

PMESII and the Non-State Actor: Questioning the Relevance

**A Monograph
by
Major Kris A. Arnold
United States Army**



**School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas**

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Major Kris A. Arnold

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Approved by:

Alice Butler-Smith, Ph.D

Monograph Director

Kevin C.M. Benson, COL, AR

Director,
School of Advanced
Military Studies

Robert F. Baumann, Ph.D.

Director,
Graduate Degree
Programs

Abstract

PMESII and the Non-State Actor: Questioning the Relevance, by Major Kris A. Arnold, United States Army, 53 pages.

A systems perspective is beginning to permeate doctrine. This perspective calls for an analysis of the key systems of an adversary. PMESII is an acronym that stands for political, military, economic, social, infrastructure, and information systems. Analyzing the adversary's PMESII systems can lead to the identification of key nodes, links, and vulnerabilities, which can then be targeted kinetically or non-kinetically to achieve desired effects.

The PMESII systems construct applies well when the adversary is a state. All of these systems will be present, and mature, with many of them possessing tangible infrastructure, which can easily be identified by Intelligence, Surveillance, and Reconnaissance, and then targeted with precision weaponry. However, when the adversary is non-state actor, these same systems will be noticeably missing. Non-state actors are organized fundamentally different than states, and manifest themselves in completely different ways. The utility of the PMESII construct is significantly diminished when the adversary is a non-state actor.

To apply the systems perspective to non-state actors, such as Al-Zarqawi, the Al Qaeda leader in Iraq, a different construct is required. The author maintains that identifying the critical requirements of non-state actors leads to a more relevant construct. The author, using the non-state actor Zarqawi, identifies four systems that the typical non-state actor requires to remain viable. These systems are funding, recruitment, information and support, or (FRIS). The FRIS construct provides the same level of utility for the non-state actor, as PMESII does for states. The author recommends incorporating the FRIS construct as a corollary to the PMESII construct in the doctrinal manuals and publications that discuss the systems perspective.

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Introduction

In the 2002 State of the Union Address, President George W. Bush emphasized rogue states as the principle threat to our country, specifically Iran, Iraq, and North Korea. The President forthrightly labeled these three states an “axis of evil.”¹ In stark contrast, his 2005 speech before the National Endowment for Democracy did not emphasize states, but instead focused on “borderless terrorist organizations.” His opening remarks highlighted the global nature of this evolving threat:

The images and experience of September the 11th are unique for Americans. Yet the evil of that morning has reappeared on other days, in other places -- in Mombasa, and Casablanca, and Riyadh, and Jakarta, and Istanbul, and Madrid, and Beslan, and Taba, and Netanya, and Baghdad, and elsewhere. In the past few months, we've seen a new terror offensive with attacks on London, and Sharm el-Sheikh, and a deadly bombing in Bali once again.... Many militants are part of global, borderless terrorist organizations like al Qaeda, which spreads propaganda, and provides financing and technical assistance to local extremists, and conducts dramatic and brutal operations like September the 11th.²

The President's speech focused on terrorist organizations and their threat to the global community. Only once did the President address states as a threat, specifically Syria and Iran. He mentioned these two states simply to highlight their role as *sponsors* of terrorism, again reinforcing his assertion that the principle threat was now from terrorist organizations.³

As the President emphasized, it is now clear, four years into the GWOT, that non-state actors, and not rogue states, are the main threat in Iraq, and to the United States. This is not a post 9/11 revelation. Martin Van Creveld presciently warned in 1996: “In today's world, the main threat to many states, including specifically the U.S., no longer comes from other states. Instead, it comes from small groups and other organizations which are not states.”⁴

¹ President's State of the Union Address, U.S. Capitol, Washington D.C., (January 29, 2002).

² Ibid.

³ Ibid.

⁴ Martin Van Creveld, “In Wake of Terrorism, Modern Armies Prove to Be Dinosaurs of Defense,” *New Perspectives Quarterly* 13, no. 4 (1996): 58.

To the dismay of the only remaining superpower, these small groups and organizations, often labeled non-state actors, are proving very difficult to defeat, especially when compared to recent operations against states. In Operation Iraqi Freedom (OIF), which began March 20, 2003, the United States military accomplished its objective of regime removal in just twenty-one days. This conventional operation against the state of Iraq was swift when compared to the current effort against non-state actors, like Al-Zarqawi, the leader of al Qaeda in Iraq. Zarqawi attacked the Jordanian embassy in Iraq five months after coalition forces seized Baghdad and immediately became a coalition high value target.⁵ To this day an intense effort to capture him continues; moreover, he remains a viable threat to the overall success of the operation—over two and half years later.

PMESII Defined

Zarqawi and other rogue non-state actors are unique in that they lack the typical systems of a state, such as political, economic, and social systems. PMESII is military acronym listed in several joint and service publications, which evolved from a systems perspective, and equates to the political, military, economic, social, infrastructure, and information systems of states.⁶ The acronym provides a starting point for identifying key interrelated systems of an adversary and facilitates analysis and kinetic and non-kinetic targeting. Established states engaged in conventional warfare allow for greater familiarity and easier military planning, as much of their PMESII systems are tangible, which facilitates overt and covert imaging, monitoring, and targeting. But the PMESII construct loses utility if the adversary is a non-state actor lacking formal PMESII systems. The Chief of Staff, U.S. Army, General Peter J. Schoomaker, gives credence to this assertion in the recent précis *Serving a Nation at War*. In it he identified one of

⁵ Jean-Charles Brisard, *The New Face of Al Qaeda* (New York: Other Press, 2005), 212.

⁶ Chairman of the Joint Chiefs of Staff, *Joint Publication 5-0, Joint Operation Plannin* (Washington, D.C.: U.S. Government Printing Office, Third Draft, 10 August 2005), IV 10.

the key problems when operating against non-state groups—they do not have “infrastructure of their own at risk.”⁷

Though non-state actors typically do not possess infrastructure similar to that of a state, they may in fact possess loose political connections, clandestine funding sources, interspersed population support, informal media outlets, and small direct action cells, all of which loosely fit in the PMESII typology. However, when dealing with non-state actors, instead of utilizing the maladapted PMESII construct, a more productive and focused endeavor would be to identify what non-state actors require to achieve their goals and objectives—in other words, their critical capabilities and requirements.

Dr. Joe Strange, an instructor at the Marine Corps University, defined and discussed both of these concepts in his treatise *Centers of Gravity and Critical Vulnerabilities*. Dr Stranges’ method is to first identify where the enemy derives his “[primary source] of moral or physical strength, power and resistance,” which equates to the enemy’s Center of Gravity.⁸ Dr Strange then suggests that critical capabilities are the “primary abilities which merits a Center of Gravity to be identified as such in the context of a given scenario, situation or mission...., [and critical requirements are] essential conditions, resources and means for a critical capability to be fully operative.”⁹ In the absence of formal PMESII systems, identifying the systems that qualify as critical capabilities and requirements will engender more relevant tangible and targetable systems for non-state actors, which leads to the purpose of this monograph.

Why Discuss PMESII

The purpose of this monograph is to show that the PMESII construct is well suited when the adversary is a state, such as Iraq. However, the construct’s utility is significantly diminished

⁷ Secretary of the Army and Chairman of the Joint Chiefs of Staff, *Serving a Nation at War* (Washington, D.C.: U.S. Government Printing Office, no date), 2.

⁸ Dr. Joe Strange. *Centers of Gravity and Critical Vulnerabilities* (Quantico, VA: 1996), 3.

⁹ Ibid., 3.

when the adversary is a non-state actor, such as Zarqawi. Non-state actors demand a more relevant construct. Applying Dr. Strange's method of identifying the critical capabilities and requirements for non-state actors creates such a construct. The rest of this chapter will highlight other concepts and definitions that are important to understand before advancing to an in-depth analysis of the PMESII construct, and before revealing a more applicable construct for non-state actors.

PMESII and the Effects-Based Approach

Creating a better construct for identifying and analyzing the systems of non-state actors is important because the emerging Effects-Based Approach (EBA) doctrine incorporates a systems perspective, and relies heavily upon the PMESII construct. EBA is a doctrinal approach to warfighting possessing roots as far back the 1930's.¹⁰ This emerging doctrine is currently making great strides, and weaving itself inextricably into joint and service doctrine. The effects-based approach described below by the *Commander's Handbook on Effects-Based Approach to Joint Operations* was derived from the effects-based operations theory:

[Effects-based operations] are operations that are planned, executed, assessed, and adapted based on a systems perspective of the operational environment....An effects-based approach is characterized by a commonly shared systems understanding of the operational environment by all members of the joint, interagency, and/or multinational team....¹¹ [The] process categorizes systems in several ways. They are usually placed in political, military, economic, social, information, infrastructure, and other groupings.¹²

Again we find the PMESII construct, and the systems perspective, both of which are beginning to permeate doctrine. In fact, much of what is touted in the core planning manual, Joint Publication 5-0, *Joint Operation Planning*, concerning systems and PMESII is repeated in the *Commander's Handbook on Effects-Based Approach to Joint Operations*, and several other service

¹⁰ David A. Deptula, "Effects-Based Operations: Change in the Nature of Warfare," *Defense and Airpower Series* (2001): 7.

¹¹ Chairmen of the Joint Chiefs of Staff, *Commander's Handbook on Effects-Based Approach to Joint Operations*, Joint Warfighting Center (Washington, D.C.: U.S. Government Printing Office, TBD), 6.

¹² *Ibid.*, 14.

publications.¹³ With ‘borderless terrorist organizations’ challenging the U.S. military, and with the services embracing EBA and the *state-focused* PMESII construct, producing a more relevant tool for analyzing systems of non-state actors becomes a timely doctrinal requirement.

Center of Gravity’s link to PMESII

President Bush discussed the GWOT on December 14, 2003, and stated "The war on terror is a different kind of war, waged capture by capture, cell by cell, and victory by victory."¹⁴ But in order to capture the enemy, friendly forces must find him, and in order to find him, friendly forces must first understand him. In *The Art of War*, Sun Tzu proffered “know the enemy and know yourself; in a hundred battles you will never be in peril.”¹⁵ One of the keys to understanding the enemy is to understand where he derives his power to operate, which in military doctrinal terms is his center of gravity (COG). Carl Von Clausewitz wrote about the enemy’s COG in his seminal work, *On War*, first published in the early 19th century. Joint Publication (JP) 5-0 *Joint Operation Planning*, incorporates Clausewitz’ COG definition verbatim: “A COG is a source of moral and physical strength, power, and resistance—what Clausewitz called ‘the hub of all power and movement, on which everything depends....the point at which all our energies should be directed.’”¹⁶

Identifying the enemy’s COG is an ingrained and accepted axiom for deriving a foundational understanding of what is important for the adversary, and for identifying what the enemy must protect in order to survive or remain viable. In order to assist in the identification of the enemy’s COG, JP 5-0 incorporated a PMESII typology, and stated “a *systems perspective*

¹³ PMESII is also mentioned in JWFC Doctrine Pam 4 and 7.

¹⁴ Remarks by the U.S. President on the Capture of Saddam Hussein, The Cabinet Room, 14 December 2003.

¹⁵ *Sun Tzu the Art of War*, trans. Samuel B. Griffith (New York: Oxford University Press, 1963), 84.

¹⁶ Joint Publication 5-0, IV 10.

[emphasis mine] of the operational environment...assists identification of adversary COGs.”¹⁷

The PMESII construct facilitates this systems perspective, and the identification of adversarial systems. These systems will have key nodes and links that together form COGs (see Figure 1 below). These nodes and links can be targeted for desired system effects.

But how will this cognitive model, shown in Figure 1, lead to the identification of an enemy COG, and its associated nodes and links, when the enemy is a non-state actor that lacks these PMESII systems? At best, non-state actors will possess one, maybe two of the six systems portrayed in Figure 1. The logic described in JP 5-0, of using a systems perspective to identify enemy COGs, would work for non-state actors, if the systems incorporated into the construct were more relevant to the non-state actors’ way of organizing.

