

Cognitive Exploitation: A Solution for Defeating Violent Non-State Actors in the Future Operating Environment

A Monograph

by

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Violent Non-State Actors, driven by nationalist, ethnic, and/or religious ideologies, will continue to threaten US national security interests in the future operating environment. Due to the proliferation of technology, VNSAs will acquire advanced warfighting capabilities and reduce the US Army's ability to generate overmatch. Thus, friendly forces must look towards non-materiel solutions as means of creating positions of relative advantage. VNSA ideology offers friendly forces the opportunity to create opportunities for exploitation on the battlefield. Understanding a VNSA's ideology allows friendly forces to generate ambiguity-decreasing deception, whereby a VNSA's preconceptions about themselves and the OE cause the VNSA to place itself in positions of relative disadvantage. This monograph will explore the relationship between VNSA ideology, social psychology, and current military deception doctrine to asses VNSAs vulnerability to "cognitive exploitation," and recommends friendly forces first seek to understand how a VNSA thinks, rather than merely analyzing capabilities, when developing tactical solutions.

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Abstract

Cognitive Exploitation: A Solution for Defeating Violent Non-State Actors in the Future Operating Environment, by MAJ Scott Miller Krasko US Army, 48 pages.

Violent Non-State actors, driven by nationalist, ethnic, and/or religious ideologies, will continue to threaten US national security interests in the future operating environment. Due to the proliferation of technology, VNSAs will acquire advanced warfighting capabilities and reduce the US Army's ability to generate overmatch. Thus, friendly forces must look towards non-material solutions as means of creating positions of relative advantage.

A VNSA's ideology offer friendly forces the opportunity to create opportunities for exploitation on the battlefield. Understanding a VNSA's ideology allows friendly forces to generate ambiguity-decreasing deception, whereby a VNSA's preconceptions about themselves and the OE cause the VNSA to place itself in positions of relative disadvantage. This monograph will explore the relationship between VNSAs ideologies, social psychology, and current military deception doctrine to asses VNSA's vulnerability to "cognitive exploitation," and recommends friendly forces first seek to understand how a VNSA thinks, rather than merely analyzing capabilities, when developing tactical solutions.

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Acronyms

AID	Ambiguity Increasing Deception
ADD	Ambiguity Decreasing Deception
ATGM	Anti-Tank Guided Missile
COC	Chain-of-Command
G2	Intelligence Staff Function
GWOT	Global War on Terrorism
IDF	Israeli Defense Forces
IC	Information Collection
ISIS	Islamic State in Iraq and Syria
MANPAD	Man-Portable Air Defense
MILDEC	Military Deception
OE	Operating Environment
TRADOC	US Army Training and Doctrine Command
US	United States
UAS	Unmanned Aircraft System
VNSA	Violent Non-State Actor

Introduction

Never attempt to win by force what can be won by deception.

—Niccolo Machiavelli, *The Prince*

Events over the past decade suggest the US Army will face future threats with greater potential to achieve overmatch. These threats will come in many forms. Near-peer threats in the form of nation-states are making investments in materiel solutions that will increase their warfighting abilities across tactical echelons. For example, Russia's development of the T-14 Armata tank represents a materiel solution that shrinks the capability gap between Russian and American mechanized forces.¹ Iran continues to develop its ballistic missile program to place US interests at risk in the Persian Gulf. The rogue regime in North Korea continues its development of nuclear weapon and ballistic missile programs that, once operational, will change the calculus of US military planning. These conventional advancements could tempt the United States to focus on the threats of adversarial nation-states. However, it is important the US Army does not lose sight of the advances of a different threat: the violent non-state actor (VNSA). Recent examples from the US fight against the Islamic State in Iraq and Syria (ISIS) provide evidence of how VNSAs are shrinking the warfighting capability gap with US forces.

The US Army had a monopoly on the use of unmanned aircraft systems (UAS) when the Global War on Terrorism (GWOT) began in 2001. However, a decade and a half later, the hunters have become the hunted. In June of 2017, the Washington Post reported that ISIS used UAS to conduct lethal strikes against US and coalition forces operating in support of Operation

¹ Dave Majumdar, "Russia's Armata T-14 Tank vs. America's M-1 Abrams: Who Wins?," *The National Interest*, September 11, 2015, accessed September 28, 2017, <http://nationalinterest.org/blog/the-buzz/russias-armata-t-14-tank-vs-americas-m-1-abrams-who-wins-13825>.

Inherent Resolve.² ISIS's employment of UAS created new challenges for US forces. In addition to fighting on the ground, US forces must also defend the tactical airspace, a task that would have been unforeseen in 2001. In addition to taking on the additional task of protecting themselves from ISIS air attacks, US forces also have to consider ISIS attacking aviation assets from the ground. In early 2016, Sky News obtained video of an ISIS "Research & Development" facility in Raqqa, Syria. The video shows ISIS members attempting to repair nonoperational surface-to-air missiles.³ The discovery of this video represents proof of ISIS's desire and ability to improve their combined arms capabilities and achieve materiel parity with US forces.

After examining the conflicts of the decade prior to their inception, ISIS's improvements should not come as a surprise. The 2006 Second Lebanon War provides an excellent example for how a VNSA, Hezbollah, armed with advanced warfighting capabilities, created tactical and operational dilemmas for the Israeli Defense Forces (IDF), a nation-state with conventional military forces. In response to the IDF's improved abilities to operate in low-intensity conflict, Hezbollah armed itself with advanced materiel capabilities and organized itself into combined-arms teams. Although relatively small, these teams were incredibly lethal, as they armed themselves with anti-tank guided missiles (ATGM), rocket propelled grenades, indirect fire weapons systems, and man-portable air-defense systems (MANPAD).⁴ These systems provided Hezbollah the ability to engage the IDF in the close fight and compelled the IDF to use

² Thomas Gibbons-Neff, "ISIS drones are attacking U.S. troops and disrupting airstrikes in Raqqa, officials say," *The Washington Post*, June 14, 2017, accessed September 28, 2017, https://www.washingtonpost.com/news/checkpoint/wp/2017/06/14/isis-drones-are-attacking-u-s-troops-and-disrupting-airstrikes-in-raqqa-officials-say/?utm_term=.f36bdbc5a950.

³ Martin Chulov, "Inside the Isis terrorism workshops: video shows Raqqa research centre," *The Guardian*, January 5, 2016, accessed September 28, 2017, <https://www.theguardian.com/world/2016/jan/06/inside-isis-terrorism-workshops-video-shows-raqqa-research-centre>.

⁴ David E. Johnson, *Military Capabilities for Hybrid Wars: Insights from the Israel Defense Forces in Lebanon and Gaza* (Santa Monica, CA: RAND Corporation, 2010), 3, accessed September 28, 2017, https://www.rand.org/pubs/occasional_papers/OP285.html.

joint/combined-arms capabilities, something for which they were not well suited for in 2006.⁵ It is likely that VNSAs with the goal of harming the United States will replicate Hezbollah's model of integrating advanced materiel capabilities with joint/combined-arms maneuver.

The US military has recognized the improved capabilities of VNSAs, and accounted for them in multiple service and Joint future operating concepts. *Joint Operating Environment 2035* forecasts a future environment where advances in technology continue to proliferate.⁶ Easy access to advanced warfighting technologies will allow VNSAs to employ capabilities equal to, or more effective, than US forces. In these instances, VNSAs will have the ability to link multiple lethal operations into sustained campaigns that could threaten vital US security interests.⁷ *Joint Concept 2020* describes a similar future environment. It states "The diffusion of advanced technology in the global economy means that middleweight militaries and non-state actors can now muster weaponry once available only to superpowers."⁸ All services within the US Department of Defense will confront the issue of rapidly increasing materiel parity between the US military and the anticipated threats posed by VNSAs. Given this, the US Army will need to develop warfighting solutions to achieve overmatch in an increasingly competitive environment.

The US Army acknowledges this trend, and its vision of the future environment nests with the vision provided by the Joint Force. The G2 (Intelligence) for US Army Training and Doctrine Command (TRADOC) anticipates that "no one nation will have an overwhelming

⁵ Johnson, *Military Capabilities for Hybrid Wars*, 4.

⁶ US Department of Defense, Joint Staff, *Joint Operating Environment 2035: The Joint Force in a Contested and Disordered World* (Washington DC: Government Printing Office, 2016), 1, accessed September 28, 2017, http://www.dtic.mil/doctrine/concepts/joe/joe_2035_july16.pdf.

⁷ *Ibid.*, 24.

⁸ US Department of Defense, Joint Staff, *Capstone Concept for Joint Operations: Joint Force 2020* (Washington, DC: Government Printing Office, 2012), 2, accessed September 15, 2017, http://www.dtic.mil/doctrine/concepts/ccjo_jointforce2020.pdf.

technological advantage over its rivals” in the years ahead.⁹ In addition to recognizing the challenge of proliferating warfighting technologies, the TRADOC G2 also believes that VNSAs will continue to represent a significant threat for US forces. VNSAs, described as “Radical Ideologues and Transnational Criminal Organizations,” represent the “1” in the “4+1” of potential adversaries the US Army could encounter in the future.¹⁰ The TRADOC G2 anticipates VNSAs will acquire advanced systems such as ATGMs, MANPADs, and missile technologies. These systems would provide them a “decisive edge” in future conflict.¹¹ If this scenario comes to fruition, VNSAs would possess the ability to shape deep areas and create improved conditions for success in close fights with US forces. This could create significant challenges for US forces, which for the last decade and a half, achieved overmatch through the application of superior warfighting capabilities.

Recent observations of ISIS and the 2006 Second Lebanon War, combined with assessments from the Joint Force and TRADOC G2 indicate two characteristics of the future operating environment. First, VNSAs will continue to pose a threat to US security interests. Second, because of the continued proliferation of technology, VNSAs will fight with more advanced and lethal equipment than what US forces experienced during the GWOT campaigns in Iraq and Afghanistan. Consequently, if the US Army is going to generate the overmatch required to win in combat, it will need to develop solutions beyond materiel capabilities.

