THINKING TIME: CULTURE'S IMPACT ON BATTLEFIELD TEMPO

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The undersigned certify that this thesis meets master's-level standards of research, argumentation, and expression.

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ABSTRACT

This research project examines the time perceptions of the United States and China to explain the temporal similarities and differences between these two cultures. The analysis shows that these two countries perceive time differently, in quite oppositional ways. This temporal asymmetry provides a source of friction when the countries interact. Understanding the differences between temporal perceptions is important to framing interactions between these (and other) cultures, especially when these interactions have the potential to escalate into armed conflict.

In its simplest form, time perception reduces to a dichotomy of being either an absolute or relative to its observer. This absolute-versus-relative-time dichotomy only captures a small portion of time's complexity. Therefore, this project presents the framework of a temporal fingerprint to disaggregate a culture's time perspective into distinct and measurable characteristics that allow for the generalization for military preferences. These characteristics are time's geometry, basis, sight, orientation, and tempo. Similar to the arches, loops, and whorls of the human fingerprint, these characteristics are determinable for each culture while also providing insight into how these cultures utilize time for military operations.

With respect to the temporal fingerprint, this analysis finds that the US is predominantly a clock-based, linear, short-sighted, future-oriented, and fast-paced culture. In contrast, Chinese culture is event-based, circular, far-sighted, past-oriented, and utilizes a measured pace.

If strategic and operational planners desire certain temporal effects when competing or contesting in the various domains, then their planning processes must incorporate an understanding of the adversary's temporal fingerprint. This knowledge provides the basis for crafting effects intended to interfere with the opponent's temporal processing. Lacking this knowledge reduces effects to mere guesses, which is how the USAF currently operates.

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Introduction

Anyone who reads this is familiar with the old paradox concerning the dubious existence of time. The past and the future by definition do not exist; only the present is real. But the present turns out to have no duration, and so it, taken alone, is not properly time at all; therefore time does not exist.
- Benjamin Whitman Van Riper

Time: a concept that has captured the thoughts and imaginations of mankind for thousands of years. It has aspects similar to the idea of an omnipresent, omniscient God. Time is everywhere and a part of everything. It has visible effects on the world and humanity has developed mechanisms to measure it. Its force has been revered and studied throughout human history. The ancient Greeks, famous for deifying almost every natural occurrence, possessed two separate gods of time: Chronos, controller of linear time; and Aion, controller of eternity. Modern culture likewise seeks to personify time. In the United States, as the end of each year approaches, caricatures of "Father Time" – an elderly man with a long beard – appear in the media. In these depictions he is sometimes accompanied by his replacement, personified as a baby, who symbolizes the fresh potential of the new year.

What *is* time? At face value, this question does not seem difficult. Sanguinely asking someone this question would typically cause them to give you *the* time. Repeat the question, however, and that person may stop and stare at you quizzically before providing a puzzled and unclear response. If you are lucky, you might chance upon a person familiar with physics, who will give you a brief dissertation on the scientific definition of time. The average person has a more intimate relationship with the numbers on a clock face than they do with the knowledge behind them.

Truthfully, seeking to understand the nature and meaning of time has been a part of human existence since our beginning, yet most people do not take the time to ponder it. We care to measure it, schedule our days by it, and put it into service through our increasingly smart devices. Even though everyone interacts with time daily (hourly,

minutely, by the moment . . .), very few stop to think about what time is and why it matters. This is a disservice to time, as it has far more to offer us.

Humans generally consider only one aspect of time: its measurement. Schedules, calendars, and clocks pervade daily life. The realm of military strategy is no different and doctrinal terms like pace, tempo, and speed are ubiquitous. Militaries create plans centered around the careful measurement of time, for this helps coordinate weapons effects to defeat an opponent. But while many strategists agree the best approach is to strike at an enemy when he is weakest, few discuss how to tell when the time is right. Many, like Clausewitz and Jomini, credit the ability of determining the right time to the genius of the commander. In so doing, they brush aside the problem of time, emphasizing that innate talent or experience compensates for this shortfall. Other strategists use time measurements quantitively, using phrases such as "short- or long-term" to describe the length of a desired objective. By specifying periods of time, these strategists unintentionally limit their temporal concepts to incomplete pieces of the greater time problem. A more complete grasp of the nature of time might allow these strategists to also consider an appropriate moment, rather than focusing on "timing" as merely a synchronization of efforts.

To better group humanity's current sense of time, one must take a brief look at the origins and evolution of the concept. Plato and Aristotle established a manner of thought and exploration still utilized today. Socrates taught Plato to raise and attempt to answer many of the questions people face through their lives.[1] Plato passed this knowledge and methodology to Aristotle, who asked similar questions to clarify the answers for greater understanding.[2] One of the questions raised by these philosophers pertained to the notion of time, and more specifically, its origins and inner workings.

The *Timaeus* documents Plato's thoughts on the construction of the universe and its many wonders. Generally considered to be one of the foundational works of Platonian philosophy, this book establishes his original conceptions of time and space.[3] Within

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[1] No original writings of Socrates survive, with Plato being the primary source. It is impossible to tell if Plato is quoting Socrates, or using him as an explanatory mechanism – therefore Socrates will not be directly used here.

[2] Mortimer Jerome Adler, *Aristotle for Everybody* (New York, NY: Macmillan Publ, 1978), x.

[3] Plato, *Timaeus* (Project Gutenberg, 15 September 2008), 3.

Timaeus, Plato described the nature of the universe and credited a superior being for accomplishing its creation and establishing its functions. One of these functions is time, created when this divine presence "resolved to have a moving image of eternity, and when he set in order the heaven, he made this image eternal but moving according to number, while eternity itself rests in unity; and this image we call time."[4] The god responsible for this action already had access to the entirety of eternity. Once the creation of the heavens was completed, the divine being mated the heavens to eternity, and then set the entire complex into motion. The motion of the heavens within eternity is specific and measurable ("moving according to number"). Thus, Plato tied the perception of time to celestial mechanics: "the sun and moon and five other stars, which are called the planets, were created by him in order to distinguish and preserve the numbers of time."[5] For Plato, the heavenly bodies exist to allow for the passage of time, and only through their movement can time be measured.

