

Cognitive Dominance:
A Historical Perspective

A Monograph

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Abstract

Cognitive Dominance: A Historical Perspective, by MAJ James H. Thomas, 45 pages.

Cognitive dominance is not a new concept. Commanders throughout history sought to gain a position of intellectual advantage over their adversaries. Present day army leaders can follow the example of past generals and achieve cognitive dominance through intense personal study before campaigns, focus on visualization during campaigns, and effective communication throughout the operations process. Napoleon Bonaparte, Ulysses Grant, and Norman Schwarzkopf used similar methods to gain this position of advantage. Each used a combination of self-study and intelligence collection to prepare before campaigns. During campaigns, all three focused on visualization of the battlefield. Maps played a critical role in their understanding and allowed them to take prudent risks. Personal understanding is not enough to ensure battlefield victory. Each commander built winning teams that worked well together, and each developed a concise style of oral and written communications.

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Acronyms

ADM	Army Design Methodology
AOC	Army Operating Concept
CAC	US Army Combined Arms Center
CGSC	U.S. Army Command and General Staff College
CENTCOM	US Central Command
DMA	Defense Mapping Agency (succeeded by NGA)
EUCOM	US European Command
GMID	General Military Intelligence Directorate (Iraq)
HDWP	<i>The Human Dimensions White Paper</i>
JSTARS	Joint Surveillance and Target Attack Radar System
NGA	National Geospatial Intelligence Agency
PACOM	US Pacific Command
SAMS	School of Advanced Military Studies
TRADOC	US Army Training and Doctrine Command

Introduction

Lieutenant General David Perkins, the Commander of the US Army Training and Doctrine Command (TRADOC), in his preface to *The Army Operating Concept: Win in a Complex World*, released in 2014, stated that the Army does not know whom it will fight in the future or where these conflicts will occur. Despite TRADOC's best efforts to describe threats of the future, it has only managed to develop a vague description of these threats as complex and uncertain. According to The Army Operating Concept (AOC), to succeed in a complex environment that lacks a specific threat, the Army must, develop leaders that can visualize, describe, direct, lead, and assess operations while surrounded by uncertainty. In particular, the AOC warns that Army leaders must "gain intellectual advantages over adversaries" regardless of the nature of the threat.¹

The Combined Arms Center (CAC) explored the concept of intellectual advantage in 2014, in "The Human Dimensions White Paper" (HDWP). The HDWP included the definition of *cognitive dominance*: "a position of intellectual advantage over a situation or adversary that fosters proactive agility over reactive adaptation, facilitating the ability to anticipate change before it occurs."² Publication of this paper marked the first time cognitive dominance appeared in an Army document, but the absence of the term from previous doctrine does not mean that past commanders disregarded its principles. Rather, a study of historical commanders provides insight into how one might achieve cognitive dominance in the modern era.

Cognitive dominance arose as the fusion of two army concepts, battlefield visualization, and battlefield command. Now known in doctrine as commander's visualization and mission

¹ TRADOC PAM 525-3-1, *The Army Operating Concept: Win in a Complex World* (Washington: Government Printing Office, 2014), iii, 3, 20; Training and Doctrine Command (TRADOC) G-2, "Operational Environments to 2028: The Strategic Environment for Unified Land Operations" (Washington, DC: Government Printing Office, 2012), 2.

² "The Human Dimension White Paper: A Framework for Optimizing Human Performance" (Fort Leavenworth, KS: United States Army Combined Arms Center, 2014), 3, 14.

command, these concepts emphasized the need to develop “a clear understanding of the current state in relationship to the enemy and the environment” and to convey this visualization to others in order to gain a cognitive advantage.³

Thesis

Humans think and make decisions in ways that have not changed greatly over time. Commanders have always sought to gain an information advantage over their opponents. Technologies may mature, but they do not fundamentally alter the way the human mind works. Commanders that attained cognitive dominance were those that gained a superior understanding and visualization of their operating environment and effectively described their visualization to subordinates charged with mission execution. Commanders that attained cognitive dominance were those that could navigate the fog of war in order to decipher meaning in a sea of noise and convey this meaning to others. Commanders today can follow the example of past generals and achieve cognitive dominance through intense personal study before campaigns, focus on visualization during campaigns, and effective communication throughout the operations process.⁴

Methodology

Three historical case studies demonstrate how past commanders used the principles described in the modern concept of cognitive dominance. The three case studies analyze

³ Army Science Board, "Battlefield Visualization" (Washington, DC: Government Printing Office, 1998), 1-13; TRADOC PAM 525-3-3: *The United States Army Functional Concept for Mission Command* (Washington, DC: Government Printing Office, 2010), 2; Field Manual (FM) 6-0, *Mission Command: Command and Control of Army Forces* (Washington, DC: Government Printing Office, 2003), 4-4; TRADOC PAM 525-70: *Battlefield Visualization* (Washington, DC: Government Printing Office, 1995), 1-3.

⁴ Michael R. Barefield, "Commander's Critical Information Requirements: Reality Versus Perception" (School for Advanced Military Studies, US Army Command and General Staff College, 1992), 43; Rodney J. Morgan, "Piercing the Fog and Information Superiority before the Information Age: The American Use of Information in War, 1776" (Marine Corps University, 2010), 21; Martin Van Creveld, *Command in War* (Cambridge: Harvard University Press, 1985), 264-65.

Napoleon Bonaparte, Ulysses S. Grant, and H. Norman Schwarzkopf over the course of their careers rather than focusing on specific battles in order to demonstrate their intellectual traits over extended periods. Evaluation of commanders from different historical eras enables analysis of generalized aspects of war that remain relevant regardless of time and place, and therefore serve as useful evidence to support cross-case synthesis to bolster the analysis. The study considers how each of these generals intellectually prepared himself prior to campaigns, maintained his situational awareness of friendly and enemy forces once campaigns began, and communicated his vision to those charged with executing it.⁵

To assess how commanders intellectually prepared prior to campaigns, the monograph examines self-study—reading habits and educational opportunities commanders pursued in order to enhance their understanding of the operating environment in which they would fight. In addition to the use of existing information sources, commanders also had to acquire information that they did not have, but needed before going on campaign. Thus, the study also considers the manner in which Napoleon, Grant, and Schwarzkopf made use of their staff and various other intelligence enablers. To examine how these commanders obtained situational awareness during campaigns, the study explores the use of visualization techniques, including the creation and use of maps and maintenance of what modern US Army doctrine refers to as a common operating picture (COP). Once the commanders built their visualization and reached a decision, they needed to communicate their plan to subordinates, leading to the final element of analysis—the manner in which they used combinations of their staff and direct communications during mission planning and execution.

⁵ Bruce and Gardiner Pirnie, Sam B, "An Objectives-Based Approach to Campaign Analysis," (Santa Monica, CA: RAND, 1996), 103. The description of the campaign objective "Dominate the Cognitive Environment" and the related discussion of cognitive dominance served as a basis for the development of these evaluation criteria.

Napoleon was one of the most successful generals of all time. The American and German armies both viewed him as the prime example of combat effectiveness and sought to copy his methods. The US Army followed a Napoleonic model for at least one hundred years, including its methods of operation in the War of 1812, The Civil War, and World War I. This influence continues to the present in the works of Antoine Henri Jomini and Carl von Clausewitz, which still appear in the curricula of US Army educational institutions. Among other things, Jomini and Clausewitz both sought to determine how an army could respond to Napoleon's genius, a term that has much in common with the concept of cognitive dominance.⁶

Grant rose from being a relatively unknown Colonel at the beginning of the Civil War, to the Chief of the Union Armies, and eventually to President of the United States. President Lincoln fired five Army commanders before Grant rose to Army-level command. Grant then succeeded where these others had failed. Grant had an uncanny ability to understand problems by breaking them down into their constituent elements and determining the most important elements on which to focus in his operational approach. Grant also understood the concept of an enemy's center of gravity, and he realized that he fought against the Confederacy as a whole, not simply Robert E. Lee's Army of Northern Virginia. Lee misidentified the Union center of gravity, causing him to focus on defeating the opposing Army of the Potomac, losing his army in a war of attrition he did not have the resources to sustain. This allowed Grant to tailor his efforts to defeat Lee's strategic center of gravity, while facing little difficulty defending his own.⁷

General Schwarzkopf led coalition forces during Operation Desert Storm, one of the most lopsided victories in history. By using superior battlefield visualization—enabled by modern technologies—Schwarzkopf defeated the fourth-largest army in the world in a ground war that

⁶ Michael A. Bonura, *Under the Shadow of Napoleon* (New York: New York University Press, 2012), 258-61; Mark T. Calhoun, "Clausewitz and Jomini: Contrasting Intellectual Frameworks in Military Theory," *Army History*, Summer 2011, 23.

⁷ Brooks D. Simpson, "Introduction," in *The Rise of U.S. Grant* (New York: Da Capo Press, 1996), xv; A.L. Conger, *The Rise of U.S. Grant* (New York: Da Capo Press, 1996), 361-62.

lasted only one hundred hours. Operation Desert Storm served as the topic of a RAND study of command that included the first appearance of cognitive dominance in a Department of Defense publication.⁸

Analyzing the military careers of these commanders, with respect to their intellectual preparation for and execution of campaigns, reveals common factors that enabled them to achieve cognitive dominance. A cross-case synthesis then demonstrates the historical continuity of these factors.⁹

Each general studied conducted extensive personal preparation before campaigns. This study covered a wide variety of subjects, all intended to help the commander develop a greater understanding of the environment, the enemy, and his own army. To fill in gaps in existing knowledge, the commanders devoted intelligence resources to develop understanding of current unknowns. Another factor in their personal study was a design approach. The generals realized that one must understand a problem before developing solutions. They understood that understanding changes over time as the environment matures. This may necessitate reframing the problem.

