maneuver tanks and APCs; but our ability to perform these tasks is not the issue. The issue is whether we can bring to bear combined arms combat power at the right time and right place to capture the synergistic effects of weapon systems and the moral effects of surprise or defeat in a coordinated manner. Our doctrine advocates such a capability. To enact doctrine requires commanders who synthesize; that is,

commanders who combine a variety of elements into a whole, understand relationships of activities (often disparate activities), and articulate their concept of operations and desired effects so subordinates can infuse the concepts with intellectual and physical energy. To orchestrate activities and events across the entire battlefield, to shape the enemy, and then to achieve desired combat power effects is the essence of FM 100-5. Yet, we are often inept at these types of operations because we fail to synthesize -- information and events and activities remain isolated entities or actions.

Third, our doctrine calls for discerning, finding, and either destroying or neutralizing an enemy's center of gravity, the "...hub of all power and movement, on which everything depends."[10] This concept, unfortunately, is also the same in our opponent's mind, and in our perception of our opponent's perception, regardless of the level of conflict or command. To discern what an opponent is thinking requires synthesis, but synthesis from the enemy's perspective. Discerning an opponent's center of gravity must be related to protecting our own center of gravity. To protect ours, we must understand the whole through synthesizing separate battlefield elements. Then, and only then, can we discern and protect our own centers of gravity while attacking our opponent's. The following schematic shows the process.



Enemy and Friendly Commanders:

SEEK opponent's center of gravity

FIND opponent's center of gravity

ACT -- physical or moral domain

ANTICIPATE opponent's attack on own center of gravity

PROTECT centers of gravity

WARGAME responses to surprise; identify branches (friendly and enemy)

DYNAMIC FOR CENTER OF GRAVITY
Figure 2

Fourth, our doctrine advocates the equality of moral and physical domains of war. The two domains, of course, are closely related and equally powerful. Think of the devastating effects of the Panzer attack (physical domain) through the Ardennes, which created paralysis in the minds (moral domain) of the French in May of 1940 to understand the inextricable relationship between the two domains of war. But our problem lies in achieving balance between the abstract and concrete.

Have you talked to people who understand relationships on the battlefield -- how logistics availability relates to counterattacks, how the rear relates to the deep, how Command,

Control, Communications, Countermeasures (C3CM) relates to manipulation of images, how priority of a Main Supply Route (MSR) in Corps Support Command (COSCOM) could possibly relate to destruction of an enemy Forward Arming Refuel Point (FARP), and how that destruction relates to deception? When is the last time you heard commanders articulate what combat power effect they wanted in the target area of interest (TAI) in the decision-support template (DST). Often, you hear phrases such as: "The DST is too difficult for me at the battalion" (or at the brigade) level, "I don't have enough assets to find an enemy and destroy him through synchronization," "Why do we have the DST so deep?" "DST...that's my S-2's job," "How can we possibly execute combined arms warfare 50km to 100km deep?" More often than not, you hear obfuscation rather than clarity in articulating effect or criteria for success, e.g., destroy the enemy, seal the border, neutralize the opponent's command and control (C2). The reason for such vagueness is our inability to synthesize when thinking about wholes -- in this case, the whole is the battlefield and the significant smaller wholes are our concept of operation and associated desired combat effects.

FM 100-5 presupposes U.S. Army officers can synthesize events, often disparate events, into one interrelated whole. Many officers fully agree that we can execute our doctrine presupposing and assuming we can adequately synthesize. But are these officers deceiving themselves by equating cliches with actual understanding and execution? Examples of our proclivity to accept cliches without understanding them include

synchronizing the deep, the main battle area, and the rear; getting inside the enemy commander's decision cycle; relating engagements, battles, and campaigns; attacking centers of gravity; and relating the moral and physical domains of war. We remain inept at unleashing the power inherent in our doctrine because we fail to synthesize information to search for full meaning, to relate one problem to another.

