

**Clausewitz, Complexity, and Custer:
An Analysis of Decision Making in a Nonlinear System**

**A MONOGRAPH
BY
Major Steven M. Leonard
Ordnance**



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

First Term AY 00-01

Approved for Public Release Distribution is Unlimited

REPORT DOCUMENTATION PAGE

1. REPORT DATE (DD-MM-YYYY) 01-01-2001	2. REPORT TYPE master's thesis	3. DATES COVERED (FROM - TO) xx-xx-2000 to xx-xx-2001
4. TITLE AND SUBTITLE Clausewitz, Complexity, and Custer: An Analysis of Decision Making in a Nonlinear System Unclassified	5a. CONTRACT NUMBER	
	5b. GRANT NUMBER	
	5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) Leonard, Steven M. ; Author	5d. PROJECT NUMBER	
	5e. TASK NUMBER	
	5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME AND ADDRESS USA Command and General Staff College School of Advanced Military Studies 1 Reynolds Ave. Fort Leavenworth , KS 66048	8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME AND ADDRESS ,	10. SPONSOR/MONITOR'S ACRONYM(S)	
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT A PUBLIC RELEASE ,		

13. SUPPLEMENTARY NOTES**14. ABSTRACT**

Decision making in combat is one of the core competencies most valued in leaders. Much effort is dedicated to the analysis of decision-making models, processes, and methodologies in order to develop skills that enable leaders to make qualitatively better decisions under duress. However, little attention is directed toward the study of decision-making with respect to complexity, the fundamental environment of combat. In addressing a legendary tale of military failure, this monograph synthesizes historical analysis, classical theory, and contemporary science. Rather than revisit an argument worn by time, the intent of this document is to overlay the elements of complexity theory onto a map of history, then present the problem from the perspective of the Prussian military theorist, Carl von Clausewitz. Ultimately, this monograph seeks to resolve whether the defeat of the U.S. 7th Cavalry at the Little Big Horn was due to a ?logic of failure? brought on by George Armstrong Custer?s inability to recognize and predict the behavior of the complex nature of the environment of combat. The first section of the monograph examines the historical events leading to the Battle of the Little Big Horn. Chapter Two proceeds into a comparative analysis of the complex metaphors presented in On War while the third chapter details the effects of decision-making in a complex system. Finally, Chapter Four addresses the ?logic of failure? that defined the chain of events eventually leading to Custer?s defeat. The monograph conclusions presented in Chapter Five bring together the elements of complexity present in the environment of battle and resolves the basic research question. In developing an appreciation for the challenges inherent to decision-making in a complex environment, the reader will ultimately earn respect for the contemporary relevance of molding classic theory to modern science. This monograph also provides readers with a new paradigm for analyzing military defeat: the complex decision-making system, examined in detail in Chapter Four.

15. SUBJECT TERMS

decision-making; complex systems; U.S. 7th Cavalry; Little Big Horn; combat

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 56	19a. NAME OF RESPONSIBLE PERSON Burgess, Edwin burgesse@leavenworth.army.mil
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified			19b. TELEPHONE NUMBER International Area Code Area Code Telephone Number 913 758-3171 DSN 585-3171

Disclaimer

The views expressed in this academic research paper are those of the author(s) and do not reflect the official policy or position of the US government or the Department of Defense.

Contents

	<i>Page</i>
TITLE PAGE	I
DISCLAIMER	II
ABSTRACT.....	IV
INTRODUCTION	1
The Path of War	3
The Statesman and The Patriot	5
The Vision.....	6
CLAUSEWITZ, COMPLEXITY, AND NONLINEARITY	11
DECISIONS IN BATTLE	17
Breaking the Paradigm.....	18
Terry's Plan.....	20
A Change of Plan.....	22
On to the Crow's Nest.....	23
Attack!.....	24
Reno Repulsed	26
Benteen, Come Quick!.....	27
The Defense of Reno Hill.....	29
Custer's Fate	31
DECISIONS IN A COMPLEX SYSTEM.....	35
CONCLUSIONS.....	43
BIBLIOGRAPHY	47

Abstract

Decision making in combat is one of the core competencies most valued in leaders. Much effort is dedicated to the analysis of decision-making models, processes, and methodologies in order to develop skills that enable leaders to make qualitatively better decisions under duress. However, little attention is directed toward the study of decision-making with respect to complexity, the fundamental environment of combat.

In addressing a legendary tale of military failure, this monograph synthesizes historical analysis, classical theory, and contemporary science. Rather than revisit an argument worn by time, the intent of this document is to overlay the elements of complexity theory onto a map of history, then present the problem from the perspective of the Prussian military theorist, Carl von Clausewitz. Ultimately, this monograph seeks to resolve whether the defeat of the U.S. 7th Cavalry at the Little Big Horn was due to a “logic of failure” brought on by George Armstrong Custer’s inability to recognize and predict the behavior of the complex nature of the environment of combat.

The first section of the monograph examines the historical events leading to the Battle of the Little Big Horn. Chapter Two proceeds into a comparative analysis of the complex metaphors presented in *On War* while the third chapter details the effects of decision-making in a complex system. Finally, Chapter Four addresses the “logic of failure” that defined the chain of events eventually leading to Custer’s defeat. The

monograph conclusions presented in Chapter Five bring together the elements of complexity present in the environment of battle and resolves the basic research question.

In developing an appreciation for the challenges inherent to decision-making in a complex environment, the reader will ultimately earn respect for the contemporary relevance of molding classic theory to modern science. This monograph also provides readers with a new paradigm for analyzing military defeat: the complex decision-making system, examined in detail in Chapter Four.

Chaper 1

Introduction

I think and think for months and years. Ninety-nine times, the conclusion is false. The hundredth time I am right.

—Albert Einstein

In the early morning hours of June 27, 1876, Brigadier General Alfred H. Terry cautiously led a column of infantry and cavalry into the valley of the Little Big Horn River in the Montana Territory. When the lead elements of the 2nd U.S. Cavalry Regiment entered the valley, they found the remnants of the largest gathering of Indians ever witnessed on the Great Plains of North America.

Smoke billowed across the rolling hills and the air was rank with the stench of decaying flesh. Debris, dead and wounded animals, discarded possessions, and abandoned lodge poles littered the area. Terry, the commander of the Department of the Dakota, was certain his force had dispersed the hostiles, until his chief of scouts reported the discovery of the bloated, mutilated corpses of more than 200 officers and men of Lieutenant Colonel George Armstrong Custer's 7th Cavalry.¹

In all, more than 250 troopers of Custer's command fell that day: 210 with the flamboyant "boy general" and another 47 four miles upstream with Major Marcus Reno and Captain William Benteen.² For the 15,000 Sioux and Cheyenne gathered in the

valley, the battle represented the apex of the Indian Wars, and would eventually bring a tragic, anticlimactic end to one of the most colorful periods in American history.

Historical analysis of the battle tends to remain blame focused, categorized as either realist or fatalist. With the former, Custer and his reputed insatiable zeal for glory were responsible for the defeat. The fatalist school, according to historian Andrew Ward, “divides in turn into three primary groups: those who blame Reno for retreating, those who blame Benteen for not leading the . . . rescue, and those who simply blame the unprecedented and unanticipatable size of the forces arrayed against [Custer].”³

However, what if Custer’s demise at Little Big Horn was the fault of no single event or individual in particular, but the result of something far more complex and, therefore, unpredictable?

In 1989, University of Bamberg psychology professor Dietrich Dörner coined the term “Logic of Failure” to describe situations where linear, cause-and-effect decision methodology proves disastrous in fundamentally complex environments. Rational decisions made by equally rational individuals result in tragically unforeseen circumstances due to the complexity inherent to specific systems; human nature relies on basic causal relationships to facilitate decision making in simpler, linear systems.⁴

Yet, what exactly differentiates linearity from nonlinearity, especially with respect to decision-making? In a linear system, the effects of a decision exhibit *proportionality* – the decision (input) results in an effect (output) that is proportional in scale and scope – and *superposition* – output may be reduced for analysis without affecting the nature of the relationship to the input.⁵ Conversely, nonlinear systems obey neither of these

principles, exhibiting output disproportional to input and a fundamental interdependency that defies reductionism (the sum of the parts does not equal the whole).

Therefore, in a nonlinear or complex system, a decision predicated upon the expectations of linear behavior can – and will – produce wholly unanticipated effects, often delayed due to the very nature of the system. Linear decisions made in a nonlinear system can produce the effect that Dörner defined as the “logic of failure.”

Was the defeat of the 7th U.S. Cavalry in the Battle of the Little Big Horn due to a “logic of failure” brought on by an inability to recognize and predict the behavior of the complex nature of a hostile environment?

The Path of War

For much of the nineteenth century, the seven tribes of the warlike Teton, or Lakota, Sioux and their ancestral cousins, the Cheyenne, roamed freely across the Great Plains of North America, hunting buffalo and establishing a presence virtually unopposed by other Native American tribes. For the Oglala, Brulé, Hunkpapa, Miniconjou, Blackfoot, Sans Arc, and Two Kettle Sioux, warfare was as fundamental to their culture as their nomadic way of life.⁶

But the discovery of gold in the Montana Territory in 1862 and the gradual encroachment of the Bozeman Trail upon territory ceded to the Sioux by the Fort Laramie Treaty of 1851 threatened the very existence of the Sioux nation. Peace overtures only exacerbated an already sensitive situation, touching off what would come to be known as “Red Cloud’s War.” Nevertheless, opposing this expansion into their hunting grounds proved costly to the Sioux. Unable to meet the basic needs of their

people, the unusually severe winter of 1865-66 left countless dead from starvation and exposure.⁷

In June 1866, several tribal chiefs weary of war, led by Oglala Sioux Chief Red Cloud, traveled to Fort Laramie in the Wyoming Territory to negotiate an end to the hostilities. While meetings with the peace commission continued, Colonel Henry B. Carrington led a force up the Bozeman Trail from Fort Reno to establish Fort Phil Kearny, then detached two companies of the 18th Infantry to build Fort C.F. Smith. Learning of this deceit, Red Cloud broke from the council, stating: “The Great Father sends us presents and wants us to sell him the road, but the White Chief goes with soldiers to steal the road before Indians say ‘Yes’ or ‘No’.”⁸

Red Cloud became the first Indian chief to execute war successfully against the United States. On December 21, 1866, Red Cloud led a force of approximately 1,800 Sioux, Cheyenne, and Arapaho – including the young Oglala warrior Crazy Horse – into an ambush of 80 soldiers under Captain William Fetterman north of Fort Kearny. The Fetterman Massacre was the opening salvo in a second Sioux war that would not end until November 1868, when Red Cloud signed a new treaty in which the government ceded the Great Sioux Reservation (the area of present day South Dakota west of the Missouri River) while abandoning the untenable Bozeman Trail.⁹

Red Cloud himself retired to the reservation in 1870. However, reservation life was not for all, and a number of Sioux remained in the unceded territory east of the Bighorn Mountains and north of the North Platte River. In time, they looked toward a new figure for leadership: not a warrior chief, but a “medicine man.” His name was Sitting Bull, a highly respected spiritual leader among the “non-treaty” Hunkpapa Sioux.

