

Surprise: Past, Present, Future

A Monograph

by

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Abstract

Surprise: Past-Present-Future, by LTC John E. Luckie, 43 pages.

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The context of Surprise in US Army doctrine is no longer apparent to the current practitioner. Doctrine must provide a complete definition and holistic understanding of the Principle of Surprise that enables the practitioner to employ it in competition and conflict. Furthermore, as “new” domains for potential conflict emerge and new capabilities become available, Surprise's temporal nature will hold much greater significance in future conflicts.

Contents

Abstract	iii
Acknowledgments	v
Abbreviations	vi
Introduction	1
Section One: Defining Surprise in Military Theory	7
Section Two: Surprise in US Army Doctrine	21
Section III: Conclusion.....	34
Bibliography	40

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Abbreviations

ADP	Army Doctrine Publication
FM	Field Manual
FSR	Field Service Regulations

Introduction

Surprises are inevitable; they come from the limits of people's knowledge and understanding of their environment and themselves.

—Zvi Lanir, *Fundamental Surprises*

Surprise has been a principle or tenet of military theory and doctrine since antiquity; Surprise as an idea becomes even more important as the world around us continues to evolve and become more complicated and potentially more complex. Advances in technology have left many believing that Surprise is no longer attainable. The evolution of wireless communication devices, beyond the line of sight communications, satellites, ISR aircraft leave many a planner with the feeling that they can attain near-perfect, near-real-time information reducing Surprise's risk near zero. However, the technologies and the networks they rely on have created new systems that evolve at an exponential rate, creating opportunities for emergence, therefore uncertainty, and the potential for Surprise.¹ Therefore, understanding the concept of Surprise will be critical to the future of conflict, providing one can accept the assumption that warfare is a complex adaptive system that will exhibit unexpected emergent behaviors and outcomes that can occur at every echelon of conflict.² Complexity theorist Ghrajedaghi goes as far as to say, "if chaos and complexity rule a kingdom of chance, fog, and friction; then cunning is the ace," harkening Clauswitzian images and highlighting that in these complex environments, complete knowledge is unachievable.³

¹ Robert Axelrod and Michael D. Cohen, *Harnessing Complexity: Organizational Implications of a Scientific Frontier*. (New York, NY: Basic Books, 2000), 15.

² Axelrod & Cohen, *Harnessing Complexity*, 7-11.

³ Jamshid Ghrajedaghi, *Systems Thinking: Managing Chaos and Complexity*. (Burlington, MA: Elsevier, 2011), 175-176.

Yet, despite being a staple of military theory for millennia, no military theorist agrees on a universal definition of Surprise, its composition, how to initiate it, what effects it can have, and ultimately, if it is still achievable in the modern world. Historical theorists describe and define Surprise slightly differently, but all agree on its centrality in the cannon of military thought. German military theorist General Waldemar Erfurth went as far as calling it “the key to victory.”⁴ The importance of Surprise is probably most famously enshrined by the 5th-century philosopher and general Sun Tzu as “in conflict, direct confrontation will lead to engagement and Surprise will lead to victory. Those who are skilled in producing Surprises (also translated as deceptions) will win.”⁵ The famed Prussian General and King Frederick the Great once said, “it is pardonable to be defeated, but never to be Surprised.”⁶ Prussian theorist Carl Von Clausewitz devotes an entire chapter to the subject in *On War* and states that “...it is a universal desire to take the enemy by Surprise. This desire is more or less basic to all operations, for without it (Surprise), superiority at the decisive point is hardly conceivable.”⁷ Baron Antoine-Henri de Jomini illustrated that, “[f]or the same reason that advantage should be taken of all opportunities for surprising an adversary, the necessary precautions should be used to prevent such attacks.”⁸ French theorist Ardant du Picq stated, “Surprise is no longer the whole of war, but it remains one of the means of war, the best means, even today.”⁹

⁴ General Waldemar Erfurth, *Surprise*, In *Roots of Strategy Book 3*, trans. Stefan T. Possnoy and Daniel Vilfroy (Harrisburg, PA: Stackpole Books, 1991), 356.

⁵ Sun Tzu, *The Art of War*, edited and translated by Roger T. Ames (New York, NY: Ballantine Books, 1993), 66.

⁶ Fredrich the Great, *Instructions for his Generals*, trans. Thomas Phillips (Mineola, NY: Courier Dover Publications, 201 2), 47.

⁷ Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1984), 198.

⁸ Baron Antoine-Henri de Jomini and Charles Messenger, *The Art of War* (London, England: Greenhill Books, 2006), 210.

⁹ Charles Jean Jacques Joseph Ardant Du Picq, *Battle Studies*, trans. Colonel John N Greely and Major Robert C. Cotton (public Domain book, 1921), Chapter I: Man in Primitive and Ancient Combat,

Current US Army doctrine defines Surprise as “[to] strike at a time or place in a manner for which the enemy is unprepared,” which is the same as the current Joint Doctrinal definition as found in Joint Publication 3-0, *Operations*.¹⁰ US Army Field Manual FM 3-0, *Operations* goes on to state that Surprise is achieved by choosing unexpected directions, times, or types of movement and maneuver.¹¹ The definitions provided in Joint and Army doctrine seem purposefully vague and incomplete. They fail to encapsulate how Surprise affects our understanding of the operational environment, how complexity and emergence are linked to it, and what options exist to either initiate or mitigate Surprise before and during conflict at all levels of war.

Furthermore, while US military doctrine and pertinent theorists focus on the initiation of Surprise, there seems to be little crosstalk with the body of popular research covering intelligence failures and Surprise. This focuses almost exclusively on intelligence failures. This monograph aims to examine the role of intelligence and operational doctrine and its implementation to effectively achieve Surprise against an enemy and mitigate the effects of Surprise on friendly forces. The process of uncovering recent intelligence successes is challenging due to their classified nature and often remains classified for decades afterwards. This makes understanding how intelligence and Surprise can have a positive impact on military operations, particularly at the strategic and—for the purposes of this paper—the operational level of war, intangible and inaccessible for events that are ongoing or in the recent past.

While the levels of war vary from country to country, and the American variety is debatable, for this monograph the levels of war will be the current definitions found in Joint

Kindle.

¹⁰ US Department of the Army, Field Manual (FM) 3-0, *Operations* (Washington, DC: Government Printing Office, 2017) 2-41.

¹¹ *Ibid.*, 2-41.

Publication 1, *Doctrine of the Armed Forces of the United States*. JP 1 describes three levels of war: strategic, operational, and tactical, which are designed to link tactical actions to achieve national objectives.¹² At the strategic level of war, a nation determines national policy and theater strategy. Strategy establishes a framework for employing the instruments of national power in a synchronized and integrated fashion to achieve policy objectives.¹³ The operational level of war links strategy and tactics by establishing objectives needed to achieve military end states and strategic objectives.¹⁴ The tactical level of war is where the employment and ordered arrangement of forces in relation to one another takes place and where battles and engagements are planned and executed to achieve military objectives.¹⁵ It should be noted that the operational level of war was only introduced into the US Army's vernacular in 1982. Before this, only the strategic and tactical levels of war were employed in US doctrine.¹⁶

The future operating environment requires the military practitioner and planner to have a holistic understanding of Surprise and its implications for the future of conflict. This understanding involves input from military theorists such as Clausewitz, Lanir, and Wohlstetter, amongst others, to understand the theoretical underpinnings and how they have helped shape the US Army's conception of Surprise. Equally important is understanding how the US Army's understanding of the levels of war and Surprise have evolved and reflected in doctrine over time.

Surprise is an effect to be achieved through positive action and a phenomenon that

¹² US Department of Defense, Joint Staff, Joint Publication (JP) 1, *Doctrine for the Armed Forces of the United States* (Washington, DC: Government Publishing Office, 2017), I-7.

¹³ *Ibid.*, I-7.

¹⁴ *Ibid.*, I-8.

¹⁵ *Ibid.*, I-8.

¹⁶ US Department of the Army Field Manual 100-5, *Operations* (Washington DC: Government Printing Office, 1982), 9-10.

occurs due to a lack of complete understating of the environment. Surprise is temporal by nature and can transcend the levels of war as they have been and are currently defined. The categorization of Surprise before its occurrence is extremely difficult since it depends on the actions taken by a belligerent and how other participants in the conflict perceive these actions. Surprise is probably best characterized by the effect(s) it achieves. These effects' duration should be its measure of effectiveness and along with the scale or, or for the lack of a better term, the blast radius (how many individuals, organizations, or even nations it affects).

This monograph's primary purpose is to conduct a qualitative examination of the use of Surprise in American doctrine over time while also examining the role of the Intelligence Warfighting function related to the Principle of Surprise. This monograph will explore and attempt to develop a more nuanced definition of Surprise and delineate how that definition may change or vary at the tactical, operational, or strategic levels of war.