Synthesis, then, is the key to unlocking the power in our doctrine. FM 100-5 advocates several concepts, some obvious and some implied, which are in reality derivatives of synthesizing information into wholes. These concepts include synergism, symmetry, deception, and synchronization.

Although FM 100-5 doesn't talk about synergism per se, the concept of synergism surfaces frequently in combined arms coalescence, synchronization of events and energy across space and coordination of activities in time, complementary activities of lethal and non-lethal combat power, relationship of information to the potential for power, and achievement of desired combat power effects. We won't understand how to use the powerful concept of battlefield synergism until we enable officers to synthesize the strengths and weaknesses of various weapon systems, battlefield constraints, and the energy contained in functional areas into a coherent whole.

Symmetry is a key concept in thinking about our doctrine. FM 100-5 advocates, albeit subtly, symmetry, which Webster defines as, "A relationship of characteristic correspondence, equivalence, or identity among constituents of a system."[11] The system here is the battlefield and the object is to maintain

symmetry from the friendly perspective and to create asymmetry from the enemy perspective. Symmetry involves equivalence between the moral and physical domains. It also involves, or should involve, symmetry between attrition and maneuver. Unfortunately, history shows that asymmetry usually occurs in favor of attrition. Arguably, wars involve killing, hence attrition. But if we could minimize our own attrition by manipulating the moral effects obtained through maneuver, and cause the enemy to cease resistance, shouldn't we do so?

We should dominate the enemy's mind to seize and retain the initiative. One of the ways to seize the initiative is to surprise the enemy through the art of deception. Without equivocation, surprise causes dissonance in the enemy commander's mind, hence the creation of asymmetry on the battlefield. FM 100-5 tells us we need to be able to execute deception, but we are unable to, generally because it is the most mentally taxing part of warfare. Regardless of complexity, deception is imperative for winning. Sun Tzu stated thousands of years ago, "Now war is based on deception. Move when it is advantageous and create changes in the situation by dispersal and concentration of forces."[12] The leader who plans deception has to understand relationships, project his mind into the enemy commander's mind, and see the whole -- the battlefield -- from the friendly and the enemy viewpoints.

Understanding these relationships is critical in deception planning. Take, for example, our ideal planner thinking through deception. What does he consider? First and foremost, deception

must satisfy the commander's intent. Deception must be thought through at the beginning of the planning process as the commander develops his concept of operation. Deception as an afterthought is impotent because it lacks the infusion and growth of power through mental energy. Deception must relate to the enemy commander -- the object of the deception. This means we must know the enemy as we know ourselves. Deception must be plausible and not too sophisticated; if the enemy is stupid, for example, he will not respond to sophisticated mental manipulation. Plausibility suggests that our planner must be able to project his mind into the enemy commander's mind and understand his way of war, his view of his own force and relationships of his forces, and his view of our forces and how we fight. This trip into the enemy commander's mind demands understanding how he obtains, analyzes, and synthesizes information. We then have to extricate ourselves from his mind and slip into our own commander's mind.

Our planner next relates what he learned from the enemy commander's mind to his commander's concept of operation. He decides whether the purpose of deception is to obtain leverage or relative advantage over the enemy commander through achieving either surprise (complete or partial) or gaining an edge because of false perceptions, hence flawed thinking. But at this stage the planner has to understand what information the enemy commander needs, how he uses the information to make decisions, how he gains information, and what information he trusts.