The 2014 US Army Operating Concept’s definition of overmatch provides some recommendations for how future forces should approach the upcoming era of materiel parity.

⁹ US Department of the Army, Training and Doctrine Command G2, *The Operational Environment and the Changing Character of Future Warfare* (Washington, DC: Government Printing Office, 2017), 15, accessed September 15, 2017, http://www.tradoc.army.mil/watch/OperationalEnvironment_ChangingCharacter_FutureWarfare.pdf.

¹⁰ Ibid., 10.

¹¹ Ibid., 11.

TRADOC Pam 525-3-1's "Special Terms" section describes overmatch as "the application of capabilities or *unique tactics* (emphasis added) either directly or indirectly, with the intent to prevent or mitigate opposing forces from using their current or projected equipment or tactics."¹² In other words, the arrangement of activities, rather than simply relying on capabilities, can create overmatch. Thus, if the future threat environment will consist of VNSAs with capabilities on par with that of US forces, the US Army must look to alter its tactics to create overmatch.¹³

In the future environment, the unrelenting creation of positions of relative advantage signifies the achievement of overmatch. Army Doctrinal Reference Publication 3-0, *Operations*, defines a position of relative advantage as a "location or the establishment of a favorable condition within the area of operations that provides the commander with temporary freedom of action to enhance combat power over an enemy or influence the enemy to accept risk and move to a position of disadvantage."¹⁴ All positions of relative advantage are contextual. Thus, determining positions of relative advantage can only occur if friendly forces understand the context in which they are operating. This will require a more holistic understanding of the enemy, an understanding that goes deeper than merely what it can or cannot do on the battlefield.

Army forces that understand their enemy, its goals, its intentions, *and most importantly its biases and strategic paradigms*, will have the greatest opportunities to arrange activities to place themselves in positions of relative advantage. Specifically, exploiting the enemy's biases creates conditions for effective Military Deception (MILDEC). MILDEC, is a low-cost, non-materiel solution for army forces in the era of increasing materiel parity. Enabled by high degrees

¹² US Department of the Army, Training and Doctrine Command Pamphlet (TRADOC Pam) 525-3-1, *The Army Operating Concept* (Washington, DC: Government Printing Office, 2014), 47.

¹³ US Department of the Army, Army Doctrinal Reference Publication (ADRP) 1-02, *Operational Terms and Graphics* (Washington, DC: Government Printing Office, 2016), 1-93.

¹⁴ US Department of the Army, Army Doctrinal Reference Publication (ADRP) 3-0, *Operations* (Washington, DC: Government Printing Office, 2016), 4-7.

of situational understanding, ambiguity-decreasing deception (ADD) creates conditions where enemy forces, due to their ideological beliefs, place themselves in positions of disadvantage and create favorable conditions for friendly forces.

Studies of prior military operations indicate that deception is highly effective when it exploits the enemy's preconceived beliefs.¹⁵ Military theorists from both eastern and western schools of thought incorporated MILDEC in their writings. One of war's earliest theorists, Sun Tzu, believed that deception was the basis of all war.¹⁶ He believed military forces must continually mislead their adversaries to create tactical opportunities. Napoleon Bonaparte also emphasized the cognitive dimensions of war. His desire to understand the enemy's perspective enabled him to anticipate and exploit enemy actions.¹⁷ Friendly forces should learn from the warfighting lessons of Napoleon and look to the cognitive space as a means to create advantages in war.

Cognitive exploitation involves the manipulation of how an enemy interprets physical actions in the OE, assesses their meanings, and takes actions in pursuit of its ideological goals. This monograph will explore the relationship between a VNSA's ideology, modern understandings of social psychology, and the current Joint doctrine for military deception. In doing so, it will first describe the characteristics of VNSAs the US military will confront in the future operating environment. It will evaluate the role of ideology within a VNSA, and assess the potential for predicting VNSAs goals by understanding the VNSA's ideology. Understanding a VNSA's ideology will allow friendly forces to tempt the VNSA to behave in manners consistent

¹⁵ Richard J. Heuer Jr., "Strategic Deception and Counter Deception: A Cognitive Process Approach," *International Studies Quarterly* 25, no. 2 (June 1981): 294, accessed February 7, 2018, <http://www.jstor.org/stable/2600359315>.

¹⁶ Sun Tzu, *Sun Tzu On the Art of War: The Oldest Military Treatise In The World*, trans. Lionel Giles (Leicester, England: Allandale Online Publishing, 2000), 3, accessed February 12, 2018, https://sites.ualberta.ca/~enoch/Readings/The_Art_Of_War.pdf.

¹⁷ Martin Blumenson and James L. Stokesbury, *Masters of the Art of Command* (Boston: Houghton Mifflin, 1975), 3.

with its ideology and exploitable by friendly forces. Second, this monograph will use current understandings of social psychology to evaluate how ideologies are developed and maintained. In addition, this monograph will explore how ideologies influence future behavior, and determine if they are reliable sources of information during the planning and execution of military operations. Finally, this monograph will explore the relationship between actions in the physical and cognitive spaces by evaluating Joint MILDEC doctrine and its potential to induce exploitable attitudes and behaviors. Joint MILDEC doctrine is the tool friendly forces should use to create opportunities for exploitation of VNSAs in the future OE. Understanding Joint MILDEC methodology, and how it can be tailored to manipulate a VNSAs ideology, will help friendly forces create positions of relative advantage.

The future OE will present US forces with many challenges. Upon first glance, the challenge of defeating VNSAs with materiel capabilities on par with US forces may seem daunting. However, as one looks more closely at the characteristics of this threat, vulnerabilities begin to emerge. Cognitive exploitation offers friendly forces an additional, non-materiel-based option to defeat the highly capable VNSAs expected in the future. A VNSA's ideology, if properly manipulated by friendly forces, may be turned from a strength to a weakness. The following section will describe the characteristics of future VNSAs, and the role of ideology within these VNSAs.

Part One: The VNSA

This section will discuss three topics concerning VNSAs. First, it will describe the characteristics of the VNSA discussed in the introduction. This will result in a “definition” of VNSA that will be used throughout the remainder of the monograph to ensure readers have a common understanding of the characteristics of the future threat. Second, it will provide an overview of the different types of VNSAs to contrast their different motivations and ideologies. Lastly, this section explains the impact of ideology on a VNSA’s behavior, and highlights its potential for manipulation by friendly forces. Understanding the linkage between a VNSA’s ideology and its behavior allows friendly forces the opportunity to exploit VNSAs in the physical space.

Characteristics of VNSAs in the Future OE

It is necessary to define the phenomenon under examination before evaluating a VNSA’s susceptibility to ADD. The VNSA discussed in this monograph represents a hybrid of ideas pertaining to international relations, warfare, and military capabilities. The first and most obvious characteristic of the VNSA under examination is that it is not a nation-state. It does not possess physical territory or an internationally recognized government.¹⁸ It cannot exert full sovereignty over a group of people within a defined area.¹⁹ Rather, VNSAs are groups of like-minded people, homogenized through their belief in abstract ideas.²⁰ They use violence to advance their beliefs with the ultimate goal of creating a new environment sympathetic to their ideas.

¹⁸ Robert “Robin” H. Dorff, “Some Basic Concepts and Approaches in the Study of International Relations,” in *U.S. Army War College Guide to National Security Policy and Strategy*, ed. J. Boone Bartholomees, Jr. (Carlisle, PA: Strategic Studies Institute, 2004), 3.

¹⁹ Ibid.

²⁰ J. Boone Bartholomees Jr., “A Survey of Strategic Thought,” in *U.S. Army War College Guide to National Security Policy and Strategy*, ed. J. Boone Bartholomees Jr. (Carlisle, PA: Strategic Studies Institute, 2004), 90.

The VNSAs discussed in this monograph employ their means for warfighting in the same manner as a nation-state. Due to the proliferation of technology and ability to obtain advanced warfighting capabilities, they employ what Joint Publication 1, *Doctrine for the Armed Forces of the United States* describes as “traditional” forms of warfare typically associated with nation-states.²¹ These VNSAs will use their materiel parity with friendly forces to gain positions of relative advantage through the employment of defeat mechanisms. They are “threat” focused and attempt to defeat friendly forces, destroy friendly capabilities, and/or control territory.²² These characteristics make the VNSA in this monograph different from the traditional VNSA described in doctrine. Joint doctrine commonly associates VNSAs with irregular warfare. Consistent with this paradigm, VNSAs use terrorism and information operations to influence populations, and to create their desired future state.²³ This unlikely in the future OE.

In addition to their non-nation-state status, and ability to engage in traditional forms of warfare, future VNSAs will employ what the US Army considers “regular” capabilities. Their materiel parity with friendly forces will allow them to employ capabilities typically associated with the fielded armies of nation-states. These VNSAs will not counter friendly materiel advantages through asymmetric approaches. Rather, they will use commonly recognized “conventional” military capabilities.²⁴ Like conventional forces, these VNSAs will synchronize fires, maneuver, and other warfighting functions to dominate tactical engagements.

For the purposes of this monograph, the definition of a VNSA is composed of three characteristics. First, it is not a nation-state. Rather, it is a group of like-minded people, without

²¹ US Department of Defense, Joint Staff, Joint Publication (JP) 1, *Doctrine for the Armed Forces of the United States* (Washington, DC: Government Printing Office, 2017), I-5.

²² Ibid.

²³ Ibid., I-6.

²⁴ US Department of the Army, Army Techniques Publication (ATP) 2-01.3, *Intelligence Preparation of the Battlefield* (Washington, DC: Government Printing Office, 2014), 5-2.

sovereignty, which uses collective violence to advance its interests.²⁵ Second, it engages in traditional forms of warfare associated with nation-states. Third, given its materiel parity with friendly forces, the VNSA employs regular warfighting capabilities rather than seeking asymmetric advantages. In other words, it fights like a nation-state, but has the organizational structure of a non-state actor.