During battles, each commander understood the importance of topography—or military geography. They all studied topography in their developmental years, and developed skill and confidence in the use of custom maps tailored to their unique operational context. The mapmakers themselves played a key role in each commander's decision-making processes. Each commander's ability to visualize the current and future military situation benefited as well from an intuitive ability to determine and focus on the most important factors that would influence the

⁸ Williamson A. Murray and Geoffrey Parker, "Post-War World 1945-2004," in *The Cambridge History of Warfare*, ed. Geoffrey Parker (New York: Cambridge University Press, 2009), 392; "Gulf War Air Power Survey Summary Report," ed. Thomas A. Keaney and Eliot A. Cohen (Washington, DC: Government Printing Office, 1993), 251; Pirnie, "Objectives Based Approach," 42.

⁹ John Lewis Gaddis, *The Landscape of History: How Historians Map the Past* (New York: Oxford University Press, 2002), 3.

outcome of a campaign. The choices they made in this regard followed no set pattern and defied traditional wisdom. A third factor, comfort with prudent risk, allowed them to exploit opportunities identified through their understanding and visualization processes.

None of the commanders studied gained victory simply through superior intellect, but by communicating vision to others tasked with execution. Each built winning teams that stayed together over many years and knew how to maximize everyone's strengths. When issuing orders, the commanders spent considerable time explaining information they needed to know to make future decisions and did not simply outline tasks for execution. Each developed a concise style of communication that took advantage of common experiences of their staff.

Case Study 1: Napoleon

Historians widely agree that Napoleon was one of the greatest generals of all time. Several hundred thousand works about Napoleon already exist, and new works continue to appear on a regular basis. Carl von Clausewitz, whose seminal work *On War* serves as a cornerstone of teaching at the School for Advanced Military Studies (SAMS) and the US Army Command and General Staff College (CGSC), wrote that Napoleon is "the god of war." Napoleon gained this reputation through a constant string of victories that began in Italy in 1796, continued through campaigns against five international coalitions, and did not stop until he first faced defeat at the Battle of Aspern-Essling in 1809. No matter the circumstances of the battle, Napoleon had an uncanny ability to gain an intellectual advantage over his adversaries. Napoleon gained this intellectual advantage through a combination of intense self-study before campaigns, constant efforts to build his battlefield visualization during campaigns, and efficient communication of his orders to subordinates through his chief of staff, Louis-Alexandre Berthier. In many ways,

Napoleon set the standard for cognitive dominance that successive commanders around the world attempted to emulate.¹⁰

Several innovations contributed to Napoleon's success in campaigns. Due to a process of mass mobilization introduced during the French Revolution, Napoleon raised armies larger than any other army up to that point in history. To command and control these huge masses of troops he used a system of independent corps that could maneuver independently, yet respond quickly to Napoleon's operational guidance. These corps formations gave Napoleon flexibility in movement as portions of his army could move faster by using multiple lines of advance.¹¹

Napoleon was one of the first to employ officers from a permanent general staff in combat. Previously, armies created staffs to serve in specific campaigns, but the French formed a permanent standing body in 1783. Napoleon benefitted from this pool of trained staff officers, which he used to fill chief of staff positions in each of his corps. Napoleon's staff system fit his style of decision-making and was the best staff of its day. Napoleon had two different staffs, an 800 man personal staff, (*maison*), and the army staff (*Grand État Major Général*), run by his Chief of Staff, Berthier. In addition to a contingent that supported Napoleon's personal needs and the logistics of maintaining a royal household, Napoleon's *maison* included a section called the

¹⁰ David Chandler, *Napoleon* (New York: Saturday Review Press, 1973), 8; Gunther E. Rothenberg, *The Art of Warfare in the Age of Napoleon* (Bloomington: Indiana University Press, 1978), 9; Carl von Clausewitz, *On War* (Princeton, NJ: Princeton University Press, 1976), 583; Suzanne C. Nielsen, "Political Control over the Use of Force: A Clausewitzian Perspective," (Carlisle: Strategic Studies Institute, 2001), 20; Crevel, *Command in War*, 62; Robert M. Epstein, *Napoleon's Last Victory and the Emergence of Modern War* (Lawrence: University Press of Kansas, 1994), 116; Theodore Ayrault Dodge, *Great Captains: Napoleon*, vol. IV (Boston: Houghton Mifflin, 1907), 672, 731; Antoine Henri Jomini, *Art of War*, trans. Capt. G.H. Mendell and Lieut. W.P. Craighill (1862), 85-92; Pirnie, "Objectives Based Approach," 18.

¹¹ Rothenberg, *Warfare in the Age of Napoleon*, 101; Peter Paret, "Napoleon and the Revolution in War," in *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*, ed. Peter Paret (Princeton, NJ: Princeton University Press, 1986), 125; Michael Howard, *War in European History*, Nook Electronic ed. (New York: Oxford University Press, 2009), 89. Historians call the mass mobilization of citizens into French armies the *levée en masse*. Napoleon did not start this process, as it began during the French Revolution. Napoleon benefitted from the increased military manpower available due to mandatory service by all able-bodied men.

Cabinet. The Cabinet included three bureaus: an intelligence bureau that compiled enemy information, a topographic bureau that maintained a situation map of enemy and friendly units, and a secretariat that wrote and dispatched orders. Though Berthier ran the separate Army staff, he also served as a member of the Cabinet, much as the heads of government departments in the United States today lead their own staffs but also serve in the President's cabinet. Though Napoleon benefitted from innovation in command relationships and staff organization, his ability to attain cognitive dominance over his enemies was the most important and least understood contribution to his success.¹²

Octave Aubry, a French historian and biographer of Napoleon, wrote that Napoleon possessed "the greatest personality of all time, superior to all other men by action of virtue of the range and clarity of his intelligence, his speed of decision, his unwavering determination, and his acute sense of reality, allied to the imagination on which great minds thrive."¹³ Reading the work of historian Peter Paret, one can conclude that Napoleon was the type of genius that could employ existing structures better than anyone else could. He did not acquire the label of genius because he created new structures never seen before or because he had superior weaponry or organization. Napoleon's advantage was in his ability to maximize use of existing resources using his mind.¹⁴

France's neighbors faced a tremendous, existential challenge as they sought a way not only to defeat Napoleon's armies, but also the intangible characteristics of his mind. Both Jomini

¹² Charles Raueber, "Duty and Discipline: Berthier," in *Napoleon's Marshalls*, ed. David Chandler (New York: Macmillan, 1987), 47; John R. Elting, *Swords around a Throne: Napoleon's Grande Armee* (New York: The Free Press, 1988), 33, 81; Epstein, *Napoleon's Last Victory*, 24; Colonel Vachée, *Napoleon at Work* [Napoleon en Campagne], trans. G. Frederic Lees (London: Adam and Charles Black, 1914), 211; Rothenberg, *Warfare in the Age of Napoleon*, 209. Before Napoleon, the French name for general staff officer was *adjutant-généraux*, he changed the name to *adjutant-commandant* and expanded the permanent pool of officers.

¹³ Octave Aubry, *Napoléon*, trans. Margaret Crosland and Sinclair Road (New York: Crown Publishers, 1964), 374.

¹⁴Paret, "Napoleon," 127.

and Clausewitz experienced warfare in the Napoleonic period, and their works *The Art of War* and *On War* draw from this experience. In these works, both officers sought to explain how Napoleon achieved such success, and to describe what people could learn about the nature of war and warfare from his actions.¹⁵ Paret argued in his article, *The Genesis of On War*, that during much of Clausewitz's lifetime the struggle to adapt to Napoleon's new method of warfare served as the defining factor that shaped the character of the Prussian Army. Paret later described in his book *The Cognitive Challenge of War* the process by which Prussia intellectually and institutionally reformed its military to contend with this fundamental shift in the nature of warfare.

Napoleon set the conditions for success well before the beginning of a campaign through intense intellectual preparation. Napoleon studied every problem he faced in detail while retaining awareness of the broader context, looking at issues in both breadth and depth. He could process vast amounts of information through intense focus on one subject, and possessed intellectual agility that enabled him to switch focus quickly to another topic as needed. Napoleon described his own brain using the metaphor of a series of drawers in a desk that he could open and close at will.¹⁶

To fill the drawers in this desk, he read voraciously, including topics outside of military art. While Napoleon had a thorough knowledge of Frederick the Great's campaigns, Napoleon devoted much of his reading to the history, geography, law, and religion of the places he expected to campaign. All of Napoleon's residences had extensive libraries, and he created a traveling library that accompanied him on campaign. Though smaller than his household libraries, it

¹⁵ "The Genesis of *on War*," in *On War*, ed. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), 9; *The Cognitive Challenge of War: Prussia 1806* (Princeton: Princeton University Press, 2009), 73-79; Calhoun, "Clausewitz and Jomini," 23; John Shy, "Jomini," in *Makers of Modern Strategy: From Machiavelli to the Nuclear Age* (Princeton: Princeton University Press, 1986), 144-45.