The planner looks at the image he wants to plant in the enemy commander's mind. That image should allow the planner to

gain surprise for our effort and to protect our centers of gravity. Then the planner begins constructing the imagery. For the sake of argument, suppose we want to prevent an enemy commander from knowing where we will counterattack. From our journey into the enemy commander's mind, we know he believes positioning and using our critically important assets generally indicate where our efforts will be and what we will attempt. He knows we must have logistics support to feed, arm, and fuel, and he knows we must have command and control (C2) over our forces. We also understand that the enemy commander's mind is heavily influenced by his cultural, historical, educational, and psychological inheritances. Technically speaking, this process is called apperception, which William James defines as, "the sum total of the effects of what we have studied as association, and it is obvious that the things which a given experience will suggest to a man depend on...his nature and stock of days, or in other words, his character, habits, memory, education, and previous experience."[13] In this case we can influence the enemy commander through positioning of massed artillery, location of our division support command (DISCOM), our C2, and the locations of our AH-64s. To satisfy his own information needs, the planner also understands the enemy commander's intelligence collection efforts. The planner then examines active and reactive OPSEC.

Active OPSEC seeks to manipulate indicators actively through actual physical location of real assets and by developing false indicators. It also allows the enemy's information collection

systems to collect what we want to provide to the enemy commander's decision-making system -- and to his mind. Through counter-reconnaissance, active counter-air, and skillful use of counterintelligence and corps collection assets that cannot go forward of the FLOT, we could effectively blind the opponent in areas we select, but show him what we want him to see in other areas of the battlefield. We cannot prevent the enemy from collecting information, but showing him what we have deduced he wants to see and what will lead him to form conclusions we want is advantageous to us.

Reactive OPSEC is passive compared to active OPSEC, and includes the traditional means of protecting our assets through camouflage, cover and concealment, noise and light discipline, communications security, and local OPs/LPs and patrols. The basic concept is to fool the enemy by showing him what we believe will cause him to perceive what we want, while we protect what we don't want him to find, yet being sophisticated enough not to alert him to other-than-normal battlefield perturbations.

Deception requires very bright thinkers well-schooled in friendly and enemy equipment, tactics, doctrine, decision-making systems, and intelligence-collection systems. Most important, deception requires synthesizing information from friendly and enemy commanders' viewpoints. The process is difficult but feasible. Notable deception artists come to mind -- Alexander at the battle of Hydaspes (326 B.C.); Sun Tsu, who openly advocated use of deception and mental manipulation; German planners who showed the right wheel through Belgium before the Panzers attacked through the Ardennes (May 1940), the British before D-

Day (June 1944), and Sadat before the Yom Kippur War (October 1973). If these people can deceive, so can we.

When achieved, the results of deception can be stunning if the planner remembers two precepts. First, deception has to occur in the commander's or his planner's mind at the start of the planning process to infuse the idea with cumulative intellectual energy. Second, to develop and to execute successful deception against an intellectually formidable foe, planners must synthesize from at least two perspectives -- friendly and enemy.

These planners have to be comfortable inhabiting the minds of friendly and enemy commanders. They must be able to analyze parts of the whole and then put it back together to develop the indicators an opponent will use to make decisions. Then our planner must accomplish the same process from the enemy commander's perspective to ascertain plausibility, required "noise," and to predict how the opponent will attempt to deceive.

If the commander cannot find a single individual to accomplish all these mental functions, he should form teams who synthesize well and have them work deception operations from friendly (combined arms officers) and enemy (intelligence officers) perspectives. The key point, though, is to find officers who synthesize the results of analysis into a coherent whole, understand the concept of center of gravity from several perspectives, understand active and reactive OPSEC, and understand the concept of symmetry and asymmetry for the security, surprise, moral, and physical domain dynamics.

Synchronization depends on synthesis. FM 100-5 defines it as "...arrangement of battlefield activities in time, space, and purpose to maximize combat power at the decisive point."[14] This definition has potential for misinterpretation. Synchronization is, for example, not simply coordination of activities in time or arrangement of activities spatially. Synchronization has to evolve in the commander's mind while he develops and articulates his concept of operation. Further, synchronization, by definition, requires the commander to visualize and then articulate the effects he wants to create with combat power. In essence, the commander has to coordinate activities, but as they relate to his desired combat power effects. The commander also must select the decision point to unleash his combat power and arrange battlefield activities to happen at the correct place and time.