The Statesman and The Patriot

From the outset, Sitting Bull represented something remarkable among Native American socio-cultural systems. First, the other Teton chiefs *elected* him to lead the Sioux: not a single tribe within the Lakota, but the entire Teton Sioux nation. Second, and arguably more significant, Sitting Bull's ascension to such a role was unprecedented among the various Indian tribal societies.¹⁰

The concept of a "supreme chief" was alien to the Sioux; it was incumbent upon Sitting Bull to transform a position of questionable legitimacy into one that would engender confidence within Lakota society. According to author and historian Robert Utley, "That is what he did. Throughout the first half of the 1870s . . . Sitting Bull carried the banner around which all true Lakota rallied. Sitting Bull came to exert an influence beyond his own tribe without parallel in the history of his people."¹¹

While Red Cloud advocated the peace and stability that came with agency life, Sitting Bull insisted that his people maintain a cultural and spiritual isolation from the white man, a return to the "old ways" of the Teton Sioux. Sitting Bull believed the reservation subordinated Lakota society, and the latter-day Moses led his people into the unceded territory.¹²

Ultimately, all Sioux would one day follow Red Cloud's path to the reservation. His vision for the Lakota was far more complex, one of a tolerable life that remained as true to the old ways as was possible while retaining some degree of freedom for the agency Sioux. Red Cloud was the statesman for the Teton Sioux: Sitting Bull, the patriot.

The Vision

Gold fever brought both white encroachment and George Custer onto the Sioux Reservation in 1874. With the return of Custer and the Black Hills Expedition to Fort Abraham Lincoln on August 30, the press had whipped prospectors into a veritable frenzy. By the following summer, 800 miners were panning for gold in the rich streams of the Black Hills.¹³

Initially, the government attempted to calm the increasingly incensed Sioux with an offer to purchase the Black Hills for the paltry sum of just \$6 million. While more-skilled negotiators may have brought the agency chiefs to a consensus, the interference of the non-treaty Sioux ended any chance of a settlement. Sitting Bull adamantly opposed any agreement that fostered further intrusion onto the Sioux lands and stood prepared to use force, if necessary, to demonstrate his determination.¹⁴

On November 3, President Grant held council in Washington with his principal advisors on Indian affairs to discuss how best to resolve the stalemate in the Black Hills. The immediate consequences of this conference were apparent only three days later, when Inspector E.C. Watkins of the Indian Bureau submitted a seemingly well-timed report that the rebellious faction of Sioux and Northern Cheyenne roaming the unceded territory could only be brought under control with military intervention. One month later, Commissioner of Indian Affairs Edward P. Smith declared that all Indians not on reservations by January 31, 1876, would be considered hostile and brought in by force. Having thus committed the military to an offensive in the unceded territory, Smith promptly resigned.¹⁵

On February 1, Secretary of the Interior Zachariah Chandler notified Secretary of War William W. Belknap that the “Indians are hereby turned over to the War Department for such action on the part of the Army as you deem proper under the circumstances.” Utley contends that this was exactly the plan conceived in Washington during the November conference.¹⁶

Lieutenant General Phillip H. Sheridan, Commander of the Division of the Missouri, dispatched Terry and Brigadier General George Crook on winter campaigns into the unceded territory. Sheridan knew from experience that locating and attacking the non-treaty “hostiles” in their winter camps was the only effective means to counter the superior mobility of the Lakota. However, an especially difficult winter paralyzed military efforts and necessitated the summer campaign that Sheridan feared and had hoped to avoid.¹⁷

Late May saw the gathering of the various hunting bands in the Powder River basin as the plentiful buffalo herds came to feed on the young prairie grasses. As spring gave way to summer, Sitting Bull mystified the visiting chiefs with a strange vision: during a commune with *Wakantanka*, he saw a great dust storm of soldiers propelled by a great wind into a white cloud resembling an Indian village at the base of snow-capped mountains. The white cloud billowed peacefully away to the north, leaving the soldiers dissipated and defeated. Sitting Bull interpreted the dream to indicate that a great military force would attack them, but the Sioux would emerge victorious.¹⁸

The reaction to Sitting Bull’s vision was as remarkable as it was unprecedented. First, instead of dispersing after a short period, as was the usual custom with hunting bands, the nomadic camps remained together in a sort of confederation. Second, word of

Sitting Bull's "medicine" spread rapidly among the neighboring tribes and the village began to expand with each passing day. Finally, eager to fulfill the vision, Crazy Horse and several of the other war chiefs elected to alter their preferred methods and adopt the ways of the American soldier: they would combat aggression with a brand of fierce opposition never before seen by the white man.¹⁹

Into this seemingly chaotic maelstrom stumbled George Armstrong Custer, renowned cavalryman and Indian fighter of some repute. The commander of the U.S. 7th Cavalry, like so many others serving on the frontier, held his enemy in rather low regard and viewed success on this campaign as a mere formality. For Custer, simplicity embodied war with this pathetically simple enemy.

Carl von Clausewitz, in his treatise *On War*, noted with a paradoxical sense of irony, "Everything in war is simple, but the simplest thing is difficult. The difficulties accumulate and end by producing a kind of friction that is inconceivable."²⁰ Long before his premature death in 1831, the Prussian military theorist possessed a remarkable grasp of the complex nature of warfare, undoubtedly drawn from the tragic lessons of defeat at the hands of Napoleon. In 1806, Clausewitz further understood that "Countless minor incidents – the kind you can never really foresee – combine to lower the general level of performance, so one always falls short of the intended goal."²¹

Had Clausewitz rode with Custer into the valley of the Little Big Horn, he would have undoubtedly explained the ubiquity of "friction" on the field of battle, that even the simplest of enemies has a profound influence on the nature of conflict. But Custer had no such counsel and was surely not aware of the Prussian's works, translated into English

only two years earlier. Custer was an uncomplicated, simple man, probably more so than were the adversaries to whom he ultimately fell.

Notes

¹ During and again in the aftermath of the battle, Indians set fire to the dry prairie grass to screen the movements of noncombatants and, ultimately, the withdrawal of the combatants. According to various eyewitness accounts, when Terry arrived the following day the area was remained densely smoke-laden and the air ripe with the stench of burned and decayed flesh.

² Robert M. Utley, *Frontier Regulars: The United States Army and the Indian, 1866-1891* (New York: Macmillan, 1973), 259.

³ Andrew Ward, "The Little Bighorn," *American Heritage* (April 1992): 83.

⁴ Dietrich Dörner, *The Logic of Failure: Why Things Go Wrong and What We Can Do to Make Them Right* (New York: Henry Holt, 1989), .

⁵ Alan D. Beyerchen, "Clausewitz, Nonlinearity and the Unpredictability of War," in *Coping with the Bounds: Speculations on Nonlinearity in Military Affairs*, Thomas J. Czerwinski (Washington, DC: National War College, National Defense University, 1998), 165-66.

⁶ The greater Sioux nation originally comprised two separate branches: the Santee, or Dakota, Sioux inhabited much of present-day southern Minnesota while the Teton, or Lakota, Sioux established a more nomadic presence within the Dakota and Wyoming Territories. According to Utley, the term "Sioux," in fact, finds its origin in a corrupted form of the Chippewa word for "enemy."

⁷ John S. Gray, *Custer's Last Campaign: Mitch Boyer and the Little Bighorn Reconstructed* (Lincoln, NE: University of Nebraska Press, 1991), 36.

⁸ Utley, *Frontier Regulars*, 99.

⁹ Stephen E. Ambrose, *Crazy Horse and Custer: The Parallel Lives of Two American Warriors* (New York: Doubleday, 1975), 231-39.

¹⁰ Robert M. Utley, *The Lance and the Shield: The Life and Times of Sitting Bull* (New York: Henry Holt, 1993), 87.

¹¹ *Ibid.*, 88.

¹² *Ibid.*, 88-9.

¹³ Utley, *Frontier Regulars*, 245.

¹⁴ *Ibid.*, 245-47.

¹⁵ *Ibid.*, 247.

¹⁶ *Ibid.*, 248-49.

¹⁷ In ordering Terry and Crook to conduct winter campaigns, Sheridan told them, "Unless they can be caught before early spring, they cannot be caught at all." Sheridan respected the elusiveness of the Plains Indians and knew from campaigns in Kansas and Oklahoma that the only effective way to counter their superior mobility was to catch them in their winter camps, which were semi-permanent in nature.

¹⁸ Utley, *The Lance and the Shield*, 136-37.

¹⁹ *Ibid.*, 136-37; *idem*, *Frontier Regulars*, 254-55.

Notes

²⁰ Carl von Clausewitz, *On War*, Edited and translated by Michael Howard and Peter Paret (Princeton: Princeton University Press, 1984), 119.

²¹ Ibid., 119.

Chapter 2

Clausewitz, Complexity, and Nonlinearity

Although our intellect always longs for clarity and certainty, our nature often finds uncertainty fascinating.

—Carl von Clausewitz, *On War*

For the final twelve years of his life, Clausewitz struggled with a concept that defied the science of his time. Its very essence permeated *On War*, from his metaphorical expressiveness to the ubiquitous concept of friction. While other theorists failed to grasp the underlying cause of the unpredictable nature of war, Clausewitz devoted more than a decade of his short life to defining what is contemporarily recognized as *complexity*.