Section One analyses Surprise's theoretical evolution as presented by military theorists influential over the development of US military doctrine and a shared understanding of Surprise's role in competition and conflict. This approach is not all-encompassing and is limited by the resources available and the time constraints of this research. It also does not account for the level of influence that each theorist has had on military thinking. Measuring each theorist's impact on military thought and US Army doctrine is also outside this research's scope. This section will illustrate that the US Army's definition is incomplete and requires doctrine writers to fully develop a more holistic definition of Surprise, including the elements and types of Surprise, the uncertainty that accompanies Surprise in action, and delineate the forms of Surprise by echelon if applicable. It will address Roberta Wohlstetter's ideas, which help frame how Surprise occurs by understanding how signal and noise concepts play into a misconception of perfect information. Those of JFC Fuller, Richard Simpkin, Robert Leonhard, and John Boyd build on each other in describing the elements and

characteristics of Surprise and establish how the Principle of Surprise is categorized at each echelon of conflict. Zvi Lanir further develops how Surprise manifests itself in two forms while also establishing and differentiating how Surprise can be a phenomenon outside the effect's scope. Lanir also describes how Surprise more accurately reflects a lack of understanding about yourself and the operational environment.

Section Two studies the evolution of Surprise in American keystone doctrine (Field Service Regulations; Field Manual (FM) 100-5, *Operations*; FM 3-0, *Operations*; and ADP 3-0, *Unified Land Operations*) to outline the development of Surprise as a principle of war over time in American doctrine. Analyzing how the concept of Surprise evolved in American military thought over a time horizon that saw America's rise from a regional actor, valued partner in maintaining the balance of power, and to eventual preeminence on the global stage provides context on American understanding of Surprise. Each of these distinct periods of American history will illustrate how Surprise's concept evolved with America's military successes and failures. This section will highlight that Surprise may be an espoused Principle of War in US Army doctrine. Yet, Surprise's nebulous nature and the uncertainty that follows it, the inability to immediately measure Surprise's effectiveness, and the finite temporal components of Surprise explain how it leaves many writers and planners uncomfortable incorporating Surprise as a component of a planning effort.

The conclusion of this monograph proposes a new military definition of Surprise as an effect achieved through positive action and a naturally occurring phenomenon. This proposed definition of Surprise should be included in future US Army doctrine to better articulate the theoretical underpinnings of Surprise, create an understanding of the Intelligence and Maneuver Warfighting Function's roles and responsibilities regarding Surprise, and better prepare commanders and staffs for future conflicts.

Section One: Defining Surprise in Military Theory

To astonish is to vanquish.

—Alexander Suvorov

Surprise is defined as “an attack made without warning, a taking unawares, the feeling caused by something unexpected or unusual” or, as a verb, “to attack unexpectedly, to take unawares, to detect or elicit by taking unawares, or to strike with wonder or amazement especially because unexpected, or to cause astonishment or awe.”¹⁷ In this common usage, we already see elements represented in military thought: An action causes Surprise, it involves an aspect of unpreparedness on the recipients’ part, that there is a cognitive aspect to it, and it will elicit a response (to be determined) by the recipient. This section of the monograph intends to begin dissecting the phenomenon of Surprise as it pertains to military theory and better understanding the theories behind Surprise and thus developing a doctrine that fully encompasses it in its entirety. While military theorists mostly agree on Surprise’s importance, few take steps to define what they mean by Surprise, to dissect it into its various elements or subcomponents. Jomini, Clausewitz, Sun Tzu, Moltke, Foch, Frederick the Great, JFC Fuller, and Du Picq (to name a few) pronounce that Surprise is a foundational component of military strategy, operations, or tactics. Surprise is something that you prevent from being done to you or something that you do to someone else to these thinkers. While none of these authors individually or collectively define Surprise or define its critical components, they all concur that if you can initiate Surprise on your adversary, it is almost universally positive. If you are Surprised, then there is a negative connotation. The remainder of this section is dedicated to defining Surprise as it pertains to military theory.

Components or Elements of Surprise

The Western military theorist Carl von Clausewitz understood the importance of

¹⁷*The Random House College Dictionary: The Unabridged Edition*, ed. Laurence Urdang & Stuart Berg Flexner (New York, NY: Random House Inc., 1972), 1323.

Surprise in strategy and operations and devoted an entire chapter to the subject in Book III of *On War*. In the Napoleonic age, achieving Surprise at the strategic level of war was nigh impossible due to the time it took to mobilize, equip, and transport the era's armies. Clausewitz does acknowledge the possibility by stating Surprise is a “means of gaining superiority” and that it is “the root of all operations.”¹⁸ In the Napoleonic era, Surprise was achieved at the tactical level of war through secrecy, maneuvers, and speed.¹⁹ However, the advent of the corps and the concept of a “Nation-in-Arms,” certainly Surprised Napoleon’s adversaries.²⁰ These emergent constructs provided the Surprise that Napoleon sought over his adversaries, while his understanding of maneuvers provided the battlefield's tactical Surprise.²¹ The *levee en masse* or “Nation in Arms” enabled Napoleon to raise armies the larger than ever before in Europe. Simultaneously, the Corps' invention allowed him to expand his command and control of forces beyond what had previously been possible. These two inventions, coupled with Napoleon’s genius provided the materials required to wage war on a scale, with the speed, and a degree of uncertainty previously unforeseeable.²²

Clausewitz states that Surprise is a psychological effect; it has an inverse relationship between time and mass (hence why strategic Surprise is so tricky in his era), and how Surprise is proportional to the energy (effort) invested in it.²³ Clausewitz also establishes that the effectiveness of Surprise produces independently of the commander's will or energy seeking to achieve it. This point lays the groundwork for future theorists to explore the

¹⁸ Clausewitz, *On War*, 198.

¹⁹ *Ibid.*, 200.

²⁰ Gunther E. Rothenberg, *The Art of Warfare in the Age of Napoleon* (Bloomington, IN: Indiana University Press, 1978), 101.

²¹ Azar Gat, *A History of Military Thought: From the Enlightenment to the Cold War* (Oxford, England, Oxford University Press, 2001), 202-203. Peter Paret. *The Cognitive Challenge of War: Prussia 1806* (Princeton, NJ: Princeton University Press, 2009), 5-7, 62-63.

²² Martin Van Creveld. *Command in War* (Cambridge, MA, Harvard University Press, 1985), 59, 96.

²³ Clausewitz, *On War*, 198-201.

phenomenon of Surprise as something independent from the effect of Surprise.²⁴ Friction also plays a role in Clausewitzian Surprise, acknowledging that the environment and the adversary will play a role in its results.²⁵

JFC Fuller believed that “Surprise should be regarded as the soul of every operation... the secret to victory and the key to success.”²⁶ JFC Fuller was writing in the wake of World War I and saw firsthand the devastating effects of emerging technologies on future conflict. Biological agents, long-range artillery, the machineguns, and airplanes all posed new challenges to planners. The machineguns and its high rate of fire challenged the principle of mass, forcing belligerents to seek dispersion and other forms of maneuver.²⁷

Fuller divides Surprise into two types, moral Surprise, and material Surprise. Moral Surprise is when an adversary is caught unawares. The detection of enemy presence remains unnoticed until the proverbial blow is landing, affecting the conflict's moral dimension.²⁸ Achieving such a result strategically is possible but improbable due to the scale of mobilization required for strategic actions. This form of Surprise focuses on overwhelming an adversary, instituting shock. Moral Surprise depends on the adversary being unable to foresee action(s) at a specific time and place. Moral Surprise challenges an adversary's assumptions and understanding of the world around them. Two examples of moral Surprise at the strategic level of war are the Soviet invasions of Czechoslovakia in 1968 and of Afghanistan in 1969, where neither country's leaders ever foresaw the Soviet attacks, despite possible evidence for

²⁴ Clausewitz, *On War*, 198-201.

²⁵ *Ibid.*, 201.

²⁶ Col. John Frederick Charles Fuller, *The Foundations of the Science of War* (London: Hutchinson & Co., Ltd., 1926), 114-117, 272-277.

²⁷ Holger H. Herwig, *The Marne, 1914: The Opening of World War I and the Battle that Changed the World*. (New York, NY: Random House), xii, and Quincy Wright, *The Evolution of War* (Chicago: Chicago University Press, 1965, 2d ed.), pp. 218-248.

²⁸ Fuller, *Foundations of Science and War*, 114-122, 271-273.

the contrary.²⁹

Material Surprise occurs when an adversary detects the enemy before the strike but lacks the time or means to prepare for action thoroughly. In this instance of Surprise, the enemy knows something is about to happen but lacks time to prepare.³⁰ Material Surprise is likely to be more prevalent at the operational and strategic levels of war since an adversary knows that something will happen but lacks the information or intelligence to determine where or when an event will occur. Fuller envisioned material Surprise accomplished through rapid maneuver and fires at a point of vulnerability.³¹ Material Surprise can occur at all levels of conflict but is particularly useful at the tactical and operational level of warfare because it can be achieved repeatedly to gain a relative advantage.