As with many subjects, Aristotle took his teacher's original notion of time, investigated it, and then expanded upon it. Where Plato tied his perception of time only to the movements of the heavens, Aristotle postulated that movement is what matters, not the measured body. He reasoned that the measurable difference between one moment and the next comes from recognition of change though the motion of any object, for "without motion and change, time is not."[6] Implied within this statement, however, is the idea that time does not exist if motion and change do not occur. Aristotle recognized this flaw in his argument and used Plato's idea of eternity to help solve it, stating that "time is present in the same way everywhere and to all things."[7] To perceive time, an individual must be able to identify the motion of an object through the past up until now, and from there postulate the future motion of the object. In this method, the present is only a snapshot of eternity, and measuring the passage of time requires recognizing that it is only "a number of motion fitting along the before-and-after."[8] Aristotle then took his perception of time one step further by acknowledging that if time is eternal and can only be measured, then

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[4] Plato, *Timaeus*, 99.
[5] Plato, *Timaeus*, 99.
[6] Aristotle and Joe Sachs, *Aristotle's Physics: a Guided Study* (New Brunswick, NJ: Rutgers University Press, 1995), 121.
[7] Aristotle, *Physics*, 120.
[8] Aristotle, *Physics Ibid*, 122.

objects at rest can also provide a measurement of time "for every act of resting is in time."[9]

This latter idea marked a remarkable leap forward in an analysis of time perception. Aristotle started with his tutor's idea of measuring time only through the movements of the heavens, applied the same principle to the movement of any object, and reasoned that time always existed and can be measured by anything. Aristotle perceived time as a constant. Time is not motion, but always passes and does so steadily. Change over time can happen fast or slow, but the idea of speed is defined by means of measuring time and thus cannot be used to define time.[10] Speed matters only through the recognition and measurement of a steady passage of time. This idea must have been remarkable at the time, as utilizing some celestial bodies implies that time is not a constant. Days and nights vary in length from winter to summer solstice, and this difference likely birthed the notion that time was accelerating or decelerating as length of daylight changed. By changing his frame of reference away from heavenly bodies, Aristotle was able to separate time from movement, thus conceiving of time as an independent entity, eternal and constant.

Almost one thousand years after Aristotle, another philosopher, Saint Augustine, picked up where Aristotle left off with *Confessions*. Like his predecessor, Augustine interpreted the Platonian idea of time and its dependence on celestial mechanics as an incomplete idea. Rather than worrying about the motions of bodies, however, Augustine puzzled how it was that anyone could measure time at all. He agreed with Newton that the present was a point in time "which cannot even now be divided into even the minutest of particles of moments." [11] As this brief moment, experienced constantly, passes quickly into the past to be replaced by an un-knowable future, how could humanity conceive measuring the passing of any time at all? What followed was a long, deep foray into metaphysics, from which Augustine emerged with the original idea that time must be in and of the mind: "In thee, O my mind, I measure times . . . the impression which things as they pass by make on thee, and which, when they have past [sic] by, remains, that I

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[9] Aristotle, *Physics Ibid*, 126.
[10] Aristotle, *Physics Ibid*, 120.
[11] St. Augustine, *The Confessions of St. Augustine* (New York, NY: Liveright Publishing Corp, 1943), 287.

measure as time present, not those things which have passed by, that the impressions should be made."[12] Despite his adherence to the Aristotelean idea of time as a constant, Augustine's conclusion regarding the origins of human time perception laid bare the argument on whether time is fixed or variable. Where science provides tools to allow for the exact measurement of time passing, the mind has no such internal devices. If time is mental, then it is possible that not all people experience time similarly; real time could fluctuate depending on the observer. While he did not personally reach this latter conclusion, other philosophers took what Augustine unintentionally provided, provoking a debate that continues to this day.

Contemporary debate concerns two different points of view regarding time. In one, time is absolute, a constant, and all manner of things exist within it. Aristotle's idea received exquisite refinement and enhancement by Newton. In *Principia*, Newton established that two types of time exist within the universe. The first—*absolute time*—flows constantly and alone, while the second—*relative time*—is how time is commonly measured.[13] For Newton, the idea of relative time, assessed through observations of the known world, is corrupted by the world itself. Instead, time and space are absolutes – constants – in the universe, and the world and the people on it reside within the absolute. Since time cannot be defined from within itself, Newton made mathematical adjustments to remove these biases so that his mathematics dealt solely with absolute time.[14]

The other side of the debate on time was championed by Gottfried Wilhelm Leibniz, a German mathematician and philosopher who became an outspoken critic of Newton's work. During his final decade, Leibniz exchanged letters with many high men of learning, propagating his ideas of space and time.[15] Leibniz's conception of time is an adaptation of Augustine's concept, postulating that man's conception of time is mental. Each person, or thing, has its own position within time and the relationship between the two defines the measurement of time.[16] Within this framework, perception matters—not just between the observer and the observed object, but between the observer and the

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[12] St. Augustine, *Confessions*, 300.
[13] Sir Isaac Newton, *Sir Isaac Newton's Mathematical Principles of Natural Philosophy and his System of the World* (Berkeley, CA: University of California Press, 1934), 8.
[14] Newton, *Principia*, 8.
[15] Samuel Clarke, *The Leibniz-Clarke Correspondence* (New York, NY: Philosophical Library, 1956), ix.
[16] Clarke, *Correspondence*, 75.

entirety of objects around him. Additionally, Leibniz countered Newton's concept of absolute time, stating that "nothing of time does ever exist, but instants; and an instant is not even itself a part of time . . . time can only be an ideal thing."[17] In Liebniz's conception, not only is time not absolute, it is not even real. Rather, time is a fabrication of the mind, shared by men, to aid the ordering of existence.[18] The relationships between objects in space are what give time meaning, and the human recognition of these interactions allows for the measurement of time.