Clausewitz's ability to synthesize the nuances of complexity into *On War* sharply contrasts his writings with those of Baron Antoine Henri de Jomini – who openly criticized the Prussian's treatise – and the majority of his successors. Defense analyst Alan Beyerchen notes that *On War* “grapples with war's complexity more realistically than perhaps any other work,” but also attributes the omnipresence of complexity in *On War* as the single factor that “makes his work so significant yet so difficult to assimilate.”¹

Beyerchen further suggests that Clausewitz exhibited an fundamental comprehension of the complexities of war that is best defined with terms and concepts only recently available: “*On War* is suffused with the understanding that every war is inherently a

nonlinear phenomenon, the conduct of which changes in character in ways that cannot be analytically predicted.”² As Clausewitz repeatedly revised *On War*, he undoubtedly developed a deeper understanding of his own insights on complexity. His evolving theory of war was counterintuitive to the linear, reductive nature of thought that dominated science from the time of Newton. In his struggle to illustrate the complex nature of war, Clausewitz was only able to complete Chapter 1 of Book One before his death.

In an era that lacked the conceptual language to translate his theories into commonly understood terminology, Clausewitz relied upon the metaphor to bear the burden of proof. Beyerchen notes that Clausewitz begins *On War* with three increasingly sophisticated, yet prominently nonlinear, definitions of war.³

The first of these metaphors, the *Zweikampf* (literally, “two-struggle”), is introduced by Clausewitz in Chapter 1 of Book One of *On War*:

War is nothing but a duel [Zweikampf] on a larger scale. Countless duels go to make up war, but a picture of it as a whole can be formed by imagining a pair of wrestlers. Each tries through physical force to compel the other to do his will; his immediate aim is to throw his opponent in order to make him incapable of further resistance. War is thus an act of force to compel our enemy to do our will.⁴

With this first, most basic definition of the nature of warfare, Clausewitz delves into one of the fundamental concepts of complexity: **interaction** (*Wechselwirkung*).⁵ War is not, as Clausewitz states, “the action of a living force upon a lifeless mass but always the collision of two living forces.”⁶ The metaphor of two wrestlers is an ideal representation of complexity, where Beyerchen notes “the bodily positions and contortions that emerge . . . are often impossible to achieve without the counterforce and counterweight of an opponent.”⁷

As Clausewitz begins to expand his theory of war to encompass the role of policy (*Politik*), he invokes his second classic, oft-quoted definition: “War is merely the continuation of policy by other means.”⁸ In the process of arriving at this definition, Clausewitz calls upon the metaphorical image of combustion to characterize the relationship between politics and war:

The political object – the original motive for the war – will thus determine both the military objective to be reached and the amount of effort it requires. . . . The same political object can elicit different reactions from different peoples, and even from the same people at different times. We can therefore take the political object as a standard only if we think of the influence it can exert upon the forces it is meant to move. . . . Depending on whether their characteristics increase or diminish the drive toward a particular action, the outcome will vary. Between two peoples and two states there can be such tensions, such a mass of inflammable material, that the slightest quarrel can produce a wholly disproportionate effect – a real explosion.⁹

Beyerchen contends that Clausewitz’s use of this distinctly nonlinear metaphor defines the “parameters that determine fundamental regimes of behavior in [a complex] system.” The prevailing political conditions, not the initial political objective, determine the military methods utilized; in war, the link between ends and means is fundamentally dynamic, a definition that contrasts the static relationship fostered by most theorists.¹⁰

In eliciting this metaphorical relationship, Clausewitz illustrates two of the basic precepts of complexity: the role of **feedback** in a complex system and the **adaptive** behavior that defines dynamic complexity.¹¹ Clausewitz’s assertion concerning the finality of war is indicative of the Prussian’s recognition of the existence of both reinforcing (amplifying) and balancing (stabilizing) feedback in his evolving theory of war.¹² His description of the chameleonic nature of warfare reflects an understanding that, ultimately, the conduct of any war affects its very character, and “its altered character feeds back into the political ends that guide its conduct.”¹³

Finally, Clausewitz draws his most complex, yet essential, metaphor: the remarkable trinity of war (*eine wunderliche Dreifaltigkeit*). In military theory, few other representations of the nature of war are so often debated with such diverse opinions. Yet, no other element of Clausewitz's treatise is as representative of the complexity of war:

As a total phenomenon its dominant tendencies always make war a paradoxical trinity – composed of primordial violence, hatred, and enmity, which are to be regarded as a blind natural force; of the play of chance and probability within which the creative spirit is free to roam; and of its element of subordination, as an instrument of policy, which makes it subject to reason alone. . . . Our task is therefore to develop a theory that maintains a balance between these three tendencies, like an object suspended between three magnets.¹⁴

The common misperception is of a geometric triad that statically represents the three forces that influence the conduct of war. Yet, this definition sharply contrasts the other fundamental complexities explored by Clausewitz. In his trinity, the points are not passive, but dynamic attractors; the metaphor is another illustration of complex interaction.

In Beyerchen's view, Clausewitz uses the metaphorical trinity to confront "the chaos inherent in a nonlinear system *sensitive to initial conditions*." A steel pendulum suspended between three interactive magnetic points will move in a predefined pattern, but the precise motion of the pendulum cannot be mathematically predicted due to variances in the initial conditions. As in war, "anticipation of the overall kind of pattern is possible, but quantitative predictability of the actual trajectory is [impossible]."¹⁵

As Beyerchen himself notes, it is unlikely that Clausewitz possessed the foresight to predict the advent of complexity theory. He did, however, perceive and articulate "the nature of war as an energy-consuming phenomenon" that existed within an environment of innumerable, dynamically interactive components.¹⁶ Furthermore, through the use of

metaphors, he defined the fundamental elements of complexity: sensitivity to initial conditions, interaction between interdependent variables, the presence of feedback cycles, and the ability of a system to spontaneously adapt to changes in the environment.

For decades, historians diligently embarked on personal quests to fix responsibility for the defeat of the 7th Cavalry at Little Big Horn. Some blamed Custer's blind ambition while still others faulted Reno's cowardice or Benteen's inaction. Of the more scholarly endeavors, the majority make note of the *complicated* nature of the situation into which Custer led his troopers.

Detail complexity, most commonly associated with complicated phenomena, is reflected in non-adaptive systems; a snowflake is an example of detail complexity. *Dynamic complexity*, however, is associated with complex adaptive systems; war, as defined by Clausewitz, is representative of dynamic complexity.

What is the effect of linear decision-making in a distinctly complex, nonlinear environment? Did the nature of Custer's decisions contribute to a "logic of failure" and his ultimate demise? The answer to that question lies in the careful analysis of the decisions made by Custer, his battalion commanders, and the Lakota war chiefs in the hours preceding the slaughter of Custer's command in the hills overlooking the Little Big Horn River.

Notes

¹ Beyerchen, 162.

² Ibid., 163.

³ Ibid., 171.

⁴ Clausewitz, 75.

⁵ M. Mitchell Waldrop, *Complexity: The Emerging Science at the Edge of Chaos* (New York: Touchstone, 1992), 11.

⁶ Clausewitz, 77.

⁷ Beyerchen, 172.

Notes

⁸ Clausewitz, 87.

⁹ Ibid., 81.

¹⁰ Beyerchen, 173.

¹¹ Peter M. Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization* (New York: Doubleday, 1990), 71. Waldrop, 11.

¹² Clausewitz, 80. In Chapter 1 of Book One of *On War*, Clausewitz asserts that “In war the result is never final.” This statement is indicative of the presence of feedback cycles, most notably the effects of “delays” that interrupt the flow of influence and cause the resulting consequences of action to occur gradually.

¹³ Beyerchen, 174. Clausewitz, 89.

¹⁴ Clausewitz, 89.

¹⁵ Beyerchen, 176.

¹⁶ Ibid.

Chapter 3

Decisions in Battle

I have had but little experience in Indian fighting, and Custer has had much, and he is sure he can whip anything he meets.

—General Alfred Terry, 21 June 1876

For the Lakota Sioux, *personal* combat defined their existence. Every aspect of their culture, from social interaction and organization to matters of spiritual consequence, revolved around the individual warrior. Within the bounds of this culture, the *akicitas* – the elite warrior societies – transcended tribal distinctions as the principal legislative and executive bodies of the Lakota, ultimately eclipsing the power and influence of the individual tribal chiefs.¹

Government officials could not conceive of a system so complex; the notion of a nation administered by warrior societies was utterly foreign to whites. According to historian Robert Utley, the Lakota “traced their origins, traditions, and values to war and conferred their highest rewards on men successful in war.”² Yet, the very cultural phenomena that produced a governing body among the Lakota also dictated the Sioux nation’s greatest vulnerability: the individualistic nature of combat.

The Lakota warrior neither required, nor acknowledged, formal orders when engaging in combat. The implications of such singular action are obvious: deliberate reconnaissance and security became secondary concerns or were ignored altogether. In

the same vein, combat leadership was at best a fleeting concept. The code of the akicita compelled the warrior to follow no one man in battle; renowned war chiefs such as Crazy Horse and Red Cloud drew their influence principally from personal valor and reputation.³

However, all this changed with Sitting Bull's vision.

Breaking the Paradigm

Word of his "medicine" spread quickly among the neighboring villages along the Rosebud Valley. Each passing day, more non-treaty Indians joined Sitting Bull's village, following his prophecy of a great victory over the "long knives."

By June 12, the village's leisurely pace along the Rosebud brought them to the drainage of the river known to the Sioux as the Greasy Grass. On the maps of the white man, that river is labeled as the Little Big Horn. The entire village crossed the Greasy Grass and moved up Davis Creek toward the Little Big Horn Valley.⁴

On June 15, the Lakota left the Rosebud and reestablished the village on the upper fork of Reno Creek a day later. During the march, hunters observed the advancing army of General George Crook, commander of the Department of the Platte, marching toward the Rosebud. A formidable force of more than 1,000 soldiers, with Crow and Shoshone warriors, moved with Crook in search of Crazy Horse, whom the taciturn general mistakenly believed to be encamped the Rosebud.⁵

During an inter-tribal war council on the evening of June 16, several anxious young war chiefs ignored the counsel of the older heralds and pushed for a spoiling attack on Crook's column the following morning. Sitting Bull initially opposed the proposition of *attacking* the advancing army, but eventually agreed to lead the assault with Crazy Horse.