Fuller argues further that Surprise can be influenced or affected by superior direction, determination, and mobility.³² In Fuller's mind, maneuver and mobility would enable Surprise; direction was about concentration and dispersion, determination was focused on the enemy's will to fight, and mobility on the initiator's ability to strike at a time and place of their choosing visé the enemy's envisioned scheme of maneuver.³³ In summary, Fuller viewed Surprise as a means to an end. In his opinion, Surprise allowed a planner to concentrate forces where an adversary was physically and morally weak, thus achieving cognitive and physical Surprise and a state of relative advantage.

Richard Simpkin builds upon Fuller's ideas of moral and material Surprise. Simpkin wrote towards the end of the Cold War, from the late 1970s through the 1980s, and was

²⁹ Donald C. Daniel and Katherine L. Herbig, *Strategic Military Deception*, (New York, NY: Pergamon Press Inc., 1981), 345.

³⁰ Fuller, *The Foundations of the Science of War*, 271.

³¹ Robert R. Leonhard, *The Art of Maneuver: Maneuver-Warfare Theory and AirLand Battle*. (New York, NY: Ballantine Books, 1991), 46-27.

³² Fuller, *The Foundations of the Science of War*, 273.

³³ *Ibid.*, 279.

influenced by his service in North Africa during World War II as an Armor Officer in the Royal Tank Regiment. In *Race to the Swift*, Simpkin highlights how that Surprise will be perceived differently across the levels of war (strategic, operational, and tactical). Surprise might be more effective at a different level of war, even if the initial action aimed to Surprise a specific one.³⁴ This is an important distinction because it is now plausible for a strategic action to Surprise at the tactical level of war or a tactical effort to achieve Surprise at the operational level of war, or any combination thereof.

Simpkin states material Surprise enables JFC Fuller's theories about maneuver warfare and the operational level of war. It can be replicable or restorable, allowing a commander to Surprise their adversary initially and again if required.³⁵ Maneuver theory aims to achieve victory through any means available, while avoiding, if at all costs, the destruction of an adversary's force and calls for active measures to achieve preemption if possible and decisive Surprise if not.³⁶ This also implies that achieving moral Surprise is extremely limited, or even unitary, obtained only once in a given conflict. Simpkin's most innovative addition to Surprise's cannon is his treatment of the variable of time, which he used to define Surprise's components as pre-execution time, pre-movement time, movement, and execution time. Throughout this process, the element of time applies to both the attacker and the defender, and either parties' actions are discoverable to the other in theory. Pre-execution time is the time taken for the commander and staff to arrive at an outline plan. Pre-movement time is the period from the commander's decision to act to the beginning of the controlled movement. Movement time is from your start position to the objective, and

³⁴ Richard E. Simpkin, *Race to the Swift: Thoughts on Twenty-First Century Warfare* (London: Brassey's Defense Publishers, 1985), 182

³⁵ *Ibid.*, 182.

³⁶ *Ibid.*, 22-23.

execution time constitutes deployment and actions on the objective.³⁷ Based on this framework, the attacker has a distinct advantage during the first two components (pre-execution time & pre-movement time) and can increase Surprise's likelihood through secrecy, deception, or condensing these periods. Further, his model now provides a working framework for planners to begin developing courses of action and analysts the opportunity to start assessing probabilities for success. Simpkin's work also clarifies how mass, speed, tempo, detection, and understanding play critical roles in Surprise's potential success.

Simpkin's other contributions to understanding Surprise include his concept of synthetic momentum. Based on his definition, synthetic momentum is a combination of mass (the amount of fighting power) and momentum (velocity over time and space).³⁸ He states that by determining an action's tempo, one can further predict its synthetic momentum, and thus how much mass is needed to achieve Surprise.³⁹ This formula should provide a ceiling and a floor for the mass required to achieve Surprise. While lacking analytical precision, it emphasizes relationships among functional planning variables. *Race to the Swift* proposes one other possibility about Surprise. Small niche units, like Special Forces, can achieve disproportional results regarding Surprise based on the capabilities that they bring to the fight.⁴⁰ These capabilities require an adversary to devote a disproportional amount of resources to collect information on them, creating opportunities for generating Surprise elsewhere. His treatment of niche capabilities helps Simpkin differentiate between the types

³⁷ Simpkin, *Race to the Swift*, 112, 183.

³⁸ Simpkin thinks of mass as fighting power, how many things do you have to destroy your enemy Ibid, 79-92 (Mass), Simpkin defines momentum is the product of mass and velocity times length over time Ibid, 95.

³⁹ Ibid., 185.

⁴⁰ Simpkin, *Race to the Swift*, 185., Simpkin is discussing unconventional force or Special Forces like the US Army's Green Berets or the US Navy's SEALs. This could also include the development of stealth aircraft, hyper sonic munitions, or any asymmetric capability that has the capacity to achieve strategic Surprise through tactical action.

of Surprise and the level of war at which these actions may occur..⁴¹

John Boyd and his lectures have heavily influenced military thought and theory and maybe the most influential military thinker of the 20th century..⁴² Boyd is purely a product of the Cold War and was directly influenced by his experiences as a pilot in the Korean War and Vietnam War. In his lecture, a *Discourse on Winning and Losing*, Boyd discusses how he was influenced by a variety of disciplines and went beyond traditional military education..⁴³ He emphasizes the psychological nature of conflict and how that deception is a cornerstone of planning military operations..⁴⁴ Boyd further clarifies that Surprise is an output of an operation; it is not something that one does, but is instead an effect that one achieves.

Furthermore, he differentiates between Surprise and Shock..⁴⁵ Boyd distinguishes the two by delineating the Surprise's scope, how many adversary decision makers are affected, and with shock, it produces an inability for an adversary to make decisions, enabling the aggressor to increase their freedom of action seize the initiative. Achieving either shock or Surprise requires the initiator or aggressor to do something first. To explain this process, Boyd references Sun Tzu's theory of cheng and chi maneuvers. Boyd's interpretation states that cheng is ordinary and obvious and thus direct. In contrast, chi is indirect, hidden, and extraordinary. In Boyd's mind, cheng (ordinary force) is the input in his formula, and it

⁴¹ Special Forces actions are extremely tactical in nature, although they may require strategic resources to enable their actions. These very tactical actions may achieve moral Surprise though if they catch enemy decision makers and political leadership unawares. This also provides a framework for the "Strategic Private" narrative that the US Army faced in Iraq and Afghanistan, where a tactical action had strategic implications.

⁴² Ian T. Brown, *A New Concept of War* (Quantico, VA: Marine Corps University Press, 2018), xi.

⁴³ Col John R. Boyd, *A Discourse on Winning and Losing*, ed. Dr. Grant T. Hammond (Maxwell AFB, AL: Air University Press, 2018), slide 30.

⁴⁴ Boyd, John R. "A Discourse on Winning and Losing." Transcript of Lecture presented at United States Marine Corps Command and Staff College, Quantico, VA, 25 April and 2-3 May 1989, 65.

⁴⁵ Boyd "A Discourse on Winning and Losing." (Transcript), 21.

comes from secrecy and deception, whereas chi is the output and manifests itself through Surprise or shock.⁴⁶ Cheng (ordinary force) draws the attention of an adversary and enables chi (extraordinary force) to strike the enemy, achieving Surprise. Shock is similar to overloading an electrical system causing it to have a blackout. In contrast, Surprise would be more along the lines of the lights flickering or temporarily shutting off before a backup generator kicking in.

The final military theorist to be discussed is Robert Leonhard. Leonhard served as an Infantry Officer in the US Army, and his writings cover the evolution of the American military through AirLand Battle moving forward into the information age. *In Fighting by Minutes*, Leonhard attempts to address Surprise's elements or components and develop an operational definition. Leonhard bases his investigation on the hypothesis that “military forces are perpetually unready for combat.”⁴⁷ Based on this requirement, an adversary must be unprepared in some manner to be susceptible to Surprise. Leonhard defines Surprise as “Surprise is a condition in which a military force is contacted while in a relative state of unreadiness.”⁴⁸ He then goes on to state that Surprise is temporal and “results (either accidentally or by design) from a failed time-distance calculation on the part of the Surprised force.”⁴⁹ In Leonhard’s mind, the two subcomponents of Surprise are detection and contact. Detection, much like Simpkin’s model, occurs when an adversary identifies an approaching threat. Contact is the meeting of the attacker and the adversary. In this model, the attacker’s goal is to make contact with the adversary before achieving a state of readiness, thus surprising the adversary. It is then desirable to either delay detection or to hasten contact for

⁴⁶ Boyd, “A Discourse on Winning and Losing.” (Transcript) 121, 132.