¹⁶ David G. Chandler, *The Campaigns of Napoleon* (New York: Macmillan, 1966), xxxv; F. M. Kircheisen, *Memoirs of Napoleon I* (New York: Duffield & Company, 1929), 255.

contained over 3,000 books on subjects including classic literature, poetry, religion, history, geography, and philosophy. Napoleon's preparation took a great deal of work, something that took advantage of Napoleon's seemingly endless energy. As he wrote, "Work is my element. I was born and made for work. I have recognized the limits of my eyesight and my legs, but never the limits of my working power." Napoleon compared the effort he spent preparing for a campaign to that of a pregnant woman preparing for the birth of her child. When asked about his genius, Napoleon responded that genius did not occur naturally, but came only through observation and experience. Napoleon believed that one could acquire genius by hard work and study covering a wide range of subjects.¹⁷

In addition to reading books, Napoleon actively used intelligence collection to expand his knowledge before campaigns. The Ministry of Foreign Affairs had an office that compiled information on all the armies of Europe and produced a book on foreign armies. Napoleon's ambassadors secretly collected information on movements of armies. Napoleon's statistical bureau headed by Lelorgne d'Ideville compiled information from diplomatic sources, foreign media, reports of battles, and captured documents. They were quite successful and Napoleon usually had as good of awareness of enemy forces as he did of his own forces. Napoleon used espionage extensively. In 1805, he converted General Karl Mack's entire network of Austrian spies into double agents. In addition to Napoleon's spies that operated at the strategic and operational level, each Corps in the *Grande Armée* maintained its own information office with a network of spies. Despite the fact that he had multiple agencies that processed intelligence, Napoleon insisted that all intelligence reports go straight to his personal staff without filter so that he could draw his own conclusions from the information. Napoleon expected his staff to take care of administrative matters and his Chief of Staff, Berthier, reviewed all operational reports before

¹⁷ Elting, *Swords around a Throne*, 76; Chandler, *Campaigns of Napoleon*, xxxviii; Kircheisen, *Memoirs*, 242, 254.

they went to the Emperor. Only intelligence reports moved through the staff to Napoleon in a different manner.¹⁸

Napoleon used intelligence to help him understand the threat. He then used design methods as he developed an initial operational approach, which he continued to adjust when he reframed his understanding of the problem. Adaptability was a hallmark of his intuitive decision-making process. All of these facts demonstrate the immense amount of effort and detailed processes that enabled Napoleon to prepare so thoroughly for campaigns before they began.¹⁹

Napoleon's success also stemmed from his unique process of battlefield visualization, in which he combined friendly and enemy functions together rather than compartmentalizing them. Whenever Napoleon set up camp, he demanded that his staff first set up his library, personal papers, and Bacler D'Albe's map. D'Albe maintained the master map Napoleon used for his visualization and maintained the positions of friendly and enemy units on the map. Napoleon and D'Albe spent hours together before each battle, working on top of a large map that D'Albe drew himself, tracing routes and measuring distances. Napoleon consistently went first to D'Albe, one of closest companions, when he needed to ask for advice. No other officer played as great a role in Napoleon's intellectual work, or directly influenced Napoleon's centralized decision-making process.²⁰

Napoleon valued maps because of their importance in his visualization process. As an indication of the importance of his cartographers, Napoleon ate his meals in a setup of four tables while on campaign. One table was strictly for Napoleon, Berthier, and distinguished visitors. One table was for personal assistants and medical staff. The third was for field marshals and generals,

¹⁸ Vachée, *Napoleon at Work*, 100-02; Elting, *Swords around a Throne*, 85.

¹⁹ Rothenberg, *Warfare in the Age of Napoleon*, 210; Elting, *Swords around a Throne*, 90.

²⁰ Elting, *Swords around a Throne*, 85, 98, 114, 167; Vachée, *Napoleon at Work*, 96-98, 114; Chandler, *Campaigns of Napoleon*, xxxix.

and the fourth strictly for members of his Topographic Bureau. Acquisition of maps was one of Napoleon's biggest challenges before campaigns. Maps were not readily available and those that were available were of poor quality with inaccuracies in data. Napoleon sent officers out to purchase all the maps they could find before battles; his armies also scoured through captured homes along their route in search of maps. D'Albe headed Napoleon's topographical enterprise for seventeen years. D'Albe would likely feature more prominently in historical accounts were it not for the fact that he left no personal memoirs.²¹

While on the battlefield, Napoleon had a natural ability to quickly assess the situation and intuitively decide upon the best course of action. This skill, or as Clausewitz came to call it—*coup d'oeil*, enabled him to focus on what is most important at the moment in order to attain victory. Jomini attempted to generalize *coup d'oeil* into a set of fixed principles, but was unable to do so as situations are always different. Clausewitz understood *coup d'oeil* as an intuitive way to address the fog of war. Napoleon's intuition allowed him to take prudent risks. However, as time progressed he lost his ability to differentiate between prudent risks and gambles.²²

The third key to Napoleon's cognitive success was his ability to communicate his vision to others. Historians sometimes criticize Napoleon for failing to mentor his subordinates. However, he knew how to build a winning team that made best use of everyone's talents. Officers coveted positions on Napoleon's staff because they thought such service would do more for their career advancement than serving on the line. This caused great resentment between line and staff officers, as the line officers believed their position gave them a disadvantage relative to their peers on the general staff. As historian Gunther Rothenberg described, however, Napoleon's staff remained superior to that of any army until at least 1812. Napoleon was loyal to those he trusted.

²¹ Rothenberg, *Warfare in the Age of Napoleon*, 211; Vachée, *Napoleon at Work*, 98-99, 114-15.

²² Calhoun, "Clausewitz and Jomini," 34; William Duggan, "Coup D'oeil: Strategic Insight in Army Planning," (Carlisle, PA: Strategic Studies Institute, 2005), 2; Chandler, *Campaigns of Napoleon*, xl-xli.

He kept the same assistants throughout the life of the empire, and he overlooked individuals' faults because he knew about them ahead of time. Napoleon kept his subordinates within clearly defined roles so they would not threaten his power, but this behavior reflects the time and environment in which he lived more than a personality quirk. He picked the best men available to do a task; he did not intentionally pick weak men to fill staff positions so they would not threaten him. He asked for loyalty and full dedication of knowledge and energy to serve both him and, by extension, France. As Robert M. Epstein described in *Napoleon's Last Victory and the Emergence of Modern War*, some believe that Napoleon made decisions on his own without aid of a staff, but this view simply makes no sense. As this case study shows, Napoleon went to great pains to surround himself with trusted agents, whom he rewarded through loyalty over many years.

To ensure Napoleon had all the information he needed, to include on his maps and to support his decisions, he included both operational instructions and information requirements in all orders to his subordinates. Instructions to his field marshals spent as much time tasking collection of information about the enemy as dictating the scheme of friendly maneuver. Colonel Paul Thiebault wrote a staff operations manual, which described staff administrative procedures in detail. More interestingly, it listed eleven standing questions about the enemy that Napoleon required his staff and subordinate commanders to answer while on campaign. Thiebault decided to become an expert on staff operations after he served on a division staff in Italy, but was embarrassed when he could not answer Napoleon's questions about his division during the campaign. Thiebault's manual became a standard text for staff operations over the next twenty years in France.²³

²³ Vachée, *Napoleon at Work*, 102; Paul-Charles-François Thiebault, *Manuel Général Du Service Des États-Majors Généraux Et Divisionnaires Dans Les Armées* (Paris: Magimel, 1813), 99-100; Gérald Arboit, "Napoléon Et Le Renseignement," (Paris: Centre Français de Recherche sur le Renseignement, 2009); Elting, *Swords around a Throne*, 82-83.

Napoleon used Berthier's staff to translate his mental concept into concise working instructions in addition to its role in building his situational awareness. Berthier's army staff ensured that the *Grand Armée* executed Napoleon's plans according to his mental concept. Napoleon stated that Berthier was always with him as he drew up his plans, which he translated into orders at the first stop of his carriage. Napoleon spoke highly of Berthier's energy, dedication, and attention to detail. Napoleon followed a standard procedure when issuing orders via Berthier. They always went out between four and five in the morning. They contained the following elements, "object of the march, position of the army, and instructions to obtain information concerning the enemy." Berthier's army staff consisted of four sections that managed personnel and discipline, logistics and engineering, operations and intelligence, and internal staff administration. Reinforcing the importance of topography, Berthier's staff also had a topographic section tasked with maintaining awareness of friendly positions, directing reconnaissance, surveying, and collecting topographic information. This office worked together with the Topographic staff within Napoleon's *maison*.²⁴

Berthier was the perfect match for Napoleon's needs as Chief of Staff, because he worked extremely hard and held high standards for his subordinates. Napoleon preferred not to fixate on specifics. Berthier was a man that made up for this by consummate attention to the smallest detail. Napoleon needed him as the mechanism to translate his conceptual plans into detailed plans that subordinates could execute. Despite his talents, Berthier was never a threat to Napoleon, because he had no ambition of his own other than to be a loyal follower. Berthier's success in managing his staff came from his establishment of clear expectations. The staff must always present the truth, even if it is painful. Speed and accuracy were critical in all work. The

²⁴ Kircheisen, *Memoirs*, 183-84; Vachée, *Napoleon at Work*, 69, 134.

staff must be prepared to respond to the armies needs at any time of day, for they had no purpose other than to serve the army.²⁵

After 1809, Napoleon's armies began to fail. Napoleon made mistakes prior to 1809, but his enemies made more."²⁶ As time progressed; however, Napoleon's enemies adapted to his methods and he no longer maintained his position of cognitive dominance. The qualities that allowed Napoleon to rise were the same ones that caused him to fall. His great ability to make decisions intuitively turned to delusion as he began to believe what he wanted to believe even when the facts of a situation did not support it. This set conditions that led to failure at Waterloo. He refused to accept defeat as a possibility and increasingly distrusted his subordinates, letting his centralization of power result in tyranny.²⁷

Napoleon attained cognitive dominance by personal preparation for campaigns that consisted of reading and using his intelligence assets to fill gaps in existing knowledge, constant efforts to build situational awareness through creation of maps, and efficient operations of his staff. While these techniques gave Napoleon cognitive dominance over his enemies for over thirteen years, he began to lose this advantage as he ossified in his methods and his enemies learned to counter them.