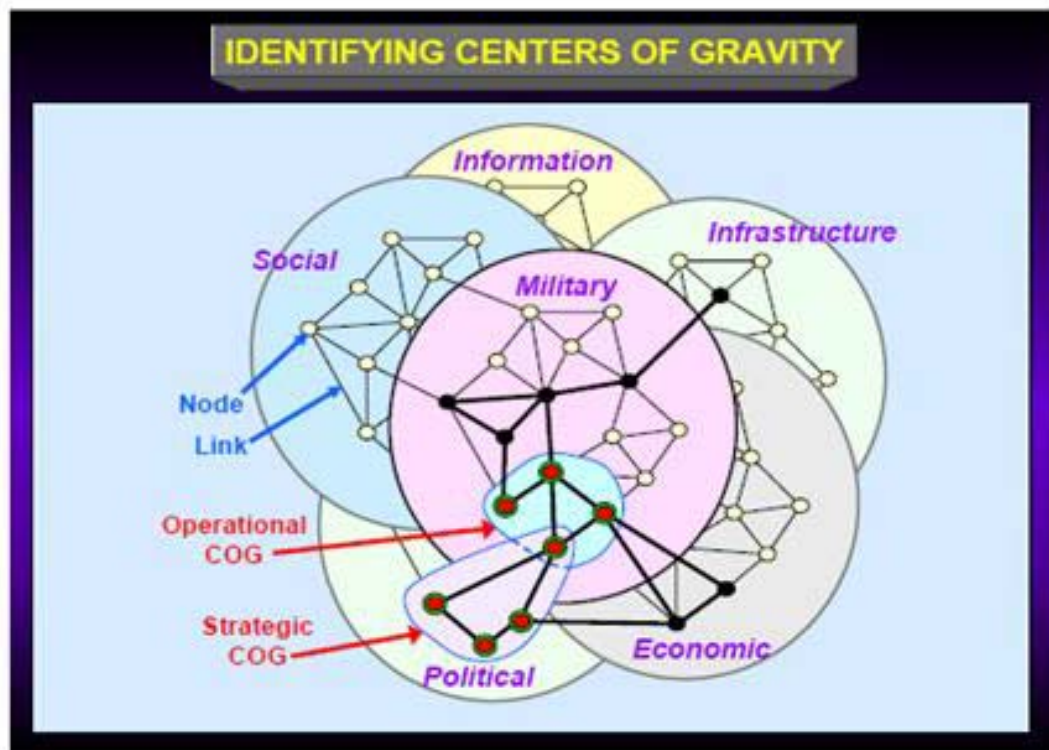


Figure 1: Identifying Centers of Gravity¹⁸

¹⁷ Ibid., IV-11.

¹⁸ Ibid., IV 10.

Key Terms

Before moving further into dissecting the PMESII construct, it is critical to understand key terms. One that is foundational to the discussion is “systems.” Robert Jervis, noted Professor of Political Science at Columbia University, succinctly described systems in his *Systems Effects: Complexity in Political and Social Life*, as “a set of units or elements [that are] interconnected so that changes in some elements or their relations produce changes in other parts of the system.”¹⁹ JP 5-0 described a system as “a functionally related group of elements forming a complex whole,” and highlighted the importance of understanding how systems are interrelated, interact with each other, and change over time.²⁰ The *Commander’s Handbook on Effects-Based Approach to Joint Operations* used very similar language, describing a system as “a functionally, physically, and/or behaviorally related group of regularly interacting or interdependent elements; that group of elements forming a unified whole.”²¹

Why this focus on systems? Dietrich Dorner’s book, *The Logic of Failure*, published in 1989, is not principally a systems theory book; however, Dorner discusses at length the perils of failing to see the interconnectedness of whole systems. Dorner states:

A system of variables is ‘interrelated’ if an action that affects or is meant to affect one part of the system will also always affect other parts of it. Interrelatedness guarantees that an action aimed at one variable will have side effects and long-term repercussions....Complexity is the label we will give to the existence of many interdependent variables in a given system.....Great complexity places high demands on a planner’s capacities to gather information, integrate findings, and design effective actions.”²²

¹⁹ Robert Jervis, *Systems Effects: Complexity in Political and Social Life* (New Jersey: Princeton University Press, 1997), 6.

²⁰ Chairmen of the Joint Chiefs of Staff, *Joint Publication 5-0, Joint Operation Planning* (Washington, D.C.: U.S. Government Printing Office, 10 August 2005), 8.

²¹ Chairmen of the Joint Chiefs of Staff, *Commander’s Handbook on Effects-Based Approach to Joint Operations*, 14.

²² Dietrich Dorner, *The Logic of Failure* (Cambridge: Perseus Books, 1996), 38.

Dorner's book highlighted the criticality of incorporating a systems viewpoint and provided numerous examples of the disasters that occur when problems are not viewed from this perspective.²³

Further incorporation of this systems view is found in the System of System Analysis (SoSA) concept, which JWFC Doctrine Pamphlet 4 defined as:

A collaborative process...that views the adversary as an interrelated system of PMESII systems...[which] attempts to identify, analyze, and relate the goals and objectives, organization, dependencies and inter-dependencies, external influences, strengths, vulnerabilities, and other aspects of the various systems.²⁴

The SoSA concept is discussed many times throughout the *Commander's Handbook of Effects-Based Approach to Joint Operations* and is an integral component to EBA. More important to this discussion is that the SoSA concept embeds the state-focused PMESII construct.

In addition to maintaining a systems view of the adversary, as outlined in the SoSA concept, another key task for military planners and intelligence analysts is the identification of threat vulnerabilities, especially those that are critical and exploitable. Dr. Strange also advocates the identification of critical vulnerabilities, which he described as "critical requirements or components thereof which are deficient, or vulnerable to neutralization, interdiction or attack (moral/physical harm) in a manner achieving decisive results."²⁵ But some vulnerabilities, especially those that are *systemic*, are more lucrative than others. The term "systemic vulnerability" is not defined explicitly in any of the doctrinal publications, but a modification of the term taken from an International Monetary Fund report on *Financial Sector Vulnerability* produces the following definition: "the mapping of weaknesses in individual systems to system-

²³ Ibid., 28. Dorner highlights how the operators at Chernobyl were not able to understand the complexity of the reactors, and thought in terms of isolated cause and effect relationships versus a systems view.

²⁴ Chairman of the Joint Chiefs of Staff, *Joint Warfighting Center Pamphlet 4, Doctrinal Implications for Operational Net Assessment (ONA)* (Washington, D.C.: U.S. Government Printing Office February 24, 2004), 5.

²⁵ Strange, 3.

wide vulnerabilities which require an examination of the functioning of the system as a whole.”²⁶

The SoSA concept mentioned above incorporates this concept: “The objective is to determine the significance of each PMESII system and its various elements to the overall adversary system in order to assess the systemic vulnerability of the various elements and how we can exploit them to achieve desired effects.”²⁷ When a systems view is incorporated, the real key task for military planners and intelligence analysts becomes identifying not just enemy vulnerabilities, but enemy systemic vulnerabilities.

Three other terms germane to the discussion of systems and the PMESII construct, which were introduced earlier, are “node,” “key node,” and “link.” According to the *Commander’s Handbook of Effects based Approach to Joint Operations* a node is “an element of a system that represents a person, place or physical thing.”²⁸ A key node is “a node related to a center of gravity or an operational/strategic effect,”²⁹ and a link is “an element of a system that represents a behavioral, physical, or functional relationship between nodes.”³⁰ As depicted in Figure 1, nodes and links are tangible items that facilitate kinetic and non-kinetic targeting, especially as it relates to EBA doctrine.

Methodology

All of these terms play a critical role in the systems perspective and in EBA doctrine. The terms will surface many times throughout this monograph. The methodology for the rest of this monograph starts by analyzing each PMESII element, and offers examples of how knowledge of the formal systems of a state, in this case Iraq, facilitated military kinetic and non-kinetic targeting during Operation Iraqi Freedom. This will be juxtaposed against a non-state actor, in

²⁶ Barry Johnston, Jingqing Chai, and Liliana Schumacher, “Capital Account Liberalization and Financial Sector Vulnerability,” *International Economic Policy Review* 2, (2000): 98.

²⁷ Chairman of the Joint Chiefs of Staff, *Joint Warfighting Center Pamphlet* 4, 5.

²⁸ Chairman of the Joint Chiefs of Staff, *Commander’s Handbook on Effects-Based Approach to Joint Operations*, 14.

²⁹ Ibid.

³⁰ Ibid.

this case Zarqawi, the current leader of al Qaeda in Iraq, and will be used to illustrate how a lack of formal PMESII systems argues for a different construct that provides more relevant analysis. Dr. Strange's Critical Capabilities and Critical Requirements concepts will then be used to develop a construct that is more relevant in the case of non-state actors.

PMESII Analyzed

As mentioned earlier, on March 20, 2003, Operation Iraqi Freedom began with the United States military accomplishing one of its main objectives, regime removal, within twenty-one days. Yet Zarqawi, a non-state actor, continues to evade U.S. forces in that same region, over two years later. Osama Bin Laden, another non-state actor, who declared in a communiqué in 1998 that killing Americans and their allies "is an individual duty for every Muslim who can do it," remains at-large over five years after making the FBI's most wanted list.³¹

Why do non-state actors pose such a challenge? Why does it appear easier for military planners to plan and carry out operations against states, while non-state actors continue to evade our forces and challenge our capabilities? The principle reason is that states have tangible systems and infrastructure, which facilitates kinetic and non-kinetic targeting to achieve desired effects. In sharp contrast, non-state actors do not possess the same type of well-defined systems or infrastructure. This challenges our targeting abilities and avoids our strengths.

The *PMESII Analyzed* section of this monograph will provide examples of how knowledge of the tangible systems of a state, in this case Iraq, facilitated military planning and kinetic and non-kinetic targeting during Operation Iraqi Freedom. Additionally, this chapter will provide an example of a non-state actor, in this case Zarqawi, to illustrate that the typical non-state actor does not possess systems similar to that of a state, and how this challenges our current capabilities, and avoids our strengths.

³¹ Rohan Gunaratna, *Inside Al Qaeda: Global Network of Terror* (New York: Berkley Books, 2002), 61.

Political Parties and Leadership

States by definition include political authorities.³² Typically these authorities are members of affiliations or parties with “a common set of interests, concerns, and goals.”³³ These parties and their processes form systems, which have structure and infrastructure susceptible to Intelligence, Surveillance and Reconnaissance (ISR) and precision weaponry. Kinetic and non-kinetic targeting of the political leadership, infrastructure, or party members can create desired effects. Denying the ability for political parties to mobilize their people against a common enemy, or preventing the leadership from commanding and controlling internal security forces are example desired effects.

Targeting the political leadership was an integral part of the strategy during OIF I. General Franks identified leadership as one of the nine pillars or ‘slices’ that the coalition “would need to effect in order to accomplish the goal of removing the regime” (see Figure 2 below).³⁴ To achieve this end, coalition forces launched numerous strikes during OIF against the political leadership and the Ba’ath Party.

³² Microsoft Encarta Encyclopedia, Standard (2004), “states.”

³³ Ibid.

³⁴ Tommy Franks with Malcolm McConnell, *American Soldier: General Tommy Franks* (New York: Regan Books, 2004), 392.