⁴⁷ Robert R. Leonhard, *Fighting by Minutes, Time and the Art of War*, 2nd edition (Westport, CT: Praeger Publishers, 2017), 174.

⁴⁸ *Ibid.*, 180.

⁴⁹ *Ibid.*, 180.

the attacker, both options having a positive outcome, resulting in the adversary's Surprise. Leonhard has built upon previous theorists, most likely Clausewitz's ideas of secrecy and speed, to create this model while incorporating Simpkin's work on Surprise's temporal aspect.

In subsequent work, *The Principles of War for the Information Age*, Leonhard evolves his definition of Surprise, stating, "Surprise is a battlefield condition that results from the interaction of two components: perpetual unreadiness and time."⁵⁰ The reader can see that the premise for his definition remains the same but makes the process of achieving Surprise dependent upon time as a variable in this equation.

Thus far, this monograph has discussed Surprise from the attacker's perspective or those attempting to achieve Surprise. This approach has significantly shaped understandings of Surprise, but it is not complete. Military theorists all take the stance that Surprise as something to be done to others enables victory. To offer a more refined definition of Surprise, the subsequent discussion will delve into other scholars who have focused on those being Surprised, n ideas that explore how Surprise is experienced.

The foundational work for understanding Surprise from the perspective of those being Surprised is Roberta Wohlstetter', *Pearl Harbor: Warning and Decision*. Here she highlights two critical components for anticipating Surprise, the concepts of signals and noise.⁵¹ For the purpose of her work and this monograph, a "signal" stands for a clue, sign, or a piece of evidence that tells about a particular danger or a particular enemy move or intention.⁵² She defines "noise" as signals that compete with or contradict the actual signal of attack, which can also be viewed as information that is useless for anticipating danger.⁵³

⁵⁰ Robert R. Leonhard, *The Principles of War for the Information Age* (Novato, CA: Pressido Press, Inc., 1998), 183.

⁵¹ Roberta Wohlstetter, *Pearl Harbor: Warning and Decision* (Stanford, CA: Stanford University Press, 1962), 2-3.

⁵² *Ibid.*, 2.

⁵³ Wohlstetter, *Pearl Harbor: Warning and Decision*, 3.

Wohlstetter also implies that the further you are removed from the attack site, the more noise there will be, suggesting that the validity of strategic Surprise due to the increased amount of noise within that system.⁵⁴ Strategic Surprise is achieved through the sheer volume of information available, and how much of that information may point towards other potential events.⁵⁵ Additionally, strategic surprise is less about surprising the masses, but more about surprising the strategic decision maker who could alter the course of events if they had assessed the world around them differently.⁵⁶ This increase in noise, divergent possibilities, and increased ambiguity enables actors to achieve strategic Surprise.

Wohlstetter also expands the concept of noise to go beyond its communications theory beginnings and becomes more applicable to military matters. Her definition of noise is not just natural communication and signals occurring in the environment. Still, it takes into account that the Japanese and American intelligence operations also contributed to the situation of Surprise by generating purposeful noise (deception) – as opposed to noise as a byproduct of time, organizational hierarchy, biases, or misconceptions about the probabilities of an attack on Pearl Harbor. Barton Whaley further reinforces this notion of developing purposeful noise. His work *Stratagem: Deception and Surprise in War*, accounted for at least sixty-seven cases where deception enabled Surprise between World War I (1914-1918) and the Six-Day War (1967), a frequency averaging more than once a year.⁵⁷

Additionally, the America's intelligence and information collection apparatus's design was not designed to handle the complex operating environment in the Pacific Theater of 1941. This led to gaps in the collection, separation of analysis and collection efforts,

⁵⁴ Ibid., 3, 70.

⁵⁵ Ibid., 387-389.

⁵⁶ Betts, *Surprise Attack*, 33-34, and Wohlstetter, *Pearl Harbor: Warning and Decision*, 393, and Daniel Kahnemann, *Thinking Fast and Slow* (New York, NY: Farar, Straus, and Giroux, 2011), 71-73.

⁵⁷ Whaley, *Stratagem: Deception and Surprise in War*, 533.

varying priorities of the intelligence collection in the general Pacific and the local vicinity, and the ability to share information and come to a shared understanding due to over-classification of pertinent materials.⁵⁸ Japanese officials themselves were surprised when America responded as decisively and as quickly following the attacks on Pearl Harbor. In fact, the assumption that America would be unable to retaliate immediately was part of the underpinnings on why they chose to attack.⁵⁹ Wohlstetter also claims that the assumption of perfect information, or lack thereof, should heavily influence current decision-makers and may be a baseless assumption for future planning efforts regarding Surprise. In the closing chapter of her book, she claims that “if our intelligence system and all our other channels of information failed to produce an accurate image of Japanese intentions and capabilities, it was not for want of the relevant materials. Never before have we had so complete an intelligence picture of the enemy. And perhaps never again will we have such a magnificent collection of sources at our disposal.”⁶⁰

Expanding on her ideas, Zvi Lanir explores what one learns from Surprises, which facilitates understanding the nature of Surprise and the potential impacts on a nation or armed force during the conflict. His research focuses on military applications and how they incorporate modern technologies. Lanir became fascinated by the concept of Surprise following Israel’s performance in the Yom Kippur War in 1973 and Israeli intervention in the Lebanese Civil War in the 1980s. He highlights that Surprise, as it pertains to military operations, is an integral part of warfare. One can Surprise an adversary in the place, time, direction, weapons, and attack methods of their choosing.⁶¹ Zvi Lanir’s research further

⁵⁸ Wohlstetter, *Pearl Harbor: Warning and Decision*, 70.

⁵⁹ S.C.M. Paine, *The Japanese Empire: Grand Strategy from the Meiji Restoration to the Pacific War* (Cambridge, United Kingdom: Cambridge University Press, 2017), 155.

⁶⁰ Wohlstetter, *Pearl Harbor: Warning and Decision*, 382.

⁶¹ Zvi Lanir, *Fundamental Surprises* (Tel Aviv, Israel: Center for Strategic Studies, 1983), 3.

reinforces that at least two forms of Surprise exist: one is limited in scope, scale, and span (situational or material Surprise) and another form that requires introspection and time to understand fully.⁶² However, Lanir focuses his research on Surprise in the defense, where belligerents are more concerned about Surprises and are pre-disposed to develop early warning procedures or signals of a Surprise; it also provided him an opportunity to understand the impact of a Surprise, since the strategic results of that Surprise were clear cut in these cases.⁶³

Lanir and Wohlstetter are the first researchers to research modern intelligence enterprises' role and their success or failure relating to Surprise. Lanir's research illustrates two contradictory conclusions regarding an understanding and predicting of Surprise. One is that to predict Surprise, there can never be too much information. However, the Israeli experience contains little evidence that more information and intelligence analysis would have improved the detection or prevention of Surprise.⁶⁴ But the first conclusion has led governments and their intelligence agencies to develop expensive capabilities and expansive organizations to collect more and more about very specific threats. These contradictory conclusions explain that despite the advent of Signals Intelligence (SIGINT), overhead satellites, precision optics, and other means of intelligence collection, there still exists the opportunity for Surprise. Lanir's research brings forth one clear insight, though. He concludes that fundamental Surprises, which he also calls astonishment (which is very similar to JFC Fuller's moral Surprise) are more about the assumptions, biases, and unpreparedness of those being Surprised than the skill or technique their adversary employed to Surprise

⁶² For all intensive purposes Lanir's and Fuller's definitions of situational and material Surprise are interchangeable.

⁶³ Zvi Lanir, *Fundamental Surprises*, 3.

⁶⁴ *Ibid.*, 13.

them.⁶⁵ The key difference between Lanir's fundamental Surprise and Fuller's moral Surprise is scale. Lanir views a fundamental Surprise as something that affects an entire nation or culture and takes time to fully understand. Fuller's moral Surprise may have the same effect, but it can also be something that only effects the military of a nation, or its political leadership, and not the entirety of a nation.⁶⁶ The role that cultural or organizational biases play in comprehending Surprise has been reinforced in more recent scholarship, finding that the sorting of "signals" and "noise" is not uniform but rather a function of the culture and identity of those analyzing the data.⁶⁷

Furthermore, Lanir contends that only fundamental Surprises produce true learning, and then only in retrospect, while situational Surprises have clear indicators or signals on why detection methods failed. This point implies that early warning mechanisms (intelligence collection and analysis for our purposes) are reactions to situational Surprise. They add little value to the learning that will take place following fundamental Surprise or astonishment.⁶⁸

These authors have highlighted critical elements as it pertains to Surprise. They have helped define that Surprise can be augmented and made more probable through deception and stratagems, but that more importantly, they highlight Robert Leonhard's point "that Surprise requires a certain unpreparedness in your adversary."⁶⁹ Whether this is lackadaisicalness on the part of a military formation or the structure of an intelligence organization is immaterial, but any failure to be prepared and ready for future conflicts leaves an organization vulnerable to Surprise. Wohlstetter and Lanir's research also alludes to the possibility that the increased complexity and variance within the operational environment enables the possibility of

⁶⁵ Ibid., 25.