Types of VNSAs: Insights into Ideology

VNSAs differ based on their ideology. The most common ideologies center on nationalism, ethnicity, and/or religious beliefs.²⁶ Distinguishing between different types of VNSAs helps friendly forces ascertain their aims and methods. Knowing a VNSA's aims and methods gives friendly forces a major advantage as they try to induce certain behaviors. This section will highlight the major differences and similarities between different types of VNSAs.

Nationalist VNSAs come in different forms. The most prevalent is a nationalist-secessionist. These VNSAs use violence in the pursuit of sovereignty.²⁷ They recognize the post-Westphalian international system of states and want to exist within that construct. Nationalist VNSAs may take on a liberal form, where they seek to remake their existing state rather than creating a new state. The French Revolution is an example of a liberal nationalist movement.²⁸ In the French example, groups of people with a common view of the future used violence to change the status quo. Nationalists-secessionist VNSAs typically homogenize based on common language, religion, and/or ethnicity.²⁹ However, despite similar religious/ethnic heritage, these

²⁵ Troy S. Thomas, Stephen D. Kiser, and William D. Casebeer, *Warlords Rising: Confronting Violent Non-State Actors* (Oxford: Lexington Books, 2005), 9.

²⁶ Peter G. Thompson, *Armed Groups: The 21st Century Threat* (New York: Rowman & Littlefield, 2014), 125.

²⁷ Peter Hough, *Understanding Global Security*, 3rd ed. (New York: Routledge, 2013), 66.

²⁸ *Ibid.*, 67.

²⁹ Hough, *Understanding Global Security*, 66.

characteristics are not the driving force behind their ideology. The major takeaway from nationalist VNSAs is that they want to change the status quo, but not change the overarching global system.

Ethnic VNSAs have a common cultural identity and generally form based on a perceived threat to their communal existence.³⁰ Typically, an outside group with a different cultural identity uses violence to move an ethnic group out of a disputed territory. In response, ethnic VNSAs use violence to create buffer spaces and protect their people from the oppressor.³¹ The demographic limitations of ethnicity make the retention of territory a primary goal of an ethnic VNSA. Unlike nationalist or religious groups, a person's ethnic identity relies on factors outside of a person's control. People cannot control the backgrounds of their parents or their place of birth. Thus, they are compelled to control territory to ensure their survival.

Religious VNSAs have rich histories and use religious teachings for motivation. Religious identities have existed longer than ethnic and nationalistic identities.³² Accordingly, the level of commitment to the ideology of religious VNSAs tends to be very strong. Religious VNSAs also draw on divine power as a source of legitimacy.³³ A religious VNSA's orientation towards a non-earthly deity makes earthly political negotiations problematic.³⁴ Unlike nationalist or ethnic VNSAs, the ideology espoused by religious VNSAs transcends geography. A religious VNSA's ability to recruit from across the globe gives them major advantages. For example, the

³⁰ T.X. Hammes, "Armed Groups: Changing the Rules," in *Armed Groups: Studies in National Security, Counterterrorism, and Counterinsurgency*, ed. Jeffrey H. Norwitz (Newport: US Naval War College, 2008), 451.

³¹ Ibid.

³² Hough, *Understanding Global Security*, 119.

³³ Delphine Alles, "Ethnic and Religious Violence," in *Routledge Handbook of Security Studies*, eds. Myriam Dunn Cavelty and Thierry Balzacq, 2nd ed. (New York: Routledge, Inc., 2017), 195.

³⁴ Ibid.

global appeal of their ideology gives them a unique opportunity to expand their followership and grow in size.³⁵ It is important to keep in mind that although a religious VNSA may appear to be homogenous, based on the ethnic identity of the majority of its members, its religious ideology does not discriminate based on where a person was born or where they are physically located.

VNSAs differ based on their nationalist, ethnic, and/or religious ideologies. However, the important factor is not that VNSAs have different ideologies, but *the fact that they all have ideologies*. They all are social groups with goals.³⁶ They all challenge the status quo and want to create something novel.³⁷ Understanding their goals provides friendly forces the opportunity to determine VNSA's objectives. Their desire for change offers insights towards their world-view. Understanding a group's ideology allows friendly forces to turn a VNSA's ideology from a strength to a vulnerability. A VNSA's ideology explains what the group is trying to achieve, why they want to achieve specific goals, and how they plan to transform their OEs.

Understanding the VNSA's Vision for the Future

VNSAs provide friendly forces an abundance of useful information. In most cases, VNSAs will tell the outside world their goals, the actions they will take to achieve their goals, and why they are trying to achieve their goals. In military parlance, VNSAs have objectives, operational approaches, and strategies. It is incumbent upon the US military to understand VNSAs communications. Understanding a VNSA's culture and identity enables friendly forces to understand its ideology. Appreciating a VNSA's ideology allows friendly forces to understand a VNSA's motivation for action, higher purpose, and the methods it will employ to transform the OE.

³⁵ Alles, "Ethnic and Religious Violence," 195.

³⁶ Richard L. Daft, *Organization Theory and Design*, 8th ed. (Mason, OH: South-Western, 2004), 11.

³⁷ Robert J. Bunker, "Defeating Violent Nonstate Actors," *Parameters* 43, no.4 (Winter 2013-2014): 59.

A VNSA's ideology is a product of its shared culture and represents a "pattern of attitudes."³⁸ Understanding a VNSA's culture provides friendly forces the opportunity to empathize with their views on armed conflict.³⁹ However, before friendly forces can understand a VNSA's culture, they have to evaluate the VNSA's epistemology. Friendly forces must answer the question: how does a VNSA know what it knows? The VNSA's narrative is useful in determining how culture influences their ideology. Most people develop knowledge by listening to the stories of other members in their social group.⁴⁰ They use stories from the past to develop judgments for how they should act in the future. People also learn about their cultural identities by observing other members of their social group.⁴¹ Listening to the VNSA's narrative, and observing how VNSA members interact with one another, will help friendly forces develop the same shared knowledge present within a VNSA. This shared knowledge will allow friendly forces to understand a VNSA's beliefs, objectives, and approaches towards armed conflict.

A VNSA's ideology is a systematic expression of its collective beliefs.⁴² These beliefs reveal a number of things. First, they provide insight towards how the VNSA understands reality.⁴³ VNSAs, regardless of type, all see the world from a distinct point of view. Their

³⁸ Michael Billig, "Political ideology: Social Psychological Aspects," in *The social dimension*, vol. 2, ed. by Henri Tajfel (Cambridge, England: Cambridge University Press, 1984), 446.

³⁹ Andrea J. Dew, "The Erosion of Constraints in Armed-Groups Warfare: Bloody Tactics and Vulnerable Targets," in *Armed Groups: Studies in National Security, Counterterrorism, and Counterinsurgency*, ed. Jeffrey H. Norwitz (Newport: US Naval War College, 2008), 258.

⁴⁰ Mary Jo Hatch, *Organization Theory: Modern, Symbolic, and Postmodern Perspectives*, 2nd ed. (Oxford: Oxford University Press, 2006), 198.

⁴¹ Eliot R. Smith and Diane M. Mackie, *Social Psychology* (New York: Worth Publishers, 1995), 221.

⁴² Hatch, *Organization Theory*, 226.

⁴³ Curtis D. Hardin and E. Tory Higgins, "Shared reality: How social verification makes the subjective objective," in *Handbook of Motivation and Cognition*, vol. 3, ed. Richard M. Sorrentino and E. Tory Higgins (New York: The Guilford Press, 1996), 62.

position in the world, physically and conceptually, helps determine what they believe to be true. Understanding their reality permits friendly forces to anticipate how they interpret different phenomena. Second, a VNSA's beliefs maintain the group's cohesion. An ideology, articulated through its beliefs, expresses the truths held by all group members.⁴⁴ A VNSA's ideology expresses the "least-common denominator" of beliefs within a group. Thus, it is reasonable for friendly forces to assume that a VNSA's ideology is an expression of beliefs that each individual member holds to be true. Third, a VNSA's ideology explains what it perceives as its "problems."⁴⁵ It will clarify what obstacle the group is trying to overcome and the threat it faces. Studying a VNSA's ideology permits friendly forces to understand its reality, its shared truths, and what it believes is preventing them from achieving their shared goals. This information is useful when trying to predict the future actions of VNSAs.

A VNSA's ideology helps communicate its vision for the future. All VNSAs have objectives.⁴⁶ Their objectives provide focus for the group, and give them a target to coordinate the use of violence and the realization of the VNSA's beliefs.⁴⁷ A VNSA will use a combination of written, verbal, and/or graphic products to express their objectives. They may use newspapers or magazines to describe their desired future and outline what conditions are necessary to convert their vision into a reality. VNSAs also use verbal communication to indicate their objectives. For instance, Osama bin Laden's interviews with western journalists provided indicators that Al-

⁴⁴ Arie W. Kruglanski, Michele J. Gelfand, Jocelyn J. Belanger, Anna Sheveland, Malkanthi Hetiarachchi and Rohan Gunaratna, "The Psychology of Radicalization and Deradicalization: How Significance Quest Impacts Violent Extremism," *Political Psychology* 35 (February 2014): 76, accessed February 7, 2015, <http://www.jstor.org/stable/43783789>.

⁴⁵ Thompson, *Armed Groups*, 126.

⁴⁶ *Ibid.*, 130.

⁴⁷ Francisco Gutierrez Sanin and Elisabeth Jean Wood, "Ideology in civil war: Instrumental adoption and beyond," *Journal of Peace Research* 51, no. 2 (March 2014): 214, accessed February 7, 2018, <http://www.jstor.org/stable/24557417>.

Qaeda wanted to harm the United States.⁴⁸ Some terrorist groups have used “persuasive cartography” to express their vision for the future through symbols, i.e. the drawings on a map.⁴⁹ They develop graphical representations for their vision of the future. VNSA’s express their vision by changing commonly understood borders, names of cities/countries, or by removing areas entirely.⁵⁰ Interpreting the VNSA’s map explains what the group is trying to achieve in the physical domain. Understanding a VNSA’s objectives, expressed through a variety of communication mediums, helps friendly forces determine how they will change their OE.

