



SMALL WARS

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Strategy is a Competition of Ideas: What Gettysburg and Afghanistan Teach Us

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“Chaos is the score upon which reality is written”

Henry Miller

On July 2nd 1863 General Lee made a decision at Gettysburg that shaped the American Civil War and the world throughout the 20th Century. This decision was so monumental that Harry F. Pfanz, in his book *Gettysburg: The Second Day*, compared it to Peter’s three time denial of Jesus[1]. Major General Hood asked three times to maneuver his forces to the high ground of Big and Little Round Top versus attacking up the Emmittsburg Road. Three times his Corps commander Longstreet rejected his request, instructing Hood that Lee’s orders were clear- attack up the road. If Hood had only disobeyed these orders or if Lee had only consented to Hood’s view, the Confederacy would have turned the Union flank and destroyed the Army of the Potomac. Washington, now in direct sight of the Army of Northern Virginia, would have sued for peace allowing the Southern states to secede. This change would have radically altered world history. America would not have been there to fight World I or World War II, there would have been no cold war, and the American West would have become a new battleground for territory during the westward expansion. The entire history of the 20th century was dramatically altered by this one decision.....maybe.

The challenge of military history and military strategy is knowing what matters. Whether one is trying to determine which crucial decisions in Gettysburg resulted in the Union victory or trying to determine the right strategy for the current Afghanistan/Pakistan campaign, determining what actions to take in an overwhelmingly complex situation to cause a desired result is incredibly difficult. Knowing what actions to take implies an understanding of how those actions will influence the situation and any decision maker who knows that will have a distinct advantage. Examining the different possible variations of Gettysburg and comparing this to the contemporary debate of the Afghan strategy places the difficulty of understanding complex situations in sharp relief and presents novel ways to understand strategy. Instead of just debating which strategy was or is superior for a given situation, this discussion attempts to conduct an analysis on meta- strategy. Adopting this approach does not develop a super strategy but offers insights into what strategies are and how they are developed.

In thinking about strategy, it is first important to understand that the world is overwhelmingly complex. The truth of this complexity is evident by examining the potential variations that could have occurred at Gettysburg. The battle of Gettysburg took place over 3 days from July 1, 1863 to July 3, 1863. It composed of approximately 83,289 Union Soldiers and 75,054 Confederate Soldiers[2]. In this conflict, many historians consider the Brigade Commander the lowest key decision maker whose actions could have dramatic effect on the outcome of the battle.[3] Operating under this assumption the Confederacy

had 38 key decision makers and the Union had 89 key decision makers for 127 total decision makers (see figure 1).[4]

Figure 1

Union Order of Battle	Confederate Order of Battle
1 Army General (Meade)	1 Army General (Lee)
8 Corps (1 Cavalry)	3 Corps
22 Divisions	10 Divisions (1 Cavalry)
58 Brigades	24 Brigades
89 Total Decision Makers	38 Total Decision Makers

If each one of these key decision makers had made one “either/or” decision in isolation (i.e. they choose course A versus course B and this action has no effect on anyone else) during the course of the battle then there is a possibility of 16,129 variations of how Gettysburg could have occurred (see figure 2). Even if one argued, the Brigade Commander was not a key decision maker and only considered the division commander and above as key decision makers then there would still be 2,025 variations (see figure 2). This first set of variations (2,205 and 16,125) is complicated but manageable. Computing power today can easily manage such numbers so it is in the realm of possibility for a computer to explore this many variations. However, to view warfare as reducible and isolated pieces is to misconstrue the nature of war.

Figure 2

<p>X=Number of key decision makers; Y=Number of choices in their decision BDE Level Variations: $X^Y=127^2=16,129$ DIV Level Variations $X^Y=45^2=2,025$</p>
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As Clausewitz identified in *On War*, war derives its complexity not from the pieces but from the interaction of those pieces[5]. Sun Tzu made a similar comment when he said that there are only two approaches in war direct and indirect but their combinations are inexhaustible.[6] Therefore, the decisions the Brigade Commanders made rippled across the chain of command. This reality flips the equation on its head (see figure 3). Still assuming each Brigade Commander and above made one either or decision throughout the 3 days of Gettysburg and now that these decisions interacted with each other commanders’ decisions, we find that the possible variations of Gettysburg quickly become unmanageable. From this perspective, if 127 commanders make one either or choice (A or B) and another commander also makes one either or choice (C or D) these possibilities can combine in four ways (AC, AD, BC, BC). This dynamic continues with three commanders resulting in eight possible variations and four commanders resulting in 16 possible variations and so on until there are over 170 unodecillion (36 zeros) variations at the Brigade or 35 trillion variations at the Division level (see figure 3). To give an idea of what unodecillion means, if the entire Gettysburg battle was fought a billion times a second since the Big Bang there is less than a one in a billion chance that one would get the same combination of decisions as actually occurred.[7] In addition, it must be remembered that these astronomical numbers exclude factors of weather, terrain, technology, training, and every other soldier except the Brigade and above commanders. This means that not only is this one historic battle too complex to understand it is too complex to even develop constructs on what variations were possible.