What FM 100-5 doesn't adequately discuss is the relationship of synergy to synchronization. "Maximize" implies synergy, a powerful, and major, by-product of synchronization. For example, consider the symmetry of the physical and moral domains of war; remember that each weapon system has strengths and weaknesses, and each weapon creates effects in the physical and moral domains of war. The goal is to capture the strengths of weapon systems, cause them to work together at the right time and right place to create desired effects, and to use this coalescence to minimize weaknesses of each system -- to achieve an effect impossible with a single weapon system.

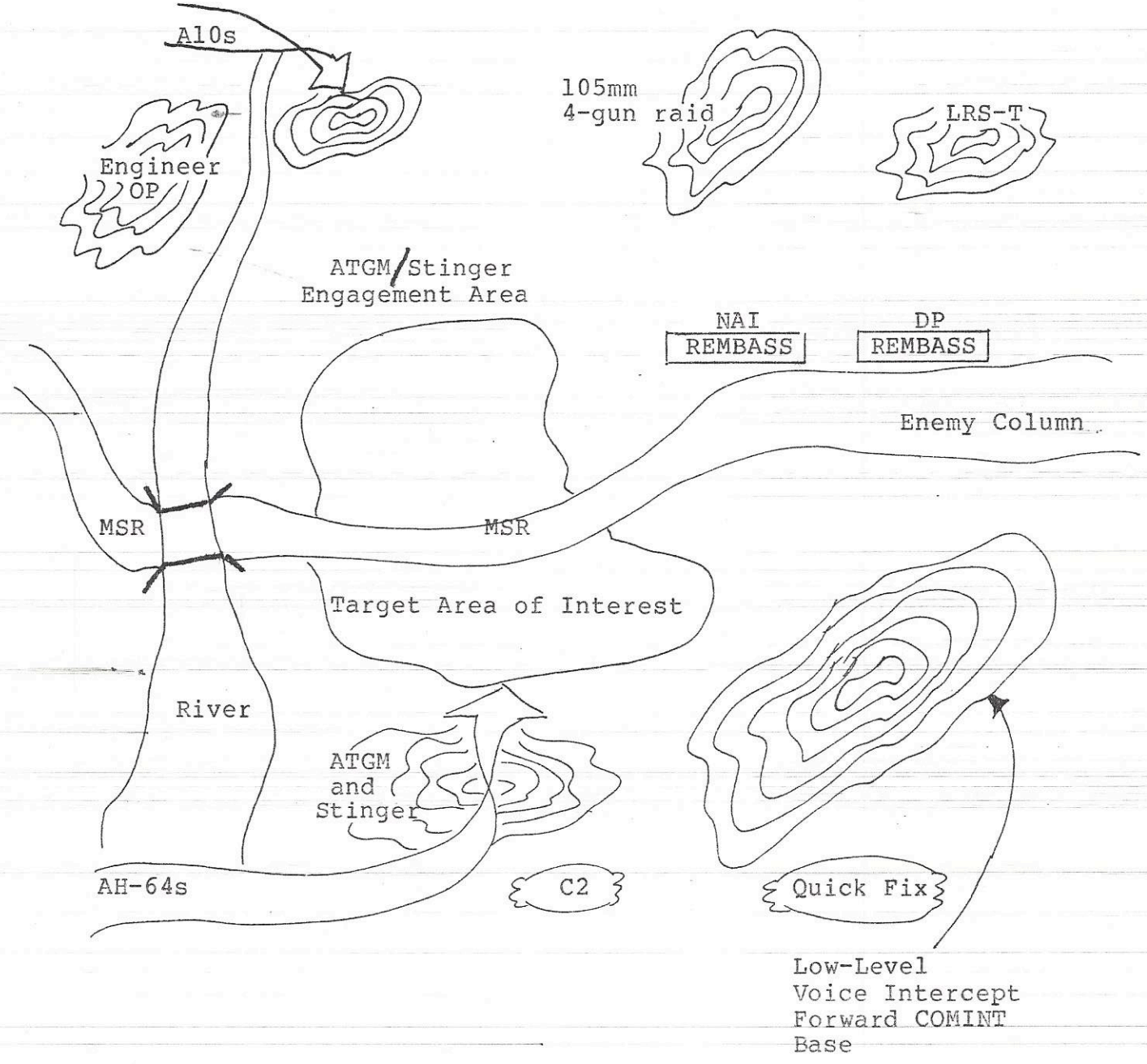
To achieve synchronization, requisite synergy, and symmetry between the moral and physical domains, planners have to