To recapitulate briefly, the written record of human time perception began with Plato, who tied time's measurement to movement—specifically that of celestial mechanics. Plato set in motion two schools of thought on time that carried forward to today. One school focused on movement, viewing time as a constant or absolute. Aristotle provided the introduction to absolute time, which Newton later improved. The second school focused on the observer and the observed, with Augustine creating a foundation that Leibniz then improved upon. The debate between these two groups raged for centuries, until Albert Einstein proffered his Theory of Relativity in an attempt to resolve the tension between these predominant views.

Einstein's breakthroughs in time perception began with his observations on the movements of bodies in space. He surmised that motion had importance to the person observing it, and that this observation could be different from another person's depending on their relative positions.[19] He surmised that the same notion could apply to time, and found that as the difference in velocity between observers increased, their respective observations of timing would begin to differ. This led Einstein to conclude that each reference body had its own specific time.[20] This was not a direct refutation of Newton and Aristotle's work, for in the realm of slower speeds their concepts and mathematics work "with a delicacy of detail little short of wonderful."[21] But these same ideas cease working with the same accuracy as the velocity of an observer accelerates closer to that of the speed of light. In fact, Einstein showed that as an object accelerates, its subjective

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[17] Clarke, *Correspondence*, 72.

[18] Clarke, *Correspondence*, 64.

[19] Albert Einstein, *Relativity: the Special and General Theory* (Methuen & Co Ltd, 1924), 7.

[20] Einstein, *Relativity*, 12.

[21] Einstein, *Relativity*, 8.

time begins to slow. He also postulated that clocks placed closer to objects of heavier mass will run slower than clocks further from that object.[22]

Physicists had a field day testing these ideas. Extremely accurate clocks were placed in high places and compared to similarly accurate clocks placed much closer to the earth, with the result that the clocks closer to the planet ran slower, as predicted. As humans reached out from the planet into space, similar experiments were conducted with similar effects. In fact, these relativistic effects must receive consideration every time someone uses the Global Positioning System for navigation.[23] Far from being a simple measurement from one moment to the next, accurately perceiving time now requires precise knowledge of relative positions, velocities, and distances.

While Einstein's theories solved much of the dispute between the two schools of time perception, they do not fully answer the root of the personal issues Augustine advanced in his exploration of time. Einstein's theories grant that the position of the observer matters in perceiving time, but what of the mind of the observer? Stephen Hawking provided insight to this problem in his *A Brief History of Time*. In this book, he argues that in science the direction of time has no meaning, as it is more interested in measuring durations.[24] But this is different than the human experience, in which time only flows in one direction. The rationale for this experience is due to what Hawking calls the three "arrows of time:" one thermodynamic, one psychological, and one cosmological.[25] While the cosmological arrow determines the general course of time, it is our brain's recognition of increasing entropy (the second law of thermodynamics) that regulates our psychological arrow of time. In short, we recognize time moving forward because we unconsciously note small increases in the chaos around us in accordance with this thermodynamic law.

To a physicist, this explanation would most likely suffice to settle the matter posed by Augustine. However, it does not completely satisfy Augustine's more metaphysical concerns about time in the mind. If each person experienced time based on

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[22] Stephen Hawking, *A Brief History of Time: from the Big Bang to Black Holes* (2012), 19, http://motsach.info.
[23] Hawking, *A Brief History of Time*, 19.
[24] Hawking, *A Brief History of Time*, 81.
[25] Hawking, *A Brief History of Time*, 78.

their own experiences or position, then it follows that the culture individuals live in will impact how that person interacts with their own sense of time. Separate and distinct cultures experience their lives differently, meaning a difference could exist in how the people of each culture perceive time.

Building to this conclusion utilizing only Western thought and science was intentional. The purpose was to paint a picture using familiar names and references to enable further dialog about time. Over history, Western culture has vacillated between favoring relative or absolute time. Other cultures have followed similar paths, yet may not have reached similar conclusions about time.

This paper uses Hawking's idea of the psychological arrow of time. What ideas and factors could make up such a psychological construct? Does the makeup of this psychological arrow impact a person's daily life, or is it more subtle, detectable only through the interactions of differing cultures? Answering these questions could provide keys to unlocking a whole host of military issues confronting the United States today.

Time is rarely truly discussed in Western military circles. Military culture acknowledges its importance, and in some cases has an almost fanatical devotion to its exact measurement to allow for a more precise synchronicity of effects. However, this leads the preponderance of military discussions to focus on *timing*. This fixation concerns itself with the scientifically accurate measurement of time, with little regard for the metaphysical perception of time.

Military minds of the last century have also based their operations and suppositions on the idea that better *timing* of military operations will shorten the overall *time* duration of a conflict. Exemplified by the philosophy of shock and awe, and utilized by the United States in Operation Iraqi Freedom, these theories do little to assess their target system specifically, or to explain how and why their ideas might work. Instead, planners utilize assumptions about the moral constitution or mental state of the opponent, disregarding any real attempt to determine the opponent's frame of reference as it relates to time and timing.

The purpose of this paper is to challenge the US military's conception of time and how it analyzes the human domain and will provide tools for understanding the temporal components of an opponent's strategy. Understanding these components requires

dissection of the time perspective for each culture under analysis. How does a culture time its events? Is the culture oriented more towards future events, or those that have passed? Does the culture prefer long-term or short-term solutions? What is the pace of life within the culture? The answers to these questions provide a temporal fingerprint for each culture, which provides a distinct picture of that culture's temporal perception.