⁶⁶ Ibid., 24-27.

⁶⁷ Milo Jones and Phillippe Silberzahn. *Constructing Cassandra, Reframing Intelligence Failure at the CIA, 1947-200*, (Stanford, CA: Stanford University Press, 2013). 3-6.

⁶⁸ Lanir, *Fundamental Surprises*, 115.

⁶⁹ Leonhard, *Fighting by Minutes*, 180.

Surprise and its magnitude rather than constraining it. This emergent potential for Surprise is compounded further with the advent of machine learning and artificial intelligence. Military practitioners and planners will become increasingly reliant on these tools to frame the operational environment. However, complimenting current efforts on information collection may make planners more susceptible to fundamental Surprise while minimizing material Surprise frequency.

In summary, this section has provided ample evidence that Surprise is something to be achieved through positive action, and it is a phenomenon that one experiences primarily when either an adversary or the operational environment behaves in a manner that challenges their preconceived notions and constructed reality should look and act.⁷⁰ Surprise's effectiveness is more about those being Surprised and their preparedness, biases, and assumptions about themselves, their adversaries, and the operational environment. However, those seeking to achieve Surprise can enable it through secrecy, speed, stratagems, and novelty. Still, the effectiveness and duration of Surprise's effect(s) are almost wholly dependent on those being Surprised and how quickly they can assimilate this paradigm into their new reality.⁷¹

⁷⁰ Peter L. Bergman and Thomas Luckman, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (New York, NY: Anchor Books, 1967), 3.

⁷¹ Thomas S. Kuhn, *The Structure of Scientific Revolutions*, Third Edition (Chicago, IL: University of Chicago Press, 1996), 19.

Section Two: Surprise in US Army Doctrine

Doctrine plays an essential role in many types of organizations. Doctrine is defined as “a particular principle, position, or policy taught or advocated, as of a religion, government, etc.” and as “[t]hat which is taught; teachings collectively.”⁷² The US Army did not begin formally publishing doctrine until the publication of the US Army Field Service Regulations in 1905. Before 1905 the Army had operated or adopted doctrine informally or the use of military drill manuals, professional journals, textbooks, or academic books on military strategy. Popular theorists such as Antoine Henry Jomini and Carl von Clausewitz were supplemented by translations of works less known today, such as French Generals Eduard Duquacq’s *Elements of Military Art and History*, Guillaume Henri Dufour’s *Strategy and Tactics*, and Rouve’s *Army Officers Pocket Companion*.⁷³ American military theorists mostly borrowed their theory and nascent doctrine from Europe, even as far back as 1814, when John Armstrong’s advocacy for adopting the *Rules and Regulations for the Field Service and Moeuvres of the French Infantry* as a complete and literal translation stymied the need for developing internal theories and doctrine.⁷⁴ Some American officers published their own work, like Henry “Old Brains” Halleck’s *Elements of Military Art and Science* (the first American military textbook), but even this was not formally adopted by the Army and was heavily influenced by the French military theorists.⁷⁵

The American military did not truly begin to strike out on its own until the later 1880s and 1890s when Arthur Wagner began to adapt European thoughts and ideas while

⁷² Laurence Urdang & Stuart Berg Flexner, *The Random House College Dictionary: The Unabridged Edition* (New York, NY: Random House Inc., 1972), 390.

⁷³ Michael Bonura, *Under the Shadow of Napoleon: French Influence on the American Way of Warfare from the War of 1812 to the Outbreak of World War II* (New York, NY: New York University Press, 2012), 118.

⁷⁴ Bonura, *Under the Shadow of Napoleon*, 55-56.

⁷⁵ Russell F Weigley, “American Strategy from its beginnings through the First World War,” in *Makers of Modern Strategy: From Machiavelli to the Nuclear Age*, ed. Peter Paret (Princeton, NJ: Princeton University Press, 1986), 416.

also incorporating the lessons learned and studied from the American Civil War.⁷⁶ This lack of formal doctrine was addressed in part by professional journals such as *Journal of the Military Institute of the United States*, *Army and Navy Journal*, and the *United States Service Magazine*, which ran original articles by American officers, while also providing a venue for recently translated works coming out of Europe.⁷⁷ Wagner began to develop military textbooks that encouraged tactical innovation, taking into account American terrain, national identity, and the US Army's organizational culture.⁷⁸ The process of formalizing and regulating doctrine did not take hold until 1899, though, when reformist President William McKinley appointed Elihu Root to his cabinet as the Secretary of War.⁷⁹ In Root's mind, the formalized doctrine would serve four purposes: convey government legislation that affected the Army, disseminate the secretary of war's approved directives, educate the officer corps, and prescribe specific actions necessary to control field army operations during conflict.⁸⁰

Surprise was a small concern in the US Army's first publication of *Field Service Regulations*. The 1905 publication, particularly the sections titled "The Service of Security" and the "Service of Information," clearly show the influence of Arthur Wagner's influence works from the previous decade.⁸¹ It mentions but does not define Surprise; it is merely what one can initiate upon others or vice versa. In fact, in the first six iterations of the *Field Service Regulations*, spanning from 1905 to 1917, Surprise is an occurrence that should be prevented. During this period, different editions mention Surprise as something to protect

⁷⁶ Walter E. Kretchik, *U.S. Army Doctrine: From the American Revolution to the War on Terror* (Lawrence, KS: University of Kansas Press, 2011), 93.

⁷⁷ Bonura, *Under the Shadow of Napoleon*, 109, 139.

⁷⁸ Arthur L Wagner, *The Service of Security and Information* (Kansas City, MO: Hudson-Kimberly Publishing Co., 1893) 40; Arthur L. Wagner, *Organization and Tactics*, 6th ed. (Kansas City, MO: Hudson-Kimberly Publishing Co., 1905), I.

⁷⁹ Kretchik, *U.S. Army Doctrine*, 107.

⁸⁰ *Ibid.*, 110.

⁸¹ US Department of the Army, *Field Service Regulations* (Washington, DC: Government Printing Office, 1949), 36.

against or be controlled with almost double the frequency that it was addressed as something that should be initiated against an adversary.

This section will analyze how Surprise and the US Army's view of Surprise has evolved in its keystone doctrine (seven iterations of the *Field Service Regulations* between 1905-1939; Field Manual (FM) 100-5: *Operations* with twelve iterations between 1939-2001; FM 3-0: *Operations* with four iterations between 2001-2019; and ADP 3-0: *Unified Land Operations* recently published in July 2019). It is essential to distinguish the US Army's view of Surprise as something to guard against or prevent (negative), something to use to your advantage (positive), or as an independent variable, element, principle, or ideal (neutral). In fact, the US Army did not think of Surprise in a neutral sense until the 1949 publication of the *Field Service Regulations*. The analysis illustrates that the US Army has developed a more holistic and complete understanding of the Principle of Surprise over time.

The War Department's Field Service Regulations in 1905 and its subsequent seven revisions to 1923 all overwhelmingly advance the view of Surprise that it is a thing to be avoided. Surprise was something to be guarded against, protected from, or prevented.⁸² Preventing of Surprise was ensured through vanguards, flank security, rear-guards, and outposts, essentially establishing the doctrinal foundation for the idea of indications and warnings of enemy activity.⁸³ Furthermore, these editions highlight the role of reconnaissance regarding Surprise and how that "far-reaching patrols by cavalry" and "watching the enemy's every movement" can also help prevent Surprise, failing to mention that the same operations could potentially allow a commander to achieve Surprise against their adversary.⁸⁴ Surprise references are almost exclusively tactical, stating that it is possible

⁸² US Department of the Army, *Field Service Regulations* (Washington, DC: Government Printing Office, 1905), 42, 48, 49, 51.

⁸³ *Ibid.*, 42-49, 51.