synthesize events and activities (related and disparate), into a coherent whole. The ideal planner, along with visualizing the whole, must have insight into relationships of weapon systems, logistics, command and control, intelligence-collection operations, air defense, engineer work, and spatial arrangements on the battlefield. Further, the planner must understand relationships between higher and lower headquarters.

Probably the most difficult mental feat, however, is to understand synchronization, synergy, battlefield relationships, and battlefield symmetry from the perspective of friendly and enemy commanders. Thinking through the enemy's perspective is critical, and has been since the beginning of time. Clausewitz captures this thought by stating, "War, however, is not the action of a living force upon a lifeless mass (total non-resistance would be no war at all) but always the collision of two living forces...Thus I am not in control: he dictates to me as much as I dictate to him."[15] So much lies in positing enemy activities in response to our activities that ignoring the enemy when trying to achieve synchronization is tantamount either to operational failure or failure to gain additional power only attainable through synergy.

The beginning of the planning cycle is the time to work through a theoretically ideal effort for achieving synchronization, for creating a desired combat power effect, and for using coalescence of combined arms combat power to create an extraordinary force that transcends the moral and physical domains. The following diagram illustrates a synchronization

effort. A decision-support template (DST), popular in today's Army, sharpens the image and focuses on the importance of information as a precursor to successful synchronization.



SYNCHRONIZATION SCHEMATIC
Figure 3

In this situation, the commander wants to destroy 85% of the tanks, APCs, and artillery of an enemy task force that has been moving forward along the main supply route to attack friendly defenses. Along with the physical destruction he envisions in his concept of operations, the commander wants to affect the enemy commander and soldiers mentally (moral domain) through the awesome combat power effects of synchronizing lethal and non-lethal combat power (physical domain). As a result of the effects in the physical and moral domains, the friendly commander wants the enemy commander to stop moving forward and enemy troops to fear for their lives, causing debilitation in their morale.

The commander's concept is that an engineer raid will mine the bridge crossing the unfordable river. The engineers lie in hiding awaiting word from the battle captain controlling the operation to destroy the bridge. In anticipation of the enemy attempting to find a fording site, the commander has ordered anti-tank guided-missile (ATGM) teams to position themselves, fully camouflaged, to the south and north of the projected engagement area. Further, he has positioned stinger teams with the ATGM teams to prevent enemy air reaction to his action. A synchronized joint air artillery attack team (JAAT) sequence is likely, and the commander knows the loiter time, flight time, and alert time of AH-64s, EH-60s, and A-10s. He has chosen to have all aircraft on strip alert awaiting direction.

The commander also positioned and hid, at night, 105-mm howitzers east of the engagement area to suppress enemy attempts to shoot down AH-64s and A-10s with ZSU-23/4s and SA 7/14/16s. The commander has an EH-60 quick-fix jammer prepared to loiter to

the south of the engagement area armed with frequencies to jam the enemy's attempts to stop vehicles from going into the engagement area after the bridge is blown and to interrupt his air defense radio nets.

The trigger for action is of critical importance to the commander for the synchronized combined arms attack. Thus, he puts a long-range surveillance team (LRS-T) to observe the decision point (DP) and he has a low-level voice-intercept (LLVI) team providing electronic surveillance of the DP. The LRS-T and LLVI teams communicate with the commander by tactical satellite (TACSAT).