Case Study 2: Grant

Ulysses S. Grant rose from relative obscurity at the beginning of the Civil War to command of all Union armies. Surpassing five previous commanders whose experience and education all indicated that they should have succeeded, Grant won the war. Grant achieved this success through perseverance—the willingness to learn and grow, particularly in difficult

²⁵ Vachée, *Napoleon at Work*, 69, 134; Raueber, "Duty and Discipline: Berthier," 50-51.

²⁶ Elting, *Swords around a Throne*, 83.

²⁷ Epstein, *Napoleon's Last Victory*, 182.

circumstances. Grant was a self-made man. He benefitted from formal education, but the most important lessons he learned came from experience.²⁸

Grant grew up in Ohio, as the son of a businessman that owned and operated a leather business spanning multiple states. He did not originally intend to join the Army. His father wrote to his congressman requesting a nomination to the United States Military Academy at West Point (West Point) for his son. He then informed Grant that this is where he would go to school. Grant's father wanted his son to get a good job, and believed that West Point would set him up for success in the military and perhaps a follow-on career in engineering or business. At first, Grant refused to go, perhaps due to a fear of failure, because he knew a friend whose family did not allow him to return home after he failed out of the academy. Despite his initial reservation, he acquiesced to his father's will. Once at the academy, Grant was an average student. His goal was to graduate and apply for a position teaching mathematics, which he could translate into a civilian academic career. Grant disliked the military's focus on drill and discipline and had no plans to make the army a career. He had a poor foundation in math before West Point compared to many of his peers, but quickly mastered algebra, geometry, trigonometry, and calculus. Though he had the aptitude to do incredibly well in these subjects, he saw little incentive to study hard when uniform or drill deficiencies negated academic performance. Grant focused on doing what he needed to do to earn a passing grade, but nothing more.²⁹

After graduation, Grant served at Jefferson Barracks, near Saint Louis, Missouri. There he met his future wife, Julia Dent. The Mexican War intervened, and Grant had to wait until the campaign ended to get married. Grant moved to Oregon with his unit and he could not bring his

²⁸ Harry S. Laver, *A General Who Will Fight: The Leadership of Ulysses S. Grant* (Lexington: University Press of Kentucky, 2013), 9.

²⁹ "The Leadership Origins of U.S. Grant" (Speech, US Army Command and General Staff College, 2015); Geoffrey Perret, *Ulysses S. Grant: Soldier & President* (New York: Random House, 1997), 18-19; Bruce Catton, *U.S. Grant and the American Military Tradition* (Boston: Little, Brown and Company, 1954), 9-13, 17-18.

family. From there, he transferred to California. While still serving in the Army, Grant formed at least four business partnerships that all failed during this time. Each attempted to sell commodities that were difficult to acquire in the frontier communities of California: potatoes, ice, hogs, timber, as well as a boarding house. The reasons for failure differed in each case, transportation difficulties, entry into the market at the same time as others, and stolen funds all played a part, but each failure was a lesson for Grant. After a long period of separation from his family, Grant became bored and home sick. Grant turned to drink and faced further problems, as he did not get along with his commanding officer, Lieutenant Colonel Buchanan. Buchanan accused Grant of misconduct and offered him the choice to resign or go to trial. Grant decided to resign and pursue a career that would allow him to spend time with his family.³⁰

Resignation from the army became only one of many setbacks Grant faced over the next several years. Grant left the army penniless, and could not even afford a hotel in New York after he got off the boat that returned him from the west coast. He had to borrow money from a close friend, Simon Bolivar Buckner, in order to pay the bill. Grant made his way back to Saint Louis and settled on a few acres of land Julia inherited from her family. Grant spent the first year clearing the land, then a second year building a log cabin for his family. He could not afford to buy seed for his crops and the only income he earned was from firewood that he cut and sold on the street in Saint Louis. After failing at farming for several years, Grant joined a real estate firm, and then attained a job at the customs collection office. Neither of these jobs worked out, and he begged his father for a job in the family business. His father hired him as a clerk in 1860, the job he held until the Civil War began.³¹

In some ways, Grant serves as the antithesis of the argument that attainment of cognitive dominance comes from personal study before campaigns. Grant gained experience through the

³⁰ Perret, *Soldier and President*, 28-29; Catton, *Grant and Tradition*, 21-23, 45-49; Jean Edward Smith, *Grant* (New York: Simon & Schuster, 2001), 81-82.

³¹ Catton, *Grant and Tradition*, 50-51; Smith, *Grant*, 85-87.

many setbacks he faced before the Civil War, but not necessarily through conscious effort to learn. During the war, General William T. Sherman stated on several occasions that Grant attained success from his common sense and the ability to adapt despite changing circumstances and stressful events. Grant did not learn common sense or resilience by reading a book. He admitted he had not read about many of the tactics he used, yet he readily applied solutions when he thought they made sense. Grant remembered his history lessons from West Point, but rarely followed a historical model on the battlefield. He viewed history as a source of ideas but not a prescriptive formula.³²

Grant responded in his memoirs to critics of his intellect, writing that he methodically prepared for battles, while keeping his thoughts to a limited audience. During the Vicksburg campaign, heavy rain caused high water from December 1862 to April 1863. This limited Grant's mobility, but he continued to pressure the enemy through a series of maneuvers in bayous north of the city as well as the attempted construction of several bypass canals. Grant received constant criticism from the media, who expected to see quick results. Though the media presented Grant as stalling, he claimed that he spent the whole time developing a plan to move his army south of Vicksburg by land, cross the Mississippi River, then attack Vicksburg from the landward side. He intentionally limited knowledge of this plan so that the enemy could not react to it. The media had an agenda in criticizing his methods. Reporters wanted to beat their rivals by publishing accounts of battles and planned operations before others. Grant knew that anything he said would end up in the newspaper. Limiting his thoughts to a select group prevented the enemy from learning about his intentions through the media.³³

Grant actively sought out information to fill gaps in existing knowledge. He employed a group of spies that he personally managed. These spies provided accurate information on "enemy

³² Smith, *Grant*, 90-95; Simpson, "Introduction," xvi-xvii.

³³ John Mosier, *Grant*, The Great Generals Series (New York: Palgrave Macmillan, 2006), 161.

strength, morale, location, and intentions” during 1861 to 1862. Leading up to the Battle of Shiloh, however, the amount of information overwhelmed his ability to manage it personally. At this point in the war, he had a staff that managed administration but had not appointed anyone to manage intelligence collection or analysis. The Union took many prisoners of war that likely knew about enemy plans, but did not question them due to other work priorities. Had they questioned the prisoners and created reports, analysts could have used them as additional information to help in the identification of erroneous information from other sources, assisting the commander in his effort to draw conclusions about enemy intentions or actions. At Shiloh, Grant’s awareness suffered because he realized the value of intelligence but he did not have a system to provide it to him when needed but without personal involvement.³⁴

Grant used a design approach in his campaigns, developing an initial conceptual plan and reframing it as the situation evolved over time. During the Vicksburg campaign, he changed operational approaches from an initial overland campaign from the north in December 1862, to a series of joint army and navy operations from January 1863 onwards. The new approach included attempted construction of several river bypass canals. This approach changed again to crossing the river south of Vicksburg and then attacking Vicksburg from the landward side. Grant changed approaches one more time when initial assaults on Vicksburg failed and he switched to a siege. He changed his approach each time based upon changes in the environment due to enemy action that changed his understanding of the problem.³⁵

Grant used maps to develop his strategy. Following the Vicksburg campaign, he maintained a map of proposed lines of advance and enemy key terrain and economic centers, which also showed the progression of land recaptured by the Union from Confederate armies. Drawing maps during the Civil War was no simple task, requiring one to do much of the work by

³⁴ Mosier, *Grant*, 162, 304-06, 1134.

³⁵ Conger, *The Rise of U.S. Grant*, 234-35; *Guide to the Vicksburg Campaign*, (Lawrence: University Press of Kansas, 1998), 2-4.

hand. At that point, no formal land survey existed for most of the country. Accurate maps existed only for small areas and resulted from specific requirements, such as surveying a land purchase or proposed railroad route. On the maps that did exist, names and spellings often contradicted other maps of the same or bordering regions. Lack of cartographic data favored the south, for locals knew accurate information about roads and infrastructure in areas in which they lived.³⁶ Though Grant had to seek out this local knowledge actively during operations, he excelled at visualization. Grant liked to paint and draw and this experience helped him visualize the important aspects of a landscape on a two-dimensional surface.³⁷

Grant gained a cognitive edge over opposing Confederate commanders because of his ability to look beyond the current tactical situation and understand strategic context. When making decisions, he did so largely based upon his intuition rather than following established rules. Civil War generals that went to West Point based many of their decisions on lessons they learned about Napoleon at the academy. Throughout much of the Civil War, these West Point generals sought the opportunity to destroy the opposing army in the Napoleonic manner. Historian Robert Doughty called this focus on destruction the “Austerlitz chimera.” These generals all studied under the same professor, Dennis Hart Mahan, who argued for the concept of decisive battle, similar to the Battle of Austerlitz. Mahan, father of naval theorist Alfred Thayer Mahan, based many of his ideas on the works of Jomini, who believed one could derive timeless principles of war by studying Napoleon’s example.³⁸

³⁶ James R. Arnold, *Grant Wins the War: Decision at Vicksburg* (New York: John Wiley & Sons, Inc., 1997), 259; Conger, *The Rise of U.S. Grant*, 308.