Such a significant departure from akicita tactical methods, while not unheard of, occurred infrequently and rarely involved numbers of any consequence. However, as frustrations grew with Indians starving on the agencies and dying on the plains, for the rapidly expanding Lakota confederation to take the offensive in unison represented not just a dangerous precedent, but also a broken paradigm. For a fleeting moment in time, Sitting Bull's decision would assume historical proportions.

Crook's forces broke camp and were on the march by 3:00 a.m., but halted just after sunrise for coffee. Crook never imagined the Indians would take the offensive; open aggression against whites was virtually unknown except in rare, isolated instances. Crook certainly never expected the Sioux to attack in force.⁶

The Battle of the Rosebud featured some of the fiercest fighting of the Indian wars. During six hours of heated combat, Crazy Horse never surrendered the initiative and consistently used the terrain to his advantage. When the Oglala war chief finally withdrew from the field of battle, he left Crook with twelve dead and twice that number wounded. Crook reported the engagement as a victory, since he remained in possession of the blooded terrain.⁷

Robert Utley notes, in defense of Crook, "the Sioux and Cheyenne fought with a wholly unexpected unity and tenacity. . . . Custer encountered the same combinations a week later, with consequences far more serious than Crook suffered."⁸ Shortly after the battle, Crook withdrew his army from the campaign and, although only 50 miles from the Little Big Horn battlefield, failed to make any effort to contact forces in the field to warn them of the sudden change in Lakota tactics.⁹

Stephen Ambrose recalls Crook's success as ephemeral. Word of the battle on the Rosebud spread quickly and "within a week the news of Crook's fiasco was known by every Indian on the northwest Plains. It emboldened the hostiles to the point where they felt they could safely defy the government."¹⁰ The steady flow of non-treaty Indians into the camp soon swelled to a flood; in the six days following the battle, Sitting Bull's village more than doubled in size. While the ultimate size of the camp will always be a matter of speculation, Indian estimates place the number of warriors between two and four thousand.¹¹

Undoubtedly, Terry's command – already planning the expedition into the Little Big Horn Valley – would have found the information extremely valuable.

Terry's Plan

On the evening of June 21, aboard the steamer *Far West*, Alfred Terry assembled his commanders for a strategic conference in which he would issue his orders for the campaign against the non-treaty Sioux and Cheyenne. With the supply ship securely moored at the mouth of the Rosebud on the Yellowstone River, Terry, Custer, Colonel John Gibbon (commanding Terry's Montana Column), and Major James S. Brisbin (commanding the 2nd Cavalry) gathered around the map board in the ship's main cabin to plan the details of the operation. Terry's adjutant general, Captain Edward W. Smith, recorded the proceedings and transcribed the notes into written orders issued the following morning.

According to Gibbon's notes, Terry's plan "focused not on how to defeat the enemy but how to catch him. Its object . . . was to prevent the escape of the Indians, which was the idea pervading the minds of all of us."¹² Terry devised his plan, however, in a

relative vacuum; both he and his commanders remained ignorant of Crook's defeat on the Rosebud and the nature and scope of the Lakota aggressiveness.

According to plan, Custer would lead the 7th Cavalry up the Rosebud and approach the village from the south along the Little Big Horn. Gibbon would cross the Yellowstone River, march his forces south on the Little Big Horn and assume a blocking position in the river valley. Custer would strike the first blow, driving the combatants north into Gibbon's forces. The 7th Cavalry would then descend into the breach opened between the warriors and noncombatants and essentially hold the latter hostage until the entire group could be moved onto the agencies. This approach, Terry believed, "would not only mitigate against premature contact but also relieve . . . apprehension that the Sioux might escape to the south before his pincers closed from the north."¹³

Terry's greatest anxiety was that the always-mobile Sioux might escape to the south; surprise was absolutely essential to his plan. Custer's orders, delivered the next morning, explicitly iterated Terry's intent: to collapse the pincers on the Lakota in the Little Big Horn Valley and for Custer not to surrender the element of surprise by following the fresh Indian trail tracing from the Rosebud to the Little Big Horn. Nevertheless, Terry framed his order in a manner that offered Custer significant tactical flexibility to alter the plan as necessary.¹⁴

The 7th Cavalry departed at noon on June 22, led by six of Gibbon's Crow scouts, since Custer's Arikaras had little familiarity with the country. Custer declined Terry's offer of two Gatling gun platoons – they would reduce his mobility – or four troops of Brisbin's 2nd Cavalry. Custer did not believe that the additional combat power was

necessary; he accepted as fact that the superior discipline, weaponry, and horses of his regiment provided sufficient advantage to defeat any enemy force, regardless of size.¹⁵

As Custer marched past Terry and away from the *Far West*, Gibbon called out to him, “Now, Custer, don’t be greedy, but wait for us.” Custer waved a hand and replied over his shoulder, “No, I will not.”¹⁶

A Change of Plan

After a march of twelve miles up the Rosebud, Custer halted for the night. At an officer’s call that evening, he discussed the importance of their mission and spoke of his confidence of the men of his command. His openness disturbed at least one of his subordinate officers. Lieutenant Edward S. Godfrey later recounted that Custer’s tone left a deep impression on those present, almost a premonition of doom.¹⁷

On June 23 and 24, the column continued the march up the Rosebud, riding nearly sixty miles amid the ever-increasing signs of Indian presence. For miles around, close-cropped grass indicated the passage of a pony herd of enormous proportions. The occasional burned-out campfire, numerous trails breaking off to the west, and the deserted frame of Sitting Bull’s Sun Dance lodge left no doubt as to the presence of hostiles. The discovery of Sioux drawings in the sand floor of the lodge depicting Sitting Bull’s vision, while greatly disturbing to the Indian scouts, left no significant impression on Custer.¹⁸

Late on June 24, the 7th Cavalry reached the point on the Rosebud noted in Terry’s order where the Indian trail diverged west across the creek and on toward the Little Big Horn. Spanning a mile across with the appearance of a freshly plowed farm field, the trail left no illusions with respect to the enormity of Sitting Bull’s camp. But Custer

remained unfazed; the general knew that few such gatherings lasted for any length of time. Taking the initiative ceded to him in Terry's order, Custer turned his forces west to follow the vast Indian trail.

When Custer made his decision to leave the Rosebud, he was only eighteen miles north of the site of Crook's battle a week earlier. After riding thirty miles since morning, he was less than a day's march from discovering the Sioux had changed tactics. "But the enemy was to the west," notes Ambrose, "not the south, and Custer was hardly the soldier to march away from the enemy's known position."¹⁹

On to the Crow's Nest

Deciding to make a night march across the divide separating the Rosebud and the Little Big Horn, Custer called his officers together to discuss his plans. The 7th Cavalry would ride through the night to make the divide, then rest the men and horses the following day while reconnoitering the country beyond for Sitting Bull's village. The regiment would attack early on June 26, the day Gibbon and Terry would reach the mouth of the Little Big Horn.

The exhausted cavalrymen made another ten miles before Custer called a halt ten miles east of the divide. At 2:00 a.m. on June 25, he ordered his chief of scouts, Lieutenant Charles A. Varnum, Mitch Bouyer, and Gibbon's Crows ahead to locate the village. The Crow scouts led Varnum to the "Crow's Nest," a wooded hollow near the summit of the divide where they would hide when on horse-stealing expeditions against the Sioux.²⁰ At dawn, from their vantage point above the valley of the Little Big Horn, the scouts located the Lakota village about fifteen miles in the distance.

Hairy Moccasin, one of Gibbon's Crow scouts, reported seeing numerous white tents, the hills covered with horses, and the smoke rising from hundreds of tepees.²¹ Much of the village remained hidden by the intervening bluffs, but to the sharp eyed Indian scouts, the sight was alarming. Bloody Knife, Custer's favorite Ree scout, begged Custer to use extreme caution; there were more Lakota ahead than the regiment had bullets. Bouyer told Custer that it was the largest encampment he had seen in thirty years on the northwest Plains.²²

Without finishing his breakfast, Custer ordered the regiment to move to the divide, then rode ahead to the Crow's Nest to see the village for himself. By the time he arrived, however, a smoky haze had settled over the valley and he could see nothing. Uncertain of the disposition of the enemy village, Custer rejoined the main column. Shortly after arriving, Varnum rode up at a gallop to report the news that Custer most feared: the Sioux appeared to be packing up and moving.²³

Attack!

While observing the village from the Crow's Nest, Varnum's party was observed by a group of seven agency Sioux led by the Oglala Black Bear. Seeing smoke from the regiment's breakfast fires, the party approached and watched the column from the safety of a concealed position. Resuming their journey to the village, Varnum observed their movement and feared they would warn of the advancing cavalry and the Indians would escape.²⁴

Varnum's account confirmed the general's deepest fear. In the ambiguity of Terry's order, the one explicit task assigned to Custer during the march was to guard his left flank

to prevent the escape of the hostiles. Custer decided to abandon his earlier plan; there would be no rest for the weary cavalymen. The 7th Cavalry would attack at once.

No longer concerned with concealing his approach, Custer ordered his bugler to sound Officer's Call. It was the first time in two days the regiment had heard the sound of a bugle.

Custer told his officers of the reports from the scouts, informing them that "the largest Indian camp on the North American continent is ahead and I am going to attack it."²⁵ He cautioned them to ensure that each man possessed his full basic load of ammunition, one hundred rounds. Then, Custer divided his forces to accomplish the attack.

Benteen would command three troops, scouting along the left, or southern, flank, probably to forestall the escape of the hostiles. Reno would command another three troops, Custer would lead five troops, and one troop would provide security for the pack train. Away toward the Little Big Horn Custer marched the 652 men of the 7th Cavalry.