Operational approaches, or “how” a VNSA will change their OE, is also communicated through its ideology. A VNSA’s ideology contains an internal logic and influences how it solves problems.⁵¹ Although not easily identifiable at first glance, the actions of VNSAs follow a line of reasoning consistent with their beliefs. Friendly forces must interpret a VNSA’s expression of beliefs to bring meaning to its actions, and recognize patterns of behavior. Ideology also guides conduct, as it helps socialize members to its beliefs and regulates behavior.⁵² Understanding what a VNSA believes is acceptable behavior frames how they will act in the physical space. For instance, how a VNSA values the civilian population in their OE will influence how they will employ violence.⁵³ If their beliefs hold that the non-combatants are part of a larger problem the group collectively faces, and rejects commonly understood concepts for the treatment of non-

⁴⁸ Osama Bin Laden, “CNN March 1997 interview with Osama bin Laden,” accessed February 4, 2018, <http://news.findlaw.com/cnn/docs/binladen/binladenintvw-cnn.pdf>.

⁴⁹ Jonathan Matusitz, *Symbolism in Terrorism: Motivation, Communication, and Behavior* (New York: Rowman & Littlefield, 2015), 118.

⁵⁰ Ibid.

⁵¹ Martha Crenshaw, “The logic of terrorism: Terrorist behavior as a produce of strategic choice,” in *Origins of Terrorism: Psychologies, Ideologies, Theologies, States of Mind*, ed. Walter Reich (New York: Cambridge University Press, 1990), 24.

⁵² Sanin and Wood, “Ideology in civil war: Instrumental adoption and beyond,” 218.

⁵³ Andrea J. Dew, “The Erosion of Constraints in Armed-Groups Warfare,” 259.

combatants, they may be less restrictive with their use of force. However, if a VNSA adheres to the commonly held beliefs on the need to distinguish between combatants and non-combatants, they are more likely to adhere to the laws of armed conflict and limit their use of force.

Friendly forces can generate high degrees of situational understanding by learning a VNSA's ideology. In the future OE, where VNSAs have materiel parity with friendly forces, dominance in the cognitive space will create competitive advantages. Exploitation of a VNSA's ideology provides this opportunity. Friendly forces must understand the VNSA's history, culture, and beliefs to determine their preconceptions about the world.⁵⁴ Understanding these preconceptions is necessary to use ADD and achieve positional advantage.

The successful employment of ADD requires a deep understanding of the VNSA's ideology. Understanding a VNSA's beliefs allows friendly forces to determine their biases. These biases make VNSAs vulnerable to ADD. However, not all biases are created equally. Friendly forces should try to manipulate a VNSA's strongest biases to generate predictable behavior. The behavioral sciences provide many resources to help friendly forces determine the strength of a VNSA's bias. The following section will address the relationship between biases, the generation of attitudes, and the role attitude of in predicting behavior. Understanding the linkages between these concepts will provide friendly forces the opportunity to exploit VNSAs in the cognitive space and create favorable conditions in the physical space.

⁵⁴ Walter Jajko "Deception: Appeal for Acceptance; Discourse on Doctrine; Preface to Planning," *Comparative Strategy* 21, no. 5 (2002): 359.

Part Two: Social Psychology

This section will examine how social psychology influences the ideology of VNSAs, and how friendly forces can manipulate ideologies to gain positions of relative advantage through ADD. This section will cover four topics. First, this section will explain the relationship between a VNSA's ideology and its biases. Friendly forces must understand biases to execute successful ADD. Second, this section will explain the formation and maintenance of attitudes. Attitudes are the building blocks of biases. Strong attitudes create the strong biases required for ADD. Third, it will explore how leadership and group norms influence attitude and behavior. All VNSAs have a leadership structure and norms that govern behavior. Appreciation for how they affect a VNSA's ideology and actions enables friendly forces application of ADD. Finally, this section describes the relationship between strong attitudes and the predictability of behavior. Exploiting a VNSA in the physical space requires a high level of certainty that the VNSA will take specific actions. Understanding the linkage between attitude and behavior will provide the insights necessary for friendly forces to create positions of advantage through ADD.

Confirmation and Availability Biases: The Key Ingredients in ADD

VNSAs are social groups comprised of generally like-minded people. Like any assembly of persons, they have preconceptions about themselves and the world around them. These preconceptions, or biases, are necessary ingredients for the generation of ADD. It is generally easier to reinforce an existing idea or belief than it is to change that idea or belief.⁵⁵ Friendly forces should strive to understand, and then manipulate a VNSA's beliefs about themselves and their adversaries. Confirmation bias and availability bias provide friendly forces the tools to exploit a VNSA's beliefs.

⁵⁵ Heuer, "Strategic Deception and Counter Deception: A Cognitive Process Approach," 315.

Confirmation bias exists when a person interprets phenomena in a manner that supports their pre-existing beliefs.⁵⁶ A VNSA with strong ideological cohesion has the potential to suffer from the effects of confirmation bias. Their shared ideology can create situations where they expect to see certain actions or activities consistent with their narrative or world-view. Studies indicate that once people develop strong beliefs, as would be the case in groups with strong ideologies, they will interpret data to justify their beliefs.⁵⁷ Active collection of information by a VNSA can exacerbate confirmation bias. When a person's beliefs are strong and well understood, they seek data they expect to find in the environment.⁵⁸ This could create a self-fulfilling prophecy whereby the VNSA's interpretation of positive feedback further solidifies its strong ideology. Thus, understanding a VNSA's ideology, and what it expects to see in the OE, provides friendly forces multiple opportunities to deceive VNSAs.

Human nature enables confirmation bias. People have a natural tendency to believe feedback that confirms their pre-existing beliefs.⁵⁹ Even when confronted with the opportunity to learn from information contrary to existing beliefs, people will desire favorable feedback that confirms their ideas.⁶⁰ This is due to the value the human mind places on information that is consistent with pre-existing beliefs. People place a greater value on information that supports a belief than data that does not support a belief.⁶¹ Consequently, if friendly forces bombard a

⁵⁶ Raymond S. Nickerson, "Confirmation Bias: A Ubiquitous Phenomenon in Many Guises," *Review of General Psychology* 2, no. 2 (1998): 175.

⁵⁷ *Ibid.*, 177.

⁵⁸ *Ibid.*

⁵⁹ Roy F. Baumeister, "Self and Identify: An Introduction," in *Advanced Social Psychology*, ed. Abraham Tesser (New York: McGraw-Hill, Inc., 2004), 74.

⁶⁰ *Ibid.*

⁶¹ Nickerson, "Confirmation Bias," 180.

VNSA with stimuli consistent with its ideology, it has the potential to make the VNSA believe their ideological beliefs are becoming realized and increase their level of certainty about their OE.

Exploiting a VNSA's availability biases also provides friendly forces opportunities to produce ADD. Availability bias exists when a person's ease of recalling something amplifies its prevalence.⁶² The human brain's limited capacity enables availability biases, because people generally store more information in their memories that confirms their beliefs than contradicts their beliefs.⁶³ As a result, they have an easier time retrieving information that is consistent with their views of themselves and the world around them. A VNSA's experiences and interactions with other actors can also influence availability bias, as people are usually willing to make inferences based upon limited experiences.⁶⁴ If a VNSA took part in prior combat engagements with friendly forces, the details of the engagements will influence how the VNSA views future friendly force capabilities, tactics, techniques, and/or procedures. Accordingly, evaluating a VNSA's prior history of engagements can help friendly forces determine what type of friendly actions the VNSA expects to see in the future.

Understanding a VNSA's biases provides friendly forces numerous opportunities to create ADD and gain positional advantage on the battlefield. First, friendly forces should use confirmation bias to exploit a VNSA's feelings about itself. A VNSA's ideology guides how it "frames" the world.⁶⁵ If a VNSA believes it is operating in a familiar world, i.e. a world consistent with its ideology, the VNSA may be more likely to develop increased certainty.

⁶² Susan T. Fiske, "Social Cognition," in *Advanced Social Psychology*, ed. Abraham Tesser, (New York: McGraw-Hill, Inc., 2004), 181.

⁶³ Richard E. Petty, "Attitude Change," in *Advanced Social Psychology*, ed. Abraham Tesser, (New York: McGraw-Hill, Inc., 2004), 214.

⁶⁴ Fiske, "Social Cognition," 178.

⁶⁵ Laurie Fenstermacher, "Countering Violent Extremism: Scientific Methods & Strategies," ed. Sarah Canna (Boston, MA: NSI Inc., 2011), 9, accessed February 4, 2018, <http://nsiteam.com/social/wp-content/uploads/2016/01/Countering-Violent-Extremism-Scientific-Methods-Strategies.pdf>.

Friendly forces should make efforts to understand what a VNSA believes will happen, and take actions consistent with these beliefs. Second, friendly forces should study a VNSA's prior combat engagements. The VNSA's experiences will influence their availability biases. Friendly forces should take actions that make it appear as though they are acting in patterns consistent with past combat engagements. This could increase the VNSA's level of certainty about friendly forces actions, and create conditions for successful ADD.

Confirmation and availability biases are important elements of ADD. Successful manipulation of biases has the potential to create situations where a VNSA, while pursuing the realization of its beliefs, will place itself in a position of disadvantage. However, for this to occur, friendly forces must identify the VNSA's strongest biases. Strong biases are the byproducts of strong attitudes. Therefore, friendly forces must take the time and effort required to evaluate how a VNSA generated its attitudes to determine how they contribute to an exploitable bias.

Attitude Formation: The Building Blocks of Bias and Ideology

Generating ADD requires friendly forces to understand the relationship between attitudes and biases. Attitudes are broad evaluations people hold of themselves, others, objects, and issues, and they have significant influence over people's emotions, beliefs, and behavior.⁶⁶ Attitudes play a significant role in the development of biases. Strong attitudes generally result in strong biases. Therefore, it should be the goal of friendly forces to identify the strongest held attitudes within a VNSA and target them for exploitation. A person's desire to maintain consistency in their attitude motivates them to maintain their biases.⁶⁷ Friendly forces should use this to their advantage, and develop deception plans that reinforce existing biases.