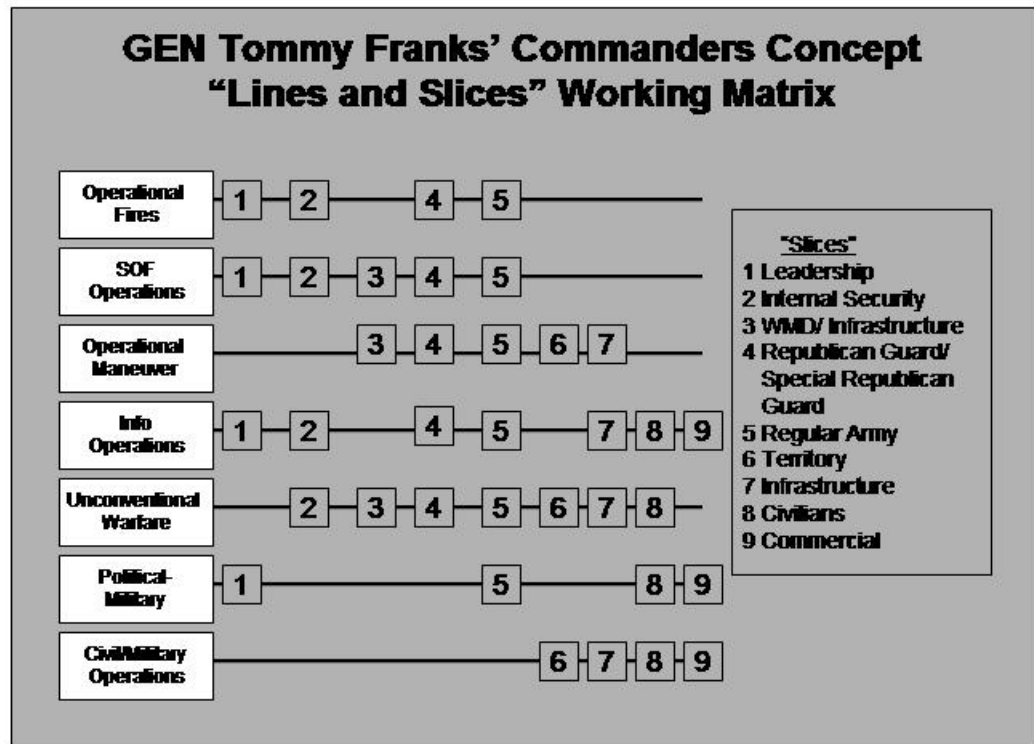


Figure 2: Franks' Slices³⁵

Closer to the tactical level, V Corps planners, postulating that Baghdad was the COG, identified the political system within the city as a critical lever that assisted Saddam in controlling the population (see Figure 3 below).³⁶

³⁵ Ibid., 392.

³⁶ Gregory Fontenot, E.J. Degen, and David Tohn, *On Point: The United States Army in Operation Iraqi Freedom* (Leavenworth: Combat Studies Institute Press, 2004), 49.

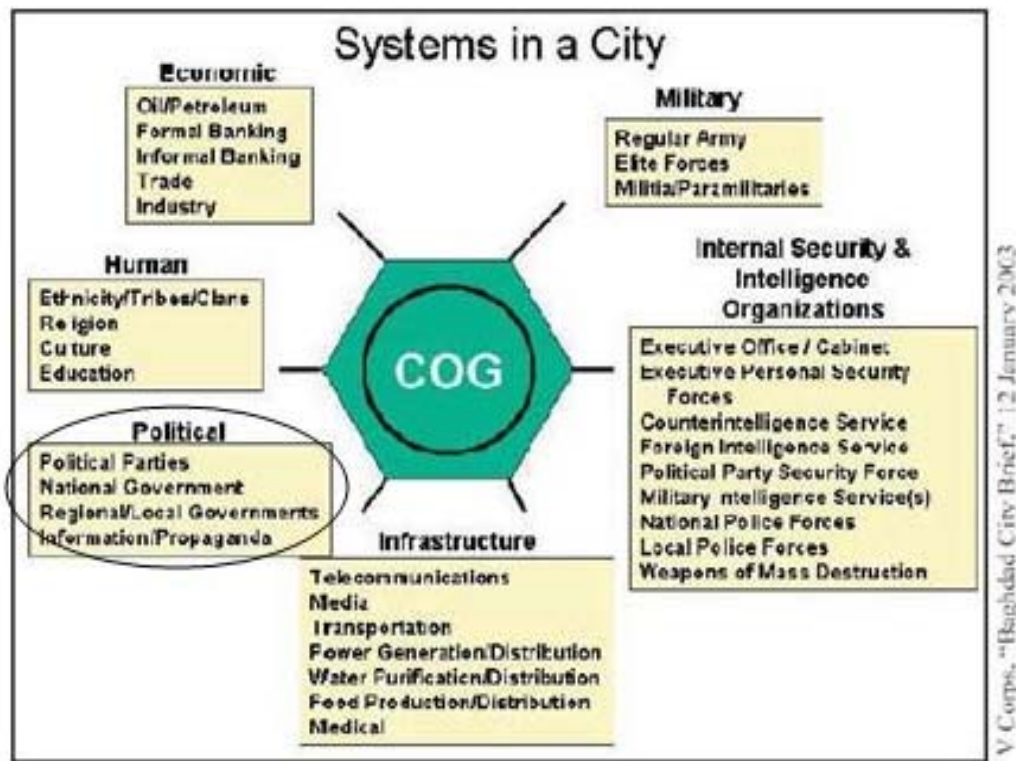


Figure 3: V Corps' Systems³⁷

Anthony Cordesman's *Iraq War: Strategy, Tactics, and Military Lessons*, provided ample evidence of targeting actions against the political leadership. As most will remember, the opening salvo of the war was against Saddam Hussein himself. On March 19th, 2003 "the United States received indicators that its intelligence had located Saddam Hussein and his sons.... [and reacting quickly, launched] a combined strike by cruise missiles and stealth aircraft."³⁸ Several days' later coalition forces conducted numerous strikes on the regime command and control, leadership, and Ba'ath Party headquarters in Baghdad and throughout the country. But these were not the only political or governmental organizations susceptible to targeting. Ken Pollack, in his book *The Threatening Storm*, described over a dozen intelligence and security services with targetable

³⁷ Ibid., 49.

³⁸ Anthony H. Cordesman, *The Iraq War: Strategy, Tactics, and Military Lessons* (Washington, D.C.:The CSIS Press, 2003), 59.

infrastructure.³⁹ Coalition forces heavily targeted these organizations and their associated infrastructure. Again the intent of these strikes was to decapitate the top leadership of Iraq, or as General Franks stated in his recent book *American Soldier*, “destroying these structures would blind and paralyze Saddam’s inner leadership circle.”⁴⁰

The fact that Iraq’s political system was well established, with identifiable leaders and locations, greatly facilitated targeting. Prior to the beginning of the war, military planners labeled Baghdad the center of gravity, “the center of all regime control mechanisms and essential to defeating Saddam Hussein....Targeters identified the critical nodes to attack with kinetic and/or non-kinetic means.”⁴¹ Destroying these critical nodes, which were linked to other nodes, had a ripple effect similar to that of a stone thrown into a pond, hastening the collapse of critical regime systems. The CFLCC Information Officer reported “by the time we reached Baghdad we had conducted nearly 500 physical destruction information operations missions on Iraqi command and control nodes, links, and decision makers. Information operations took away the Iraqi leadership’s ability not only to mass combat power, but to govern [the] nation.”⁴²

The collapse of Iraq’s political system would directly affect other systems, in this case, the military. Saddam Hussein’s dictatorial rule stymied the military leadership’s initiative. Without Saddam’s guidance and direction, the military would disintegrate into disorder. This is exactly what happened, as coalition airpower “destroyed much of Iraq’s command and control capability and had shocked many units into ceasing to maneuver to fight or even into disbanding.”⁴³ Saddam Hussein’s tightfisted rule over Iraq, heavily orchestrated by the Ba’ath Party, engendered a significant interdependence between the systems. This interdependence inextricably linked the other systems to the political system, resulting in a systemic vulnerability.

³⁹ Kenneth Pollack, *The Threatening Storm* (Random House: New York, 2002), 115-121

⁴⁰ Franks, 392.

⁴¹ Ibid., 4, 9.

⁴² Fontenot, 248.

⁴³ Cordesman, 94.

As discussed above, Iraq's political system was tangible, structured, formal, and easily identifiable and susceptible to our targeting processes. This is not the case with the typical non-state actor. Zarqawi is affiliated with Al Qaeda, but Al Qaeda has no identifiable static headquarters building, structure, or location. Al Qaeda does not have official party members that show up to work each day at known locations. Even their court has no official building or physical structure. But instead the Shari'a Court of Al Qaeda in Iraq issues communiqués through internet postings.⁴⁴ Al Qaeda in Iraq is not a pyramidal, integrated, or hierarchical system where elimination or destruction of one part of a system will have a significant impact on the others.⁴⁵ Loretta Napoleoni, in her book *Insurgent Iraq: Al Zarqawi and the New Generation*, states "what we have is a nebula of groups that forge alliances whenever it suits them, alliances which can be broken at any time....Al Qaedism is a creed embraced by a highly unstructured web of people and groups."⁴⁶ It is this lack of structure and infrastructure that challenges our current capabilities in the United States military.

The closest one can come to finding such infrastructure where pseudo political affiliates meet on a regular basis is the radical mosques and *madrasas*, or religious schools. But finding which mosque or *madrasas* the enemy is currently meeting or operating in is near impossible, as *madrasas* alone number in the tens of thousands, and targeting them would likely result in a tremendous backlash.⁴⁷

A non-state organization with ties to the *jihadi* movement, possessing a viable political structure, is the Society of the Muslim Brothers.⁴⁸ But the Society of Muslim Brothers does not

⁴⁴ The Middle East Media Research Institute, *Special Dispatch Series* no 962 (August 19, 2005): 1.

⁴⁵ Loretta Napoleoni, *Insurgent Iraq: Al Zarqawi and the New Generation* (New York: Seven Stories Press, 2005), 127.

⁴⁶ Ibid.

⁴⁷ Evans Alexander, "Understanding Madrasahs," *Foreign Affairs* 85, no. 1, (January/February 2006): 10.

⁴⁸ Daniel Byman, Michael Scheuer, Anatol Lieven, W. Patrick Long, "Iraq, Afghanistan and the War on Terror," Symposium, 38th Capitol Hill Conference convened by the Middle East Policy Council, (Jan 11, 2005): 14.

have ties to large military forces, nor do they control economic processes, or rule over societies. Along with the radical mosques and *madrasas*, the only other system their structures and leaders can be solidly linked to within the PMESII construct is *information*, which they use to transmit their radical ideologies.

As discussed earlier, Iraq possessed a very formal and structured political system with tangible infrastructure. During OIF, the destruction of that system greatly reduced the ability of another, Iraq's military. But unlike states, non-state actors like Zarqawi, have no identifiable political systems where targeting through kinetic and non-kinetic means could potentially result in the collapse of other systems, or the entire enemy system.

Large Militaries

Standing armies or national militias, possessing the capability to conduct both offensive and defensive operations, date back as early as the 20th century BC, and today are a *sine quo non* for state viability.⁴⁹ A modern day state typically earns credibility or respect regionally, and in the eyes of the international community, through its military prowess. But large tangible militaries are also susceptible to targeting and destruction. Countries possessing superior intelligence, surveillance, and reconnaissance (ISR) capabilities and precision weaponry can easily exploit large military formations and associated infrastructure. The Iraqi military was targeted heavily during OIF, and was again one of the critical 'slices' that General Franks identified as components that kept Saddam in power (see Figure 2).⁵⁰ V Corps as well identified the military as a critical component (see Figure 3).⁵¹

Iraq's military, though reduced by over twelve years of United Nation sanctions after Desert Storm, still possessed a large amount of military equipment and infrastructure. In order to bring about the early collapse of the Iraqi military and regime, coalition air power targeted this

⁴⁹ Microsoft Encarta, "standing armies."

⁵⁰ Franks, 339.

⁵¹ Fontenot, 49.

infrastructure heavily during the opening days of OIF. Again Cordesman includes numerous examples of targeting military equipment and infrastructure in his treatise on the Iraq War. On March 19, 2003 “the targets and locations included communication sites..., long range artillery..., a mobile early warning radar and an air defense command center..., [and] a surface to surface missile system.”⁵² Precision weaponry made it possible to destroy such discrete targets with minimal collateral damage. Possessing this capability enables EBO by systematically eliminating key nodes or links in the system. Destroying these key nodes or links renders the rest of the system inoperable, or greatly reduces its effectiveness, (e.g., without an early warning radar, or air defense command center, the enemy air defense systems will not be able to effectively target coalition aircraft).

En route to Baghdad, coalition ground forces routinely targeted Iraqi Regular Army and Republican Guard units, decimating units that chose to fight, while coalition air power easily targeted and destroyed key military weaponry and facilities in and around Baghdad. The success of these early operations facilitated the twenty-one day record advance to Baghdad—the posited enemy center of gravity. At the end of this march, Saddam and his regime no longer controlled the state of Iraq. However, to the dismay of the coalition, the actions of non-state actors would later heavily influence the perceived success of the operation.