⁸⁴ *Ibid.*, 58,76.

to achieve Surprise through the overwhelming fire, ambushes (ambushes), or in an attack on an enemy's flank.⁸⁵ There are subtle references, though, to the complex nature of Surprise. The *FSR* does discuss how previous defeats, the vigor in which the aggressor conducts the attack, and the attacker's moral ascendancy can strengthen the arm (effect of Surprise).⁸⁶ These subtle references pay homage to Clausewitz's notions that Surprise is primarily a psychological effect and foreshadow the future writings of Fuller, Simpkin, Leonhard, and Boyd previously discussed.⁸⁷

While fundamentally, the role of Surprise in military operations remains the same in the 1908, 1910, and 1913 editions of the *FSR*, small yet key additions help explain the concept's later evolutions. The 1910 edition sees the beginnings of leveraging Surprise to gain advantage in US Army doctrine. Sections on how to Surprise cavalry or artillery formations demonstrate the positive implications that Surprise can have on military operations, albeit at the tactical level, and only in specific cases.⁸⁸ During this period, other sections in the *FSR* address how the aggressor can achieve Surprise through timing and tempo, night marches (1910), and forced marches (1913).⁸⁹ The 1913 *FSR* also mentions for the first time how Surprise against an adversary is demoralizing and has the potential to generate exponential benefits.⁹⁰ Until this point, Surprise has yet to take on modern characteristics as we define it today. The 1914 *FSR* has a small section dedicated to "the Surprise," and its first sentence is telling, "Surprise is never justifiable in warfare."⁹¹ This

⁸⁵ US Army, *FSR* (1905), 104, 107.

⁸⁶ *Ibid.*, 42, 48, 49, 51.

⁸⁷ Clausewitz, *On War*, 198

⁸⁸ US Army, *FSR* (1910), 162, 170.

⁸⁹ US Department of the Army, *Field Service Regulations* (Washington, DC: Government Printing Office, 1913), 105; *FSR* (1910), 105.

⁹⁰ US Army, *FSR* (1913), 158.

⁹¹ US Department of the Army, *Field Service Regulations* (Washington, DC: Government Printing

statement's absoluteness demonstrates that doctrine writers were predominately thinking about the concept from the Surprised side's point of view, and that the authors were struggling with the concept, since it contradicts previous editions more positive outlook on the concept.

During the interwar period, the 1923 edition of *FSR* evolved and expanded to reflect technological innovations such as tanks, airplanes, radios, and machineguns. Additionally, it required the synthesis of lessons learned by the American Expeditionary Force and innovations that the French, Germans, and British had produced.⁹² Further, it reemphasized the US Army's approach to warfare using aggressive, offensive operations in the form of open warfare requiring large units.⁹³ This also led to the concept of Surprise becoming slightly more pronounced in the doctrine. The most crucial evolution in Surprise was the declaration that it applied to both the offense and the defense, was the basis for all combat operations.⁹⁴ This establishes that Surprise provides a state of relative advantage and serves as a combat multiplier for offensive and defensive operations. The 1923 *FSR* also directly illustrates the influence of JFC Fuller on American military thought, " Surprise takes the enemy in a state of moral and material unpreparedness, prevents him from taking offensive counter measures, and often compensates for numerical inferiority."⁹⁵ It goes on to state that Surprise could be reinforced or strengthened by supporting efforts, such as artillery fires.⁹⁶

During the interwar period, British military theorists such as JFC Fuller gained popularity, and his work on the theory of Surprise had a considerable impact on American

Office, 1914), 80.

⁹² Kretchik, *U.S. Army Doctrine*, 132.

⁹³ *Ibid.*, 137.

⁹⁴ US Army, *FSR* (1923), 77-78

⁹⁵ *Ibid.*, 77-78, and Fuller, *The Foundations of Science of War*, 271-282.

⁹⁶ US Army, *FSR* (1914), 77-78.

military thinking, as demonstrated by the 1939 *FSR* (tentative), Field Manual 100-5: *Operations*. Here the concept of Surprise undergoes the most substantial overhaul in American keystone doctrine is addressed in a manner that today's planners would readily recognize. The *FSR* (1939) fully encompasses the lessons that the War Department has been processing in the aftermath of World War I and begins to incorporate the technologies that would play a crucial role in World War II in an American cultural context.⁹⁷ The 1939 edition of the *FSR* where the definition of Surprise becomes "finding the enemy in a state of moral and material unpreparedness, prevents him from taking effective countermeasures and often compensates for numerical inferiority in force."⁹⁸ In this definition, JFC Fuller's concepts of unpreparedness and the delineation between the forms of Surprise encapsulated.⁹⁹ The 1939 *FSR* also introduces Surprise as an element of, or principle, in planning efforts stating, "the commander then makes a simple plan... based on the most effective combination of Surprise, firepower, maneuver, and use of terrain."¹⁰⁰ The other critical step is that the 1939 *FSR* links the intelligence function to "safeguarding against Surprise," thus making today's Intelligence Warfighting function responsible for understanding what Surprise is and its impacts on military operations.¹⁰¹

The US Army continued to publish keystone doctrine throughout World War II with the 1941 and 1944 editions of FM 100-5: *Operations* refining concepts and introducing new ideas that new technologies reflected the larger and more complex battlefields that the US Army was facing in Europe and the Pacific. While these editions focused more on the

⁹⁷ Oliver Prescott "O.P." Robinson, *The Fundamentals of Military Strategy*, (Washington DC: United States Infantry Association, 1928), 141-149.

⁹⁸ US Department of the Army, *Field Service Regulations* (Tentative), Field Manual 100-5: *Operations* (Washington, DC: Government Printing Office, 1939), 28.

⁹⁹ Fuller, *The Foundations of the Science of War*, 272.

¹⁰⁰ US Army, *FM 100-5* (Tentative) (1939), 56.

¹⁰¹ *Ibid.*, 38.

differing roles, responsibilities, and problems faced by divisions, corps, and armies than those of the brigade/regiment, battalion, and company, they added context and granularity to mission planning. These revisions did integrate all combat arms and how the sequencing of tactical actions within a larger operational offensive enabled the US army to defeat an enemy that was also changing and adapting. In these editions, the use of Surprise also increases and begins to develop more contextuality and applicability. The 1941 edition outlines how the degree of Surprise is dependent on coordination and timing of action and how effectively a force can deceive its adversary.¹⁰² It also emphasizes later how armored units can exploit their enhanced mobility to achieve Surprise.¹⁰³ The 1944 edition reinforces the intelligence warfighting function's role in Surprise by linking the collection of information to it, today's intelligence or information collection function when describing the essential elements of information and their role in collection operations and how collection operations two primary tasks are to support sound decision making and avoid being Surprised.¹⁰⁴

The most important milestone in American keystone doctrine, though, was the 1949 edition of FM 100-5: *Operations*. It was here that the US Army first introduced the Principles of War into its keystone doctrine. The Principles encapsulated the American way of war's crucial elements and reflected the evolution of military thought over 150 years. It states that all military operations' ultimate objective is the destruction of the enemy's armed forces and his will to fight.¹⁰⁵ This acknowledgment of the moral dimension of warfare per Clausewitz and Fuller solidifies Surprise in the Principles of War since it is the only principle that exclusively focuses on warfare's moral component. In the 1949 FM, Surprise is to be

¹⁰² US Department of the Army, Field Service Regulations, Field Manual 100-5: *Operations* (Washington, DC: Government Printing Office, 1941), 109.

¹⁰³ *Ibid.*, 268.

¹⁰⁴ *Ibid.*, 49.

¹⁰⁵ US Department of the Army, Field Service Regulations, Field Manual 100-5: *Operations* (Washington, DC: Government Printing Office, 1949), 21.

sought throughout the operation by every means and every echelon of command. It further notes that Surprise is something that a belligerent produces by denying the enemy information for the purposes of deception, through variation in the means and methods employed in combat, through rapidity and power of execution; and by leveraging terrain to your advantage.¹⁰⁶ Additionally, it introduces the concept of tactical Surprise, which implies that it would then differ from strategic Surprise but does not clarify how it would differ between these two different levels of war.¹⁰⁷ Since tactical Surprise is only mentioned in reference to airborne operations through vertical envelopment, the reader can infer that tactical Surprise is linked to technological advancements and enhanced mobility.¹⁰⁸ Although in a somewhat contradictory manner, this idea is further addressed in the 1954 edition of FM 100-5: *Operations*, wherein airborne operations are treated as capable of strategic Surprise.¹⁰⁹ It can be assumed that the evolving nature of mobility (the technological improvement of airplanes over time) and a greater understanding of strategic capabilities alter the authors opinions between 1949 and 1954.

This edition also asserts that Surprise has the potential to “decisively shift the balance of combat power in favor of the commander who achieves it.” It also delineates that Surprise does not have to take an adversary entirely unawares but that the adversary cannot react effectively if Surprise is to be achieved.¹¹⁰ This is an important distinction that reflects the theoretical underpinnings of JFC Fuller, and helps the planner distinguish between the two theoretical forms of Surprise and the temporal nature of Surprise. It goes on to state “Surprise

¹⁰⁶ FM 100-5 (1949), 22.

¹⁰⁷ *Ibid.*, 251.