⁶⁶ Petty, "Attitude Change," 196.

⁶⁷ *Ibid.*, 214.

Generally, people form their attitudes in two ways. The first involves simple exposure to a stimulus.⁶⁸ Repeated exposures to a stimulus, over time, generates a more positive feeling towards the stimulus.⁶⁹ Thus, a person repeatedly exposed to a VNSA's ideology is likely to develop a favorable feeling towards the VNSA's ideology. Social learning also plays a role, as people learn from one another beginning on the day they are born.⁷⁰ A person's interactions within their social group, driven by nationalistic, ethnic, or religious beliefs, may play a role in developing the person's attitudes.

Evaluative conditioning is the second path to attitude formation. This involves the pairing of two stimuli, where one stimulus is already associated with a positive or negative attribute but the other stimulus does not have any positive or negative associations. Over time, the stimulus without an associated positive or negative attribute will take the valence of the stimulus it is paired with.⁷¹ For instance, if a person has not developed an attitude towards a certain sound, but the sound is repeatedly paired with a food they enjoy, over time they will develop a positive feeling towards the sound. In the case of persons within a VNSA, evaluative conditioning may explain how they developed attitudes towards their enemies. Understanding the effects of exposure and evaluative conditioning may help friendly forces determine how VNSAs form their attitudes. However, attitudes are not static. They evolve as people learn and have new experiences. Therefore, it is important for friendly forces to evaluate whether or not VNSA attitudes change over time.

⁶⁸ R.B. Zajonc, "Attitudinal effects of mere exposure," *Journal of Personality and Social Psychology* 9, 1-27 (1968): 1.

⁶⁹ Ap Dijksterhuis, "Automaticity and the Unconscious," in *Handbook of Social Psychology*, vol. 1, 5th ed., eds. Susan T. Fiske, Daniel T. Gilbert, and Gardner Lindzey (Hoboken, NJ: John Wiley & Sons, Inc., 2010), 235.

⁷⁰ Albert Bandura, *Social Learning Theory* (New York: General Learning Press, 1971), 3.

⁷¹ Ap Dijksterhuis, "Automaticity and the Unconscious," 235.

Evaluating a person's attitude evolution can help determine its strength. Normally, attitudes can change in two ways. The first way is through the "central route." Identifying central route attitudes is one of the most important steps friendly forces must perform to leverage ADD. Central route attitudes are the most persistent attitudes and least likely to change.⁷² Persistent and resistant attitudes allow friendly forces to identify strong biases. Strong biases are likely to be susceptible to cognitive exploitation via ADD.

The central route occurs when a person prudently examines available evidence to make merit-based conclusions.⁷³ The person looks at phenomena from multiple perspectives to ensure they have not discarded relevant information and carefully evaluate the full content of an argument.⁷⁴ Additionally, people invoking the central route take their time when forming attitudes. Periods of reflection allow people the ability to make sense of data and understand how it all fits together. In the case of a VNSA, groups with long histories are likely to invoke the central route.

Furthermore, the types of people within a VNSA can influence whether it holds central route attitudes. People who are high in the "need for cognition" are more likely to form attitudes based on the values of evidence.⁷⁵ They scrutinize information and find inconsistencies in arguments.⁷⁶ It is likely that VNSAs with members who are high in "need for cognition" are more likely to have attitudes developed through the central route. This is especially true in the case of its leadership. When confronting challenges that affect a group, the feeling of responsibility

⁷² Eliot and Mackie, *Social Psychology*, 282.

⁷³ Petty, "Attitude Change," 207.

⁷⁴ Smith and Mackie, *Social Psychology*, 279.

⁷⁵ Petty, "Attitude Change," 212.

⁷⁶ Smith and Mackie, *Social Psychology*, 287.

motivates the group's leader to put more effort towards analyzing information.⁷⁷ Thus, VNSAs comprised of high cognition people, who thoughtfully evaluate all evidence, are most likely to develop attitudes through the central route.

The "peripheral route" is the second way an attitude evolves. Peripheral route attitudes rely on easily available information to make simple conclusions.⁷⁸ These attitudes are very easy to generate, and very easy to change. For instance, a perceived "expert's" testimony can induce a peripheral route attitude.⁷⁹ Due to the expert's presence, a person is less likely to evaluate all the available evidence. They expect the expert to do the cognitive work on their behalf and they do not attempt to make effortful judgments. People who do not enjoy thinking use salient and easily obtainable information to evaluate phenomena.⁸⁰ Thus, their attitudes are less persistent and less resistant to change.

It is necessary to make a caveat regarding the central and peripheral routes to attitude formation. Although the level of cognition and scrutiny used to evaluate evidence plays a large role in whether an attitude is strong or weak, it is also important to recognize the importance of context. Individual and situational factors influence the evaluation of different arguments and evidence.⁸¹ More specifically, different people value different things.⁸² Whereas one leader may hold a subordinate's opinion in high regard, a different leader may hold the same subordinate's opinion in low regard. Similarly, situational factors also matter. Every decision exists in a unique context which can never be 100% replicated. As a result, it is essential for friendly forces to

⁷⁷ Petty, "Attitude Change," 211.

⁷⁸ Smith and Mackey, *Social Psychology*, 275.

⁷⁹ Petty, "Attitude Change," 208.

⁸⁰ *Ibid.*, 212.

⁸¹ *Ibid.*, 207.

⁸² *Ibid.*

evaluate the uniqueness of each individual VNSA, and the situation they are confronting, when they examine the strength of a VNSA's collective attitude.

After the identification of a strong attitude, it is incumbent upon friendly forces to ensure the VNSA maintains its attitude. Friendly forces must strive to present information that reinforces the VNSA's beliefs. The continual observation of positive information that reaffirms an attitude will make the attitude stronger and more resistant.⁸³ As the attitude becomes stronger, it is more likely to discard data inconsistent with its attitude, further contributing to the reinforcement of its original belief.⁸⁴ The maintenance of the VNSA's attitude may solidify its bias, increase its level of certainty about the OE, and increase its susceptibility to ADD.

Understanding how a VNSA developed its attitude towards itself, the population, and its perceived threats would give friendly forces significant advantages. Distinguishing between attitudes developed through individual experiences and/or a social learning process, or whether central or peripheral routes maintain these attitudes, allows friendly forces to determine the strength of a VNSA's bias. Ideologies comprising attitudes developed through the central route are the strongest. They are the most likely to inspire action, and will telegraph how the VNSA is likely to act in the future. Attitudes developed through the peripheral route are relatively weak, and they are less useful for determining future VNSA actions. Understanding situational factors helps friendly forces determine whether the central or peripheral route created an attitude. Attitude generation occurs in unique contexts, as different groups value different evidence. Friendly forces must learn about the leaders and individuals within different groups and make assumptions about how they evaluate information.

⁸³ Petty, "Attitude Change," 232.

⁸⁴ Charles G. Lord, Lee Ross, and Mark R. Lepper, "Biased Assimilation and Attitude Polarization: The Effects of Prior Theories on Subsequently Considered Evidence," *Journal of Personality and Social Psychology* 37, no. 11 (1979): 2099.

Understanding the strength of a VNSA's attitudes aids friendly forces determination of the strength of a VNSA's biases, and its potential for exploitation. However, determining which biases to exploit is the starting point. Friendly forces must then conduct actions to reinforce the VNSA's biases. Appreciating the role of schemas and stereotypes will help friendly forces stimulate the OE and increase a VNSA's certainty.

Schemas and Stereotypes: Means for Developing Certainty

Understanding a VNSA's schemas and stereotypes helps friendly forces create ADD. Schemas denote a person's "preconceptions or theories" about the world.⁸⁵ They are cognitive structures that connect a stimulus with certain attributes.⁸⁶ When a stimulus, whether it is a person, object, or situation, is placed into a cognitive category, it is associated with general knowledge pertaining to the category.⁸⁷ This allows people to rapidly access knowledge and make decisions.

Schemas become very useful during times of stress and duress, which are common occurrences for a VNSA in armed conflict. When speed and action are paramount, people will conserve mental energy by using schemas to make decisions.⁸⁸ However, if the situation is more tranquil and a person has a desire to be more accurate with their judgment, schemas may play less of a role in decision-making.⁸⁹ Understanding a VNSA's past actions will help friendly forces determine if their interpretation of certain stimuli will trigger corresponding schemas. For instance, if a VNSA experienced a helicopter strike resulting in a high number of casualties, the

⁸⁵ Fiske, "Social Cognition," 161.

⁸⁶ Susan T. Fiske and Shelly E. Taylor, *Social Cognition* (New York: McGraw-Hill, 1991), 139.

⁸⁷ Martha L. Cottam, Elena Mastors, Thomas Preston, and Beth Dietz-Uhler, *Introduction to Political Psychology* (New York: Psychology Press, 2010), 90.

⁸⁸ Fiske, "Social Cognition," 166.

⁸⁹ Ibid.

next time they encounter an adversary's helicopter they will be more likely to believe the engagement will result in high casualties again.

Schemas can also have a temporal component. Event schemas contain a series of events that a person would expect to see in certain situations.⁹⁰ If a person experiences a stimulus, and then witnesses a sequence of actions after that stimulus, they will develop an event schema that corresponds to the initial stimulus. Event schemas can be very useful when applying ADD to the VNSA. Friendly forces should reflect upon the sequences of events from prior engagements with VNSAs. If there were patterns in friendly schemes of maneuver that were consistent throughout the engagements, it is reasonable to assume the VNSA will expect these patterns in the future.

A VNSA's stereotypes also provide friendly forces the opportunity to create ADD. A stereotype is a prevalent and overgeneralized belief about a person or object. Stereotypes influence how a person thinks about the outside world, and they guide how people process information and make evaluations of situations.⁹¹ People normally create stereotypes for social groups to which they do not belong, typically referred to as "out-groups." When a person makes contact with an out-group, rather than dealing with the dynamic characteristics of the group, people will seek whatever cognitive simplification a stereotype offers.⁹² They will refer to the attributes their mind has associated with the out-group instead of evaluating the out-group as a unique entity with unique attributes. This can result in the generation of many biases, which if reinforced, will be resistant to change.⁹³

⁹⁰ Fiske, "Social Cognition," 162.