In stark contrast, non-state actors do not possess large armies, nor do they wear easily identifiable uniforms. In fact, many times they will blend into the local population.⁵³ Targeting non-state actors from miles away with satellite imagery and precision weaponry is difficult because they do not have static barracks or headquarters buildings. Interdicting their communication nodes by physical destruction or jamming is difficult because they do not possess fixed command and control structures. Their communication sites are often temporary and

⁵² Cordesman, 61.

⁵³ U.S. President, *National Strategy for Combating Terrorism*. (Washington, D.C.:U.S. Government Printing Office, February 2003), 7.

routinely moved to avoid detection and targeting.⁵⁴ With the exception of cell phones and some Improvised Explosive Devices (IED's), non-state actors do not possess high tech weaponry or equipment that emits detectable signals. Non-state actors do not operate in large targetable formations, and will conduct operations with as few people as possible in order to avoid detection. Locating these terrorists with satellite imagery is difficult because they do not drive or operate easily identifiable military equipment. They do not conduct operations according to a specified doctrine that military planners can exploit, but they will routinely adapt and change their tactics to stay ahead of opposing forces.⁵⁵ The non-state actor's most powerful weapon is not a long-range surface to surface missile that is easily identified by a trained imagery analyst hundreds of miles away, but is instead a suicide bomber that is almost impossible to detect from only a few feet away.⁵⁶

This lack of a tangible military force poses a great challenge to U.S. forces, and avoids its strengths, which are ISR and precision weaponry. The U.S. military's doctrine, training, and equipment favor operations against a foe that possesses an organization which is similar but less capable. There are standing Operation Plans (OPLANS) for almost every state that could one day pose as an enemy to our nation. The military systems of states are well defined and easily identified, targeted and destroyed by a superior force, with U.S. forces currently reigning supreme in this arena. Yet the ways to fight the GWOT and these rogue non-state actors are still heavily debated four years into this war. Unlike states, non-state actors typically do not possess militaries, and certainly not large militaries with associated infrastructure, making the *military* of PMESII near irrelevant as an analytical tool against this type of foe.

⁵⁴ Josh Meyer and Mark Mazzetti, "In a Battle of Wits, Iraq's Mastermind Stays A Step Ahead of U.S.," *Los Angeles Times*, 16 November 2005, 3.

⁵⁵ Bruce Hoffman, "Insurgency and Counterinsurgency in Iraq," *Occasional Paper*, RAND, (June 2004): 6.

⁵⁶ Loretta Napoleoni, *Terror Incorporated: Tracing the Dollars Behind the Terror Networks* (New York: Seven Stories Press), 127.

States and their Economies

Economics is a social science that deals with the production, distribution, and consumption of goods and services to a given population.⁵⁷ Economic systems consist of market activity and government intervention to regulate the activity for the good of society and the state.⁵⁸ Within states, markets tend to arise naturally, and with it concomitantly the need for control. This exercise of control by the government engenders a natural link between the political and economic systems of a state. These links lead to potential systemic vulnerabilities, where the application of stress or force to one system can affect others or even the complete system of systems.

The targeting of economic systems to bring about the collapse of a state is not a new concept, and “was a central tenet of the strategic air offensives against Germany and Japan during World War II. Early in the twentieth century theorists described the vulnerability of ‘modern’ nation states, highly centralized, interdependent political and economic structures to air attack.”⁵⁹ In World War II Allied forces targeted ball bearing factories, “electric power systems, transportation systems, railroads, fuel, food distribution, steel manufacturing, and other manufacturing industries vital to the operation of the economic, industrial, and war-making welfare of the state.”⁶⁰

This concept, originally espoused by Giulio Douhet, Billy Mitchell, and the United States Air Corps Tactical School and carried out during World War II, has evolved into the modern day concept of EBO. During Operation Desert Storm, military planners applied the EBO concept to the air war, and targeted not only military forces, but essential economically-tied industries, such

⁵⁷ Microsoft Encarta, “economics.”

⁵⁸ Ibid.

⁵⁹ Deptula, 7.

⁶⁰ Ibid.

as electricity, transportation, critical oil storage facilities, and other military support and production factories.⁶¹

Before OIF, General Franks, realizing the importance of economic systems, placed *commercial* on the list of ‘slices’ requiring effects in order to bring down the regime (see Figure 2);⁶² V Corps also identified economic systems as a critical part of Saddam’s hold over Baghdad (see Figure 3). But during OIF, military planners had a different objective when identifying economic systems. In this case, planners did not want to destroy Iraq’s economic base, which was essentially its oil industry. Instead they wanted to prevent Saddam and his regime from sabotaging this critical infrastructure. In fact, “protecting and preserving the Iraqi oil wells was one of the coalition’s strategic objectives,”⁶³ and actually led to an earlier than planned start of the ground war, when it was suspected that Saddam was setting the southern Rumaylah oil fields on fire.⁶⁴ Preserving the oil industry and other economically tied facilities were critical to Phase IV operations, or the reconstruction phase of the campaign. The goal was to remove the regime without destroying key infrastructure or Iraq’s economic base, which could potentially increase the cost of the war and make reconstruction and transition more difficult.

Identifying the critical component of Iraq’s economic system was not difficult, as oil was the single biggest contributor to state revenues. Similar to Iraq, most states possess easily identifiable economic systems. Monitoring, tracking, imaging, and reporting on these systems using intelligence disciplines, such as Signals Intelligence (SIGINT), Human Intelligence (HUMINT), and Imagery Intelligence (IMINT) is easier because of this fact. Targeting these systems for destruction, as the allies had during World War II, or for protection, as the Coalition did during OIF, is facilitated by this ease of identification. Because states’ economic systems are typically linked to other systems within the PMESII construct, targeting one can create effects on

⁶¹ Deptula, 2-3.

⁶² Franks, 339.

⁶³ Fontenot, 91.

⁶⁴ Ibid., 92.

the others, and in the best case, achieving desired or “specific effects against portions of a system [can] render the entire system ineffective.”⁶⁵ But the utility of this postulate is dependent upon the premise that economic systems are easily identifiable, which is not the case for non-state actors.

Non-state actors do not possess formal economic systems. Zarqawi does not have production facilities or assembly plants that are easily recognizable by satellite imagery. In Iraq, U.S. forces have occasionally raided buildings that turn out to be crude factories for making IEDs and suicide vests, but there is little chance that a trained imagery analyst could identify this facility from satellite imagery, as it will likely resemble all the other houses in the neighborhood. About the only way U.S. forces are able to find one of these factories is through a HUMINT source such as a neighbor that suspects something, or by stumbling upon it during a raid. Also, to avoid detection terrorists will routinely move this facility.⁶⁶ To move supplies and equipment non-state actors will likely use transportation assets that blend in with the local commercial traffic, vice transportation that is olive drab green, camouflaged, or sand colored. Zarqawi obviously needs money to continue to finance his operations; however he does not have established market systems, or an industry, such as oil, to provide him such funding. Instead many non-state actors such as Zarqawi are reportedly involved in criminal activities, such as narcotics trade and smuggling, kidnapping, and money laundering to raise money.⁶⁷ It is reported that “Al Qaeda [has] raised as much as 35 percent of its operating funds from the drug trade.”⁶⁸ These types of activities are conducted covertly, making them very difficult to target. Moreover,

⁶⁵ Deptula, 5.

⁶⁶ Meyer, 3.

⁶⁷ Napoleoni, 90, 93.

⁶⁸ Angel Rabasa, Cheryl Benard, Peter Chalk, C. Christine Fair, Theodore W. Karasik, Rollie Lal, Ian O. Lesser, and David E. Thaler, *The Muslim World After 9/11* (Santa Monica: RAND, 2004), 467.

non-state actors, such as the radical Islamists, routinely rely on the “transfer of wealth from rich Muslims via charitable organizations” to help finance operations covertly.⁶⁹

Identifying and targeting economic systems to create desired effects is much easier for states that possess mature formal economic systems. However, for the non-state actor, such as Zarqawi in Iraq, who does not possess an economic system with a static infrastructure, it becomes a near impossible task. Zarqawi requires funding from numerous sources to continue operations. He does not require an economic system, only money. This discrete requirement more narrowly defines his system. It will not consist of buildings, facilities, electricity, and transportation, but will rely on people, relationships, information and ideology. In light of these facts, the *economic system* within the PMESII construct is yet another system that lacks relevancy when analyzing the typical non-state actor.

Society and History

Local or regional history typically plays a significant role in the development of a societies’ culture. Cultural awareness is a term used frequently to describe the process of attempting to understand a society’s culture and its norms. The Army has recently elevated the goal of cultural awareness for its soldiers, especially those deploying to foreign lands, and has implemented cultural awareness training in most of its schools. It is an imperative that deploying soldiers understand the society. Cultural awareness mishaps have had strategic consequences, (e.g. mishandling of the Koran at the Guantanamo Bay prison; burning of the insurgent bodies in Afghanistan; wearing dark sunglasses while conducting patrols; and using men to search women in Iraq). The United States Institute for Peace prepared a recent report that stated “culturally and socially, the behavior of U.S. and coalition forces toward the Iraqis was occasionally insensitive and was perceived by the local population as offensive. This insensitivity may be explained by a

⁶⁹ Ibid.

lack of familiarity with the local language and culture.”⁷⁰ These cultural blunders have led to setbacks where soldiers have had to re-earn the respect of the Iraqi population. Additionally these missteps typically result in information fodder for extremists’ anti-American information operations, which concomitantly aids their recruitment efforts.

The consequences of not understanding the culture are unfortunate, especially considering that cultural information on states and societies is readily available. Iraq for instance, has a rich history, with the Arabic term dating back to the eighth century AD.⁷¹ Iraq’s history and culture is well documented and easily available for study. The three main social/religious groups that are involved in the political struggle today, (i.e., Sunni, Shi’a, and Kurds), have been openly divided and fighting for hegemony since “the aftermath of the Ottoman collapse [when] the British imposed a military and semi-colonial administration.”⁷² Additionally, the importance of tribes and tribal leaders is a well known fact, with tribal leaders reigning in the British resistance and revolts during the 1920’s.⁷³ The importance of religious leaders to the Iraqi society is also well understood. Sheiks, Imams, and clerics all play a critical role in societal relations in Iraq. The key Shi’a religious leader, Ayatollah Ali Sistani, at times acting as a center of gravity, has potentially kept the lid on a possible civil war by urging his very large following not to react to attacks by Zarqawi, who is Sunni.⁷⁴

Military planners knew most of these cultural facts, but knowing facts is different than understanding and correctly discerning ramifications. Understanding the importance of the society, General Franks listed civilians as one of his slices, but V Corps actually went further and identified humans, and their ethnic, tribal, religious, and cultural factors as critical components of

⁷⁰ “Who are the Insurgents? Sunni Arab Rebels in Iraq,” Special Report 134 (United States Institute of Peace, April 2005), 7.

⁷¹ Keegan, 8.

⁷² Keegan, 13.

⁷³ Ibid., 15.

⁷⁴ Anthony Cordesman, “New Patterns in the Iraqi Insurgency: The War for a Civil War in Iraq,” (Center for Strategic and International Studies, September 27, 2005): iv.

the human system that Saddam leveraged for control over Iraq (see Figure 3).⁷⁵ Understanding the culture and society where the military will conduct operations is an important requirement for success. Planners and soldiers may never have complete understanding, and learning will always continue to take place; however, much of the information concerning a society's or a state's culture is readily available and greatly facilitates planning for military operations. When soldiers understand the culture, they are less likely to inadvertently undermine the mission.

Conversely, information on non-state actors is difficult to find. First of all, non-state actors can seemingly surface from nowhere. Many start out as local or regional figures, Zarqawi for example, “until 2001,...was a regional figure with a focus on Jordan, Israel, and Turkey.”⁷⁶ It was probably not until February 5, 2003, when U.S. Secretary of State Colin Powell spoke before the United Nations Security Council and described “Zarqawi as the link between Al Qaeda and the regime of Saddam Hussein,” that he became known internationally.⁷⁷ This fact, that today we may not know who the anathematized non-state actor of tomorrow will be, greatly hinders our ability to study and understand their cultural background. And even though we know Zarqawi is from Jordan, he has had other influences on his life that transcend his birthplace. Many of the influences on extremists like Zarqawi come from the social interactions at mosques, which “build and reinforce ideological commitment to a particularly salient cause.”⁷⁸ Identifying which mosque Zarqawi or other radical Islamists are in at any given moment is a near impossible task—destroying a mosque that harbored them would be political suicide.