³⁷ John Keegan, *Intelligence in War: The Value and Limitations of What the Military Can Learn About the Enemy*, 1st Vintage Books ed. (New York: Vintage Books, 2004), 75-79; T. Harry Williams, *Lincoln and His Generals* (New York: Vintage Books, 1952), 5-6.

³⁸ Robert A. Doughty and Ira D. Gruber, *Military Operations from 1600 to 1871*, vol. I, *Warfare in the Western World* (Lexington, MA: D.C. Heath, 1996), 392; Mosier, *Grant*, 160.

Though Grant went to West Point, he did not embrace the idea of the focusing on destruction of the opposing army, or its designation by the War Department as the enemy center of gravity. Rather, he represented an opposing school of thought that attrition would defeat the enemy. On the Confederate side, Lee held true to the West Point tradition, continually focusing his efforts on destruction of the opposing Army of the Potomac. Lee was an unparalleled tactical leader, but he could not define a strategic vision for the Confederacy.³⁹

J. F. C. Fuller wrote in *The Generalship of Ulysses S Grant*, that Grant did not reject Napoleonic maxims present in historical accounts of his time, but understood that these lessons did not apply to all situations. Fuller claims that Grant regularly applied Napoleon's *manoeuvre sur les derrières*, an indirect approach to defeat the enemy by cutting off his supply routes, rather than frontal assaults using mass and firepower. Fuller claims that Grant's critics unfairly chastise him as a butcher. When he conducted frontal assaults, it was only when he had no other option due to the position of the enemy and terrain.⁴⁰

Grant's first major victory at Fort Henry in January of 1862, exhibited his ability to visualize the relative strengths of his own forces and those of the enemy and then to take prudent risks based upon this information. Grant's orders were to conduct a diversionary attack. His superiors expected Fort Henry to present strong resistance. Grant correctly assessed enemy strength to be low and requested permission to seize the fort. He returned with a 15,000 men and a naval fleet of gunboats. The fort was flooded and only a small force of artillery remained. Before the battle, the Confederates shifted the majority of their Soldiers to nearby Fort Donelson, not expecting the enemy to strike Fort Henry. After naval bombardment, the garrison surrendered

³⁹ Perret, *Soldier and President*, 27; Christopher Bassford, "Jomini and Clausewitz--Their Interaction," accessed January 15, 2015, <http://www.clausewitz.com/readings/Bassford/Jomini/JOMINIX.htm>; Geoffrey Parker, "Introduction: The Western Way of War," in *The Cambridge History of Warfare*, ed. Geoffrey Parker (Cambridge: Cambridge University Press, 2005), 5.

⁴⁰ Laver, *General Who Will Fight*, 5; J. F. C. Fuller, *The Generalship of U. S. Grant* (New York: Dodd, Mead and Company, 1929), 375.

and a naval boat sailed inside the flooded fort to accept the surrender. This success opened the Tennessee River to Union raids, allowing the Union to strike as far south as Alabama. Grant attempted to repeat the same success at nearby Fort Donelson. This time, the navy flotilla suffered extensive damage and had to retire, leaving the assault to the Army. The Confederates initially withdrew following the bombardment, but decided to hold their ground and defend the fort. Grant demanded unconditional surrender and achieved the first major Union success of the war. Over 12,500 Confederate Soldiers surrendered. Union gunboats could now travel up the Cumberland River and Nashville, Tennessee, the state capital, surrendered without a fight.⁴¹ Forts Henry and Donelson provide examples of how Grant took prudent risk to exploit gained through superior battlefield visualization.

Grant knew how to build his subordinate commanders and staff into a winning team. He inspired his subordinate commanders so that orders were not just instructions, but motivators for them to put forth their best effort. Grant is the first known general with over one million men under his direct command, yet he effectively ran this large army by leveraging trust with these commanders.⁴²

Just as Grant relied upon his commanders, he used his staff further his visualization and to help him make decisions. Each evening his staff discussed options and weighed the pros and cons as a group. Grant's staff did not follow a formalized process in presenting products to him. Rather, Grant sat with the group while they debated and he listened to everyone's input. Grant did not always embrace options exactly as presented, but used the discussion as an input help as he made decisions later on.⁴³

⁴¹ *Generalship of Grant*, 360-72.

⁴² Doughty and Gruber, *Operations 1600 to 1871*, I, 352.

⁴³ Conger, *The Rise of U.S. Grant*, 349.

Grant emphasized the importance of gathering information about the enemy while conducting maneuver. Grant's intuitions played a large role in his decision-making processes, so such knowledge was necessary for him to understand and react to changing circumstances. Grant stated that war is simple. "Find out where the enemy is. Get him as soon as you can. Strike at him as hard as you can and as often, as you can, and keep moving on."⁴⁴

Grant was a man of few words, but his words carried meaning. His writing was direct and to the point. Several authors described that Grant's subordinates always understood what he wanted. No plan ever failed because of misinterpreted communications. Grant won over others through his ability to describe concepts concisely, his ability to relate to his soldiers, as well as his courage, confidence, and determination.⁴⁵

Grant may have been able to succeed earlier in 1864 if his generals followed his design. Three of his army commanders, Banks, Butler, and Sigel, were political appointees that lacked the experience and training necessary to execute effectively. Grant did not blame them for their failures or lack of experience because he understood their political importance to Lincoln's re-election.⁴⁶ Grant also understood better than other commanders that war is inherently a political struggle. While political generals might lack experience, they understood the link between military action and popular support. Regular army commanders often misunderstood the link between politics and focused on strictly military matters. Grant found a middle ground; he based his operational approach during the last year of the war on breaking the Confederate will to fight, not simply destruction of its armies. In order to execute this approach he built a winning team

⁴⁴ Quoted in Simpson, "Introduction," xiii-xiv.

⁴⁵ T. Harry Williams, *McClellan, Sherman, and Grant* (New Brunswick, NJ: Rutgers University Press, 1962), 105; Smith, *Grant*, 13.

⁴⁶ Wesley K. Clark, "Foreword," in *Grant*, ed. John Mosier, *The Great Generals* (New York: Palgrave Macmillan, 2006), x.

from his regular army cadre, but trained them to understand the political connections with their actions on the battlefield.⁴⁷

Case Study 3: Schwarzkopf

H. Norman Schwarzkopf served as Commander-in-Chief of Central Command (CENTCOM) during Operation Desert Storm, one of the most lopsided victories in military history. During this forty-two day conflict, the United States destroyed most of the Iraqi Army's combat power and caused tens of thousands of enemy casualties while only losing eighty-nine American soldiers. Before the conflict, Iraq possessed the world's fourth-largest army. By the end of the conflict, the Iraqi Army retained less than thirty percent of its original strength. As CENTCOM Commander, Schwarzkopf controlled all US military forces in the Middle East. Unlike Grant and Napoleon, Schwarzkopf commanded forces in a specific region but did not have control over the entire armed force of the nation. Though consulted frequently by senior national leaders, Schwarzkopf was not the sole voice in expressing military options to the President. General Colin Powell, Chairman of the Joint Chiefs of Staff, conducted much of the regular interaction with the President and other senior government officials. This separation of roles allowed Schwarzkopf to focus on fighting while others dealt with politics. It also meant, however, that Schwarzkopf had to implement political guidance with limited influence on shaping the development of this guidance.⁴⁸

⁴⁷ Willamson Murray, "The Industrialization of War," in *The Cambridge History of Warfare*, ed. Geoffrey Parker (Cambridge: Cambridge University Press, 2005), 233; Thomas J. Goss, *The War within the Union High Command: Politics and Generalship During the Civil War* (Lawrence: University Press of Kansas, 2003), 170-89.

⁴⁸ Stephen A. Bourque, *Jayhawk! The VII Corps in the Persian Gulf War* (Washington, DC: Department of the Army, 2002), 455-56; Robert A. Doughty and Ira D. Gruber, *Military Operations since 1871*, vol. II, Warfare in the Western World (Lexington, MA: D.C. Heath, 1996), 981-82, 993; Michael R. Gordon and Bernard E. Trainor, *The Generals' War: The inside Story of the Conflict in the Gulf* (Boston: Little, Brown and Company, 1995), viii-x; Jeffrey J. Matthews, "Exemplary Followership: Colin L. Powell," in *The Art of Command: Military Leadership from George Washington to Colin Powell*, ed. Harry S. Laver and Jeffrey J. Matthews (Lexington: University Press of Kentucky, 2008), 251-55.