Figure 3

X=Number of key decision makers; Y=Number of choices in their decision

BDE Level Variations: $Y^X=2^{127}=1.7 \times 10^{38}$

DIV Level Variations $Y^X=2^{45}= 3.5 \times 10^{13}$

Examining the possible variations of Gettysburg and not just describing what occurred is hopefully a novel perspective for most readers. However, this perspective offers little in devising new strategies or providing a better understanding of Gettysburg as a historical event. The crucial insight this approach does provide is that any understanding of Gettysburg is a simplification. Historians often turn wars and battles into linear sequences outlining casual chains for which the mind has a natural bias.[8] The unique approach that each historian uses to conceptualize and create their casual linkages of events then helps commanders and strategists develop mental models with the hope of improving their combat decisions and increasing their chance for victory. Yet, each description is only one of an exhaustive number of ways to understand the events. Great strategists and scientists are the ones who provide novel ways to conceptualize complex events that other people can apply to a myriad of situations.[9] The conceptualizations that allow a superior understanding of events provide a competitive advantage to strategist and leaders. Strategy is therefore a competition to find superior conceptualizations; this is true whether one is trying to understand ancient battles or contemporary campaigns such as Afghanistan.

Two examples, the Afghan National Development Strategy (NDS) and the article “Parallels with the Past” demonstrate different approaches for conceptualizing the Afghan conflict. The Afghan National Development Strategy is an exhaustive 259 page document outlining what elements are necessary to develop Afghanistan. This strategy outlines three pillars of (i) Security, (ii) Governance, Rule of Law and Human Rights, and Economic and (iii) Social Development. In these three pillars are six cross-cutting issues of counter-narcotics, anti-corruption, capacity development, gender equality, environment, and regional cooperation.[10] The NDS’ approach is to identify the key traits of a developed country and then find ways to achieve them with detailed metrics. The appendices outline the objectives responsible agencies and intermediate objectives.[11] The approach of NDS can be called a direct approach.

A competing approach to understand the dynamics of Afghanistan is the article “Parallels with the Past” by Larry Goodsen a professor at the Army War College and Thomas H. Johnson a Professor at the Naval Postgraduate School. This article compares the US experience in Afghanistan with the Soviet experience. In this article, the authors identify three key similarities between the US and Soviet experiences. First the failure to adopt a population centric strategy, second an unpopular government attempting reconciliation and third an ‘Afghanization’ or attempt to build local capacity to fight the insurgency.[12] To add further credence to their argument the authors then go on to identify seven other key similarities and conclude that based on these similarities the current US strategy holds little chance of success. Goodsen and Johnson argue that if these approaches did not work in the past under similar conditions how can they work in the future. The authors present three new strategies as the only viable alternative: (1) better nation-building through COIN, (2) counterterrorism is enough, and (3) declare victory and disengage.[13] Goodsen and Johnson then build on their previous similarities and contend that the unpleasant best strategy forward is “counterterrorism is enough”- essentially spending less resources to make Afghanistan a developed nation and more on (albeit orders of magnitude less than nations building) on attacking the symptoms of directly fighting the terrorist organizations.[14] Goodsen and Johnson use what could be considered a classic historical argument. The authors looked in the past to a seemingly similar situation found similarities and conclude the same mistakes are being repeated.

Both the NDS and the Goodsen and Johnson approach have flaws. The Afghan approach can be accused of being too linear as it identifies objectives and adopts the most obvious way to get there. This approach

ignores the complex dynamics within the society that are producing the undesirable phenomenon such as corruption. The best example of this is the Karzai's administration rampant corruption and fraudulent 2008 presidential election. The Goodsen and Johnson approach also has flaws. Despite some disconcerting similarities between the US and Soviet approach there are also large disparities. These disparities include but are not limited to differences in the US/ Soviet military culture, changes in the global paradigm from the 1980s to 2000s and the fact that the Taliban are markedly different from the Mujahedeen. The challenge with these two approaches or any approach arguing in favor of a certain perspective that analyzes a complex system is that it is extremely difficult to prove or disprove them. Identifying flaws in these two approaches merely points out that their approach cannot encapsulate the complexity of the situation, which is true of all approaches. Determining if the Afghan Government's or if Goodsen and Johnson's approach is flawed to the point that their strategy is wrong represents a more difficult problem.