Marc Sageman, in his book *Understanding Terror Networks*, labeled these *jihad* groups, such as Zarqawi's “a dynamic social movement that forms and breaks bonds to various [other]

⁷⁵ Fontenot, 49.

⁷⁶ Rohan Gnaratna, “Abu Musab Al Zarqawi: A New Generation Terrorist Leader,” (IDSS Commentaries, 5 July 2004): 3.

⁷⁷ Brisard, 212.

⁷⁸ Marc Sageman, *Understanding Terror Networks* (Philadelphia: University of Pennsylvania Press, 2004), 143.

terrorist groups.”⁷⁹ Many times these are marriages of convenience, much like the alleged relationship between Zarqawi and the former regime loyalists in Iraq, who have different endstates in mind, but similar mid-term goals, such as the expulsion of American forces. This lack of permanent ties to any one social group provides them a unique advantage in that they are “unrestrained by responsibility to any society.”⁸⁰

All of these facts conspire to make it very difficult to pinpoint any static societal or cultural systems and norms that, in the example of a state such as Iraq, would greatly inform and drive military planning for operations. Understanding the culture and society will greatly ameliorate potential missteps that can significantly impact mission success. But the non-state actor develops his society as he evolves in response to the threat. He builds and discards societal relationships as needed.⁸¹ He resides with, and attempts to win over, the society he can leverage today. This requires analysts to continually ask, “where does the non-state actor require support from now?” What society is important to him depends on what day it is and what he is trying to accomplish.

Understanding and exploiting the non-state actors’ adaptive social system is a difficult task. Predicting who the next radical non-state actor will be is an even harder task. Ten years ago, predicting that America would again carry out operations against Saddam Hussein after Desert Storm was more plausible than predicting Zarqawi would become our biggest threat in Iraq. One was a well-defined state with a rich history, which greatly lends itself to cultural and societal study; the other was a relatively unknown entity from Jordan, being sentenced to fifteen years in prison by the Jordanian courts for actions *against* the state.⁸²

⁷⁹ Ibid., 151.

⁸⁰ Ibid., 150.

⁸¹ Ibid., 151.

⁸² Brisard, 209.

Infrastructure: A Vulnerability for States

Infrastructure is an important component of developed societies and includes systems like transportation, power generation, communications, banking, education, and health.⁸³ States typically possess well defined infrastructure that is easily identified and targeted. Deliberately striking a nations' infrastructure is not a new concept.

Lord Montague in 1909 spoke of crippling an entire nation through air attacks on 'nerve centers' like London. The targeting of, 'government buildings, the Houses of Parliament, the central railway stations, the central telephone and telegraph offices, and the stock exchange'—all attacks against the nation's central nervous system producing a 'massive and fatal paralysis.'⁸⁴

Lord Montague's idea of targeting infrastructure to cripple a nation was further developed by the Italian air power theorist Giulio Douhet, America's famous World War I aviator Billy Mitchell, and the United States Army Air Corps. During the interwar years, the United States Army Air Corps was developing air doctrine, and proffered that "proper selection of vital targets in the industrial, economic, and social structure of a modern industrial nation, and their subsequent destruction by air attack, can lead to fatal weakening of an industrial enemy nation."⁸⁵ In World War II, the strategic bombing campaigns attempted to carry out this theory with mixed results. However, over the years, as ISR and precision weaponry technology advanced, so did the ability to effectively strike infrastructure and at the same time minimize collateral damage, making this theory more viable.

During Operation Desert Storm, the air campaign successfully identified and targeted critical infrastructure in Iraq. Targets like oil storage facilities, bridges, military support and production facilities, naval facilities, satellite downlink facilities, vital communications nodes, air fields, command and control bunkers, electrical systems, and governmental decision-making and

⁸³ Microsoft Encarta, "infrastructure."

⁸⁴ Deptula, 7

⁸⁵ Ibid., 7.

communications centers were all targeted with great precision as part of what David Deptula labels “parallel warfare,” which has evolved into the current EBO theory of warfare.⁸⁶

More recently, during OIF, air power again targeted Iraq’s critical infrastructure as an integral part of the overall campaign. Not surprisingly, infrastructure was one of General Franks’ nine pillars or ‘slices’ that the coalition “would need to effect in order to accomplish the goal of removing the regime” (see Figure 2).⁸⁷ V Corps again mirroring CENTCOM also identified infrastructure as a key system (see Figure 3).⁸⁸ Cordesman supplies numerous examples of coalition air and ground forces targeting communication sites, command and control installations, regime leadership buildings, Ba’ath Party headquarters, Air Force headquarters, military barracks, Iraqi air defense systems, and early warning radars.⁸⁹

Due to the nature of the campaign, which would later call for stability and reconstruction, some critical infrastructure was not targeted, but instead was identified as requiring protection from sabotage. Targets like rail lines, bridges, power stations, export facilities, oil fields, ports, and dams were not struck, and some were even seized, for example, the oil fields and export facilities in the south, along with the Hadithah Dam on the Euphrates, which was seized in order to “guard against deliberate flooding operations by the Iraqi regime.”⁹⁰

Iraq’s infrastructure was easily identified and integrated into the campaign plan to achieve desired effects. Iraq’s visible, tangible infrastructure was something its society depended upon daily, and just as Saddam used the infrastructure for control, destroying or seizing key infrastructure could facilitate the achievement of coalition desired effects. The characteristics of infrastructure are common to the other PMESII systems. Most of these systems will typically have some sort of infrastructure where operations or daily business is conducted, and targeting

⁸⁶ Ibid.,1-3.

⁸⁷ Franks,339.

⁸⁸ Fontenont, 49.

⁸⁹ Ibid, 4.

⁹⁰ Cordesman, “New Patterns in the Iraqi Insurgency: The War for a Civil War in Iraq,” 67, 84.

infrastructure is a relatively easy process. Infrastructure is the most critical component of the PMESII construct, because it is this tangible portion of the PMESII systems that is most susceptible to kinetic weaponry. Targeting infrastructure with kinetic weaponry provides near instantaneous feedback. Targeting personnel can use this feedback to modify or meter future operations to achieve desired effects.

Targeting is difficult when the adversary has no infrastructure, and non-state actors lack static infrastructure. They do not have rail lines, bridges, dams, power stations, manufacturing plants, ports, transportation hubs, air fields, stock exchanges, banking facilities, communications facilities, fixed missile sites, command and control or headquarters facilities, Air Force headquarters, or political party buildings. They have no infrastructure that is at risk when they conduct offensive operations, or if they were to threaten to use weapons of mass destruction.⁹¹ They will use abandoned buildings or force occupants out of an area, and use it as a headquarters, but they will not stay in one place for very long. U.S. forces have routinely just missed Zargawi, as he continues to remain mobile to evade capture.⁹²

Speaking before the House Committee on International Relations, Bruce Hoffman made the following comment about Al Qaeda: “The movement’s strength is not in geographical possession or occupation of a defined geographical territory, but in its fluidity and impermanence....[They do] not require extensive operational bases and command and control headquarters in an existing country to facilitate...planning and execution.”⁹³ This lack of infrastructure gives the non-state actor an incredible advantage, and in fact avoids our strengths--technical ISR and precision weaponry.

⁹¹Secretary of the Army and Chairman of the Joint Chiefs of Staff, *Serving a Nation at War* Serving a Nation at War, 2.

⁹²Meyer and Mazzetti, 3.

⁹³Bruce Hoffman, “Does Our Counter-Terrorism Strategy Match the Threat?” (Testimony, before the House International Relations Committee, September 2005): 3.

Compared to infrastructure, intangible systems are much harder to target, and it is much harder to determine Battle Damage Assessment, or to measure the effectiveness of actions. In many cases there will be a significant delay in receiving feedback from these intangible systems. This time delay introduces the probability that extraneous variables will intervene, which greatly hinders the measurement of effectiveness. Was it the military's actions, or something else that brought the desired or undesired effect.? This overriding characteristic of lacking tangible infrastructure provides the strongest argument against applying the PMESII construct to non-state actors.

Information: An Enabler for the Non-State Actor

The Department of Defense considers information to be “facts, data, or instructions in any medium or form,” and defines an information system as “the entire infrastructure, organization, personnel, and components that collect, process, store, transmit, display, disseminate, and act on information.”⁹⁴ During OIF information systems were routinely targeted for destruction. Cordesman gave explicit details of communications nodes that were destroyed, for example, on 26 March, “ a U.S. Air Force B-2 Spirit bomber targeted and struck a major link in Iraq's national communication network, [in order] to degrade the ability of the Hussein regime to command and control the actions of Iraq's military forces.”⁹⁵ Cordesman provided many other examples of the specific targeting of command and control and critical communication nodes.

Destruction however, was not always the desired effect, as some infrastructure was deemed too important to destroy, and as discussed earlier required protection. As an example of the deliberate protection of the components of Iraq's information system, General Franks initially made the decision not to destroy all television and radio outlets, as they could be especially helpful in the dissemination of information during the transition to stability and reconstruction

⁹⁴ Department of Defense Military Terms and Definitions,”information,” “information systems.”

⁹⁵ Cordesman, “New Patterns in the Iraqi Insurgency: The War for a Civil War in Iraq,” 78.

phase.⁹⁶ But this decision came back to haunt him as the infamous “Baghdad Bob,” Saddam’s information minister, used the television medium extensively to the regime’s favor. Williamson Murray and Major General (R) Robert Scales, in their book *The Iraq War*, state that in “the war’s early days, most Iraqis must have taken the continued, uninterrupted broadcasts of the Baath regime [Baghdad Bob] as clear evidence that Saddam was still in control.”⁹⁷ It was shortly after the realization that ‘Baghdad Bob’s’ information operations were undermining the coalition efforts, that COL Perkins, the 2nd BCT Commander from 3rd Infantry Division, made the key decision to remain in the city of Baghdad, after the second ‘thunder run,’ in order to get back the initiative. Concomitantly the decision was made to destroy the communications tower that was allowing the information minister to spread the disrupting propaganda.⁹⁸ Future wars will likely experience this same dilemma of whether to keep these information outlets functioning, allowing for later friendly use, or to destroy them, and prevent the enemy from using them in the short term.

Iraq was a clear example of how a state typically has an easily identifiable information system, with key nodes that can be targeted, or protected, to facilitate desired effects. The continued targeting of Saddam’s information network during the first few weeks of the campaign destroyed his ability to command and control the Iraqi military. On April 13th, twenty-four days after coalition forces crossed into the country of Iraq, General Franks stated “Saddam Hussein’s regime cannot exercise control over any portion of the country.”⁹⁹ Similar to infrastructure being an essential component of the other PMESII systems, so is information. Information is the medium for communicating across the other systems, and its importance to the other systems argues for labeling it a systemic vulnerability.

⁹⁶ Murray and Scales, 168.

⁹⁷ Murray and Scales, 168.

⁹⁸ Murray and Scales, 168.

⁹⁹ Cordesman, *The Iraq War*, 126.

The only PMESII system that *does* exhibit analytical utility for both the state and non-state actor is information. The non-state actor must be able to move information. Even the enemy recognizes this fact as exhibited by a recent letter from Zarhawi, Osama bin Laden's operations officer, to Zarqawi, the leader of Al Qaeda in Iraq. In the letter Zarhawi stated "more than half of this battle is taking place in the battlefield of the media."¹⁰⁰ Being able to communicate its ideology is critical, as "some would argue that the center of gravity is the radical fundamental ideology."¹⁰¹ But it is also the on-going requirement to communicate plans, orders, tactics, lessons learned, intelligence, recruitment solicitation, funding needs, and training methodologies that is critical in order for the non-state actor to maintain viability. Without the ability to move data and information, the non-state actor loses its networked advantages.