⁹¹ Patricia G. Devine, "Prejudice and Out-Group Perception," in *Advanced Social Psychology*, ed. Abraham Tesser (New York: McGraw-Hill, Inc., 2004), 476.

⁹² *Ibid.*

⁹³ *Ibid.*, 477.

Strongly held stereotypes may lead VNSAs to generate expectations of the OE. People tend to view the OE through the paradigm of their stereotypes and associate indistinct stimuli with their stereotypes.⁹⁴ This has the potential to reinforce biases, and make the VNSA more susceptible to ADD. People generally look for information that confirms, rather than disconfirms, their stereotypes.⁹⁵ They interpret any stimuli to confirm its hypothesis about the environment, which could manifest in the generation of a self-fulfilling prophecy.⁹⁶ The positive feedback between the VNSA's belief about the OE, and its interpretation of the OE's behavior, may create an opportunity for friendly forces to decrease the VNSA's level of ambiguity and create conditions favorable to ADD.

Many of the factors influencing the formation and maintenance of strong attitudes also apply to stereotypes. People develop stereotypes from interactions with their social groups.⁹⁷ How members learn from one another could influence VNSAs stereotypes. Social learning may help determine what VNSA members think about the OE and/or threat forces, and gives the VNSA's leadership significant power. Their role within the group gives them the ability to shape what stereotypes will be accepted within the group. Personal experiences also produce and preserve stereotypes. Stereotypes generated by personal experiences with an out-group or situation are the most resistant to change.⁹⁸ Thus, if a VNSA's leader was personally involved in a confrontation with friendly forces in the past, they will likely develop a strong stereotype about the attributes and characteristics of friendly forces. These stereotypes will influence their judgment in the future.

⁹⁴ Devine, "Prejudice and Out-Group Perception," 477.

⁹⁵ Smith and Mackie, *Social Psychology*, 199.

⁹⁶ Devine, "Prejudice and Out-Group Perception," 478.

⁹⁷ Smith and Mackie, *Social Psychology*, 188.

⁹⁸ *Ibid.*, 180.

Stressful situations requiring judgment and decision make it more likely a person will invoke a stereotype.⁹⁹ Time, complexity, and cognitive abilities all influence whether or not a person will rely on a stereotype to make an evaluation.¹⁰⁰ Time constraints increase the likelihood a person will recall a stereotype to make sense of a situation and make a decision. Deep thinking requires time, and if time is limited, a VNSA is more likely to invoke what it already knows rather than try to generate new knowledge. Complexity, common in the non-linear phenomenon of war, also plays a role. When there is too much information for a person to process, or if they cannot be confident of causal relationships, a person will resort to using a stereotype. In these situations, cognitive abilities become a factor, as a person with lower cognitive abilities will be less capable to generate understanding in complex situations. Thus, they will resort to stereotypes to aid decision-making. Friendly forces should maintain continuous assessments of a VNSA's decision-making horizons and its member's cognitive abilities to determine the role of stereotypes in its decision-making.

Leaders and Group Norms: The X-Factor

A VNSA's leadership and shared norms influence the group's attitudes. Leaders play a strong role in the development of people's attitudes. Social learning influences the formation of attitudes, and many VNSA members learn from their leaders.¹⁰¹ People have a tendency to accept the truthfulness of what a leader tells them, simply due the leader's position within the organization.¹⁰² Group members are dissuaded from critically analyzing the leader's beliefs,

⁹⁹ Smith and Mackie, *Social Psychology*, 199.

¹⁰⁰ Ibid.

¹⁰¹ James J.F. Forest, "Knowledge Transfer and Shared Learning among Armed Groups," in *Armed Groups: Studies in National Security, Counterterrorism, and Counterinsurgency*, ed. Jeffrey H. Norwitz (Newport: US Naval War College, 2008), 273.

¹⁰² Smith and Mackie, *Social Psychology*, 276.

which results in a direct transfer of an attitude from the leader to the led. This is especially true in the case of religiously inspired VNSAs operating in areas where the state's sovereignty is limited and VNSA members find their leaders more credible than those of the state.¹⁰³ This gives a VNSA's leadership considerable power to form and maintain attitudes within its membership.

Leaders also influence the development of the VNSA's norms. A norm is a common belief for how members of a group should behave, and they solidify the patterns of behavior that guide how the group confronts challenges.¹⁰⁴ The leader's status in the VNSA gives him the power to establish the group's belief structure. Group members adhere to the leader's established norms because of his perceived authority within the group.¹⁰⁵ In situations where disagreements exist regarding the leader's espoused beliefs, he has other tools to establish and maintain group norms. A leader may use the power of rewards or punishments to ensure the group adheres to its norms.¹⁰⁶ More often than not, however, people will adhere to group norms simply because they believe the groups shared attitudes and behaviors are "right" and offer the best solutions to the challenges facing the group.¹⁰⁷

One caveat on the topic of norm adherence requires discussion. Although people adhere to norms based on their inherent value, the scale of adherence may vary based upon culture. Different cultures put different values on individual identity and self-perception. For example, collectivist societies place a strong emphasis on adhering to group norms, whereas individualist

¹⁰³ Pauletta Oits, "Armed with the Power of Religion: Not Just a War of Ideas," in *Armed Groups: Studies in National Security, Counterterrorism, and Counterinsurgency*, ed. Jeffrey H. Norwitz (Newport: US Naval War College., 2008), 219.

¹⁰⁴ John M. Levine and Richard L. Moreland, "Group Processes," in *Advanced Social Psychology*, ed. Abraham Tesser (New York: McGraw-Hill, Inc., 2004), 434.

¹⁰⁵ Smith and Mackie, *Social Psychology*, 424.

¹⁰⁶ Thompson, *Armed Groups*, 111.

¹⁰⁷ Smith and Mackie, *Social Psychology*, 403.

societies emphasize diversity and self-expression.¹⁰⁸ In the case of collectivist societies, an individual's obligation to adhere to group norms supersedes any individual obligation to express what they believe to be "right" or "true" in a given situation.¹⁰⁹ The majority of these collectivist societies exist in the eastern part of the world. Thus, VNSAs comprised of eastern populations, which have the potential for the strongest norm adherence, are most likely to possess strong ideological cohesion and susceptibility to ADD.

Attitude Strength and Predictability of Behavior: The Critical Linkage

Strong attitudes are better predictors of behaviors than weak attitudes.¹¹⁰ Friendly forces must examine the strength of a VNSA's beliefs to determine how they will behave in the future. Evaluating the strength of an attitude involves many considerations. First, is the amount of time the attitude existed. The strongest attitudes persist over the longest times.¹¹¹ Religion and ethnicity precede the nation-state system in the timeline of human history.¹¹² This makes it likely that the beliefs of religiously and ethnically inspired VNSAs are stronger than nationalist VNSAs. Second, the formation of an attitude provides insights for its ability to predict behavior.¹¹³ Attitudes developed from personal experiences are stronger than attitudes developed from secondhand information.¹¹⁴ VNSAs advocating beliefs generated through firsthand experiences are likely to be more resilient and prompt predictable behavior in the future. Third, an attitude's

¹⁰⁸ Baumeister, "Self and Identity," 55.

¹⁰⁹ Ibid.

¹¹⁰ Petty, "Attitude Change," 235.

¹¹¹ Ibid., 230.

¹¹² Hough, *Understanding Global Security*, 119.

¹¹³ John Sample and Rex Warland, "Attitude and prediction of Behavior," *Social Forces* 51, no. 3 (March 1973): 302, accessed February 2, 2017, <http://www.jstor.org/stable/2577135>.

¹¹⁴ Petty, "Attitude Change," 235.

resistance to change serves as an indicator of its strength. If outside forces consistently challenge a person's beliefs, yet they remain constant throughout time, they are considered strong attitudes.¹¹⁵ Thus, it is likely that VNSAs that have defended their beliefs for a long time have strong attitudes.

A VNSA's strong attitudes, which represent the building blocks of its ideology, are the strongest predictors of its behavior. Friendly forces must orient their efforts towards determining VNSA beliefs with long histories, development through personal experiences, and resistance to outside pressures. Identifying these beliefs allows friendly forces to determine the likelihood that a VNSA's ideology will predict its future behavior. By understanding a VNSA's attitudes and biases, friendly forces can see the world through the eyes of the VNSA. They can empathize with the VNSA and understand how it interprets the OE. Most importantly, friendly forces can determine what the VNSA expects to see in the future, which allows friendly forces to exploit the VNSA through invoking the confirmation bias. Additionally, friendly forces can determine how the VNSA feels about its threats. Examining a VNSA's past combat engagements provides friendly forces the opportunity to exploit the VNSA through use of the availability bias.

The goal of friendly forces is to allow a VNSA's ideology to guide itself into a place of positional disadvantage. This requires a MILDEC plan anchored in ADD. The more certain a VNSA feels about its attitudes and beliefs, the more likely they are to act in a predictable manner. If friendly forces can invoke a predictable behavior, they can be more deliberate and overwhelming with their actions due to their higher levels of certainty and situational understanding. The following section will examine how ADD exploits the ideology of a VNSA and creates friendly force overmatch in the physical space.

¹¹⁵ Petty, "Attitude Change," 232.

Part Three: MILDEC

In the future OE, where ideologically driven VNSAs possess a warfighting potential on par with the United States, it is imperative friendly forces search for non-materiel ways to generate overmatch. If all things are equal with respects the tools of warfare, friendly forces should focus efforts toward identifying threat vulnerabilities in the cognitive space. MILDEC, and ADD specifically, provide friendly forces opportunities to gain positions of relative advantage prior to the employment of kinetic force. All VNSAs have an ideology, and if friendly forces empathize with their ideology, they can discover their intentions.¹¹⁶ Once a VNSA reveals its intentions and feelings towards adversaries, friendly forces have the ability to create certainty in the mind of the VNSA, induce predictable behavior, and meet the enemy at a place of relative advantage.