He has a remote battlefield sensor system (REMBASS) string covering the DP and the named area of interest (NAI) immediately before entrance into the engagement area. The commander has positioned REMBASS repeaters to ensure activations are transmitted to his headquarters. When the DP is triggered, the commander decides to execute the engagement area. He has already put the AH-64s, EH-60, and A-10s on alert. Now, he provides suppression of enemy air defense along their flight corridors and moves them into position. The commander's fortuitous move of 105-mm howitzers, by UH-60, to the east of the engagement area, enables the howitzers to be in place to create the correct effect at the right time.

In understanding how the enemy commander thinks, the friendly commander has ordered a feint, with a formidable force, in a portion of the battlefield to the north of the engagement area. He has also started MLRS and a 155-mm howitzer battalion

moving to the north to create an image of a potential attack to the north, while in reality our friendly commander's focus is on the engagement area.

The battle captain -- probably the aviator in charge -- executes and coordinates the activities of the combined arms team. Through good planning, the logistics system has provided the ammunition for the AH-64s and AH-10s to accomplish the desired effects.

As the lead vehicle moves through the engagement area, the engineer raid team blows the bridge. While the enemy officer in the lead vehicle attempts to relay information to his battalion commander to stop the column, the EH-60 quick-fix aircraft interrupts his communications. ATGM teams destroy the lead vehicle while it attempts to find a fording site. When the battalion force is in the engagement area, the battle captain launches the attack, taking care to complement artillery fire and the air operations of the AH-64s and A-10s.

This synchronization exercise emphasizes points of synthesis, and is plausible. But several activities occurred before the commander activated the plan.

1. The commander and his principal planners developed the commander's concept, and in it articulated the desired combat power effects.

2. The commander understood battlefield relationships of combat, combat support (intelligence, air defense, engineer, fire support, artillery), and logistics in the friendly rear, on the FLOT, and in the enemy rear.

3. The commander understood spatial relationships as they related to the whole, such as movement of MLRs and the feint to draw attention away from the main effort. He used deception to achieve surprise and leverage.

4. The commander understood time/distance relationships for AH-64s, EH-60s, and A-10s to have their combat power available at the right time and place.

5. The commander planned for aggressively seeking information and acting upon it as it arrived.

6. The commander understood act/react/counteract relationships between enemy and friendly battlefield energy -- when CAS, AH-64, started hitting the column, SA-7/14/16 gunners attempted to dismount and protect the column, and the ZSU-23/4 tried to acquire targets and provide protection. At that time, however, the artillery countered the enemy's attempts to counter air support by filling the air with lethal shrapnel causing enemy gunners either to die or to seek shelter.

7. The commander planned branches in which his plan could change because he knew plans require flexibility, and change has a better chance to be positive if the changes are anticipated.

Commanders and planners, in the example, thought in wholes (the battlefield) and pieces of the whole (battlefield components). The commander's plan maximized the strengths of each combat system to create synergy; no one system could have had the same effect as all systems working together, in concert, toward achieving the same effect -- the commander's concept. They analyzed, in detail, a myriad of important battlefield

functions to have the best battlefield arrangements and combinations in place, then they synthesized these analyses into a coherent whole to release the synergism possible through synchronization. Further, they synthesized bits and pieces of information into the whole to predict the coordination and the timing of battlefield activities.

Battlefield synergism, symmetry, deception, and synchronization are plausible, but only after we improve our thinking for these concepts to move into the world of reality. While the theoretical ideal is impossible, we can approximate the ideal if we achieve a better thought process and encourage our young future planners to synthesize and to deal with wholes. Then, and only then, will we be able to achieve what our doctrine says we can achieve and unlock the potential power of the ideas in FM 100-5.