As Custer and Reno rode along the trail into the valley of a small creek leading into the Little Big Horn, the general detected a rising cloud of dust from behind a line of bluffs. The dust, stirred by a group of forty Sioux warriors serving as the rear guard of a small village moving to join Sitting Bull's camp, alarmed the already agitated Custer. Robert Utley, in his study of the battle, believes that Custer saw the dust and retreating warriors as yet another sign that the Indians were escaping.²⁶

Without hesitation, Custer dispatched his adjutant, Lieutenant William Cooke with instructions for Reno to attack. As Reno later recalled the order, "to move forward at as

rapid a gait as prudent, and to charge afterward, and that the whole outfit would support me.”²⁷ For Reno, a veteran of the Civil War, this would be his first Indian fight.

Reno Repulsed

Across the Little Big Horn, Sitting Bull’s camp extended almost three miles downstream and spanned most of the half-mile width of the river valley. Any warning the Lakota had of the approach of Custer was minimal, enough for individual preparation for combat but not sufficient time to prepare plans or array forces. Nevertheless, they held the initiative, for their reaction was one for which Custer was unprepared.

Instead of evading Reno’s charge, they turned and fought.

As Reno charged toward the upper end of the village, the Sioux and Cheyenne warriors swarmed to confront him. Reno, undoubtedly confused by action of the hostiles, dismounted his 112 men and formed a thin skirmish line. As Reno’s men were dismounting, he could see Custer on the bluffs overlooking the village, waving his wide-brimmed hat. Reno believed Custer was cheering him to action.²⁸

On the bluffs, Custer could see that events were not unfolding according to plan, but he could not yet see the entire village, the northern end hidden by the cottonwood trees along the river. Believing he could still maneuver around the lower end of the village and capture the noncombatants, he rode along the column shouting, “We’ve caught them napping! We’ve got them!”²⁹

Realizing Benteen’s reconnaissance would take him away from the action, Custer ordered trumpeter John Martini, an Italian immigrant just learning English, to find Benteen and tell him to hurry. As Martini prepared to depart, Cooke gave him a written

order, scrawled on notebook paper: “Benteen: Come on. Big village. Be quick. Bring packs. W.W. Cooke. P.S. Bring Packs.”³⁰

Meanwhile, in the valley below, the warriors quickly flanked Reno’s skirmish line, causing him to order a retreat into a cottonwood grove to his right. Initially, the Lakota did not pursue Reno’s men into the tangled brush surrounding the timber, but continued to fire after the troopers. A single bullet pierced the head of Bloody Knife and splattered blood and brain matter across Reno’s face. At that moment, Reno lost the last remnants of courage that remained in his soul. He ordered a general retreat back across the river and up into the bluffs, then fled the scene without ensuring the safety of his men in an orderly withdrawal.³¹

Leaving only a small force to harass Reno, the remainder of the Lakota turned their attention to Custer, now moving toward the village along Medicine Tail Coulee. Reno’s retreat quickly devolved into a rout: for thirty minutes, isolated groupings of troopers fought for their lives in the timber while those who could made their escape across the river and up the bluffs. Reno abandoned sixteen men and one officer in the cottonwood grove, but the Lakota had more pressing matters at hand.

Reno, broken and disheveled, was left to organize what troopers remained of his command into some semblance of a defense. A failure in his first Indian fight, he now hoped only to survive the affair.

Benteen, Come Quick!

Benteen had misgivings about his orders to scout south of the village. Isolated by terrain and distance from the main body of the regiment, he was haunted by images of Custer’s campaign into the Washita River Valley in November 1868.³² In his greatest

triumph as an Indian fighter, Custer's dawn attack surprised the Cheyenne war chief Black Kettle in his winter camp. Custer, however, had failed to scout into the lower reaches of the valley, where a number of other camps – including Arapaho, Kiowa, and Comanche villages – were nestled in the snows along the banks of the Washita. At the sound of battle, hundreds of mounted warriors streamed up the valley and surrounded the 7th Cavalry.

Custer managed to escape at dusk with much of the regiment, but abandoned Major Joel H. Elliot and fifteen others who became isolated from the main force. A warrior force converged on Elliot, cutting him off from escape, then wiped out the detachment to a man. Custer's "victory" opened a wound in the 7th Cavalry that would never heal during his command tenure.³³

With no sign of Indians and the terrain increasingly impassable, Benteen turned the battalion back, concluding that the hostiles had better sense than to travel through such rough ground. Benteen, who had opposed dividing the regiment for the attack, had been away from the main trail for as many as three hours when the battalion halted to water their horses and fill canteens. The fight had already begun.

Within a mile of resuming the march, Benteen encountered Sergeant David Knipe of C Company with a message for the pack train to hurry to Custer's location. Knipe explained that the regiment had "struck a big Indian camp." He galloped away without relaying the critical fact that Custer had committed Reno to battle.

Benteen accelerated the pace of the march significantly, between a stiff trot and a gallop for most of the route between the watering hole and the river. A mile past the "Lone Tepee", a Sioux burial lodge for a casualty of the Rosebud, the trail split. The trail

split was disconcerting to Benteen, who remarked, “Here we have the two horns of a dilemma.”

The dilemma was resolved in the person of Private Martini, galloping in their direction – on the northerly trail – with Cooke’s handwritten message. The young trumpeter explained that Custer’s force was about three miles further along the trail and that the Indians were ‘skeedadlin’.” Martini failed to inform Benteen that he had left Custer’s column advancing down Medicine Tail Coulee. Benteen chose not to wait for the pack train, instead deciding to ride ahead to the sound of gunfire in the distance.³⁴

John Gray’s exhaustive time-space analysis of the battle reveals that Benteen was already too late to participate in the attack on the village. While a mounted courier might have overtaken Custer’s guidon, three companies of cavalymen marching in column could not hope to close the gap.³⁵ Custer would fight alone.

The Defense of Reno Hill

Confident that the Indians could not work in behind him and attack the pack train, Benteen led his battalion in the general direction indicated by Martini. The sudden appearance of four of Gibbon’s Crow scouts, making off with some stolen ponies, startled the gray-haired captain. The Crow mimed the firing of many weapons and emotionally repeated “Otoe Sioux. Otoe Sioux.” Many Sioux. Many Sioux.

Benteen trotted in the direction they indicated and was horrified by the sight he beheld: the rout of Reno’s command. Swarms of mounted warriors were riding down the scattered survivors of Reno’s aborted charge. The few who managed to escape the melee made for a high bluff less than a mile from his position. Benteen organized his

battalion into a single column, ordered his men to draw pistols, and led a charge toward the bluff at a full gallop.³⁶

When Benteen arrived at Reno's position, he dismounted his battalion and formed a skirmish line. In the midst of this scene, a hatless, hysterical Reno ran to Benteen's side, beseeching him to save his shattered command. "For God's sake, Benteen, halt your command and wait until I can organize my men!" he shouted.³⁷ Reno, obviously still in shock, then turned and discharged his pistols in the direction of a group of warriors some 900 yards in the distance.

Benteen was shocked at the sight of the survivors. He also noted that the hostiles who had earlier been in enthusiastic pursuit of Reno's men were rapidly disappearing. The entire scene was one of pandemonium. Reno had not attempted to organize his men into any semblance of a defense, and departed on his own in search of his friend and adjutant, Lieutenant Benjamin H. Hodgson.

It was incumbent upon Benteen to establish a defense, tend to the wounded, and bring up the pack train for additional ammunition. While this effort postponed movement for another thirty minutes, any march would have to be conducted at a pace sufficiently slow to enable the wounded and slow-moving mules to keep up. Benteen located a patch of high ground about a mile from Reno's position and struck his own company's guidon, hoping the fluttering standard would attract the attention of Custer's command.

Instead, the guidon served as a waypoint for Captain Thomas B. Weir, who had led an excursion in search of Custer's embattled forces, only to run headlong into a party of Lakota serving as the rear guard of the main force. With the hostiles in rabid pursuit, Weir galloped his men toward Benteen's guidon. Benteen ordered Captain Thomas F.

French to dismount and form a skirmish line perpendicular to the Indian advance, but French unaccountably remounted and retreated in panic. Benteen directed Lieutenant Edward S. Godfrey to dismount and accomplish the task French had failed to perform.

The cavalymen withdrew to Reno Hill – the point at which Reno had taken refuge from the valley fight – and entrenched into a defensive posture. Within moments, hundreds of warriors swarmed in and around the position while others sniped from the distance at the partially exposed troopers. Benteen’s timely counterattacks against enemy positions certainly gained some relief from enemy fire, albeit only temporarily.

The fight on Reno Hill continued into the next day, but the Sioux and Cheyenne began to withdraw under the cover of smoke by late afternoon. At dusk, the cavalymen witnessed the movement of the massive village through the haze of the burning prairie grass. Though unmolested by hostiles, Benteen and Reno held their position through the night. The morning of June 27, dust clouds on the horizon announced the arrival of Terry’s column.

When informed of the fate of Custer’s command, Benteen remained unconvinced. “I can hardly believe it,” replied Benteen, “I think he is somewhere down the Big Horn grazing his horses. At the Battle of the Washita, he went off and left a part of his command and I think he would do it again.” Only the sight of the carnage would change his opinion.³⁸

Custer’s Fate

From the time trumpeter Martini left Custer at the head of Medicine Tail Coulee, any theory concerning the actions of his command is purely speculative. The only survivor of the Custer fight was Comanche, the mount of Captain Myles Keogh, the colorful

Irishman from Garryowen who brought to the regiment their renowned ballad. Every cavalryman riding under Custer's guidon that day lay dead in the hills surrounding the Little Big Horn Valley.

What is certain is the fact that Custer was wholly unprepared for the offensive tactics of the Sioux and Cheyenne. He was accustomed to fighting the odds, relying on the bold audacity of the cavalryman's soul to turn the tide of battle in his favor. But on June 25, 1876, his enemies used his own methods to defeat him. According to Sitting Bull, Custer laughed as he fired his last shot.³⁹

He laughed, then he died.

In the aftermath of the Battle of the Little Big Horn, investigation centered on focusing blame. An unbelieving public, celebrating the nation's centennial, was shocked by news of the "Custer Massacre." So much attention was directed toward Reno's rumored cowardice that he requested and received a military court of inquiry to review the events. Similarly, numerous historians note Benteen's personal differences with Custer as a root cause of the defeat. Or, as many suggest, was Custer's own zeal for glory to blame?

Someone must be responsible: if not Custer himself, then Reno or possibly Benteen. The idea that Custer could have been overcome by events was inconceivable. Such is the nature of linear human thought processes; human failure must be attributable to individual fault.