Loretta Napoleoni discusses this network in her recent treatise, *Insurgent Iraq*, and comments that "this network is perceived today as the most powerful instrument for recruiting, funding, and coordinating the activity cells and armed groups."¹⁰² This form of warfare has also been labeled 'netwar', which is a "concept of warfare involving flatter, more linear networks rather than pyramidal hierarchies and command and control systems (no matter how primitive) that have governed traditional insurgent organizations."¹⁰³ These networks are made possible by the information revolution, more specifically the internet. Zarqawi's "presence on the Internet is overwhelming."¹⁰⁴ Zarqawi and his Salafist ideology are both centers of gravity for Al Qaeda in Iraq, and the ability to move information is the fuel for this powerful engine.

In summary, the PMESII construct is a model that works well when the adversary is a state, but with the exception of *information*, does not work well for the typical non-state actor,

¹⁰⁰ Katherine Shrader, "Al-Qaida No.2 U.S. 'Ran' From Vietnam" (*Associated Press*, Oct 12th, 2005).

¹⁰¹ Jack Kem, "Campaign Planning Tools of the Trade" (Leavenworth, KS: Command and General Staff College, March 8th, 2005):16.

¹⁰² Loretta Napoleoni, *Insurgent Iraq: Al Zarqawi and the New Generation* (New York: Seven Stories Press, 2005), 128.

¹⁰³ Hoffman, "Does Our Counter-Terrorism Strategy Match the Threat?", 17.

¹⁰⁴ Napoleoni, *Insurgent Iraq*, 124-126.

such as Zarqawi in Iraq. Yet PMESII continues to grow in acceptance as evidenced by the frequency of its listing in new doctrinal manuals and joint warfighting documents. As stated earlier, the non-state actor does not have political parties and leaders with a political headquarters; he does not have a large military, which wears uniforms, and fights in a doctrinal manner with easily recognizable equipment; he does not have a formal economic system, with established and regulated markets; he does not have social structure with a long history, as he quickly builds and cuts off relationships as needed; he does not have tangible infrastructure that is easily recognizable from satellite imagery and destroyed from miles away by long-range precision weaponry; he *does* have an information system, but it consist more of electrons than physical structures, with the former near impossible to target kinetically.

In the current GWOT, non-state actors are the biggest challenge for our military, as they lack formal, tangible PMESII systems that are easily identified and targeted by kinetic and non-kinetic systems and weaponry. A different construct is required when dealing with this different foe. The non-state actor lacks PMESII systems, yet they do have some universal requirements to remain a viable threat. Identifying these overarching requirements is the key to developing a more relevant construct for the non-state actor.

PMESII's Corollary

As discussed earlier, the PMESII construct appears to be a near perfect fit for identifying the key systems of states. However, it loses utility in the case of non-state actors, such as Zarqawi. If the non-state actor does not have these systems, then what systems do they have, or what systems do they require? Dr. Joe Strange's treatise, *Centers of Gravity and Critical Vulnerabilities*, analyzed in depth Clausewitz' term Centers of Gravity. In this work Dr. Strange proffered several new conceptual terms that will prove very useful in identifying key systems that non-state actors require to remain viable threats. The beginning of this chapter will briefly cover

the key components of Dr. Strange's methodology, which will then be applied to the non-state actor. Applying this methodology will lead to the identification of the key systems that non-state actors typically require. Each of these key systems will be briefly discussed with research provided to justify their identification as key or critical to the non-state actor.

Dr. Stranges' methodology begins with the identification of the enemy's center of gravity, or COG. He defines COG as the "primary sources of moral and physical strength, power and resistance."¹⁰⁵ The physical strength COG applies more to a state, which typically possesses a large military, an economic system, and an industrial base.¹⁰⁶ In the case of the non-state actor, which as discussed earlier does not possess these factors, the moral center of gravity is the more applicable term. Moral COGs, "cause things to happen by virtue of their will, influence, and leadership, [and] must possess such qualities as determination, courage...and power to persuade, inspire, or intimidate."¹⁰⁷ Dr. Jack Kem, an instructor at the Command and General Staff College, recently produced a treatise titled *Campaign Planning: Tools of the Trade*, which also applied Dr. Stranges' methodology, and identified "Middle Eastern terror groups centered on Al Qaeda," as the enemy COG in the GWOT.¹⁰⁸ In the case of the non-state actor, they are themselves the COG, (e.g., Zarqawi is currently the moral COG for Al Qaeda in Iraq, as he provides the leadership, as well as the other qualities included in the moral COG definition).¹⁰⁹

Once the COG is identified, Dr. Strange then looked for critical capabilities (CCs). He defined CCs as the "primary abilities which merits a Center of Gravity to be identified as such in the context of a given scenario, situation or mission."¹¹⁰ He used a national leader as an example COG, and asked, "What does a national leader have to be able to do, to function as a moral or

¹⁰⁵ Stange, 43.

¹⁰⁶ Ibid., 45.

¹⁰⁷ Ibid., 47.

¹⁰⁸ Kem, 49.

¹⁰⁹ Bruce Crumley, "The New Bin Laden," *Time Magazine*, September 5, 2005.

¹¹⁰ Stange, 43.

political center of gravity?”¹¹¹ Dr. Strange answered the question with four imperatives, which in turn are the CC’s: remain alive, stay informed, communicate with government officials, and remain influential.¹¹² Dr. Kem offered his own example of CCs for the enemy COG in the GWOT, which he defined as terror groups centered on Al Qaeda. He defined the terror groups’ CCs as the ability to “create the conditions where extremist groups can topple moderate Middle East regimes through persistent terrorist attacks against U.S. and indigenous targets.”¹¹³ Similar to Dr. Kem’s example, the CCs for Zarqawi, the Al Qaeda leader in Iraq, would simply be the ability to conduct terrorist attacks. This is an imperative for Zarqawi and other terrorist organizations, as it is not likely that these terror groups would negotiate or compromise on their objectives, nor would the United States negotiate or compromise with a terrorist organization, as it is against our national policy.

After identifying CCs, Dr. Strange then moved to identifying the critical requirements (CRs), which he defined as “essential conditions, resources, and means for a CC to be fully operative.”¹¹⁴ Earlier it was postulated that the non-state actor lacks PMESII systems, yet they do have critical requirements that must be met if they are to remain a viable threat. It is this third step of identifying corresponding CRs, of the previously identified CCs, that results in the identification of the key systems required of non-state actors. Applying this methodology to the non-state actor will produce a better construct, with a utility level equivalent to that of the state-centered PMESII construct.

Using the national leader example, Dr. Strange produced the following corresponding CRs for the previously identified CCs.¹¹⁵

¹¹¹ Strange, 48.

¹¹² Strange, 49.

¹¹³ Kem, 49.

¹¹⁴ Strange, 43.

¹¹⁵ Strange, 50-51.

<u>Critical Capability</u>	<u>Corresponding Critical Requirements</u>
Remain alive	Resources and means to be protected from all threats
Stay informed	Resources and means to receive essential intelligence
Communicate	Resources and means to communicate with government officials, military leaders, national elites and “the people”
Remain influential	The leader’s determination to persevere in a “cause” or course of action (whether for positive or negative reasons) (a condition) A reason to maintain confidence or hope, or the realization that there is no viable alternative (either for his country, or for him personally, or both) (a condition) The continued support of the people and other powerful government and military leaders (regardless of whether said support stems from positive or negative motivations) (a condition)

Dr. Kem, again applying Dr. Strange’s methodology to the GWOT enemy, produced the following example CCs and CRs.¹¹⁶

<u>Critical Capability</u>	<u>Corresponding Critical Requirements</u>
Create the conditions where extremist groups can topple moderate Middle East regimes through persistent terrorist attacks against U.S. and indigenous targets, with or without forcing the withdrawal of the U.S. from the Middle East.	Secure bases for training, logistic support, and command. Continuing recruitment of committed followers for the long war Charismatic leadership Financial backing to position and sustain long-term “sleepers” in Western states. Technological know-how to develop and use weapons of mass destruction – to force the eventual ending of the West’s will to win.

¹¹⁶ Kem, 50.

Dr. Kem's CRs could be summed up in order of appearance as secure bases, continued recruitment, charismatic leadership, funding, and the ability to use weapons of mass destruction. Dr. Kem's work in this area identifies two of the non-state actors' key systems, (i.e., recruitment and funding). His first CR of secure bases could fall under support, as the non-state actor will likely rely on the active or passive support of the population for secure bases and supplies. Charismatic leadership, according to Dr. Strange's definition, is more accurately a moral COG, and from that CCs and CRs are subsequently derived. The final CR on Dr. Kem's list, knowing how to develop and use weapons of mass destruction, is arguably a *means* in Zarqawi's case, and not necessarily a CR. Finally, a CR that Dr. Kem does not mention, but is in fact a key enabler for the non-state actor, is the ability to move information.

The discussion above results in the nomination of the following CRs for Zarqawi: funding, recruitment, information, and support. Zarqawi, as the leader of Al Qaeda in Iraq, requires a funding system that continues to supply the money to fund operations. He requires a recruiting system that continues to supply people, as there will be a natural attrition due to suicide bombers and those killed in the execution of terrorist's attacks. He requires an information system that gives him the ability to move information and communicate to a broad, geographically dispersed audience. And finally, he requires a support system that includes both active and passive support from the population. Therefore as a corollary to the state-centered PMESII construct, the following construct, FRIS, or funding, recruitment, information, and support applies equally well for identifying the key systems of non-state actors. Figure 4 below represents the PMESII construct, with the following Figure 5 representing the FRIS construct.