Schwarzkopf grew up in New Jersey, the only son of the first superintendent of the New Jersey State Police. Norman had the same name as his father, known for his role in the investigation of the kidnapping of Charles Lindberg's son. The elder Norman served in World War I after graduation from West Point and reached the rank of Colonel, then transitioned to civilian police work. Schwarzkopf's father entered the army again in World War II and served as the chief US military representative in Iran, during which time he rose to the rank of Brigadier General. Norman lived with his father in Iran for several months then went to a boarding school in Switzerland, followed by American high schools on military bases in Frankfurt and Heidelberg, Germany. In each of these cases, he felt like an outsider and learned to adjust to changing environments. He also learned to appreciate the perspectives of other cultures, knowledge that helped him understand how to work with a coalition in Operation Desert Storm.⁴⁹

After high school, Schwarzkopf followed his father's example and went to West Point. He graduated high in his class and later credited West Point with giving him a sense of purpose and duty. Schwarzkopf commissioned infantry and served his first assignment in the 101st Airborne Division. Following this assignment, he served as a reconnaissance platoon leader with the Berlin Brigade in Germany. In Berlin, he conducted real-world missions against the East German and Soviet militaries on a regular basis. This experience showed him that real world missions bred professionalism and he felt that he learned more in these types of missions than training exercises. Following his tour in Germany, the Army sent Schwarzkopf to advanced infantry officer training at Fort Benning and then to earn a master's degree in guided missile engineering at the University of Southern California. While in California, he moonlighted as a professor at two local colleges, teaching calculus, accounting, engineering, and business math. He did so to earn extra money, as his captain's pay did not go far with the high cost of living in

⁴⁹ H. Norman Schwarzkopf, *It Doesn't Take a Hero* (New York: Linda Grey Bantam Books, 1992), 7-11, 28-46.

southern California. Schwarzkopf then taught at West Point. While at West Point, he volunteered to serve in Vietnam, however, as he had not completed the teaching time required to earn his master's degree, he went on the condition that he must return to West Point following the deployment.⁵⁰

Schwarzkopf learned to visualize military aspects of terrain while advising a Vietnamese airborne task force. The Vietnamese commander, Colonel Ngo Quang Truong, knew how to look at a map and find areas from which he expected the Viet Cong to attack. He continually surprised Schwarzkopf with his predictive abilities. Each time Truong called in fire missions on these areas that he identified by analyzing a map, ground troops later found enemy bodies of enemy soldiers killed by artillery fire. Colonel Truong spent hours each night studying maps in preparation for the next day's action. Schwarzkopf described Truong as the most brilliant tactical commander he ever met. He lamented that Americans took over the war and imposed their methods, not appreciating the wisdom of professional Vietnamese soldiers such as Truong.⁵¹

Schwarzkopf commanded the 24th Infantry Division at Fort Stewart and deployed as Deputy Commander of the Joint Task Force conducting the Grenada Invasion. His Grenada experience highlighted the importance of good military intelligence, tactical communications, and working together with other services, all which caused friction during the operation.⁵²

Schwarzkopf took command of CENTCOM in 1989 during a time of existential crisis to the future of that headquarters. The command's mission was to counter Soviet influence in the Middle East, but the decline of the Soviet Union (USSR) meant that this threat diminished. European Command (EUCOM) already managed US involvement in Israel, Syria, and Lebanon, while Pacific Command (PACOM) controlled the nearby Arabian Sea and Indian Ocean. An

⁵⁰ Ibid., 72, 92, 98-102.

⁵¹ H. Norman Schwarzkopf, *It Doesn't Take a Hero*, 122-25, 150.

⁵² Ibid., 258.

army general typically commanded EUCOM, while an admiral typically commanded PACOM. With political changes in the USSR, the army and navy fought over the CENTCOM command and gained political allies on both sides. Neither the army nor the navy saw CENTCOM as important in itself, but rather viewed it as an insignificant theater where nothing of note would likely occur. The significance of an admiral or general holding the command was in increasing the relative strength of EUCOM or PACOM and the relative power structure of the two services within joint command structures.⁵³

Schwarzkopf determined that he needed to find a new enemy to give CENTCOM a sense of purpose. Through personal study and his experience living in the Middle East, he understood that Iran posed a long-term threat, but currently had diminished military capabilities because of losses during the Iran-Iraq war. He needed a different enemy that posed a current threat to its neighbors due to robust military capabilities. Schwarzkopf could not focus on problems in Israel because this problem belonged to EUCOM. Iraq was the only state that met these conditions. Schwarzkopf tasked his staff to create a contingency plan to respond to an Iraqi offensive. CENTCOM conducted a war game called Internal Look in which Iraq invaded Saudi Arabia via Kuwait, resulting in political controversy. The State Department wanted to know why CENTCOM acted as if it were at war with Iraq, when no current conflict existed and current US policy was to improve relations with Iraq.⁵⁴

Regardless of his rationale for studying Iraq as a threat, the preparation Schwarzkopf and his staff conducted gave them a cognitive advantage over their foe in the Persian Gulf War. Schwarzkopf recognized the value in planning for possible contingencies ahead of time. His staff produced Operations Plan 1002-90, which he pulled off the shelf to serve as the initial

⁵³ Gordon and Trainor, *General's War*, 42-43; Bob Woodward, *The Commanders* (New York: Simon and Schuster, 1991), 209.

⁵⁴ Gordon and Trainor, *General's War*, 42-43; Robert H. Scales, *Certain Victory: The U.S. Army in the Gulf War* (Washington: Brassey's, 1994), 43-44; Rick Atkinson, *Crusade: The Untold Story of the Persian Gulf War* (Boston: Houghton Mifflin, 1993), 107.

deployment plan for the defense of Saudi Arabia during Operation Desert Shield. Schwarzkopf brought in a four-man team of graduates from the School of Advanced Military Studies (SAMS), who developed the “left wing” attack in which the VII Corps enveloped Iraqi forces in Kuwait and attacked them from the rear. This plan proved critical to Schwarzkopf’s ultimate success. The SAMS team helped Schwarzkopf realize that he needed an additional corps of combat power to ensure success of a flank attack. Schwarzkopf sent the team to Washington to brief the Joint Staff and the President. Colin Powell flew to Saudi Arabia and soon agreed to the SAMS plan. The effort put into this intellectual preparation resulted in Schwarzkopf gaining more forces than he originally suggested. A second Marine division and three additional aircraft carriers in addition to the corps he originally requested. Schwarzkopf may not have fully benefitted from his staff’s talents due to his abrasive personality. The Secretary of Defense almost fired him on multiple occasions during the operation because of the manner he treated his subordinates as well as his perception that Schwarzkopf presented limited options to strategic leaders. Additionally, an outside party, rather than his own staff, developed the concept for his ground maneuver. Both of these facts begin to raise questions about his ability to inspire and lead subordinates. The environment in his headquarters made it difficult for anyone to present novel, creative ideas.⁵⁵

Schwarzkopf used intelligence to fill gaps in existing knowledge. The first American forces sent to Saudi Arabia were reconnaissance and airborne warning aircraft to build situational awareness in addition to fighters and tankers for their protection and logistical support.

Schwarzkopf needed information on the emerging situation as it developed. Iraq was not a focus for US intelligence collection until CENTCOM began to plan for possible regional threats in line with Schwarzkopf’s guidance. Previously, limited resources focused elsewhere. Iraq’s aggressive counterintelligence programs made it difficult to develop new human intelligence networks, so

⁵⁵ Atkinson, *Crusade*, 108-13; Scales, *Certain Victory*, 108-09, 28-29; Gordon and Trainor, *General's War*, 123-29.

Schwarzkopf had to get other capabilities into theater quickly. Intelligence analysts had a large task in planning to identify key targets within Iraq, work that they could not take off the shelf due to limited prior focus on the country. Schwarzkopf felt that national capabilities did not provide him the information he needed as a theater commander but his own intelligence staff in theater made up for these shortcomings.⁵⁶

Four days after Iraq invaded Kuwait, Schwarzkopf flew to Camp David to meet with the Chairman of the Joint Chiefs of Staff, General Colin Powell, the Secretary of Defense, Dick Cheney, and President Bush. In a series of meetings, he argued for the use of airpower in countering Saddam's invasion, describing the many limitations in the use of ground forces, to include a period of seventeen weeks to build a defensive capability and eight to twelve months to build an offensive capability. Cheney and Powell argued that a ground presence was necessary and the President accepted their rationale. The King of Saudi Arabia opposed deployment of US ground forces, so the President sent Cheney and Schwarzkopf to brief him, with the guidance to convince him that ground troops were a necessity. In September 1990, Schwarzkopf agreed with Air Force Chief of Staff Michael Dugan in a Washington Post article that air power was the only solution that could drive Iraq out of Kuwait without destroying the country in the process. Secretary of Defense Dick Cheney fired Dugan several days later for taking his case for airpower to the media. Though Schwarzkopf initially argued for the air only option, his planning efforts gave him the ability to quickly reframe and adopt a new operational approach that used a large ground force in addition to airpower.⁵⁷

Both Schwarzkopf and his Iraqi opponents understood the importance of topography in gaining a cognitive edge over the opponent. Both sides complained about shortages of tactical maps as well as the availability of quality satellite imagery. The US compensated using its

⁵⁶ "Gulf War Air Power Survey Summary Report," 3, 121-23; Schwarzkopf, *It Doesn't Take a Hero*, 293.

⁵⁷ Woodward, *The Commanders*, 247-56, 291.

extensive logistics capabilities, airlifting over 800 pallets of maps into theater. Iraq's military had a Directorate of Military Surveying equivalent to the former US Defense Mapping Agency (DMA)-now known as the National Geospatial Intelligence Agency (NGA). Unlike the US agency, Iraq's agency ran out of maps and sent instructions to attaches abroad to acquire more. It achieved little success due to international condemnation of the Kuwait invasion. It could no longer purchase maps or satellite imagery on the open market. The Iraqis compensated through active intelligence collection including the use of aerial signal intelligence platforms that helped them determine the activity and readiness status of coalition units. They used an airborne radar platform that peered sideways into Saudi Arabia a depth of 40 kilometers. These capabilities helped the Iraqis determine relatively accurate positions of US forces and the preparedness to attack, though the Iraqis struggled to determine indicators of the attack's timing.⁵⁸

Schwarzkopf accepted prudent risks when he began shifting forces to the west on January 17, three weeks before the planned ground invasion. Schwarzkopf moved 270,000 troops with sixty days of supplies without the Iraqis moving any forces in reaction. He knew before making the decision that the Iraqis had limited intelligence because coalition air supremacy prevented reconnaissance flights. He also knew that if even if they learned of the move and shifted armored vehicles to counter it, these vehicles were more vulnerable from the air on the move than in existing protected fighting positions in Kuwait or along the Saudi border. Schwarzkopf employed a new surveillance platform called the Joint Surveillance and Target Attack Radar System (JSTARS) that gave him a radar picture of Iraqi army ground movements within 100 kilometers of the Saudi border.⁵⁹

⁵⁸ Kevin M. Woods, *The Mother of All Battles: Saddam Hussein's Strategic Plan for the Persian Gulf War* (Annapolis, MD: Naval Institute Press, 2008), 127-29; Scales, *Certain Victory*, 134.