CONCLUSION

> Two souls, alas! are lodg'd within my breast,
> which struggle there for individual reign:
> One to the world, with obstinate desire, And
> closely-cleaving organs, still adhere: Above
> the mist, the other doth aspire, with sacred
> vehemence, to purer spheres. Oh, are there
> spirits in the air, who float 'twixt heaven
> and earth dominion wielding, stoop hither from
> your golden atmosphere, Lead me to scenes, new
> life, and fuller yielding!
>
> Goethe

Several powerful themes constitute the basis for conclusions. The first is that commanders must understand how they think, what information they need, and how their subordinates think. Commanders should find thinkers who complement their way of thinking. Further, commanders should create and maintain an environment conducive to thinking, particularly synthesis. Commanders must nurture their subordinates' intellectual development to permit entrance into the world of higher-level thinking.

Another theme is that we should not be complacently comfortable with the way we have thought in the past. We must break away from the bindings of tradition and the torpidity of the cliche, "we have always done it that way, why change now." We are in a complex era -- more complex and dangerous than any era earth's population has ever been in. We need people who can take analysis and synthesize its bits and pieces into a whole relevant to the problem at hand. We must transcend the lines of traditional thinking. We must recognize the power of the

intellectual energy inherent in thinking and understand we can create the future through our thought processes.

If we choose to remain traditional, we will never open up new worlds of thought, creativity, and development. We will, alas, remain as mediocre as we are now.

We should be neither afraid nor apprehensive about our new type of thinker. People who synthesize naturally are rare; their minds work differently than others. They see images of wholes, they see relationships, and easily discern insights from even the most complex data. Often, they are bored with the minutae of analysis. Commanders who have synthesizers as staff officers or as their subordinate commanders should recognize their abilities and use their positive synthesizing attributes to the organization's advantage. Further, commanders should make an effort to challenge their subordinates who synthesize to even greater mental accomplishments.

Commanders should also develop skills for synthesis in their analytical thinkers. Since analytical thinkers often find entry into synthesis traumatic, the progress may be painfully slow. Nonetheless, most people have the capacity for some synthesis although with varying levels of success. The important point is to create the intellectual environment that encourages synthesis, and to reward those who try to improve.

Ideally, through his intellectual energy, articulated in the concept, the commander creates and charts the future's course. The power of the idea in the concept should gain force as subordinates analyze and synthesize to understand their pieces of the whole. The commander takes his subordinate's processes of

synthesis and collapses these processes into his own, which adds additional positive force to his "whole" or concept. Their collective intellectual energy focuses on accomplishment of the commander's concept; however, they must understand complex relationships, integration of combat, combat support, and combat service support, and draw inferences from these relationships to unleash potential power. The driving force in this process is the concept of operation with which subordinate concepts are nested, working toward the goal of the commander's concept.

We can hope to achieve neither synchronization nor synergism of combined operations without developing thinkers capable of engaging in synthesis. To accomplish either, the commander has to understand relationships of obvious and disparate variables, to identify insights, and to synthesize analytical bits and pieces into a whole.

Today we can indeed provide combat power effects, but without the full benfit of synergy these effects are not as powerful as they could be. We tend, wrongfully, to congratulate ourselves on synchronizing combat power effects even when the effects are not clearly articulated. Nor should we congratulate ourselves on truly synchronized and coordinated combat power to achieve a theoretically ideal effect. We fail, even though clouding the issue with hubris, because many factors have to complement each other to achieve synchronization factors that, in isolation, make the problem seem unsolvable. But by using synthesis, we can find solutions.

We can develop great planners although we will probably not develop ideal planners. Using synthesis, our planners can approach precognition because they predict from the relationships among wholes and obscure insights into the links between wholes. Planners, more than others, combine the skills of analysis and synthesis to form plans and to will those plans to fruition.

We must invest our time, resources, and energy to develop thinkers who specialize in synthesis. This type of thinker, by considering the future, is also developing the means to create it. Thus, we should encourage, support, and nurture thinkers who synthesize so we can shape our future, rather than letting it shape us.

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