Unlike human fingerprints, not all temporal fingerprints will be unique. Like a human fingerprint, however, the temporal fingerprint provides a mechanism for disassembling a culture's time perception into identifiable pieces. A temporal fingerprint is distinguished by five key characteristics: geometry, basis, sight, orientation, and tempo. Geometry defines the shape of a culture's time perspective. Basis delineates how a culture defines the timing of occurrences. Sight utilizes a spectrum from the present to the far future to define a culture's preference for planning future events. Orientation refers to where in time a culture prefers to look for answers. Finally, tempo defines the general pace of life within the culture.

The next chapter will examine the American psychological arrow of time to see its unique construction and to define its temporal fingerprint characteristics. This lens will be applied to American military operations to discover any trends in planning or military performance that indicate trends in using time. Chapter Three will repeat this process, but apply it to China, a rising contender for world power and a possible threat to American hegemony. Importantly, China has a very long cultural history very distinct from that of the US, which will facilitate identifying different characteristics of time perception. Chapter Four will examine the similarities and differences in time perception between the two countries. It will then apply these aspects to each nation's various military activities to draw conclusions about how differing time characteristics affect military decisions and performance. The final chapter will build on the results of these comparisons and recommend operational changes the US should make with respect to time in general and with China in particular. The goal of this examination of time is to challenge our perceptions of a concept that most people take for granted. The idea of time deserves more thought than it receives, and our first subject is as guilty of this as anyone: The United States of America.

Chapter 2

Time: American Style

Your Way Right Away
- Burger King

Baseball. Apple Pie. Freedom. Ask anyone in the United States what it means to be an American, and they will respond quickly with an answer that probably contains at least one of these terms. A query to define American culture, however, will most likely generate a look of confusion or deep thought—confusion, because the person thinks the question is the same, or deep thought, because the person realizes culture is difficult to define.

Examining a country's culture, however, is the key to unlocking that society's particular perception of time. Cultural cues provide insight not only into the speed of societal time perception but also hints at personal biological clock speed. Combined with climate and geography, these aspects provide each culture with a unique set of temporal values. These values make up that society's "temporal fingerprint," and this knowledge is crucial in understanding a particular society.[1]

Unfortunately, analyzing a society's time perception cannot be tackled directly, as the human brain lacks a capability for the specific processing of time.[2] Delving into American time perception, then, requires a roundabout investigation of various dominant aspects of the culture. This analysis will begin first with a look at the dominant religious implications on America's temporal fingerprint, before moving on to the country's infatuation with the clock. Following this will be a brief foray into both American civil and military temporal philosophy and experience.

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[1] Jeremy Rifkin, *Time Wars: The Primary Conflict in Human History*, 1st ed (New York: H. Holt, 1987), 1.
[2] Daniel Kahneman, *Thinking, Fast and Slow*, 1st pbk. ed (New York: Farrar, Straus and Giroux, 2013), 407.

Influence of Religion

For many countries around the world, defining the dominant religion is easy. Some countries have state-sponsored religions. Others have an overwhelming preponderance of one religion. Although the United States presents a somewhat more diverse religious topography, essentially the nation is Judeo-Christian in make-up. United States census data from 2008 shows that of the 228 million adults polled, 173 million indicated belonging to one variant of Christianity or another.[3] This share represents nearly 76 percent of the entire adult population of the country. Of the remainder, almost three times as many people (thirty-four million) indicated a preference for no religion over one of the other major world religions (i.e., Judaism, Islam, et al.). The overwhelming majority of Americans, therefore, identify with the Judeo-Christian worldview over other religious perspectives.

Identification of religious preference is essential, as most religions have one of two major types of time perception: either cyclical or linear. In cyclical perceptions, time is eternal. Plato's description of time is an example of this. Additionally, cyclical time has the possibility of repeating itself, meaning that what has passed may occur again. A belief in reincarnation, as typified in Hinduism and Buddhism, exemplifies a common tenet found in religions with cyclical time perceptions. Outside of religion, highly agrarian cultures also tend to be cyclical, especially those that lack direct contact with or influence from industrial societies. These agrarian cultures focus more on the turning, repetitive nature of seasons rather than the demands for progress within industry.

The opposite of cyclical time is that of linear time perception. In this variation, time is finite: it has a beginning and has an end; moreover, linear time moves in one direction and does not repeat. In linear societies, once a moment passes it does not come again. The Judeo-Christian time perspective falls neatly into this latter category. The books of Genesis and Revelation from the Bible describe both the beginning and the end of the known universe. These religions also place great emphasis on how to act in this life, as each person has only one opportunity for salvation.

The Judeo-Christian time perspective also adds an impetus for change within the lives of its followers. Along with its linear time perspective, Judaism also added in the

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[3] https://www.census.gov/library/publications/2011/compendia/statab/131ed/population.html, number 75,

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notion of free will. Instead of the future representing something pre-determined and waiting to pass, the future became something that each person could fill in for themselves.[4] Adding Christianity's requirement that dwelling with Christ after death requires acceptance of Him in this life shrank the personal time horizon to that of a single lifetime. This latter notion of a better life after death translates to a general belief in an idealized future in all Judeo-Christian societies. This idea of a better future spread through Western culture thanks to the Holy Roman Empire.[5]

In summary, and based on its religious background alone, the American time perspective is linear and based on a single lifespan. This perspective also looks toward an idealized future. As these descriptions also describe most of the Western world, however, further defining the American perspective requires examination of moral and physical artifacts, specifically calendars and clocks.

Measuring Time's Passage

The planet is littered with physical artifacts that exemplify humanity's various attempts throughout history to measure and schedule time. Early attempts relied on the movement of sun and stars. Stonehenge, England, typifies this effort, where an observer can mark the passage of the solstice depending on the position of the sun. As with many things in ancient life, such knowledge brought control.