Yet, the hostile environment of combat is markedly nonlinear. Could a modification to the initial conditions of the environment significantly alter the anticipated course of events? What if the combined effects of the interaction between the individual decisions

leading up to the battle resulted in the defeat of the 7th Cavalry? Is it possible that the boy general found himself in the midst of a dynamically complex environment without the capacity to predict the behavior of the system?

Only further examination of the circumstances, decisions, and results of the Battle of the Little Bighorn will provide these answers.

Notes

¹ Ambrose, *Crazy Horse and Custer*, 48. Traditionally, the akicita was something akin to a “men’s club,” a closed society for the prominent warriors to meet, lounge, eat, relate tales of heroism, and form uniquely male bonds. By the nineteenth century, the akicita had evolved to include governmental responsibilities that included enacting laws, performing police duties, and implementing punishment for criminals. According to anthropologist Robert Lowie, the akicita was the first manifestation of civil government in Lakota society and could have served as the origin of a formal state.

² Utley, *The Lance and the Shield*, 16.

³ Ibid., 17.

⁴ Ibid., 139.

⁵ Utley, *Frontier Regulars*, 255.

⁶ Robert Nightengale, *1876: Little Big Horn* (Edina, MN: Far West Publishing, 1996), 55.

⁷ Utley, *Frontier Regulars*, 255.

⁸ Ibid., 256.

⁹ Nightengale, 55.

¹⁰ Ambrose, *Crazy Horse and Custer*, 414.

¹¹ Ibid. Every account of the Battle of the Little Big Horn offers some estimate of the size of Sitting Bull’s camp, with few in agreement. Depending on the source, historians place the number of combatants anywhere from 1,500 to 10,000. Indian accounts, originally believed to have been embellished, actually seem the most accurate.

¹² Utley, *Frontier Regulars*, 257.

¹³ Ibid.

¹⁴ Ibid. Utley contends that Terry’s overriding concern for his recently rebuked subordinate caused him to frame his orders in especially courteous language that gave Custer the authority to seek alternate courses of action in the event of unforeseen circumstances. By “connecting the explicit with the permissive,” Terry established the foundation for the eternal controversy concerning the question of whether or not Custer disobeyed his orders.

¹⁵ Ambrose, *Crazy Horse and Custer*, 425-26.

¹⁶ Ibid., 427.

Notes

¹⁷ W.A. Graham, *The Custer Myth: A Source Book of Custeriana* (Harrisburg, PA: Stackpole Books, 1953), 135.

¹⁸ Ambrose, *Crazy Horse and Custer*, 428.

¹⁹ Ibid.

²⁰ John M. Carroll, ed., *Custer's Chief of Scouts: The Reminiscences of Charles A. Varnum* (Lincoln, NE: University of Nebraska Press, 1987), 61. John S. Gray, *Custer's Last Campaign: Mitch Boyer and the Little Bighorn Reconstructed* (Lincoln, NE: University of Nebraska Press, 1991), 229.

²¹ Gray, 231.

²² Ambrose, *Crazy Horse and Custer*, 430.

²³ Ibid., 431.

²⁴ Gray, 237.

²⁵ Ambrose, *Crazy Horse and Custer*, 431. Despite the fact that he had neither fixed the size or location of the village, Custer was committed to action. It is likely that his statement was intended to rouse the spirits of his weary officers since he was not wholly convinced of the size of the Indian encampment.

²⁶ Utley, *Frontier Regulars*, 259.

²⁷ Ibid.

²⁸ Ambrose, *Crazy Horse and Custer*, 438.

²⁹ Ibid.

³⁰ In the volumes of historical material published on the Custer fight, every single source refers to Cooke's famous note to Benteen. Due to the numerous references, it is not necessary to list them all here.

³¹ Utley, *Frontier Regulars*, 259.

³² Benteen was concerned with what he believed to be Custer's willingness to leave others on the field of battle in order to save himself. While the Battle of the Washita is the most notable example of this character flaw, Custer's 1867 court martial included charges for his part in the death of two soldiers riding with the general during the incident that resulted in his trial. At the time, Custer was riding far ahead in order to reach his wife at Fort Wallace. The soldiers fell behind and were killed by Indians; Custer's failure to turn back and general lack of concern for their welfare stirred great controversy and additional charges at his court martial.

³³ Ibid., 151-53. Charles K. Mills, *Harvest of Barren Regrets: The Army Career of Frederick William Benteen, 1834-1898* (Glendale, CA: Arthur H. Clark Company, 1985), 254.

³⁴ Mills, 257.

³⁵ Gray, 264-65.

³⁶ Mills, 258.

³⁷ Ibid.

³⁸ Ibid., 278.

³⁹ Ambrose, *Crazy Horse and Custer*, 443.

Chapter 4

Decisions in a Complex System

In another sense, [Clausewitz] meant with [friction] the amplification of a micro-cause to a macro-consequence, in a kind of cascade of things gone wrong.

—Alan Beyerchen

George Armstrong Custer possessed what has often been referred to as “Custer’s luck.” His uncanny ability to always be “in the right place at the right time” had served him well throughout his career. The flamboyant cavalryman was well accustomed to victory; his bold methods enabled him to repeatedly pull victory from the jaws of defeat.

Clausewitz, on the other hand, experienced defeat many times at the hands of the French Emperor, Napoleon I. He viewed war from an entirely different perspective and possessed a comprehension of the inherent complexity of war foreign to Custer. He understood the interaction between events in war and the consequences of decisions in battle:

War, in its highest forms, is not *an infinite mass of minor events*, analogous despite their diversities, which can be controlled with greater or lesser effectiveness depending on the methods applied. War consists rather of *single, great decisive actions*, each of which needs to be handled individually. War is not like a field of wheat, which, without regard to the individual stalk, may be mown more or less efficiently depending on the quality of the scythe; it is like a stand of mature trees in which the axe has to be used judiciously according to the characteristics and development of each individual trunk.¹

Clausewitz was warning against what he termed as “methodism,” the unthinking application of actions learned through experience without regard to the consequences. There exists in war no singularity of action: every action will result in a reaction at some point in space and time. Recognizing the behavior of a system or environment as complex as war enables the decision maker to produce *qualitatively* better decisions. In battle the commander who possesses that ability will, more often than not, emerge victorious.

In his book, *Sources of Power*, author Gary Klein describes a decision model similar to methodism he refers to as the Recognition-Primed Decision (RPD) model. With the RPD model, practiced decision makers assess situations based on experiential mental modeling and use personal experience to quickly determine appropriate courses of action, rather than rely on formal analysis and comparison. The emphasis of the RPD model is on action, not exhaustive situational evaluation.²

A final concern in analyzing the complexities of war is what Dietrich Dörner defined as “intertransparency.” The term refers to situations in which information required by planners and decision makers may not be visible; they have no direct access, or no access at all, to information about the situation they must address. Dörner illustrated this example in terms of someone attempting to look through frosted glass.³

In war, intertransparency introduces another element of uncertainty into decision-making. Commanders must make critical decisions “affecting a system whose momentary features they can see only partially, unclearly, in blurred and shadowy outline – or possibly not at all.”⁴

With Custer, decisions were made based on his experiences in war. For a man who had never lost a battle, those experiences were extremely limited in scope and, as such, resulted in a reckless disregard for the complexities of war. Custer, Terry, and Gibbon experienced intertransparency in planning the Little Big Horn campaign; an incomplete picture of the enemy situation tainted their ability to make qualitative decisions prior to committing to action.

The bounds that defined the decision-making system that determined Custer's fate were finite events in time and space. At one end of the spectrum was Sitting Bull's vision of the defeat of the "long knives" and at the other extreme, Custer's approach to the village down Medicine Tail Coulee.

Events prior to Sitting Bull's commune with *Wakantanka*, while certainly consequential, had little effect on establishing the initial conditions that resulted in the chain of events that followed. The vision of the "upside down" soldiers fundamentally changed the preconditions for battle. Similarly, once Custer led his troopers down the ravine toward the village, the same chain of events had completed a cascading effect that was unavoidable; his defeat was as inevitable as any other in history.

Nine critical decisions separate these two points in time and space.

In Peter Senge's *The Fifth Discipline*, he discusses the existence of reinforcing and balancing feedback processes in decision-making systems. Typically, reinforcing feedback is an engine of growth, amplifying the effects of decisions. Conversely, balancing feedback acts to slow, or stabilize momentum created by reinforcing feedback. In addition, many decision-making systems exhibit delays in which the consequences of actions occur gradually over time.⁵

In the decision-making system that defined the Battle of the Little Big Horn, reinforcing feedback abounded. Balancing feedback, however, was non-existent. Each decision contributed additional momentum to a process rapidly accelerating out of control, becoming what Senge describes as a “vicious cycle,” in which events begin badly and grow increasingly worse.⁶ Into the midst of this system rode George Armstrong Custer and the 7th U.S. Cavalry, searching for a place in history.

Crazy Horse, the enigmatic Oglala Sioux, made the first decision of consequence in the system, choosing to adopt the tactical methods of the “bluecoats” in order to fulfill Sitting Bull’s vision. This decision, combined with the growing Lakota confederation resulting from the aforementioned vision, achieved a unity of purpose and effort rare among the various tribes of the Sioux nation. They carried this momentum into their encounter with Crook at the Battle of the Rosebud.

Following his “victory,” Crook chose withdraw from the campaign and made no effort to inform Terry of the new methods adopted by the Sioux. This decision, in conjunction with the emboldened spirit of the Sioux, further reinforced the momentum of the decision cycle. Crook’s decision was the single inexplicable action during the campaign; he possessed the one element of information that could have prevented the cycle of disaster, but failed to do so.⁷

Terry’s decision to split his forces into two columns effectively divided his combat power. In addition, he chose to provide the preponderance of scouting expertise to Custer, thus blinding Gibbon’s Montana Column for the march along the Little Big Horn. Essentially, Terry’s decision isolated Custer’s forces in space; Custer’s decision to follow the Indian trail across the Rosebud isolated the 7th Cavalry in time. Combined, those

decisions ensured that at whatever point in time and space Custer encountered the Lakota, he would do so alone, without support or reinforcement.