Role of Ambiguity: Less is More

Friendly forces use MILDEC to manipulate how an adversary perceives friendly actions, intentions, or capabilities.¹¹⁷ This requires friendly forces to manipulate a VNSA's understanding of reality.¹¹⁸ There are two ways to manipulate reality: ambiguity-increasing deception (AID) or ADD.¹¹⁹ AID seeks to provide the VNSA multiple courses of action to create confusion and make it more difficult for leaders to make decisions.¹²⁰ During the adversary's paralysis by indecision, friendly forces seize the initiative and strike the VNSA at a time and place of their choosing.

¹¹⁶ Barton Whaley, *Practise to Deceive: Learning Curves of Military Deception Planners*, ed. Susan Stratton Aykroyd (Annapolis, MD: Naval Institute Press, 2016), 204.

¹¹⁷ US Department of the Army, Field Manual (FM) 6-0, *Commander and Staff Organization and Operations* (Washington, DC: Government Printing Office, 2014), 11-2.

¹¹⁸ Ibid.

¹¹⁹ US Department of Defense, Joint Staff, Joint Publication (JP) 3-13.4, *Military Deception* (Washington, DC: Government Printing Office, 2017), I-8.

¹²⁰ Ibid., I-9.

In contrast, ADD seeks to increase the adversary's level of certainty about the OE by taking actions to confirm the decision-makers preconceived beliefs.¹²¹ In the case of a VNSA, friendly forces take action to confirm the VNSA's preconceived understanding of reality, and tempt them to behave in a predictable manner that can be exploited.¹²² By making an ideologically consistent, but ultimately wrong decision, friendly forces create opportunities to generate temporal, physical, and/or tactical surprise.¹²³ Through operations designed to confirm the VNSA's pre-existing biases, friendly forces allow the VNSA to place itself in a position of disadvantage. ADD, although the most difficult to plan and execute, provides the greatest opportunity for tactical and operational success. The Allies made investments in ADD during the months leading up to the invasion of Normandy, which paid large dividends on June 6, 1944.

General Dwight D. Eisenhower, the commander of Allied forces in the European theater during World War II, understood the value of ADD. He used Lieutenant General George S. Patton's reputation among senior German officers to influence how the German army positioned their forces on the western coast of France. The Germans believed Patton was the Allies' best commander and assumed he would lead the main effort during the invasion of Europe.¹²⁴ To reinforce their preconceived belief, Eisenhower created a phony army group, with real and phony corps, and placed Patton in command.¹²⁵ Additionally, the Allies combined sham radio traffic with the genuine British press to ensure the Germans knew Patton was in charge.¹²⁶

¹²¹ US Army, FM 6-0 (2014), 11-3.

¹²² Ibid.

¹²³ US Joint Staff, JP 3-13.4, (2017), I-9.

¹²⁴ Stephen E. Ambrose, *D-Day June 6, 1944: The Climactic Battle of World War II* (New York: Simon & Schuster, 1994), 82.

¹²⁵ Ibid.

¹²⁶ Ibid.

Eisenhower based his deception plan on the German military's preconceived belief of what an Allied invasion would look like. This tempted the Germans to place themselves in physical and cognitive positions of disadvantage prior to D-Day. In the physical domain, the positioning of Patton's fake army in England led the Germans to believe that the Allies main effort would strike near Pas-de-Calais.¹²⁷ The Germans oriented many of their forces on Pas-de-Calais, which increased the vulnerability of the flank at Normandy, the location of the actual main effort. The use of fake units also placed the Germans in a cognitive disadvantage. The Germans believed the Allies had nearly twice as much combat power than they actually had. As a result, the Germans believed that diversionary attacks would precede the main effort of the invasion.¹²⁸ When June 6, 1944 arrived, the Germans were slow to reposition forces to the Normandy coast, partially due to their belief that the Normandy landings did not constitute the main effort.¹²⁹

Eisenhower's willingness to use his best, most aggressive, and most feared commander to deceive the enemy, shows the value of ADD. Military operations incorporating ADD, although difficult to implement, generate effects far greater than the amount of effort exerted. Friendly forces should heed the lessons of Eisenhower's example, and first seek to understand the enemy's beliefs prior to taking physical action. However, merely understanding an enemy's beliefs, or in the case of a VNSA, their ideology, is only half the task. Friendly forces must ensure the VNSA maintains these beliefs. Understanding groupthink, and its antecedent conditions, provides friendly forces the opportunity to create certainty in the minds of a VNSA's decision-makers.

¹²⁷ Ambrose, *D-Day June 6, 1944*, 82.

¹²⁸ Michael Dewar, *The Art of Deception in Warfare* (New York: Sterling Publishing Co., Inc., 1989), 11.

¹²⁹ James F. Dunnigan and Albert A. Nofi, *Victory & Deceit: Dirty Tricks at War* (New York: Quill William Morrow, 1995), 178.

Groupthink: Cognitive Poison for VNSAs

Critical and creative thinking enable friendly forces to understand their OEs and make good decisions.¹³⁰ Both skills allow friendly forces to analyze operational and mission variables to develop situational understanding, while simultaneously envisioning original solutions to difficult problems.¹³¹ Deliberately applying critical and creative thinking skills prevents intellectual stagnation and predictable behavior. Groupthink, in comparison, is the nemesis of critical and creative thinking. It entices groups to embrace the pre-existing beliefs which the group members have already committed themselves towards, even if they are hurting the groups pursuit of other goals.¹³² Friendly forces should use groupthink to its advantage by promoting it within VNSAs. Friendly MILDEC activities, if executed in accordance with a VNSA's ideology, can serve as an incubator for groupthink, and induce the VNSA to think and act in a predictable fashion.

A group suffers from groupthink if it reaches a consensus or decision without considering all the information available.¹³³ Situational threats, directive leaders, and high levels of group cohesion set conditions for groupthink. Situations with high levels of stress compel groups to rely on schemas and stereotypes to interpret stimuli in the OE.¹³⁴ These situations generally evolve due to a lack of time to carefully evaluate a situation and make a well-informed decision. Rather than making the effort to evaluate a situation from multiple perspectives with the attempt of making new knowledge, the VNSA uses an existing stereotype or schema to understand the OE

¹³⁰ US Department of the Army, Army Doctrinal Reference Publication (ADRP) 5-0, *The Operations Process* (Washington, DC: Government Printing Office, 2012), 1-10.

¹³¹ Ibid.

¹³² Irving L. Janis, "Groupthink," in *Classics of Organizational Behavior*, eds. Walter E. Natemeyer and Jay S. Gilberg (Danville, IL: The Interstate Printers & Publishers, Inc., 1989), 179.

¹³³ Smith and Mackie, *Social Psychology*, 382.

¹³⁴ Ibid., 197.

and apply judgement to a situation. Friendly forces should remain cognizant of how time influences a VNSA's decisions. The more time the group has, the greater its opportunity to thoroughly analyze a situation from multiple perspectives and employ a novel solution. However, if time is in short supply, the VNSA is prone to groupthink and is more likely to act in accordance with its preconceived beliefs or ideology.

Directive leaders can also enable groupthink. A leader's bias towards a certain way of thinking and behaving is one of the most common drivers of groupthink.¹³⁵ Overbearing leaders put pressure on group members with dissenting views, which restricts the amount of information available to the group and biased processing of the available information.¹³⁶ Over time, group members may stop contributing information, leaving the leader alone to interpret more information than is possible for one man. Friendly forces should make efforts to understand the group dynamics within a VNSA to determine its potential for groupthink. Leaders with strong personalities create VNSAs susceptible to groupthink and exploitation.

VNSAs with high levels of cohesion may be prone to groupthink as well. Cohesion leads to increased conformity with group norms.¹³⁷ Although cohesion is essential to maintain coherence in combat, it can lead to faulty information processing procedures. Groups with strong cohesion have the potential to develop an "illusion of invulnerability."¹³⁸ The overconfidence, which comes with feelings of invulnerability, can result in a group discarding indicators of danger.¹³⁹ Even worse, groups rigidly committed to ideological goals, may not sense danger in

¹³⁵ Mark Schafer and Scott Crichlow, "Antecedents of Groupthink: A Quantitative Study," *The Journal of Conflict Resolution* 40, no. 3 (September, 1996): 429, accessed February 2, 2018, <http://www.jstor.org/stable/174313>.

¹³⁶ Levine and Moreland, "Group Processes," 450.

¹³⁷ Janis, "Groupthink," 180.

¹³⁸ *Ibid.*, 181.

¹³⁹ *Ibid.*

the first place. Additionally, similar to the effects of an overbearing leader, strong group cohesion increases the likelihood that group members will not offer beliefs inconsistent with the group's ideology. Cohesion drives groups to maintain unity, even if it means agreeing to flawed logic and decisions. The desire to maintain unity is especially common in groups with similar backgrounds.¹⁴⁰ Friendly forces should continuously evaluate a VNSA's cohesion to assess its susceptibility to groupthink. High levels of danger and confinement increase a group's cohesion.¹⁴¹ Friendly forces should maintain an awareness of a VNSA's combat history. Groups with extensive combat experience are more likely to develop the type of cohesion that makes them susceptible to groupthink.

Understanding the antecedent conditions of groupthink aids friendly forces' assessments of a VNSA's vulnerability to ADD. Time pressures, directive leadership, and group cohesion all make VNSA's prone to groupthink. The Prussian military theorist Carl von Clausewitz once wrote on the ever-present uncertainty in war.¹⁴² Information is always imperfect and based upon what the commander knows at a point in time. VNSA's suffering from groupthink will rely upon their ideology to guide them through the uncertainty of combat. Friendly forces should use ADD to create certainty in the mind of the VNSA, by creating an OE consistent with its views of reality and permissive to the accomplishments of its ideological goals, and induce the VNSA into predictable behaviors. The Joint Force's MILDEC methodology provides friendly forces the tools to create this situation.