The calendar exemplifies this idea like no other human creation. The creation of the calendar allowed ancient civilizations to order, schedule, and arrange the rituals and celebrations that had become necessary to daily life.[6] These rituals and celebrations tended to increase group cohesion and orderliness. The Jewish faith, for instance, is a function of the history of their relationship with their God; their calendar is an artifact that explains and ritualizes these historical links. A robust and lasting calendar allows those of the faith to be together ritualistically, though they may be separated geographically.[7] These firm temporal group dynamics may be one reason why Judaism

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[4] Rifkin, *Time Wars*, 127.
[5] Rifkin, 130.
[6] Rifkin, 70.
[7] Rifkin, 71.

has continued to survive despite its long history of persecution, and why the Jewish calendar persists since its creation thousands of years ago.

Not only does a calendar grant order, but it also becomes a conduit for power. Controlling and modifying a calendar to meet the needs of a state or religion is a typical bureaucratic function among those who maintain it. Moreover, making large-scale modifications that receive wide dissemination requires a considerable influence and power base to implement the change and make it last. Two of the most widely-used calendars to date, the Julian and Gregorian, were enacted by edict from Julius Caesar and Pope Gregory XIII, respectively. Both individuals had the influence to implement the desired change, and they each had a strong power base to ensure the highest acceptance. In both cases, the changes centered around increasing the accuracy of the solstices within the calendar, thus decreasing the overall resistance to a new order.

Not content with ordering the passage of days, humans have consistently sought to measure time in ever smaller quantities. The clock, in all of its various forms, has come to dominate the temporal landscape in conjunction with the calendar to meet this demand. While not a religious artifact per se, in Western culture the clock reached great cultural significance through its propagation and use by monks of the Order of St. Benedict. The Benedictines based their Order on temporal rigidity and scheduling, with early sects timing all activities to the tune of a bell.[8] The Benedictines measured hours via any means available, and were thus quick to adopt the use of an early version of the automatic mechanical clock as a better means to standardize time. While the mechanical clock had existed for some time, adoption by the Benedictines further spread its influence.

As knowledge of this device spread, so did the demand for its use. Clock use specifically found adherents in urban environments, where the bells of a clock tower could calibrate the town's denizens to each other temporally, allowing for higher efficiency. This dynamic became important during the Industrial Revolution, where, unsurprisingly, the most significant demand for clocks came from leaders of industry, who found the orderly pacing of a clock granted greater organization to their day and

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[8] Rifkin, 81.

efficiency to their production lines.[9] At first, however, their laborers, accustomed to natural schedules of the sun and not that of the clock, had difficulty adjusting to clock-time.[10] Partly for this reason, some industries shifted to child labor, as kids handled clock indoctrination better than adults. In response to industrial needs, schools also incorporated clocks and schedules to socialize younger populations to the requirements of clock-based time. In this manner, the Industrial Revolution became responsible for separating humans from their natural clock and putting them more in tune with automation.

The most recent steps in human clock-calibration came with the establishment of standard times. As the pace of travel increased, the need for a common time standard across distances increased as well. The spread of the railroad across the United States became the harbinger for standard time zones as an attempt to establish consistent train schedules.[11] Before the train, localities in the nation would set their clocks by the sun, and this gradual change in time across the country played havoc with train schedules, creating the desire and ultimate enactment of standard time.

If the railroad brought temporal standardization, however, war brought national temporal unity. During World War I, the US enacted War Time, now commonly known as Daylight Savings Time (DST), to save energy during the spring and summer.[12] Repealed federally after the war, DST stayed in use by some states while others states discontinued its use, recreating a version of the pre-time zone temporal jumble. The outbreak of World War II saved the US from this mess when the federal government re-instituted DST. The rationale for its re-implementation was not to save energy, as is commonly misunderstood, for factories were already working at all hours to produce the war material needed for the Allies. Instead, the widespread use of electric clocks, deemed more accurate than mechanical, brought out the notion that waking up in darkness to an alarm clock was every citizen's way of serving the county. The darkness would remind

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[9] Rifkin, *Time Wars*, 90.
[10] Rifkin, *Time Wars*, 22.
[11] Rifkin, 112.
[12] Mary L. Dudziak, *War Time: An Idea, Its History, Its Consequences* (Oxford ; New York: Oxford University Press, 2012), 12.

them that the country was at war.[13] This act further bound a united America to the use of clock time.

Sociologists have argued that all industrialized countries have gone through similar phases in their own development. These adjustments to time are important, because non-industrialized countries have not endured the same catalysts, and thus are not as bound to the clock's effects. In fact, non-industrial countries find Western adherence to clock time bizarre and eccentric.[14] Thus, identifying the United States as a country that follows the clock is an identifier that adds to the country's temporal fingerprint. But not all clocks run at the same pace, and the speed of each culture's clock is just as important as knowledge of how they use it.

Life's Tempo

One of the more fascinating cultural aspects of time is how each human's personal perception of time, which can vary, can also be synched with the collective around it. While time variations between individuals exists within a society, that difference is much smaller than between individuals from different societies. Groups of humans in protracted contact invariably synchronize their biological clocks, and this rhythm of life extends beyond bodily functions to include each person's sense of time.[15]

For decades, sociologists have worked to qualify and quantify the various aspects of personal and cultural time perception to discover the various speeds of social groups. These studies cover the gamut from the personal to large-group settings. On the micro level, sociologists measure personal time sequence, length, planning, recurrence, synchronization, and perspective.[16] Most of these variables deal with the amount of individualization within a society and the effort involved in syncing activities between people, while others deal with personal time length and future outlook. Planning and synchronization also attempt to measure each person's, and thus society's, reliance upon the clock.

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[13] Dudziak, 13.