¹⁰⁸ *Ibid.*, 251.

¹⁰⁹ US Department of the Army, Field Service Regulations, Field Manual 100-5: Operations (Washington, DC: Government Printing Office, 1954), 198.

¹¹⁰ *Ibid.*, 26.

is achieved by varying means and methods and using seemingly impossible terrain.”¹¹¹ It does not solely depend on the initiator of Surprise’s actions but also on the perceptions, understandings, and readiness of those who are Surprised. These elements would later be incorporated into Simpkin and Leonhard’s theoretical framework to inform their definitions of Surprise. This edition reemphasizes that other factors can reinforce the effects of Surprise. Rather than artillery fires previously, it is now preferred to strengthen and exploit Surprise through mass.¹¹²

The evolutions of FM 100-5: *Operations* from the 1958 to the 1986 editions reflect the US army's needs and requirements during the Cold War with the Soviet Union. The technological advances in remote sensing created an atmosphere of increased understanding and information. Thus, the concept of Surprise ebbed and flowed along with the US Army's confidence in its surety of stature and its knowledge of the operational environment. While the definition of Surprise fundamentally remains unchanged, several refinements occur within the paradigm laid out in the 1949 edition.¹¹³ FM 100-5 is the first in the series to acknowledge that Surprise comes in varying degrees and depends on the initiator and the recipient's actions.¹¹⁴ The 1968 edition refines the intelligence warfighting function’s roles and responsibilities regarding Surprise, stating that, “intelligence practitioners have the responsibility for conducting strategic assessments that prevent the United States from being Surprised and ensuring that limited and cold wars do not have sudden changes in the scope, type, or intensity of the conflict.”¹¹⁵ This illustrates the US Army’s concern in the aftermath

¹¹¹ US Army, *FM 100-5* (1954), 27.

¹¹² *Ibid.*, 27.

¹¹³ Kuhn, *The Structure of Scientific Revolutions*, 7.

¹¹⁴ US Department of the Army, *Field Service Regulations, Field Manual 100-5: Operations* (Washington, DC: Government Printing Office, 1958), 90.

¹¹⁵ US Department of the Army, *Field Service Regulations, Field Manual 100-5: Operations* (Washington, DC: Government Printing Office, 1968), 1-5.

of the Korean War and the ongoing Vietnam Conflict, which was drastically escalating at its publication. The concern manifested from the juxtaposition of the irregular warfare seen in Vietnam and Southeast Asia and the nuclear threat presented by the USSR and China.¹¹⁶ The aim of the 1968 edition of FM 100-5 was to codify the changes seen in the operational environment, while preventing escalation into nuclear conflict.

While the US Army's understanding of Surprise was heavily influenced by the British and French, US keystone doctrine had not considered how adversaries viewed it. The 1975 edition of FM 100-5: *Operations* outlines how Soviet tactical doctrines stresses Surprise, security, reconnaissance, and superior firepower. In Soviet doctrine, Surprise is fundamentally temporal since it denies the enemy time to react.¹¹⁷ Surprise enhances conventional, nuclear, or chemical munitions so that they can institute shock, and shock is the effect that the Soviets are trying to achieve.¹¹⁸ This is the first reference to multiple forms of Surprise in US keystone doctrine. This idea is muddled in the subsequent edition of FM 100-5: *Operations* (1982), where forceful and rapid operations achieve local Surprise and shock effects.¹¹⁹ Here shock is still an effect but is not a higher form of Surprise per the Soviets and John Boyd. This edition also identifies Surprise as the second most important principle of the offense, behind only concentration, and states that it may require Surprise to achieve concentration at the decisive point.¹²⁰ This edition also narrows the definition of Surprise to "strike the enemy at a time and/or place and in a manner for which he is unprepared. While also stating that Surprise is the reciprocal of the principle of security, since the principle of

¹¹⁶ Kretchick, *US Army Doctrine*, 171, 188-192.

¹¹⁷ Herbig, *Strategic Military Deception*, 347.

¹¹⁸ US Department of the Army, Field Service Regulations, Field Manual 100-5: *Operations* (Washington, DC: Government Printing Office, 1976), 11-4.

¹¹⁹ US Department of the Army, Field Manual 100-5: *Operations* (Washington, DC: Government Printing Office, 1982), 2-3.

¹²⁰ *Ibid*, 8-6.

security never permits the enemy to acquire an unexpected advantage.”¹²¹ The next edition (1986) further defines Surprise by adding, “Surprise delays enemy reactions, overloads and confuses his command and control, reduce the effectiveness of his weapons, and induces psychological shock in soldiers and leaders.”¹²² These updated definitions demonstrate the influence of Boyd with their references to shock and overloading systems. They do a much better job of encompassing the elements of Surprise by including temporal, psychological, actions of initiator and recipient, and a level of unpreparedness on the recipient’s part.

The US Army’s transition away from the Cold War to the War on Terror following the September 11, 2001 attacks has seen the usage of Surprise in keystone doctrine drastically decrease, despite the fact that 9/11 was a tactical action that had strategic effects and achieved a level of Surprise not seen since Pearl Harbor.¹²³ Zvi Lanier would attribute this to the misconceived theory of perfect intelligence and the speed and which information can be transmitted on the internet and subsequent information ages.¹²⁴ Despite this, the US Army’s definition of Surprise remains unchanged since 1986, although the concept has had a few refinements. The 2008 edition of FM 3-0: Operations highlights how speed and Surprise can complement the effect of shock, that the impact of Surprise diminishes over time, and a new construct in the concept of Surprise, that is that Surprise is the essence of risk, and that commanders should attempt to balance, audacity and the assumption of risk.¹²⁵ This could be construed that the uncertainty associated with achieving Surprise may not be worth the risk a commander would have to assume to achieve it. This is a potentially dangerous construct

¹²¹ US Army, *FM 100-5* (1982), B-4.

¹²² US Department of the Army, *Field Manual 100-5: Operations* (Washington, DC: Government Printing Office, 1986), 95.

¹²³ Erik J. Dahl, *Intelligence and Surprise Attack” Failure and Success from Pearl Harbor to 9/11 and Beyond*. (Washington DC: Georgetown University Press, 2013), 129.

¹²⁴ Lanir, *Fundamental Surprises*, 77.

¹²⁵ US Department of the Army, *Field Manual 3-0: Operations*. (Washington, DC: Government Printing Office, 2008), 3-5.

since it limits the means and methods available to achieve Surprise and could remove tactical actions as a means of initiating Surprise. Another exciting development is that the FM has removed Surprise from the intelligence warfighting function entirely in the keystone doctrine.

Today, in Army Doctrine Publication (ADP) 3-0: *Operations*, the most recent edition of keystone doctrine, Surprise is mentioned fewer times than in the 1905 edition, and by more than fifty percent.¹²⁶ Surprise remains a principle of war in American cannon, but the principles of war have been replaced by the principles of joint operations where the definition remains unchanged from the 1993 edition of FM 3-0 Operations.¹²⁷ Surprise takes on a more complementary role in ADP 3-0, supporting the concepts of simultaneity (doing multiple actions at the same time) and presenting numerous dilemmas “real or false.”¹²⁸ Surprise is also linked to achieving the initiative, defined as setting of tempo and terms of action throughout an operation.¹²⁹

While it is natural to assume that the relevance of a single Principle of War will wax and wane over time, it is troubling that the principle of Surprise receives so little use in our keystone doctrine. Military theorists across the ages all agree that it is crucial to victory; even modern theorists agree with this undertone. Perhaps doctrinal writers find this problematic since Surprise is subjective because it involves human psychology and unquantifiable calculations.¹³⁰ As the Army transitions to multi-domain operations and large-scale combat operations, the potential for Surprise should theoretically increase, not decrease. Therefore, it is critical that the Army’s keystone doctrine addresses Surprise appropriately and attempts to

¹²⁶ US Department of the Army, Army Doctrine Publication 3-0: *Operations*, (Washington DC: Government Publishing Office, 2019) mentions Surprise nine (9) times while the FSR (1905) mentions Surprise twenty (20) times.

¹²⁷ *Ibid.*, 2-1.

¹²⁸ US Army, ADP 3-0, 3-3.

¹²⁹ *Ibid.*, 1-11.

¹³⁰ Richard K. Betts, *Surprise Attack*. (Washington DC: Brookings Institute, 1982), 3.

fully define the Principle of Surprise for the modern planner and military practitioner.

Section III: Conclusion

One of the surest ways of forming good combinations in war should be to order movements only after obtaining perfect information of the enemy's proceedings. In fact, how can any man say what he should do himself, if he is ignorant of what his adversary is about?