⁵⁹ Doughty and Gruber, *Operations since 1871*, II, 989; Woodward, *The Commanders*, 348.

Though Schwarzkopf benefitted from the visualization provided by JSTARS, he did not initially want to bring the asset into theater. Schwarzkopf did not want to use any untested systems, and JSTARS was still in development. He did not want to ask soldiers to learn how to use new systems during the course of battle. The VII Corps Commander, General Frederick “Freddy” Franks, requested the system because he saw its utility during test exercises in Germany. Army Chief of Staff Carl Vuono sided with Franks and deployed the system, believing that troops deserved the latest technologies. The system gave US forces a tremendous advantage over Iraqi forces in visualizing the locations of their forces in comparison to the positions of Iraqi forces, though the system was not perfect. People had to interpret the data and sometimes made mistakes. The plane identified major Iraqi movements during multiple parts of the campaign, but also produced some false reports such as identifying herds of sheep and wire obstacles as enemy columns. Though the system was not perfect, the risk to deploy the system proved correct as overall the system provided key information about enemy movements and aided decisions at numerous points in the campaign.⁶⁰

Perhaps the best evidence that Schwarzkopf chose correctly in accepting the risk to move forces west came in captured Iraqi intelligence documents found at the end of the war. A report from the Iraqi General Military Intelligence Directorate (GMID) dated 23 January, 5 days after the left-wing move began, discussed a major movement of American and French units toward the west. The document correctly reported many details of Schwarzkopf’s plan, including use of Egyptian and Syrian forces as an independent corps, attack of US Marines into Kuwait, use of an armored division to guard the left wing, and heavy use of armor along the center of the coalition advance. The report included a graphic plot of the current positions of US forces in relation to

⁶⁰ *The Commanders*, 369; Scales, *Certain Victory*, 167-70; Thomas Houlahan, *Gulf War: The Complete History* (New London, NH: Schrenker Military Publishing, 1999), 49. JSTARS is a joint program between the Army and Air Force. The Army Chief of Staff had influence in deployment decisions because the system did not belong to the Air Force alone.

Iraqi forces and even included Special Forces elements in Iraq. The report noted that the Americans would try to attack the Iraqi flank and noted the need to increase defenses protecting Iraqi rear areas. Despite gaining this information, however, Iraqi forces were unable to act upon the information. This report was not the only example of accurate reporting on US forces. A seized situation map from November 1990 gave accurate positions for nearly all US units in Saudi Arabia and assessed XVIII Airborne Corps operations as a deception. Schwarzkopf may not have had complete cognitive dominance over his foes, but could better act upon information because of technological advantages and superior communications. Schwarzkopf had a large amount of data due to his use of technical systems, but this information superiority did not automatically translate into cognitive dominance. Cognitive dominance depends upon how one makes use of information, not simply having more information than others do. As this case illustrates, Schwarzkopf believed he had information superiority, but the enemy may know more about friendly forces than he thought they did. Ability to respond was more important than the availability of information.⁶¹

Schwarzkopf benefitted from the strong team that worked for him, but the team succeeded because of the strengths of these individuals, not Schwarzkopf's influence on them. Schwarzkopf often directed volcanic outbursts at subordinates. He threatened to relieve nearly all of his subordinate commanders at some point during the war. Inside his headquarters, initiative suffered, as even senior generals feared bringing Schwarzkopf bad news. The conceptual plan for his campaign came from the SAMS team brought in from outside, not his own staff. This raises the question if his command climate stifled creativity, forcing Schwarzkopf to turn elsewhere for new ideas. Dick Cheney considered relieving Schwarzkopf at various points during the campaign due to his hostile interpersonal interactions. Schwarzkopf faced criticism for failing to develop options for national decision-makers, who believed he offered one comprehensive and inflexible

⁶¹ Woods, *Mother of All Battles*, 126-30, 88-89.

plan. Schwarzkopf worried a great deal about political interference in his plans. Because of their good working relationship, Powell served as a buffer between the politicians and Schwarzkopf, allowing Schwarzkopf to focus on his mission.⁶²

Schwarzkopf instructed subordinates to conduct reconnaissance actively as well as operations to counter the enemy's counter reconnaissance. The combination of these two types of operations would increase his cognitive dominance over the Iraqis as he gained greater situational awareness in comparison to the other side. Before the official beginning of the Gulf War, the First Cavalry Division conducted a number of small-scale raids into Iraq to probe for weaknesses in the defenses. Several of these operations resulted in firefights with Iraqi units.⁶³

In assessing whether Schwarzkopf attained cognitive dominance in the Persian Gulf War, one must look at the results of the war. In the common American narrative, the US won an overwhelming tactical victory. Numerous writers questioned long-term strategic results, as Saddam remained in power. The Iraqi narrative is different. Saddam claimed victory, and in some ways, US actions allowed him to consolidate his power. In April 1990, five months before invading Kuwait, Saddam spoke with Yasser Arafat about future conflict with the United States. He predicted that the US would strike Iraq, and that Iraq would remain dormant during this period, but then strike back at America's strength using terrorist attacks. He stated that the US would seek to fight Iraq in a number of days or months but Iraq would fight a long war and nothing would be over quickly. Saddam's predictions did not play out immediately after the Gulf

⁶² Houlahan, *Gulf War*, 49; Matthews, "Colin Powell," 253-54; Woodward, *The Commanders*, 294-95, 369. According to current army doctrine, a toxic leader focuses on self-promotion while unfairly treating subordinates, resulting in short-term and long-term negative effects on the organization. See Army Doctrine Publication (ADP) 6-22: *Army Leadership*, (Washington, DC: Government Printing Office, 2012), 3. An article in *Military Review* further explains the concept stating that toxic leaders embody the following characteristics: 1) perceived lack of concern for subordinates 2) interpersonal techniques that negatively affect organizational climate 3) subordinates view the leader as looking out for his or her own interests. See George Reed, "Toxic Leadership," *Military Review*, July-August 2004, 3.

⁶³ Bourque, *Jayhawk!*, 36, 142-43; Gordon and Trainor, *General's War*, 329.

War because American forces left Iraq. Saddam's words would ring true when the US returned to Iraq in 2003.⁶⁴

Cross-Case Study Analysis

Several trends emerge when comparing the ways that Napoleon, Grant, and Schwarzkopf prepared before campaigns, and visualized operations and communicated their vision to others during campaigns. Each commander conducted extensive preparation before campaigns. This preparation evolved over time from an individual commander's responsibility to a collective staff responsibility. Each commander also used intelligence to build understanding and identify opportunities worth exploitation. Finally, all had to adapt to changing conditions and adjust their operational approach when changes occurred.

Napoleon expended a great deal of personal effort preparing intellectually for campaigns. Though he had a staff of over a thousand people that assisted him in handling administrative matters, he considered intellectual study of the enemy and environment key tasks that he could not delegate to others. Napoleon trusted only a small group to help him make decisions. His topographer Bacler D'Albe was perhaps the most important because he constantly worked together with Napoleon to create large-scale maps tailored specifically to his needs at any given time. Much of Napoleon's preparation focused on non-military topics related to the culture of the area in which he planned to conduct operations.⁶⁵

Grant benefitted from an excellent education. However, other factors overshadowed his formal education in assisting his decision-making. He relied upon his intuition and experience, most of which he gained by making mistakes. His knowledge of history along with his own personal struggles proved more useful in helping him decide what he did not want to do than in

⁶⁴ Woods, *Mother of All Battles*, 50-51.

⁶⁵ Elting, *Swords around a Throne*, 33, 85, 98, 114, 167; Vachée, *Napoleon at Work*, 96-98, 114, 211; Chandler, *Campaigns of Napoleon*, xxxix; Rothenberg, *Warfare in the Age of Napoleon*, 209.

guiding him to the actions that he took. He understood that his opponents applied historical lessons as principles for action. He saw this as a weakness he could exploit by doing the unexpected. Grant's intuitive abilities helped him to advance past generals who thrived as managers in a bureaucracy, but struggled to lead men in battle.⁶⁶

Schwarzkopf took the opposite approach from Napoleon when preparing for campaigns. While Napoleon limited the involvement of others in mental preparation for battle, Schwarzkopf relied a great deal upon others, perhaps to the point of outsourcing his own thinking. Like Napoleon and Grant, he benefitted from an excellent education. Unlike Napoleon and Grant, he did not personally develop many of the ideas that led to his success. Preparation before a campaign had shifted by Schwarzkopf's time to a more institutional than personal process, and this fit Schwarzkopf's personality and leadership style particularly well. Tasks that had once fallen within the realm of the commander now existed as roles of the staff. Schwarzkopf generally planned operations by accepting or rejecting options that his staff prepared, rather than generating options himself. These differences existed partially because of increased bureaucratization of the Army over time, not strictly Schwarzkopf's personal influence.⁶⁷

Each general focused intelligence to fill gaps in his understanding. Napoleon's foreign ministry and a statistical bureau collected strategic intelligence on other nations including movements of their armies. At the operational level, he employed a network of spies that reported only to him for direction. During the execution of campaigns, he maintained the policy requiring the delivery of all tactical intelligence reports to him without filter or interpretation so that he could make his own judgments of the information. Grant used intelligence assets in much the same way that Napoleon did; he managed his own group of personal spies. The amount of

⁶⁶ Smith, *Grant*, 286-87; Simpson, "Introduction," xvi-xvii; Mosier, *Grant*, 160; Doughty and Gruber, *Operations 1600 to 1871*, I, 392; Fuller, *Generalship of Grant*, 375.