As the 7th Cavalry approached the divide separating the Rosebud and the Little Big Horn, Custer had one opportunity to halt the chain of events rapidly gaining momentum. Having received the scouts' reports of the enormity of the village, in conjunction with the many signs on the trail of a village of incredible proportions, he rode to the Crow's Nest to see for himself. Since the haze prevented him from confirming the mounting facts, Custer committed what Klein defines as a *de minimus* error: the information he was receiving was not consistent with his experiences, so he discounted the disconfirming evidence that indicated a village and confederation of historical proportions.⁸

Custer proceeded toward the village, conceiving a plan that would enable his regiment to complete their assigned mission alone. With a total force of 652 men, Custer decided to attack the village using Terry's plan, but on a decidedly smaller scale. He ordered his most *experienced* officer, Benteen, on a reconnaissance to block any attempted Indian retreat to the south. When he thought he might lose the element of surprise, he launch his most *inexperienced* officer, Reno, into a charge to flush the warriors from the village while he led five troops around the northern edge of the village to block the withdrawal of the noncombatants.⁹

Here, the effects of the growing momentum of the reinforcing process are increasingly evident. Had Custer encountered the rear guard of the approaching village even two hours earlier, he would undoubtedly have ordered Benteen, his most experienced Indian fighter, to take the pursuit. Reno, although a veteran of the Civil War, had little frontier experience and was more suited to the blocking action assigned to

Benteen. But Custer was mired in a vicious cycle, and events were already spinning out of his control.

Reno charged his column blindly into the village with pistols drawn high, in full expectation of flushing the warriors from their lodges. But his limited experience had not prepared him for what occurred next: the warriors rode out in a wild fury to meet his charge. Fear paralyzed with indecision. He ordered his men to dismount, then remount and withdraw to the cottonwood grove. He directed his men to dismount again. Then, inexplicably, he called a retreat, abandoned his force south of the river, and made his escape to the bluffs on the other side.¹⁰

Custer's fate was virtually sealed. When Benteen found a hysterical Reno atop the bluffs with only the shattered remnants remaining of his command, the old cavalryman chose to halt his forces and establish a defense. Benteen's decision surely saved the lives of the men on Reno Hill. He could not have overtaken Custer and participated in the "Last Stand" in the hills above the far end of the village.

Nevertheless, Benteen's decision also sealed Custer's fate. The warriors adopted a textbook economy of force operation at Reno Hill and brought the mass of their forces to bear on Custer's isolated battalion. As command and control dissolved into anarchy, the code of the akicita reigned supreme on the battlefield and the warriors systematically destroyed the dispirited remnants of Custer's command.

When Custer passed his order to Private John Martini, he looked down into Medicine Tail Coulee. For a brief moment in time, he stood at the very edge of Chaos: "the constantly shifting battle zone between stagnation and anarchy, the one place where a

complex system can be spontaneous, adaptive, and alive.”¹ Then, confident as ever, he led his force headlong into the full fury of the great Sioux nation.

In the aftermath of battle, the Lakota dispersed from the valley under the cover of smoke from the burning prairie grass. As Custer would have predicted, the confederation dissolved, lasting less than a week; such alliances rarely endured time. An enraged government launched a full-scale offensive against the Sioux, eventually capturing both Sitting Bull and Crazy Horse. And, as Red Cloud foretold, the entire Sioux nation followed him to the reservations.

Having defined the critical decisions and methodology that delivered Custer to the edge of Chaos, analysis must return to the fundamental question concerning the nature of the system in which the 7th Cavalry fought the Battle of the Little Big Horn. Was the environment a nonlinear, *complex* system or just a linear, *complicated* system? In order to answer that question, the focus must return to the essential elements of Clausewitzian complexity defined previously in Chapter 2.

Notes

¹ Clausewitz, 153.

² Gary Klein, *Sources of Power: How People Make Decisions* (Cambridge, MA: MIT Press, 1998), 15-30.

³ Dietrich Dörner, *The Logic of Failure: Why Things Go Wrong and What We Can Do to Make Them Right* (New York: Henry Holt, 1989), 40.

⁴ Ibid.

⁵ Senge, 79-80.

⁶ Ibid., 81.

⁷ Crook and Terry were the key components to the Sheridan's campaign against the non-treaty Indians in the unceded territory. Crook's force was one of three columns operating against the hostiles; Terry commanded the remaining two. Although the columns maneuvered independently under the orders of their respective department commanders, Sheridan chose not to unify operational command and control under a single commander, a decision that reflected a fundamental disregard for the capabilities of his enemy. As an independent commander, Crook was able to withdraw from the

Notes

campaign without providing notice to Terry, an unfortunate result of Sheridan's ineffective prosecution of the campaign.

⁸ Klein, 66.

⁹ Custer's decision to dispatch Benteen to conduct the reconnaissance reflects both his lack of familiarity with the terrain – which was impassible to any large mass of people – and his disregard for the enemy. His likely reasoning for this decision was that the more experienced commander, Benteen, could maneuver independently while out of communication. Reno, the less experienced of his two senior officers, would be most effective within "arm's reach" of the commander.

¹⁰ Here, the result of Custer's decision to send Benteen on the reconnaissance is clear. Reno's inexperience prevented him from formulating a coherent plan under fire and he quickly lost control of the situation. Benteen possessed a level of experience with irregular forces unparalleled by any other officer in the 7th Cavalry. Although he would have faced the same overwhelming odds that broke Reno's spirit, Benteen could call on a wealth of knowledge and experience that would likely have produced different results. In the identical situation, it is possible that Benteen could have extricated his forces without the subsequent loss of control, an action that would have prevented the Indians from massing forces in Medicine Tail Coulee. Reno's fragmented retreat allowed the Lakota to fix his defeated column with an economy of force operation, freeing the remainder of the warriors to mass on Custer's column.

¹¹ Waldrop, 12.

Chapter 5

Conclusions

It was about this moment that a distant line of bayonets gleamed on the heights in the direction of Frischmont. That was the culminating point in this stupendous drama. The awful mistake of Napoleon is well known. Grouchy expected, Blucher arriving. Death instead of life. Fate has these turns; the throne of the world was expected; it was Saint Helena that was seen.

—Victor Hugo
Les Misérables

When Clausewitz remarked in *On War*, “Everything in war is very simple, but the simplest thing is difficult,” he was, in essence, defining the dynamic complexity of the environment of combat.¹ The Prussian’s innate ability to integrate the contemporary science of complexity theory into his treatise adds further utility to its timelessness as an instrument with which to analyze war.

While unlikely that Clausewitz possessed the foresight to predict the advent of complexity theory, he did define the fundamental elements of complexity through the use of descriptive metaphors: *sensitivity to initial conditions, interaction between interdependent variables, the presence of feedback cycles, and the ability of a system to spontaneously adapt to changes in the environment.* The presence of these elements in the environment in which George Armstrong Custer met his fate is essential to addressing the original question posed by this monograph.

Was the defeat of the 7th U.S. Cavalry in the Battle of the Little Big Horn due to a “logic of failure” brought on by an inability to recognize and predict the behavior of the complex nature of a hostile environment?

The previous chapter demonstrated the existence of interdependent reinforcing feedback processes – creating what Peter Senge described as a “vicious cycle” – that essentially brought Custer to the edge of Chaos. As defined, the distinctly nonlinear decision-making system comprised purely linear decisions. Thus, the defeat was due to a “logic of failure.” The question that remains is whether the system was fundamentally complex.

The first criterion for determining complexity is the sensitivity of the system to initial conditions. Sitting Bull’s vision established the initial conditions for the decision-making system examined previously; his dream of the defeat of the “long knives” significantly altered the nature of battle. Without his vision, there is no battle and, therefore, no defeat of Custer. Hence, the system was sensitive to initial conditions.

The second and third criteria, interaction between independent variables and the presence of feedback cycles, were addressed in the previous chapter. In analyzing the decision-making cycle that sealed Custer’s fate, the individual decisions were markedly interdependent and genuinely representative of reinforcing feedback. Each decision, by adding momentum to the cascading effect of the vicious cycle, exhibited interdependence as well as interaction. Altering a single decision, thereby introducing stabilizing feedback, would have changed the nature of the entire system. Therefore, interaction and feedback were prevalent in the system.

The final criterion, the ability of the system to spontaneously adapt to changes in the environment, is indicative of a complex adaptive system. An adaptive system is typified by active interaction, the tendency for a system to dynamically respond to events. As the Sioux gained experience in their conflicts with the white soldiers, they began to adapt their tactical methods; the *akicitas* evolved to survive in a changing environment. Thus, the system was inherently adaptive, a dynamically complex system capable of spontaneous reorganization.

Therefore, the hostile environment in which the 7th Cavalry fought was a complex system; additionally, the system clearly demonstrated the traits of a dynamically complex system, one spontaneously adaptive to change. As a complex adaptive system, the environment was qualitatively different from one exhibiting detailed complexity.

Custer, a man whose previous experiences did not prepare him for battle under such circumstances, was incapable of recognizing the dynamic nature of his environment. He was a veteran cavalryman accustomed to linear cause-and-effect relationships: when he made a decision, he could witness the results without significant delay. The notion that the effects of his decisions could be delayed by hours or even days was completely foreign to him. Similarly, he would not have accepted the suggestion that the effects of his decisions could spin out of control without his knowledge. He was blind to the reality of his environment.

Ultimately, the defeat of the 7th U.S. Cavalry in the Battle of the Little Big Horn was due to a “logic of failure” brought on by Custer’s inability to recognize and predict the behavior of the complex nature of a *dynamically* hostile environment.

The linear nature of Custer's decisions contributed to the increasingly deterministic character of the system. Custer was not a victim of disobedience, cowardice, or even his own zeal for glory. Rather, George Armstrong Custer was a victim of his own human nature, the tendency of man to make simple, linear decisions regardless of the complexity of his environment.

The defeat of the 7th Cavalry imparted lessons, however counterintuitive to the nature of man, that prove contemporarily invaluable. With its rational assessment of the complexities of war, *On War* offers the solution to planning in an inherently complex environment. In addressing the deceptive simplicity of war, Clausewitz was actually indicting man's reductionist approach to war. Little Big Horn taught us – as did the Schleiffen Plan, Operation Barbarossa, and the Ia Drang – that planning for simplicity is analogous to scheduling failure.