—Baron Antoine-Henri de Jomini, *The Art of War*

Surprise has been and remains a foundational element of warfare. However, its decreased usage in current US Army doctrine concerns for numerous reasons. As the US Army prepares for Large Scale Combat Operations (LSCO) under the construct of Multi-Domain Operations (MDO), Surprise will become more prescient in operational planning. Thus a complete understanding of it as a concept is critical for future success. Current doctrine uses the term “Surprise” sparingly, and the current definition is lacking, only describing a portion of the complex concept it denotes. Surprise is an essential element of planning. Studies have shown that it increases casualty ratios from 1:1 to 5:1 in favor of the aggressor who can achieve any form of Surprise.¹³¹

Another study shows that the combat capability of the side achieving Surprise was, on average, doubled.¹³² Edward Luttwak commented that “the list of outcomes [who wins] that does not evoke massive Surprise is short. Nor has the pattern been different since 1945...”¹³³ The lack of a complete definition leaves the reader open to false assumptions and biases regarding the concept of Surprise, believing that Surprise is only “Striking at a time or place or in a manner for which the enemy is unprepared.”¹³⁴ This bias also leaves the practitioner more susceptible to Surprise per Lanir and Jones’ theories. The definition fails to

¹³¹ Whaley, *Stratagem: Deception and Surprise in War*, 189-194.

¹³² Colonel Trebor N. DePuy, *Elusive Victory: The Arab Israeli Wars, 1947-1974* (New York, NY: Harper & Row, 1978), 596.

¹³³ Edward N. Luttwak, “Perceptions of Military Force and US Defense Policy,” *Survival*, vol 19 (Jan-Feb 1977), 5n.

¹³⁴ Army Doctrine Publication 3-0, *Operations* (Headquarters Department of the Army: Washington, DC, 2019), 2-1.

take into account the dual nature of a Surprise. Surprise is an effect or an output, but one achieved through deliberate and positive action, which can include deception, mobility, stealth, secrecy (operational security), novelty, and technological means; understanding the duality of Surprise is crucial for understanding its nature. Education and diversification are essential to guard against Surprise since they help protect against the psychological precursors to Surprise and limit biases and heuristics in our planning processes.

Additionally, Surprise comes in two types. Type One is the grander form of Surprise that has been named by numerous theorists as shock, fundamental, astonishment, or moral Surprise; Type Two is the lesser form of Surprise, which Fuller and Simpkin call a material Surprise, and Boyd simply labels Surprise. Finally, the likelihood of Surprise is directly tied to an individual or organization's understanding of themselves, their adversary, and the operational environment. Therefore, Surprise is psychological in nature. The speed of detection and our ability to comprehend what has been detected will determine whether the incoming Surprise is of a grander or lesser form.

The analysis of US Army doctrine and prominent military theorists illustrates the complex nature of Surprise and lends itself to a better definition of the concept. Based on this analysis, the definition of Surprise should incorporate the following elements: Surprise is a psychological effect achieved through the effective application of deception, secrecy, mobility, speed, tempo, and novelty against an adversary who is in a state of unpreparedness either materially, mentally, or spiritually. There are two forms of Surprise, Type 1: Grand Surprise and Type 2: Lesser Surprise. Type 1: Grand Surprise overwhelms an adversary physically and/or cognitively and severely degrades their ability to process information and make decisions. Type 2: Lesser Surprise is like Type 1 but is more easily overcome and is limited in scope, scale, and duration. The effectiveness of Surprise is directly tied to an adversary's ability to detect the actions that attempt to achieve Surprise, comprehend those actions, and decide to take steps against the aggressor. The type of Surprise is immaterial to

the level of war (strategic, operational, tactical) at which it occurs, and the effect of Surprise can be isolated at a specific level of war or transcend the level of war on which it appears.

Defining Surprise in its entirety enables planners to effectively plan for it, frame it for future analysis, and clarify the nature of Surprise and its implications. Understanding the nature of Surprise, and how it will benefit future operations against a peer adversary against whom the US does not have technological or numerical overmatch, is imperative.¹³⁵ These issues and concerns are laid out in detail in the TRADOC Pamphlet 525-3-1: *The US Army in Multi-Domain Operations 2028*, and in this proposed operational concept, the US Department of Defense must be able to withstand, delay, or disrupt a Surprise attack; yet current doctrine provides little clarification on how to do so, and the operational concept only vaguely describes this critical juncture and what it would entail.¹³⁶ This document's underlying assumption is that the United States and our allies remain the preeminent world power, having the preponderance of military capabilities and forces to dictate the terms of a conflict. Another assumption is that the stated potential adversaries, Russia and China, only can “disrupt regional stability.”¹³⁷ The premise of these assumptions alone leaves the United States and our allies open to a plethora of Surprise since it fails to consider the full range of military options that our adversaries have at their disposal. Furthermore, it assumes that our intelligence capabilities and the newly minted multi-domain formations can survive whatever the Surprise attack (singular) may entail.

Clausewitz cautions that “every age had its own kind of war, its own limiting conditions, and its own peculiar preconceptions.”¹³⁸ Today, MDO focuses on the rapid rate of

¹³⁵ US Department of the Army, TRADOC Pamphlet 525-3-1: *The US Army in Multi-Domain Operations 2028* (Government Printing Office, Washington DC, 2018), vii.

¹³⁶ *Ibid.*, 28,30.

¹³⁷ *Ibid.*, 11.

¹³⁸ Clausewitz, *On War*, 593.

technological advancements over the last few decades and the potential progress that could be coming in the near term between now and 2028. MDO fails to address how these advances could make Surprise more prevalent in the future, not less so. The communications technologies that were designed to reduce friction and increase a shared visualization and understanding have contributed to the complexity of conflict, increasing the potential and opportunity for Surprise. The speed at which physical munitions travel (supersonics), information (beyond the line of sight communications, internet, etc.), and our ability to manipulate the electromagnetic spectrum all increase the number of domains monitored and increase the complexity of the operational environment. At its primordial core, Surprise occurs when one's understanding of the operational environment does not match reality. The difference between one's understanding of the operational environment and its reality directly impacts the type(s) of Surprise that occurs. The US Army's continuous deployments across multiple theaters of war since 2001 has provided numerous venues for adversaries to study, learn, and adapt their own theories of war to effectively negate cognitive and technological advantages previously held by the US and its allies. Furthermore, America's focus on counter-insurgency operations has seen its proficiency in large-scale combat operations or traditional warfare wither, creating a doctrinal and technological vulnerability for other great and burgeoning powers to exploit.

Futurist Peter Schwartz recommends that when developing scenarios for the future, one must account for three primary alternatives: more of the same but better, more of the same but worse, and very different but better.¹³⁹ However, when planning for a future state of warfare, a fourth scenario, very different but worse, should also be included. This form of scenario planning will help planners develop a complete understanding of the future

¹³⁹ Peter Schwartz, *The Art of the Long View: Planning for the Future in an Uncertain World* (New York, NY: Crown Business, 1996), 19.

operational environment, where such a scenario would theoretically be full of Surprise in various forms. Today's operational environment finds a world where success in conflict is no longer built upon material superiority, and recent conflicts have illustrated the evolving nature of conflict. Historically, the concept of Surprise was a prominent variable in planning and executing operations. Doctrine's current concept of Surprise lacks the readily available theoretical foundations that influenced previous generations' understanding of Surprise. Furthermore, if doctrine reflects the US Army's understanding of the operational environment and the nature of conflict, its understanding of Surprise must change to meet the current and future demands. Surprise as a principle of war in US Army doctrine has always been the catalyst for success and how to implement the other principles of war; it is a foundational concept for victory.

Future success will require a paradigm shift that presents the concept of Surprise in its entirety, a psychological effect that is achieved to increase the chances of success. Once effectively conveyed, it aids planners in creating opportunities for Surprise.¹⁴⁰ Countering Surprise requires enough variance in training and education that prepares the future practitioner to challenge their assumptions and biases, effectively overcoming the almost guaranteed opportunities for an adversary to Surprise them. A complete understanding of Surprise must first be reflected in doctrine to present the planner with the importance of Surprise, appreciate the elements of Surprise, and how Surprise embodies uncertainty, making it essential but difficult to account for. Although current doctrine reflects the existing paradigm, it should represent the uncertainty that abounds in future conflict and thus forces the prospective planner to account for and understand Surprise to be better prepared for the future operational environment. If the US Army fails to refine the terminology and theory surrounding Surprise risks the misapplication and misunderstanding of the historical

¹⁴⁰ Kuhn, *The Structure of Scientific Revolutions*, 7.

understanding of Surprise, which could lead to mission failure. The failures to understand the nature of Surprises are numerous. Even if the nature of a surprising event, 9/11, for example, is debatable on the premise of “how surprising were they, really?” It is challenging to argue that the costs of the war(s) that followed, the security measures emplaced in its wake, and the changes to culture and practice were profound and costly.

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