[14] Robert Levine, *A Geography of Time: The Temporal Misadventures of a Social Psychologist, or How Every Culture Keeps Time Just a Little Bit Differently*, 1st ed (New York: BasicBooks, 1997), 92.

[15] Craig Brod, *Technostress: The Human Cost of the Computer Revolution* (Reading, Mass: Addison-Wesley, 1984), 126.

[16] Rifkin, *Time Wars*, 49,50,55,57,62,64.

Macro-level examinations attempt to analyze person-to-person cultural interactions to derive similar conclusions about time perspectives. These experiments seek to answer questions on how a culture experiences waiting, assesses punctuality, maintains its work and social life balance, and views the appearance of doing nothing.[17] The results have led researchers to believe five criteria determine the tempo of a culture, with faster tempos found in areas with vibrant economies, higher industrialization, larger populations, colder climates, and individualistic cultures.[18] All of these descriptors match the United States, a country particularly infatuated with speed.

American culture is organized to provide for the necessities of life quickly. Americans want their food fast and they devour it speedily. They enjoy fast cars, fast sports, and celebrate breaking speed records. Where others believe that haste makes waste, the US is a country where speed reflects intelligence, alertness, power, and success.[19] A common rule in America is that "time is money," which comes with the notion that doing nothing, sitting idle, or waiting are all anathema to profit and production.[20] The US is a nation of movers, and they prefer to do so with haste. This desire for speed in America did not always define the country, nor did it appear overnight. The current US, as a fast-paced and fast-lived country, is the result of an ironically slow process that mirrors the development of other Western cultures, but with a distinct American flair.

From its origins as colonies, life in the United States has been about progress. The original settlers brought themselves to the New World with an idea of creating a novel and better life. America seemed to offer hope: hope for new opportunities, new ways of life, and freedom from persecution. Upon arrival, if settlers could not find what they wanted in the East, they were told to go West. A new life awaited any who had the will and desire to go search for it; it was America's Manifest Destiny, after all.

Geography did not hold a monopoly on progress, and both science and technology benefited from its focus. Overall, the idea of making progress evolved from simply moving West to an association with the betterment of mankind, giving rise to a definable

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[17] Levine, *A Geography of Time*, 193–203.
[18] Levine, 9.
[19] Rifkin, *Time Wars*, 58–59.
[20] Levine, *A Geography of Time*, 102–3.

movement within the country.[21] The Progressive movement brought with it the desire to see an orderly and rapid fulfillment of America's Manifest Destiny across space and time.[22] However, as the exploration and settling of the country came to a close, the progressive movement focused more on scientific and technological advances as the means to improve the human condition. With this change in focus came a change of time perspective. The American time horizon began to shrink away from an abstract and ill-defined future to one that could be discerned and calculated.[23] This process slowly shortened the average American future outlook from a lifetime to that of years or less.

Progress remained an American focus despite this diminishing future horizon. Philosophical works from various authors all describe the future with terms like "possibility," "evolution," and "change," with the latter frequently assumed to mean "change for the better."[24] Ultimately, the thinking and ideas behind these notions, and representative of them, began to accelerate the American pace. If change is good, then changing faster is better. This increased pace has seen the rise of more technical "revolutions" in the past one hundred years than in any previous century. Industry gave way to technology, which then spawned the Information Age. All of this occurred simultaneously with revolutions in computers, transportation, warfare, communications, economy, and diplomacy—the list goes on.

Moreover, a new type of time has entered the discussion—that of computer time. Computer time deserves a brief analysis because it represents a new era of time perception available to all humans, not just Americans or those in the West. As use of computers spreads, so may this new time perception. The argument behind the notion of computer time is that of the computer as an enabler. Human time perception is limited to what the brain can process at any given moment. Computers and technology have far outstripped the natural neural reaction time, enabling scientists to make observations on an ever smaller and faster scale. For example, scientists were able to measure the movement of a particle down to a femtosecond, which is one-millionth of a nanosecond,

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[21] Merritt Roe Smith and Leo Marx, eds., *Does Technology Drive History? The Dilemma of Technological Determinism* (Cambridge, Mass: MIT Press, 1994), 3.

[22] Smith and Marx, 11.

[23] Max Lerner, *America as a Civilization* (Simon & Shuster, 1957), 719.

[24] For examples of this, see Bertrand P. Helm, *Time and Reality in American Philosophy* (Amherst: University of Massachusetts Press, 1985).

or the amount of time it takes the Concord supersonic airliner, at full speed, to travel the distance of one *atom*.[25] This increased speed already allows computers to make decisions faster than a human, with forecasts expecting this ability to get faster still.

Computer time thus presents humanity with a time perception focused on ever-smaller increments. Mutual fund managers use these ever-faster capabilities to make better snap decisions on the market. Increased speed in computer timekeeping also grants an increase in navigation accuracy. Finally, faster clocks and decision-making will be a lynchpin technological enabler for fully instituting self-driving cars. While the possibility of this ever-greater speed in decision-making may not excite all Americans, it certainly excites many, including more than a few in a military uniform.

The Rheostat of Time

The United States military holds speed in very high regard. Its leaders desire a way to have forces in place faster, deliver effects faster, and meet the needs of its political masters faster than any other military. Like other aspects of American temporal biases, the military's preferences have evolved steadily and surely over time.