The reason determining the worth of a strategy is so difficult is because strategies are trying to understand complex adaptive systems. The definition of a complex system is that the interdependencies of the system become important and any attempt to reduce the system to its component parts stops the observed behavior that one is trying to understand.^[15] These types of systems are non-linear whereby the interdependency of parts exhibit behavior that is more than the sum of the parts. This situation is further complicated when one accepts that not only do the interdependencies of the system make it difficult to understand but also that the entities within the system are constantly adapting. The challenge of understanding how these dynamics work is captured in the motto of agent based modeling (the primary tool of complexity theorists^[16]) – “If you didn't grow it you don't understand it.”^[17] This seemingly innocuous quote challenges the common method, the scientific method, for rigorously understanding any phenomenon. Where the scientific method breaks phenomenon down to their component parts and seeks to disprove a hypothesis complexity tries to create simplified versions of what are believed to be key interdependencies and see if the same phenomenon is produced. However, the ABM motto is heavily caveated by the fact that even if one was able to grow the desired phenomenon it does not mean that they actually found the key interdependencies that are producing the real life phenomenon one is trying to understand.^[18] The reason growing a phenomenon does not prove understanding is because there may be multiple paths to the same phenomenon. So, complex systems are systems you cannot break down into component pieces and whose simplifications cannot be verified. This means any proposed strategy is just an attempt at conceptualizing an overwhelming problem with no sure way of verifying its accuracy. Fortunately, there is still hope.

As we are surrounded by and immersed in complex adaptive systems, nature is already employing a tried and true process for finding the best strategies- competition. Whether it is an ecosystem or capitalism, competition promotes new strategies. In addition, new strategies are not new ideas that emerge from nowhere but are rather the combination of existing ideas in new ways. The next evolution of strategy will be comprised from the bits and pieces of other developed strategies.^[19] This process is generically the same as male and female DNA intermixing to create a new and unique person. ^[20] The conceptualizations that leaders and strategists adopt then compete with each other and the ones that over time prove successful will be the ones that leaders adopt and will form the basis of future strategies. Strategy is facing the same pressures and going through the same process as any species on the planet. Strategy is evolving through its own “natural selection” and the challenge for any military or country is to develop effective ways to evolve their strategy to gain and maintain a competitive edge.

Conflicts overwhelming complexity was evident in the simple analysis of Gettysburg. Superior strategies allow leaders to have a better understanding of events and make better decisions in order to produce a desired outcome. Unfortunately, determining what new strategies have value and which ones do not is an

exceptionally difficult undertaking. The difficulty of assessing strategy was evident in the comparisons of the Afghan National Development Strategy, the article “Parallels with the Past” and the discussion on complexity theory. The process that seems to be the most successful at picking superior strategies is competition. Superior strategies survive and are replicated because those who adopt them have a competitive advantage and will be victorious more often than those who do not. Exploiting this understanding of strategy and developing processes to select competitive strategies will provide any leader with a competitive advantage. Finding effective ways to select and develop competitive strategies is easier said than done, but knowing what strategies are and how they evolve is half the battle.

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<http://www.civilwar.org/battlefields/gettysburg.html?gclid=CISQp7bc0JsCFQRM5QodZT-1Lg>

[3] Interview with Dr. Ed Coss Professor of History, US Army Command and General Staff College, Fort Belvoir Campus on approximately 23 June 2009

[4] *The Gettysburg National Military Park Virtual Tour*,
<http://www.nps.gov/archive/gett/getttour/main-ms.htm> accessed 21 June 2009).

[5][5] Alan Beyerchen. “Clausewitz, Nonlinearity, and the Unpredictability of War” *International Security*, Vol,17, No.3 (Winter 1992-1993). p.70-71

[6] Sun Tzu, *The Art of War*, (Los Angeles: Phoenix Books)

[7] *What Are the Chances: Probability Made Clear*, taught by Michael Starbird, The Teaching Company, 2008, Lecture 1

[8] Beyerchen, “Clausewitz, Nonlinearity, and the Unpredictability of War” p. 86

[9] Scott E. Page, *The Difference: How the Power of Diversity Creates Better Groups, Firms, Schools, and Societies*, (Princeton University Press, 2007)

[10] Government of the Islamic Republic of Afghanistan, *Afghan National Development Strategy 2008-2013*, p.5-13

[11] *Ibid.*, 219-259

[12] Goodsen, Larry and Thomas H. Johnsen, “Parallels with the Past: How the Soviets Lost Afghanistan, How the US is Losing,” *Foreign Policy Research Institute*, available at April, 2011, available at http://www.fpri.org/enotes/201104.goodson_johnson.afghanistan.html

[13] *Ibid*

[14] *Ibid*

[15] John H. Miller and Scott E. Page, *Complex Adaptive Systems: An Introduction to Computational models of Social Life*, (Princeton: Princeton University Press, 2007), 9.

[16] *Understanding Complexity*, taught by Scott E. Page, The Teaching Company, 2009, Lecture 6 ,

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[18] Ibid

[19] Antoine Bousquet, *The Scientific Way of Warfare: Order and Chaos on the Battlefields of Modernity*, (New York: Columbia University Press, 2009)

[20] John Holland, *Hidden Order: How Adaptation Build Complexity*, (New York: Basic Books)

About the Author



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