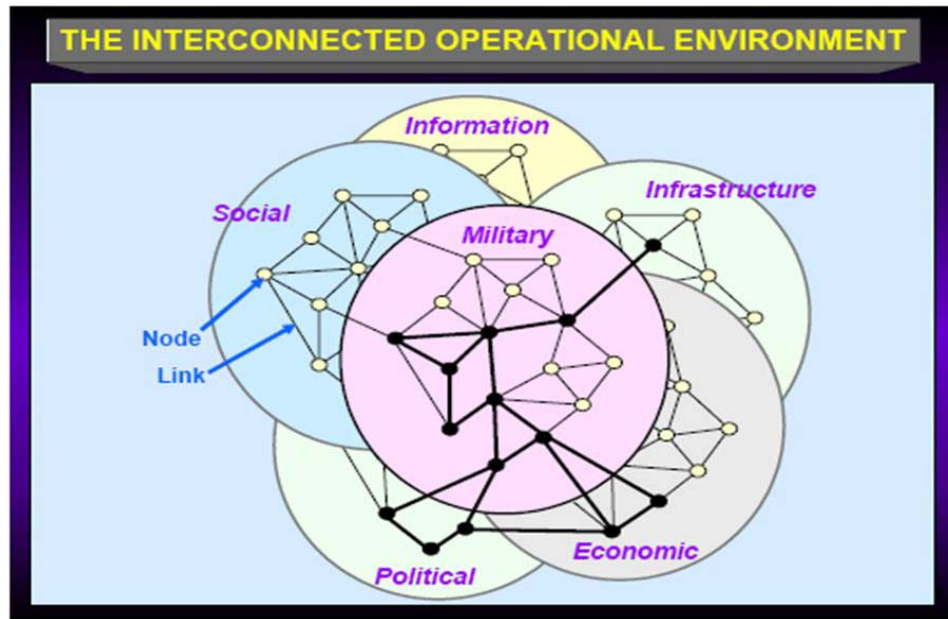


Figure 4: PMESII Construct

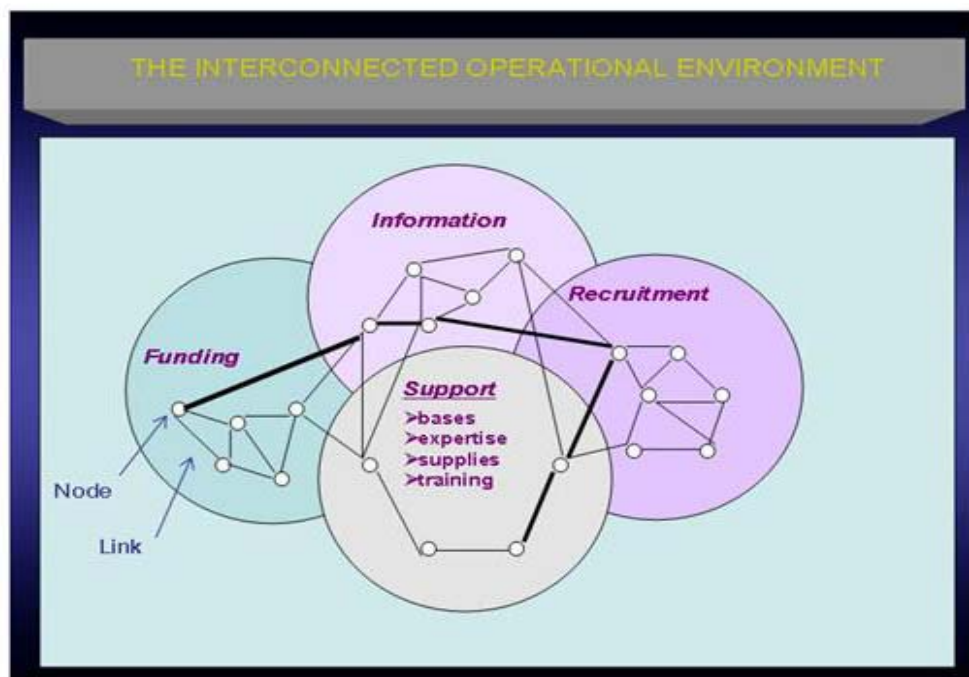


Figure 5: FRIS Construct

Funding: Oxygen for the Non-State Actor

According to former Secretary of State, Colin Powell, “money is the oxygen of terrorism. Without the means to raise and move money around the world, terrorists cannot function.”¹¹⁷ In June 2005, LTG John Vines, commanding general of coalition forces, stated that “insurgent activity among Iraqis was being driven by money, not ideology, and foreign jihadists were using their financial resources to get Iraqis to attack other Iraqis.”¹¹⁸ One of the key components of Al Qaeda’s system is its financiers, and “each perceived success on the ground by Zarqawi’s group [generates] more Jihadists and more money, primarily from wealthy Saudi and other Gulf individuals.”¹¹⁹ But it is not just Zarqawi in Iraq, as “Islamic causes throughout the world are financed by an array of states, groups, fronts, individuals, businesses, banks, and criminal enterprises.”¹²⁰ The criminal enterprises of these Jihadi groups “raise millions of dollars in drug money to support their operations,” with as much as 35% of Al Qaeda’s operating funds reportedly coming from the drug trade.¹²¹ Charities play a significant role in funding as well, as “the counterterrorism research center, the SITE Institute, [recently] revealed [that] at least seven major charities...linked in the past to terrorists...have extensive operations in Iraq—and could be covertly supporting insurgent groups.”¹²²

Funding is a critical component for the non-state actor, as “terrorism has always been an expensive business to run. According to Israeli intelligence, in the 16 months prior to May 2002, the Saudis provided \$135 million to meet Hamas’s expenses.”¹²³ Terrorists operations require money to pay for supplies, to hire locals to fire RPGs at coalition forces, to buy off government

¹¹⁷ Napoleoni, *Terror Incorporated*, 73.

¹¹⁸ Cordesman, “New Patterns in the Iraqi Insurgency,” 5.

¹¹⁹ Dr. Nimrod Raphaeli, “The Sheikh of the Slaughters’: Abu Mus’ab Al-Zarqawi and the Al Qa’ida Connection,” (The Middle East Media Research Institute, Inquiry and Analysis Series-No 231, July 1, 2005): 11.

¹²⁰ Theodore Karasik and Cherly Benard, *Muslim Diasporas and Networks*, 461.

¹²¹ *Ibid.*, 467-468.

¹²² Niles Latham, “Charity Isn’t so Sweet,” (*New York Post*, December 19th 2005).

¹²³ Loretta Napoleoni, *Terror Incorporated: Tracing the Dollars Behind the Terror Networks*, 73.

officials, to pay people to conduct reconnaissance for future operations, to recruit new people to the organization, and to buy communications equipment, such as cellular and satellite phones. The more money the non-state actor is able to acquire or raise, the more operations they are able to plan and conduct. Money is inextricably linked to the other systems of recruitment, information, and support, as each system requires money, and the more money a non-state actor has, the more he can fund these other systems. Finding the links to the other systems and the key funding nodes can help intelligence analysts and planners identify systemic vulnerabilities. If “money is the oxygen of terrorism,” then identifying ways to cut off the non-state actors’ oxygen is an imperative. In testimony to the Department of the Treasury’s Executive Officer for Terrorist Financing and Financial Crimes, the Offices’ Senior Advisor, Jeffrey Ross, Jr. made the following statement.

Money serves both as the fuel for the enterprises of terror, narco-trafficking and organized crime, as well as a significant vulnerability....Stopping the flow of money to terrorists, narco-traffickers and other organized criminals may be one of the very best ways we have of stopping the supported criminal activity altogether. If we and our international partners can follow and stop the money, we will have gone a long way toward destroying the infrastructure supporting these criminals.¹²⁴

Identifying the key nodes of the terrorist funding system is paramount. As Ross states, money is the fuel, and stopping the money flow may in fact be the best way to stop the terrorists.

Recruitment: The Demand for People is High

Recruitment for *jihadi* organizations can be defined as “an activity that intends to enlist militant Islamists in an existing terrorist cell....[and is] the bridge between a personal belief and violent activism.”¹²⁵ The non-state actor requires people in order to build his network and to

¹²⁴ Testimony of Lee Jeffrey Ross, Jr., Senior Advisor, Executive Office for Terrorist Financing and Financial Crimes, before the Department of the Treasury, December 15, 2003, 1

¹²⁵ Michael Taarnby, “Recruitment of Islamists Terrorists in Europe. Trends and Perspectives,” (Centre for Cultural Research, University of Aarhus, 14 January, 2005): 6.

conduct operations. “The main resource of any terrorist organization is its militants.”¹²⁶ Non-state actors and their groups must continually recruit new militants to fill vacancies, which occur more frequently than in typical organizations. Members of terrorists organizations can be killed, captured, or die as suicide bombers. Decentralizing operations, which is a current trend in terrorist organizations, also requires an increase in personnel and recruiting, especially leadership. A recent report by Michael Taarnby, discussing the recruitment of Islamist terrorists in Europe, stated that “recruitment to the Jihad is contingent on a pool of candidates of a sufficient size in order to reconstitute itself, to recover from set-backs, and to forge new links. Without a critical mass to sustain a militant Islamist ideology the Jihad will wither to insignificance.”¹²⁷

Adding complexity to this system is the fact that recruitment in the current terrorist environment appears to not be a top-down driven system, but instead a bottom-up process.¹²⁸ It is many times a self-organizing process, which is fueled by radical ideology found on various websites on the internet—linking it to an information system. Facilitating this process, “the global jihad appears to be structured around a number of specific individuals with numerous personal contacts, who through these contacts have the ability to make things happen.”¹²⁹ Taarnby’s report mentioned earlier, labeled these specific individuals “gatekeepers.” These gatekeepers don’t typically conduct operations themselves, but instead are able to give new recruits access to key individuals inside the network. Identifying these gatekeepers, as well as attempting to understand how the overall recruitment system works, is a critical step in the analytical process

The terrorists have created a tangible system for recruitment, but much like the terrorist organizations themselves, it is not hierarchical. This lack of structure makes targeting harder, yet

¹²⁶ Joao Ricardo Faria and Daniel G. Arce M, “Terror Support and Recruitment, The American Economic Association,” (www.aeaweb.org; annual meeting 2005): 1

¹²⁷ Taarnby, 25.

¹²⁸ Ibid., 23.

¹²⁹ Ibid., 23.

this is another system that must be affected, from the supply and demand side, in order to reduce terrorism. It is important to recognize that the recruitment system is linked to the other systems, as it requires money to pay a recruit and to get them trained, it requires an information system to attract recruits, and it requires a support system to sustain the recruits. And again, due to the hazards of this profession, the terrorist must be able to maintain a continued resupply of people in order to remain viable.

Information: A Key Enabler

If there is one system that enables the others, it is information. One of the key technological inventions that has revolutionized the movement of information is the internet. “The internet has...dramatically affected the global jihad by making possible a new type of relationship between an individual and a virtual community.”¹³⁰ Through the use of the internet, non-state actors can “learn and share information garnered from our web sites..., plan and operate worldwide as never before..., coordinate their actions among dispersed cells while remaining in the shadows..., [and] establish links with other like minded organizations around the globe.”¹³¹ Osama Bin Laden and Zarqawi, as well as leaders of other terrorist’s organizations, regularly use the internet “to release statements that sanction, encourage, and provide guidance for future terrorist operations.”¹³² This ability to communicate globally, in real-time, with little expense, and with little trace, has radically enhanced the capabilities of the non-state actor, and has enabled terrorist organizations to have a global reach. Additionally, it has elevated information to the status of a weapon, that at times acts as a precision weapon, and at other times an area weapon. Even the enemy openly acknowledges the importance of information. As cited

¹³⁰ Marc Sageman, 160.

¹³¹ U.S. President, *National Strategy for Combating Terrorism*, (February 2003), 9-10.

¹³² Christopher M. Blanchard, “Al Qaeda: Statements and Evolving Ideology,” (CRS Report for Congress, June 20, 2005): summary.

earlier, Zarhawi, recently wrote that “more than half of this battle is taking place in the battlefield of the media.”¹³³

Support: Required in Many Forms

According to Steven Metz and Raymond Millen in a report prepared for the Strategic Studies Institute, “insurgents need five types of resources: 1) manpower, 2) funding, 3) equipment/supplies, particularly access to arms, munitions, and explosives; 4) sanctuary (internal or external); and, 5) intelligence.”¹³⁴ Funding and manpower, or recruitment, have already been covered as systems the non-state actor requires. The other areas covered under support systems that Metz and Raymond mentioned are equipment/supplies, sanctuary, and intelligence. The concept of support can cover an even broader area than that discussed by Metz and Millen, but in the end, support is something the non-state actor must have in order to operate.

As Metz and Raymond mentioned, non-state actors require sanctuary or secure bases. Whether it is active support, with locals providing safe havens, or passive support, with locals remaining silent about terrorist occupying their neighborhoods, terrorists need secure bases to plan and operate. Zarqawi has somehow continued to evade coalition forces, many times only narrowly escaping their grip.¹³⁵ Zarqawi’s uncanny ability to avoid capture is only possible through the active or passive support of the population.

Additionally, non-state actors such as Zarqawi require support from people with special expertise. Non-state actors require remote detonation specialists, and people that can turn artillery shells into IEDs, or create suicide vests. They require people to act as money handlers to move money and pay people, and to smuggle people and supplies. As Metz and Raymond stated, the non-state actor requires people to provide intelligence, communications specialist, webpage

¹³³ Shrader, 2.

¹³⁴ Steven Metz and Raymond Millen, “Insurgency and Counterinsurgency in the 21st Century: Reconceptualizing Threat and Response,” (Carlisle Barracks: Strategic Studies Institute, November 2004): 7.

¹³⁵ Meyer and Mazzetti, 3.

makers, and people that can make training videos. Some of this expertise can be taught fairly quickly; some of it takes a highly qualified person with experience.

An on-going requirement for most operations is supplies. These supplies can vary by operation and terrorist group, but typically are food and water, ammunition, artillery shells, wiring for IEDs and suicide vest, material to make homemade mortar tubes, cell phones, weapons for new recruits, and computers with internet access. Supplies and the ability to move them are a critical element for the non-state actor's survival.

Support for training is also a critical element, as militants are routinely killed or captured during operations, or die as suicide bombers, and will need to be replaced and adequately trained. Training requires supplies, such as weapons and ammunition. Training also requires trainers with the requisite expertise, and training locations that are secure. Some training can be performed fairly easily in a confined area, over the internet, or with videos, and other training, such as how to conduct vehicle ambushes, requires more space and a concealed area.