⁶⁷ Schwarzkopf, *It Doesn't Take a Hero*, 28-46; Atkinson, *Crusade*, 108-13; Scales, *Certain Victory*, 108-09, 128-29; Gordon and Trainor, *General's War*, 123-29.

information available overwhelmed Grant early in the war. He could not effectively manage acquisition of intelligence or analyze information already available, such as knowledge held by prisoners of war. Schwarzkopf faced the challenge of disseminating large amounts of intelligence to tactical users. Though Schwarzkopf had access to the data, he faced difficulty transmitting it on existing communications networks to units that needed the information to execute their plans.⁶⁸

Each general faced changing circumstances that necessitated a change in operational approach. Napoleon adapted quickly to nearly any situation. He did not confine himself to one method of making decisions, preferring to assess conditions on the battlefield quickly and come to a decision based upon his extensive self-study and ever-growing range of experience. He could easily change his operational approach, because he alone made decisions. Like Napoleon, Grant relied on intuition and experience to react to emerging circumstances. He advanced past others who did not have the same ability to adapt, relying instead upon historical example and doctrinal models. Schwarzkopf changed his operational approach on several occasions, such as when directed by Powell to prepare for an air and ground campaign, rather than an air-only option. Schwarzkopf did not like these changes and they often resulted in angry outbursts, however, once he dealt with his emotions, he successfully adjusted existing plans. Preparation by his staff during planning and exercises prior to Iraq's invasion of Kuwait enabled him to adopt new approaches quickly because of his thorough understanding of the problem and the environment⁶⁹.

Each general relied upon topographical tools to make decisions. For Napoleon, multiple accounts describe maps and their mapmaker, D'Albe, as the most important influence on his decisions. Grant and Schwarzkopf faced challenges acquiring maps that met their needs, and devoted resources to gaining additional maps and other aids such as aerial photographs. All knew how to take their understanding of the environment, friendly forces, and the enemy and use this

⁶⁸ Vachée, *Napoleon at Work*, 100-02; Elting, *Swords around a Throne*, 85; Mosier, *Grant*, 162, 304-06, 1134; Scales, *Certain Victory*, 171-72.

⁶⁹ Woodward, *The Commanders*, 246-57, 291.

information to assess prudent risks. All three generals studied topography as part of their formal education.

Napoleon and Grant built strong teams that stayed with them for many years. All communicated concisely with their subordinates, though for different reasons. Napoleon relied upon his chief of staff, Berthier, to transmit orders. Since they worked together for many years, it was easy for Berthier to understand Napoleon's words based upon years of common experiences. Schwarzkopf also spoke with few words, which were often inflammatory, and because of this, he probably did little to win the trust of his followers. Grant may have enjoyed the most success at both communicating his vision and winning the loyalty of his subordinates. Schwarzkopf inherited an existing team when he took command of CENTCOM and faced interpersonal challenges. Adjustment came naturally for Napoleon and Grant, but it was more difficult for Schwarzkopf. In addition to these qualities, studied deliberately as part of the methodology, several unexpected conclusions emerged in cross-case study analysis.

Each of the generals achieved success by using existing military structures better than his opponents did, rather than winning by creating new structures. Within the context of institutions at the time, Grant and Napoleon challenged existing methods for the employment of forces, and used the new approaches that they developed to defeat opponents that continued to use existing methods. Schwarzkopf, in contrast, used the existing method of AirLand Battle doctrine against an enemy that he expected to use Soviet doctrine. He achieved success because the asymmetry between US and Iraqi capabilities did not allow Iraq to maximize use of its forces in a doctrinal manner.

Each general rose to power in a slightly different way. With the exception of Schwarzkopf, the three generals rose to their positions during a time of conflict and after other officers possessing greater seniority failed in their responsibilities. Napoleon rose to the top during a long period of conflict that lasted, with brief interludes, for his entire military career. He reached his position through a constant string of victories. He only failed after he had dominated

Europe for over a decade. Grant experienced and learned from a constant string of failures before his rise in the Army. He served in combat in Mexico as a junior officer, but he experienced many formative lessons as a civilian after he left military service in the period before the beginning of the American Civil War. Schwarzkopf served in combat during Vietnam and Grenada, but his long career consisted primarily of service during peacetime. He is the only general of the three that served in his command position before the war. During the war, he almost lost his job several times. The war was short, and if America had remained in Iraq for an extended period, the US Army's personnel management system would have resulted in his service as only one of a string of commanders, regardless of his performance.

Unlike Grant, Napoleon struggled with management challenges as the size of his army grew in his later campaigns. Grant succeeded through leadership and gaining the trust of his subordinates, who proved competent at assisting Grant in the management of his massive army. Schwarzkopf excelled at tactical command and benefited from a largely bureaucratized management system that neither Napoleon nor Grant enjoyed, but he encountered interpersonal difficulties when working at the operational and strategic levels.

All three commanders saw past service rivalries, worked well with officers from other branches of service, and advocated the use of joint capabilities over the use of Army resources if they felt that they could perform the job better. They each did so in an environment of high inter-branch and inter-service rivalry. Napoleon relied upon the navy early in his Middle Eastern campaign, and though he never dominated England at sea, he continued to challenge England on both sea and land for much of his career. Grant worked well with Admiral David Dixon Porter, using navy capabilities extensively and even providing soldiers to help man navy boats during the Vicksburg campaign.⁷⁰

⁷⁰ Keegan, *Intelligence in War*, 30-34.

Despite his army background, Schwarzkopf initially favored the use of air power over ground operations during planning for Operation Desert Storm.⁷¹ Schwarzkopf almost did not have the chance to command CENTCOM because the navy lobbied to put an admiral in the position. The position came open in 1988 and at the time, the navy had a year of experience conducting escort missions in the Persian Gulf, which they touted as the current main effort for the Department of Defense in the Middle East. Despite entering this position at a time when tensions between branches in his command were high, Schwarzkopf lobbied to use capabilities of sister services.⁷²

All three commanders left behind memoirs, though only Grant wrote his memoirs himself. Grant wrote late in life, and did so when he had trouble making ends meet financially. The other two generals' motivations to write differed from those of Grant. Grant began writing his autobiography after receiving a cancer diagnosis, and died a week after completing the work. Unlike Grant, who spent his final years at home, Napoleon lived in exile on Saint Helena, in much more comfortable financial circumstances than Grant. He appears to have written his memoirs primarily to justify his actions and preserve his reputation. Schwarzkopf wrote that he modeled his own book on Grant's memoirs, but he appears to have written it mostly to capitalize on his temporary fame. He benefitted financially while adding his account of these events to the historical record. Despite their different motivations for writing their memoirs, each provides valuable, if not biased, insight into the military campaigns that each commander led and that served as cases for analysis in this study.⁷³

⁷¹ Conger, *The Rise of U.S. Grant*, 349.

⁷² Woodward, *The Commanders*, 291.

⁷³ William S. McFeeley, "Introduction to the First Da Capo Edition," in *Personal Memoirs of U.S. Grant* (Cambridge, MA: Da Capo Press, 1982), xxi-xxiv; Woodward, *The Commanders*, 209.

Conclusion

Modern staffs, bureaucracies, and technologies augment a commander's ability to understand a problem, visualize a solution, and communicate this understanding to others, but they do not replace a commander's obligation to prepare personally before campaigns. Grant, Napoleon, and Schwarzkopf all involved themselves early in personal preparation as well as staff planning in order to understand the environment and enemy rival systems. Each general studied devoted years of his life to education before his wartime experiences. Much of the material that the generals studied came from non-military subjects. Military knowledge of tactics proved useful, but understanding cultural aspects of the environment was also important. Cognitive dominance is something that one must personally work for, it is not a given based upon duty position or factors such as technological advantage.

Intuition and experience may be more useful in decision-making than procedural analysis using methods such as the Military Decision Making Process. However, one may not be able to develop in a peacetime army the intuition required to enable sound decision-making using this method alone. Napoleon and Grant attributed their success to experience, but they each gained this experience through many years of hardship and war before reaching the pinnacle of their military career.

Conceptual planning helps one understand the problem he or she is trying to solve. Preparation and detailed prior planning help one succeed in campaigns, but one must be aware that circumstances change, which often leads to the necessity of reframing one's view of the environment or the problem. Grant and Napoleon excelled at adaptation. Schwarzkopf did not like change, but did recognize the need to change his operational approach based on guidance from his superiors and changes in the environment.

Commanders that benefited from long-lasting relationships with staff members and fellow commanders achieved greater success. Grant and Napoleon both worked with the same staff members over the course of many years. This enabled them to communicate and operate

more efficiently due to common contextual understanding and awareness of personal strengths and weaknesses. Benefiting from relationships does not mean seeking out like-minded individuals, but rather building a winning team of complementary talents and personalities.

The human mind functions in the same manner that it has done for centuries. Though circumstances and technologies change, cognitive traits that enabled past commanders to achieve success still apply in the present day. Napoleon, Grant, and Schwarzkopf achieved cognitive dominance over their enemies through personal study before campaigns, and superior visualization and communication of their vision to subordinates during campaigns.

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