A discussion on American military affairs must include some of its foundational theory. However, while many theorists contributed their knowledge to solving the problem of war, very few considered the problem of time. Of those, Carl von Clausewitz presented some of the clearest analysis of time in war. For Clausewitz, time could be both a problem and a solution to the commanding officer. Clausewitz recognized that a military operation takes time to complete, and that the victorious side would be the one that turned this time to its advantage.[26] He stressed that time must be more significant for one side over the other.[27] Its use by that side would make all the difference, however. For example, time usually favors the defense as its primary purpose is to outlast an offensive, wait for the attacker to culminate, and then counterattack.[28] Clausewitz also recognized that all war consists of alternating periods of action and inaction, but stressed that this is

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[25] James Gleick, *Faster: The Acceleration of Just about Everything* (New York: Pantheon Books, 1999), 62.
[26] Carl von Clausewitz, Michael Eliot Howard, and Peter Paret, *On War*, First paperback printing (Princeton, N.J: Princeton University Press, 1989), 597.
[27] Clausewitz, Howard, and Paret, 209.
[28] Clausewitz, Howard, and Paret, 94.

short of his ideal form of war where the action continues unabated until one side gains victory over the other.[29]

Clausewitz's arguments were completed before the acceleration of American time, yet they still reflect many aspects of Western cultural thinking on time. For one, Clausewitz's analysis of war is linear. It proceeds from moment to moment, action to inaction, until it reaches a climax. Clausewitz's ideal form of warfare also represents western time values, in that it favors constant action. In his ideal form, action leads to change, which leads to an improvement (change for the better), which leads to victory.[30] The actual form of warfare represents a "temporal dilution" of his ideal form, as Clausewitz takes phases of inaction literally and assumes that nothing occurs in this period.[31] Additionally, Clausewitz frequently refers to the necessary *coup d'oeil*, where the battlefield commander must utilize his collective experience to make judgments that "depend on the pace with which operations are taking place," but which frequently require speed.[32] This condition places a sense of urgency on the commander to make the correct decisions quickly, or risk losing the entire battle.

Early American military actions reflect the various temporal tenets of Clausewitzian-style warfare. In the Revolutionary War, the Continental Army had time on its side, as the local insurgent force. General Washington merely had to keep his force in being to effectively threaten British rule. In essence, Washington's early defensive strategy was an attempt to wait for the British operational offensive to culminate before beginning a counterattack. This period of defense, marked by small surprise offensives like the crossing of the Delaware at the end of 1776, arguably came to an end after the second Battle of Saratoga on October 7, 1777. The defeat of a major British Army by the colonials convinced France to formally enter the war, increasing arms and supply deliveries to the Continentals while broadening the defensive theater for the British. In all

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[29] Clausewitz, Howard, and Paret, 19.

[30] Laure Paquette, "Strategy and Time in Clausewitz's On War and in Sun Tzu's The Art of War," *Comparative Strategy* 10, no. 1 (1991): 42.

[31] François Jullien, *A Treatise on Efficacy: Between Western and Chinese Thinking* (Honolulu: University of Hawai'i Press, 2004), 50.

[32] Clausewitz, Howard, and Paret, *On War*, 85; Paquette, "Strategy and Time in Clausewitz's On War and in Sun Tzu's The Art of War," 43.

cases, time favored the Americans, and their slow, steady use of it brought eventual success.

The Civil War represents a transition between a slower-paced past and a faster-paced future. This war marked an inflection point between Clausewitzian-style warfare and the warfare of the Industrial Age. Following the evolution of the Union's strategy throughout the war highlights this change, as the Union Army moved from a slow-paced defensive strategy to a faster-paced offensive. Initially, the Union established a blockade around the South with the intent of slowly choking the Confederacy. Paired with a superiority of men and materials, the Union sought to hold the Confederate military in a strategic defense. This strategy ultimately played to the south's strengths, allowing General Lee to gain multiple victories, and permitting his forces to continue to press north and capture vital Union territory. President Lincoln then changed strategies in 1862, calling for a general advance against the South. This advance was slow in coming, with Union generals being outmaneuvered or failing to capitalize on victory to pursue their foe. The victories at Gettysburg and Vicksburg marked a turning point, as the Union simultaneously defeated General Lee's army in the north while also taking command of the Mississippi River, effectively dividing the Confederacy. At this point, the Union moved faster than before, taking advantage of its railroad-powered logistics to quickly apply pressure all throughout the South. The Confederacy maintained its resistance for another two years, but ultimately could not outlast the steady Union pressure.

Following the US Civil War, the United States military experienced two World Wars, both of which fostered a continued desire for faster military operations. This yearning is reflected in the work of John Boyd, who presented an impactful development of Clausewitzian thought. Boyd compressed Clausewitz's concepts into a simple framework that could allow anyone, not just commanders, to find a way to take advantage of time. He called it the observation, orientation, decision, action (OODA) loop, and stressed its importance to all levels of strategy.[33] Successful military operations require the OODA loops of all levels to be in harmony, although these loops should be operating at different speeds, with tactical loops necessarily processing faster than

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[33] Grant Tedrick Hammond, *The Mind of War: John Boyd and American Security* (Washington: Smithsonian Institution Press, 2001), 2.

strategic. An understanding of the OODA loop gives military professionals a tool for getting inside the thinking of their opponent, reacting faster than an adversary can comprehend, thus paralyzing or otherwise disrupting the enemy.[34] Underlying all of Boyd's philosophy is the requirement for time and movement. Successful militaries must move quickly to continually present new situations faster than the enemy can adapt, therefore generating an advantage over the foe.[35] Speed, then, is of the essence in Boyd's thinking.

Boyd cannot take all of the credit for the acceleration of the American military, however. His philosophy arrived at a time when Western-style militaries were very accepting of the notion. Starting in World War I, the United States became embroiled in extensive, significant wars that took longer and cost more than anyone wanted to pay. Original planners for WWI assumed that the operation would last mere months, never foreseeing the years of bloody stalemate. The use of airpower in WWII also promised its planners a quick victory, one that the Axis denied until its last gasp. The addition of the Chinese Army lengthened the Korean War by two years. The Vietnam War persisted because of foreign aid and an opponent that was as equally unwilling to retire as the Axis was in WWII. The American public, far more than its military institution, grasped at Boyd's work in an attempt to find a different way to fight war, one where victory could occur quickly.