The non-state actor must be able to support his operations with secure bases, special expertise, supplies, and training, and must have the active or passive support of the local population. Without a support system that can meet these needs, the non-state actor will face considerable difficulties in maintaining continuous operations. Some of this support comes from the local population, for example secure bases for operations, and some comes from external sources, such as expertise, which may be hired from other countries, and training which may be conducted in remote locations or other countries.

Applying Dr. Strange's model of identifying the enemy moral COG, in this case Zarqawi himself, and then identifying Zarqawi's CC, which was the ability to conduct terrorists attacks, followed by the identification of his CR's, which were funding, recruitment, information, and support or FRIS, has resulted in a construct similar to PMESII, but with far greater utility for the non-state actor.

Systemic Nature of PMESII and FRIS

The FRIS construct has the same systemic nature as the PMESII construct. In describing characteristics of systems, Ervin Laslo, noted systems scientist, states that “there is interdependence among the systems—as with points along a net, when one is displaced, all others suffer some displacement,” (e.g., when U.S. forces attacked Iraq’s political system by systematically destroying the Ba’athist headquarters, it also significantly affected the military, as the military relied heavily on the political system for command and control).¹³⁶ The same can be said for the targeting of Iraq’s communications infrastructure, as the military was spread from the northern end of Iraq to the southern end and relied upon this infrastructure to receive direction and guidance. PMESII and FRIS systems, as illustrated by the OIF and Zarqawi example, exhibit interdependent characteristics, highlighting the importance of viewing your adversary through a systemic lens, vice a reductionist lens. Using a reductionist lens “eliminates precisely that which is essential about each structure: the organization of the materials into variously functioning wholes.”¹³⁷

According to JWFC Doctrine Pam 4, a System of Systems Analysis (SoSA) “attempts to identify, analyze, and relate the goals and objectives, organization, dependencies and *inter-dependencies*...of the various [PMESII] systems.”¹³⁸ This same statement can be applied to the FRIS construct, as it too possesses interdependencies (see Figure 5). Each of the FRIS systems has links to other systems, (e.g., disrupting a non-state actor’s information system can significantly impact other systems). If the non-state actor is not able to show videos on the internet of successful attacks, then this may significantly affect his ability to convince others to join the organization or to provide more funding.¹³⁹

¹³⁶ Ervin Laslo, *The Systems View of the World: A Holistic Vision for Our Time* (Creskill: Hampton Press, Inc., 1996) 40.

¹³⁷ Ibid., 17.

¹³⁸ Chairman of the Joint Chiefs of Staff, *JWFC Doctrine Pam 4*, 5.

¹³⁹ Brisard, 184.

Additionally the Pam states: “The objective is to determine the significance of each PMESII system and its various elements to the overall adversary system in order to assess the systemic vulnerability of the various elements and how we can exploit them to achieve desired effects.”¹⁴⁰ Again, this same objective applies to the FRIS construct. Determining which system possesses the most significance to the overall system can lead to a systemic vulnerability. As the example above discussed, disrupting or effectively countering the non-state actor’s information system can have a significant effect on the viability of the other systems, which highlights the criticality of this system to the overall non-state actor’s system of systems, (i.e., his ability to carry out his critical capability of conducting terrorist attacks).

Degrading and disrupting the non-state actors’ critical capabilities and requirements is facilitated by viewing the non-state actor through a systemic lens. Just as the PMESII construct is most useful when it is viewed as a system of system, with key nodes and links to other the systems, so is the FRIS construct, which also possesses these same systemic characteristics.

Conclusion

The PMESII construct is still relatively new. Planners and analysts are just now beginning to routinely incorporate the construct into the planning and targeting process. OIF was a clear and recent example of planners identifying and targeting systems similar to those described by the PMESII construct. The well defined infrastructure of Iraq allowed planners to incorporate elements of the construct and facilitated the targeting process, essentially providing a real-world testing ground for the construct. Subsequently, PMESII continues to grow in popularity and use.

However, unlike the PMESII construct, planners and analysts are not currently aware of the FRIS construct, but it too has similar potential when applied to non-state actors. Currently there are on-going operations against non-state actors that would facilitate the testing of the FRIS construct and validate its efficacy. Discourse and debate about the utility of this construct needs

¹⁴⁰ Chairman of the Joint Chiefs of Staff, *JWFC Doctrine Pam 4*, 5.

to occur in order to reveal its full potential. What follows are specific recommendations on what should occur next in the validation process of the FRIS construct.

Recommendations

The first recommendation is to test this construct against a wider and more diverse range of non-state actors to determine if there are other systems that should be included. The second recommendation is to research and identify typical subsystems, or key nodes and links, within the different funding, recruitment, information, and support systems, which would facilitate the targeting process. Another recommendation is to explore effective ways to kinetically and non-kinetically attack the different FRIS systems. Also, establishing methods or techniques for determining systemic vulnerabilities could increase the utility of this construct. The final recommendation is to integrate the FRIS construct into military doctrine.

Using Dr. Strange's methodology to identify the CRs of a non-state actor such as Zarqawi resulted in the FRIS construct, but it is possible that this construct may need to include other systems. A recommendation is to test this construct against a broader range and more diverse selection of rogue non-state actors, both past and present. The principal threat in the GWOT comes from rogue non-state actors, which provides a real-world opportunity to apply the construct. Testing the construct in this manner will serve to either validate the construct in its present form, with the four systems, or through the identification of other relevant systems, widen its applicability.

Identifying subsystems within each of the funding, recruitment, information, and support systems would provide analysts and planners with an increased amount of possible targets. Some of these subsystems will qualify as key nodes or links within the primary FRIS systems. As discussed earlier, targeting these nodes and links kinetically and non-kinetically can facilitate friendly desired effects. Moreover, identifying subsystems allows planners and operators the opportunity to attack the adversary's system at multiple points and on different functional levels.

Exploring tactics, techniques, and procedures for attacking FRIS systems kinetically and non-kinetically could also increase the utility of this construct. As highlighted earlier, some of these systems lack the typical infrastructure that is present in the PMESII systems, which complicates targeting. Finding creative and effective ways of targeting the different FRIS systems, especially non-kinetically, would provide analysts and planners increased options for accomplishing desired effects.

Identifying and successfully targeting systemic vulnerabilities, as mentioned earlier, is a key task for analysts and planners. Understanding how to identify and target systemic vulnerabilities provides planners a marked advantage. In the best case scenario, attacking a systemic vulnerability could potentially collapse the non-state actor's entire system. Currently there are no prescribed techniques or established methodologies for identifying systemic vulnerabilities. Developing such techniques or methodologies would greatly aid the targeting process, and potentially save lives when operations are cut short due to the hasty collapse of the adversary's system.

The ultimate aim is to integrate the FRIS construct into our doctrine. In light of the current GWOT, and considering that our future adversaries will not always be states, it is important to continue research with the goal of validating the FRIS construct. Upon validation, JWFC Doctrine PAM 4 and 7, as well as Joint Publication 5-0, should include the FRIS concept and Figure 6, shown on the next page, as a corollary to the PMESII construct, making the distinction that PMESII is for states and FRIS is for non-state actors. Including both the FRIS and PMESII constructs in our doctrine increases the number of tools planners and analyst can use to identify and target enemy systems, and addresses the current vacuum that exists with the state-centered PMESII construct.

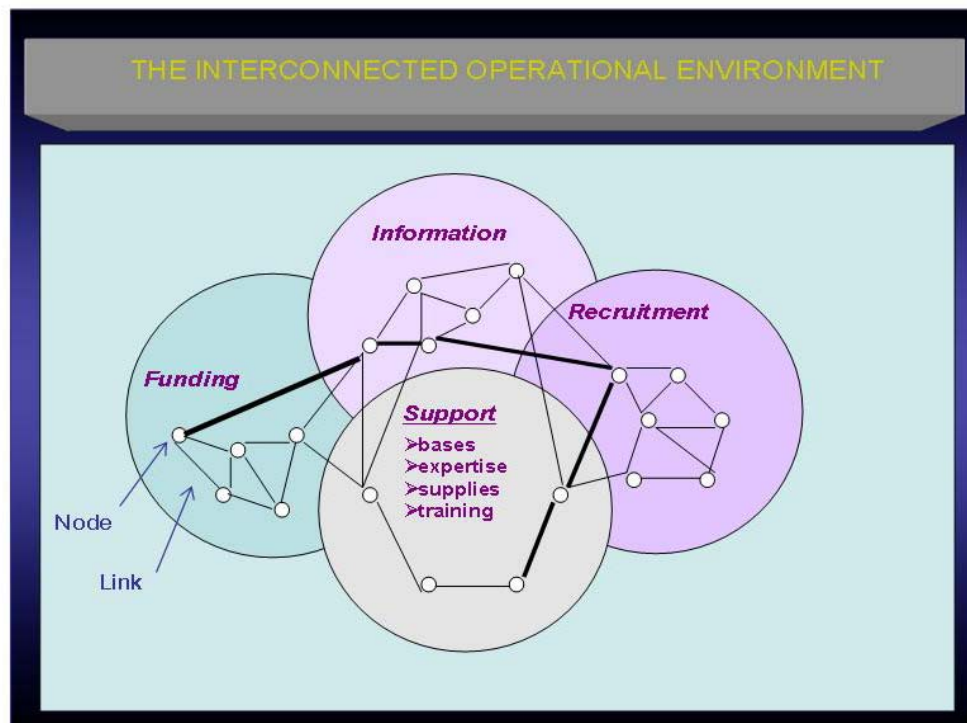


Figure 6: FRIS Construct

Final Remarks

The PMESII construct is a model that works well when the adversary is a state, as most states possess political parties, large militaries, structured economies, established societies, tangible infrastructure, and formal information outlets. But with the exception of information, the PMESII construct does not work well for the typical non-state actor. As depicted earlier, Zargawi does not have political party members that routinely gather at a political headquarters. He does not have a large military which wears standard uniforms and operates easily recognizable military equipment. He does not have a formal economic system, with established and regulated markets. He does not have a homogenous social structure, as he routinely makes and breaks ties when it is to his advantage. He does not have tangible infrastructure that is easily recognizable from satellite imagery. He does however possess an information system, but it consist more of

electrons than physical structures. States and non-state actors possess significantly different systems, and thus require different constructs.

A more relevant construct for non-state actors was created through the application of Dr. Strange's critical capabilities and critical requirements methodology. The critical requirements, those essential conditions, resources, and means a non-state requires to operate, were identified as funding, recruitment, information, and support (FRIS) systems. Funding supplies the fuel to continue operations. Recruitment supplies the people to replace those lost through attrition. Information enables the other systems, by passing orders, tactics, lessons learned, and propaganda. And support is required to maintain the other systems and the people of the organization.

As our doctrine continues to move towards embracing aspects of systems theory, concomitantly the PMESII construct continues to grow in importance. In some aspects of our doctrine the term permeates. EBA, ONA, and the systems perspective of SoSA are concepts discussed in JWFC Doctrine Pam 4 and 7, and the current draft of Joint Publication 5-0. All of these documents include the PMESII construct as an integral part of their concepts. Analyzing the different PMESII systems to determine the significance of each system to the system as a whole, as well as the interdependence of the various systems will assist planners in identifying key nodes that can bring about desired system effects. PMESII diagram shown in Figure 4, illustrates this concept; this diagram exists in all of the doctrinal references mentioned above. Yet as this monograph has shown, the PMESII construct is well suited when the adversary is a state, but for non-state actors analyzing the funding, recruitment, information and support, or FRIS systems, provides a more relevant construct. The same principles of "viewing the adversary as an interrelated system of PMESII [or in this case FRIS] systems" applies, but as illustrated earlier, the systems of a non-state actor are much different than that of a state.¹⁴¹

¹⁴¹ Ibid., 5.

Both the PMESII and FRIS constructs are only starting points, and it is not improbable that adversarial systems will be uncovered that do not fit neatly in either one of these typologies. But in light of our current operational environment, where a large percentage of finite resources are directed towards locating, defeating and destroying non-state actors, it is imperative to include a more useful construct. That construct is FRIS, and analyzing and understanding the non-state actors' FRIS systems will help planners and operators identify key targetable nodes. Applying kinetic or non-kinetic energy to a non-state actor's key nodes can potentially render the non-state actor's system as a whole inoperable—a worthy goal in the GWOT.

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