Nothing in war is simple.

Notes

¹ Clausewitz, 119.

Bibliography

Books

- Alberts, David S. and Thomas J. Czerwinski, eds. *Complexity, Global Politics, and National Security*. Washington, DC: National War College, National Defense University, 1997.
- Ambrose, Stephen A. *Upton and the Army*. Baton Rouge, LA: Louisiana State University Press, 1964.
- _____. *Crazy Horse and Custer: The Parallel Lives of Two American Warriors*. New York: Doubleday, 1975.
- Aron, Raymond. *Clausewitz: Philosopher of War*. Edited and translated by Christopher Booker and Norman Stone. London: Routledge and Kegan Paul, 1983.
- Barnett, Louise. *Touched by Fire: The Life, Death and Mythic Afterlife of George Armstrong Custer*. New York: Henry Holt and Company, 1996.
- Brady, Cyrus Townsend. *The Sioux Indian Wars: From the Powder River to the Little Big Horn*. New York: Indian Head Books, 1992.
- Brinstool, E.A. *Troopers with Custer: Historic Incidents of the Battle of the Little Big Horn*. Mechanicsburg, PA: Stackpole Books, 1994.
- Carroll, John M., ed. *The Benteen-Goldin Letters on Custer and His Last Battle*. New York: Liveright, 1974. Reprint, Lincoln, NE: University of Nebraska Press, 1991.
- _____. *Camp Talk: The Very Private Letters of Frederick W. Benteen of the 7th U.S. Cavalry to His Wife, 1871 to 1888*. Mattituk, NY: J.M. Carroll, n.d.
- _____. *Custer's Chief of Scouts: The Reminiscences of Charles A. Varnum*. Lincoln, NE: University of Nebraska Press, 1987.
- Clausewitz, Carl von. *On War*. Edited and translated by Anatol Rapoport. New York: Penguin, 1968.
- Clausewitz, Carl von. *On War*. Edited and translated by Michael Howard and Peter Paret. Princeton: Princeton University Press, 1984.

- Connell, Evan S. *Son of the Morning Star*. New York: Promontory Press, 1984.
- Custer, Elizabeth B. *Boots and Saddles: or, Life in Dakota with General Custer*. 1885. Reprint, Norman, OK: University of Oklahoma Press, 1961.
- Custer, George A. *My Life on the Plains; or, Personal Experiences with Indians*. 1874. Reprint, Norman, OK: University of Oklahoma Press, 1962.
- Czerwinski, Thomas J. *Coping with the Bounds: Speculations on Nonlinearity in Military Affairs*. Washington, DC: National War College, National Defense University, 1998.
- Dörner, Dietrich. *The Logic of Failure: Why Things Go Wrong and What We Can Do to Make Them Right*. New York: Henry Holt, 1989.
- Dustin, Fred. *The Custer Tragedy: Events leading Up to and Following the Little Big Horn Campaign of 1876*. El Segundo, CA: Upton, 1987.
- Fougera, Katherine Gibson. *With Custer's Cavalry*. Caldwell, ID: Caxton Printers, 1940. Reprint, Lincoln, NE: University of Nebraska Press, 1986.
- Fox, Richard Allan, Jr. *Archaeology, History, and Custer's Last Battle: The Little Big Horn Reexamined*. Norman, OK: University of Oklahoma Press, 1993.
- Frost, Lawrence A. *The Court-Martial of General George A. Custer*. Norman, OK: University of Oklahoma Press, 1968.
- Gleick, James. *Chaos: Making a New Science*. New York: Viking, 1987.
- Gore, John. *Chaos, Complexity, and the Military*. Washington, DC: National War College, National Defense University, 1996.
- Graham, W.A. *The Custer Myth: A Source Book of Custeriana*. Harrisburg, PA: Stackpole Books, 1953.
- _____. *The Reno Court of Inquiry: Abstract of the Official Record of Proceedings*. Harrisburg, PA: Stackpole Books, 1954.
- _____. *The Story of the Little Big Horn: Custer's Last Fight*. New York: The Century Company, 1926. Reprint, Harrisburg, PA: Stackpole Books, 1959.
- Gray, John S. *Custer's Last Campaign: Mitch Boyer and the Little Bighorn Reconstructed*. Lincoln, NE: University of Nebraska Press, 1991.

- Greene, Jerome. *Evidence and the Custer Enigma: A Reconstruction of Indian-Military History*. 1973. Reprint, Siverthorne, CO: Vistabooks, 1995.
- _____, comp. and ed. *Battles and Skirmishes of the Great Sioux War, 1876-1877: The Military View*. Norman, OK: University of Oklahoma Press, 1993.
- Hammer, Kenneth, ed. *Custer in '76: Walter Camp's Notes on the Custer Fight*. Provo, UT: Brigham Young University Press, 1976. Reprint, Norman, OK: University of Oklahoma Press, 1990.
- _____. *Men with Custer: Biographies of the Seventh Cavalry*. Hardin, MT: Custer Battlefield Historical and Museum Association, 1995.
- Hassrick, Royal B. *The Sioux: Life and Customs of a Warrior Society*. Norman, OK: University of Oklahoma Press, 1964.
- Hattaway, Herman, and Archer Jones. *How the North Won: A Military History of the Civil War*. Urbana, IL: University of Illinois Press, 1983.
- Holland, John H. *Hidden Order: How Adaptation Builds Complexity*. Reading, MA: Addison-Wesley Publishing Company, 1995.
- Hoig, Stan. *The Battle of the Washita: The Sheridan-Custer Indian Campaign of 1867-69*. Lincoln, NE: University of Nebraska Press, 1979.
- Howard, Michael. *Clausewitz*. New York: Oxford University Press, 1983.
- Hunt, Frazier, and Robert Hunt. *I Fought with Custer: The Story of Sergeant Windolph, Last Survivor of the Battle of the Little Big Horn*. New York: Scribner's, 1947. Reprint, Lincoln, NE: University of Nebraska Press, 1987.
- James, Glenn E. *Chaos Theory: The Essentials for Military Applications*. Newport, RI: Naval War College Press, 1996.
- Jones, Archer. *Civil War Command and Strategy: The Process of Victory and Defeat*. New York: Macmillan Free Press, 1992.
- Kidd, J.H. *A Cavalryman with Custer: Custer's Michigan Cavalry Brigade in the Civil War*. 1908. Reprint, New York: Bantam Books, 1991.
- Klein, Gary. *Sources of Power: How People Make Decisions*. Cambridge, MA: MIT Press, 1998.
- Lam, Lui and Vladimir Naroditsky, eds. *Modeling Complex Phenomena*. New York: Springer-Verlag, 1992.

- Lawrence, Elizabeth Atwood. *His Very Silence Speaks: Comanche – The Horse Who Survived Custer's Last Stand*. Detroit: Wayne State University Press, 1989.
- Leckie, William H. *The Buffalo Soldiers: A Narrative of the Negro Cavalry in the West*. Norman, OK: University of Oklahoma Press, 1967.
- Liddic, Bruce R., and Paul Harbaugh. *Custer & Company: Walter Camp's Notes on the Custer Fight*. Lincoln, NE: University of Nebraska Press, 1995.
- Merington, Marguerite, ed. *The Custer Story: The Life and Intimate Letters of General George A. Custer and His Wife Elizabeth*. New York: Delvin-Adair, 1950.
- Michno, Gregory. *Lakota Noon: The Indian Narrative of Custer's Defeat*. Missoula, MT: Mountain Press, 1997.
- Mills, Charles K. *Harvest of Barren Regrets: The Army Career of Frederick William Benteen, 1834-1898*. Glendale, CA: Arthur H. Clark Company, 1985.
- Monaghan, Jay. *Custer: The Life of General George Armstrong Custer*. New York: Little Brown, 1959. Reprint, Lincoln, NE: University of Nebraska Press, 1971.
- Nightengale, Robert. *1876: Little Big Horn*. Edina, MN: Far West Publishing, 1996.
- Overfield, Loyd J., II, comp. *The Little Big Horn, 1876: The Official Communications, Documents, and Reports*. Lincoln, NE: University of Nebraska Press, 1971.
- Panzeri, Peter. *Little Big Horn 1876: Custer's Last Stand*. London: Osprey, 1995.
- Rankin, Charles E., ed. *Legacy: New Perspectives on the Battle of the Little Bighorn*. Helena, MT: Montana Historical Society Press, 1996.
- Senge, Peter M. *The Fifth Discipline: The Art and Practice of the Learning Organization*. New York: Doubleday, 1990.
- Seymour, William. *Yours to Reason Why: Decision in Battle*. New York: De Capo Press, 1982.
- Sklenar, Larry. *To Hell with Honor: Custer and the Little Big Horn*. Norman, OK: University of Oklahoma Press, 2000.
- Stewart, Edgar I. *Custer's Luck*. Norman, OK: University of Oklahoma Press, 1955.
- Taylor, William O. *With Custer on the Little Bighorn*. New York: Viking, 1996.
- Tillett, Leslie, ed. *Wind on the Buffalo Grass: Native American Artist-Historians*. New York: De Capo Press, 1976.

- Utley, Robert M. *Cavalier in Buckskin: George Armstrong Custer and the Western Military Frontier*. Norman, OK: University of Oklahoma Press, 1988.
- _____. *Frontier Regulars: The United States Army and the Indian, 1866-1891*. New York: Macmillan, 1973.
- _____. *The Lance and the Shield: The Life and Times of Sitting Bull*. New York: Henry Holt, 1993.
- _____, ed. *Life in Custer's Cavalry: Diaries and Letters of Albert and Jennie Barnitz, 1867-1868*. New Haven, CT: Yale University Press, 1977.
- Van Creveld, Martin. *Command in War*. Cambridge, MA: Harvard University Press, 1985.
- Viola, Herman J. *Little Bighorn Remembered: The Untold Indian Story of Custer's Last Stand*. New York: Times Books, 1999.
- Waldrop, M. Mitchell. *Complexity: The Emerging Science at the Edge of Chaos*. New York: Touchstone, 1992.

Articles

- Ward, Andrew. "The Little Bighorn," *American Heritage* (April 1992): 76-88.