¹⁴⁰ Smith and Mackie, "Social Psychology," 382.

¹⁴¹ Levine and Moreland, "Group Processes," 423.

¹⁴² Carl Von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1989), 84.

Joint MILDEC Methodology: Tools to Manipulate the Cognitive Space

The “see, think, do” methodology drives how Joint Forces conduct MILDEC operations. Using this approach, friendly forces take actions to ensure adversaries can see the deception activities, conclude their observations are valid, and take actions based upon their interpretations of friendly actions.¹⁴³ Typically, for the “see, think, do” methodology to be effective and create conditions for the success of friendly force combat activities, it is necessary for friendly forces to plan MILDEC operations in a reverse sequence. Friendly forces determine what behavior they want to evoke from the VNSA, determine what the VNSA must think to induce the desired behavior, and decide what the VNSA would need to see in the OE to invoke the before mentioned thoughts and behaviors. This follows the generic “backwards planning” model used in the military.

However, in the case of ADD, where friendly forces build deception plans based upon the VNSA’s preconceived beliefs, it is necessary to start with what and how the VNSA already thinks. Armed with the VNSA’s attitudes and biases (think), friendly MILDEC planners determine how the VNSA would act (do) if they felt certain of their beliefs, and what actions must be taken (see) to increase certainty in the minds of the VNSA’s leadership. An important caveat is worth mentioning about this sequence. As with any military organization, a chain-of-command (COC) exists within the VNSA. The COC distributes decision-making authorities to different echelons and ensure the VNSA maintains focus and cohesion in combat. It is essential, that friendly MILDEC planners orient their MILDEC activities towards VNSA leaders with actual decision-making authorities.¹⁴⁴ Only persons with authority can direct the predictable actions necessary for friendly force exploitation.

¹⁴³ US Joint Staff, JP 3-13.4, (2017), I-4.

¹⁴⁴ Ibid., V-8.

After identifying persons within a VNSA with decision-making authority, friendly forces must ensure they “see” things that make them feel more certain about the OE. Friendly force action must have salience and capture the VNSA’s attention. Salience, however, is unique in every situation.¹⁴⁵ In some situations, a stimulus has salience because it stands out.¹⁴⁶ In other situations, a stimulus has salience because of a pre-existing schema.¹⁴⁷ In these cases, a person sees something in the OE because they were making a deliberate effort to find it. When applying ADD, friendly forces must coordinate actions with both types of salience to ensure the VNSA observes the MILDEC activities. Understanding a VNSA’s schemas allows friendly forces to determine what objects or activities the VNSA expects to observe in the OE. Equipped with this knowledge, friendly forces conduct MILDEC activities that stand out.

Friendly forces must continually assess the salience of MILDEC activities to ensure the VNSA’s intelligence collection (IC) capabilities observe friendly actions.¹⁴⁸ This requires a thorough analysis of how the VNSA acquires, analyzes, and shares information. Conduit analysis, whereby friendly forces map information pathways from the observation of a stimulus to the receipt of intelligence by the VNSA decision-maker, helps friendly forces determine how to direct MILDEC activities.¹⁴⁹ Understanding how information flows through a VNSA helps friendly planners determine where and when MILDEC activities must occur to ensure they are influence a VNSA leader’s attitudes and behavior.

MILDEC planners ensure the VNSA’s IC network observes friendly actions by building redundancy into their plans, as redundancy also increases their believability. The most believable

¹⁴⁵ Fiske, ‘Social Cognition,’ 169.

¹⁴⁶ Ibid.

¹⁴⁷ Ibid.

¹⁴⁸ Whaley, *Practise to Deceive*, 189.

¹⁴⁹ US Joint Staff, JP 3-13.4, (2017), IV-7.

stories are corroborated by multiple sources.¹⁵⁰ This requires a centralized planning process and unity of effort across friendly echelons. If friendly forces present an incoherent and illogical plan, it will generate and exhibit the wrong type of salience and pique the VNSA's curiosity. A critically thinking VNSA has the potential to mitigate groupthink and is less prone to MILDEC activities.

Once friendly forces determine the VNSA's IC capabilities, they can conduct coordinated actions in the physical and information spaces that reinforce the VNSA's biases and ideology. In the physical domain, friendly forces use a combination of deception techniques to tempt VNSA biases.¹⁵¹ Feints, demonstrations, ruses, and displays influence how the VNSA understands friendly intentions and the permissiveness of the OE. In addition to physical actions, friendly forces conduct operations in the information space to reinforce a VNSA's preconceptions and beliefs.

ADD provides friendly forces the opportunity to generate overmatch against VNSAs in the highly lethal future OE. ADD turns one of the VNSA's most important characteristics, its ideology, into a vulnerability. Friendly forces should foster groupthink within the VNSA, create certainty in their minds, and increase the likelihood the VNSA will act in a predictable manner. Looking towards the future, the US Army should take actions to improve its ability to conduct ADD. The following section will discuss the feasibility of using ADD to generate overmatch against VNSA's in the future OE and outline recommendations for stronger integration into the operations process.

¹⁵⁰ Jon Latimer, *Deception in War* (New York: The Overlook Press, 2001), 63.

¹⁵¹ US Joint Staff, JP 3-13.4, (2017), I-9.

Conclusions and Recommendations

Conclusions: Understand the VNSA's Attitudes and Ideologies

ADD provides friendly forces the opportunity to generate overmatch against VNSAs in the future OE. Trends suggest the US military, and the US Army in particular, will confront well-armed VNSAs that will employ conventional methods and capabilities in the future. Proliferation of advanced technologies will create symmetry between friendly forces and non-state adversaries. As a result, friendly forces must develop methods to defeat VNSA's with materiel parity.

Incorporating ADD into tactical approaches allow friendly forces to cognitively exploit VNSA's and gain positions of relative advantage in the physical space. All VNSAs, whether driven by nationalist, ethnic, or religious beliefs, have ideologies that direct behavior. Ideologies explain how a VNSA interprets the OE, what they want to change in the OE, and how they will change the OE. All of this information is useful to friendly MILDEC planners. Friendly forces that understand a VNSA's ideology have the potential to create conditions where the VNSA places itself in positions of disadvantage. To do so, friendly forces must empathize with the VNSA's ideology. Friendly forces do not have to agree with the VNSA, they only have to understand the VNSA's beliefs and epistemology.

More specifically, friendly forces should focus attention towards understanding the VNSA's visualization for transforming the OE, and their biases towards friendly forces and other actors in the OE. The VNSA's ideology will explain its desired future state. Speeches from leaders, philosophical narratives, or cartographic visuals depict the VNSA's future goals and objectives. Understanding what the VNSA is trying to achieve helps friendly forces predict future actions. Additionally, understanding how a VNSA views friendly forces indicates their biases and stereotypes. Friendly forces should appreciate how VNSAs interpreted past military engagements to ascertain if their confirmation and availability biases are worthy of exploitation.

Strong attitudes create strong biases, and strong biases provide the greatest opportunity for cognitive exploitation through ADD. Analyses of the behavioral sciences indicate that a relationship exists between stimuli and attitudes, and between attitudes and behaviors. Friendly MILDEC planners must understand this relationship to generate effective ADD. Understanding a VNSA's stimuli-attitude-behavior relationship helps friendly forces employ the see-think-do MILDEC methodology. After determining a VNSA's strongly held beliefs (attitude/think), friendly forces use MILDEC tactics and techniques (stimuli/see) to capture the VNSA's attention, and generate a tactical response (behavior/do).

Inducing strong attitudes and predictable responses requires thoughtful analysis. Friendly forces must evaluate a number of factors. First, they must consider the length of time the VNSA held an attitude. The strongest and most resistant attitudes, the types of attitudes most prone to creating predictable behaviors, have long life spans. Second, understanding how the VNSA developed an attitude helps determine its strength. Attitudes created through first-hand experiences are generally stronger than attitudes created through second-hand information. Understanding a VNSA's history and experiences will help determine which attitudes were developed first-hand and prioritize them for exploitation. Moreover, understanding an attitude's consistency indicates its strength. VNSAs that rigorously and continuously defend their attitudes are most prone to exploitation. Their thoughtful re-evaluations of belief systems strengthen their biases and make them vulnerable in the cognitive space.

Exploitation of the cognitive space can help friendly forces generate advantages in the physical space. Understanding a VNSA's ideology allows friendly forces to turn a source of strength into a vulnerability. However, manipulation of a VNSA's beliefs requires friendly forces to change how they view tactical problems and the operations process.

Recommendations: More Understanding, Empathy, and Risk Acceptance

Friendly forces' employment of cognitive exploitation requires a paradigm shift. Friendly forces must start asking different questions, place greater emphasis on different information, and accept greater risk during missions. As elucidated throughout this monograph, cognitive exploitation requires thoroughly understanding adversaries' preconceived beliefs. Thus, friendly forces must focus greater emphasis on understanding a VNSA's ideological beliefs and how the VNSA views friendly forces. This requires a mindset change. Rather than the typical analysis of relative combat power, which often involves a description and comparison of capabilities, friendly forces should analyze the VNSA's identity and epistemology. Understanding how a VNSA knows what it knows offers greater advantages than understanding the capabilities of their warfighting systems.

Friendly forces must also place greater emphasis on different types of information. Typically, friendly forces develop tactical plans based how they believe the enemy will pursue its goals. Rarely do friendly forces consider how the enemy views their adversary. If friendly forces can use empathy to understand the VNSA's perspective, they have a greater chance of identifying their preconceptions and biases. These biases should anchor the friendly forces operational approach and guide tactical actions.

Finally, friendly forces must accept greater risk in execution. Deceiving a VNSA requires friendly forces to present the appearance of tactical activities recognizable by the VNSA. However, actual exploitation in the physical space requires friendly forces to employ new tactical arrangements unforeseen by the VNSA. As a result, exploitation of the VNSA may require friendly forces to act in unfamiliar ways. Friendly forces should accept the uncertainty that comes with novel approaches and remind themselves that potential benefits of deception far outweigh the potential losses of acting in accordance with the VNSA's preconceived belief.

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