The penultimate example of American military speed comes from Operation Desert Storm. This operation showcased a far more mobile, proactive, and flexible American military than the world had ever seen. The planners of Desert Storm took Boyd's OODA loop, overlaid it on the Iraqi command and control (C2) structure, and then proceeded to find ways to dismantle, disrupt, or destroy Iraqi C2 to interrupt its leadership's OODA loop. Taking Boyd's concept a step further, Desert Storm planners found ways to use advances in airpower technology to attack various aspects of this system simultaneously.[36] Dubbed "parallel warfare," this method maintains linear temporal processing, yet overloads its foe by concurrently executing multiple tactical

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[34] Hammond, 123.
[35] Hammond, 151.
[36] John A. Warden, *The Air Campaign: Planning for Combat*, Rev. ed (San Jose: toExcel, 1998), 144.

lines of effort.[37] The cumulative effects of these actions place the burden of time on the enemy, who must now attempt to handle multiple assaults across differing fronts, all while losing the ability to process and communicate effectively.

The American Temporal Fingerprint

In summary, the American temporal fingerprint can be described as linear, clock-based, and near-sighted, with a focus on speed and efficiency to meet ends quickly. Americans experience time linearly, perceiving the progression of the world's events as a straight temporal path towards a finite conclusion. American culture embraced the clock to more efficiently organize its progress down this path. The clock provided a means to better define progress and thus realize progress earlier, resulting in an American favoritism for near-term rather than long-term goals. Additionally, increasingly advanced timekeeping allowed for an acceleration in the pace of life, an effect that continues still.

Collectively, these aspects describe a country that is ever on the move, accelerating toward progress, but which is frequently unsure of where that progress is taking them. These cultural characteristics serve as America's temporal basis as it faces a world full of rising great-power challenges. As the US attempts to balance a rising number of issues, a confrontation is growing between it another country that has a different temporal fingerprint. While every fingerprint is unique, the significant differences between these particular two temporal fingerprints makes any potential conflict interesting to ponder, yet frightening to consider.

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[37] Colonel David A. Deptula, "Firing for Effect: Change in the Nature of Warfare" (Aerospace Education Foundation, August 1995), 4.

Chapter 3

Dragon Time

*But he was not in a hurry, "hurry" he failed to grok. He was
sensitive to correct timing – but with a martian approach: timing
was accomplished by waiting. He noticed that his human brothers
lacked his discrimination of time and often were forced to wait
faster than a Martian would.*

- Robert A. Heinlein

Time perception is a funny thing. Each person has it, but the difference of opinion
on the passing of time between one person and the next can be amazing. Many have had
personal experience with this phenomenon, where time seemed to "fly by" for them, but
not for others. These individual discrepancies of time perception are natural, and usually
pass unremarked because of a shared cultural bond.

What if the individuals interacting have different cultures? In the quotation above,
the "he" is a fictional human named Valentine Michael Smith who has the inauspicious
origins of being the first human born on Mars to parents of the first human voyage to the
planet. This fact is unknown to the people of Earth, however, and shortly after his birth
Michael's parents, and the entire crew, died, leaving infant Smith to be raised by the
locals, who adopted him. These locals were native Martians, and they raised Smith as one
of their own for over twenty-five years, the duration of time between the first and second
human visits to the planet. On this second visit, the Martians decide to send Smith back to
Earth as an ambassador of sorts, but also as an experiment of how the two cultures could
interact.

Heinlein's novel, *Stranger in a Strange Land*, explores the possible complexities
inherent in attempting to bridge alien cultures. The author weaves Smith's completely
different cultural time perception into his interactions with native Earthlings. At first
glance, the reader takes this time perception to be what it is intended to be: completely
alien. For example, on Mars, the term "waiting" is both a verb and a noun. Martians "wait
for time to fill" before accomplishing an action, but also acknowledge that "waiting is" –
referring to a state of serene contentment while observing the world around until further

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action is required. Delving beyond the novel and into this cultural time perspective highlights, however, that this time perspective is not alien at all. It appears different, but many populations on Earth view time in the same way as Smith and the Martians. The reason it appears alien is that Heinlein is describing an event-based society in a book whose intended audience is a clock-based society.

This very different cultural perspective on time again highlights the need to grasp these ideas to understand a culture. Failure to do so could have detrimental effects when interacting with other cultures, as a differing view on when something should occur could form a basis for disagreement. Now imagine if neither culture could agree on a definition of "when!" Finding similar ground matters, and an understanding of differing cultural times provides the key to unlocking better dialog between event- and clock-based cultures. This strife marked many of the West's interactions with China, as China's cultural time perspective is similar to the fictional one of Mars. The Chinese are not aliens here on Earth and examining their cultural time will provide a means for a better understanding of them.

Different cultures deserve a route of analysis more applicable to that culture. Similar to the American perspective, this chapter will analyze Chinese religion and Chinese military philosophy on time. As the Chinese are not a clock-based culture, this chapter will instead analyze other essential time-keeping measures utilized by the Chinese, as well as provide a focus on their political administration of the country. This analysis will provide a temporal glimpse into a culture that in some ways is very different from the United States.

A common theme of this chapter is longevity. The idea of China has existed for thousands of years, predating historical written accounts. In the earliest known writings, authors speak of a China already risen to great heights and with an established cultural identity. Henry Kissinger, former US Secretary of State and National Security Advisor, describes China's appearance in history as "less as a conventional nation-state than a permanent natural phenomenon."[1] Owing to this long history, investigating the various components of China's culture must first acknowledge two caveats. First, the specific origins of many facets of China's culture are unknown, as they predate available records.

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[1] Henry Kissinger, *On China* (New York: Penguin Press, 2011), 5.

An analysis thus requires stitching together many disparate pieces of information to form a complete picture, and most of this work is outside the scope of this paper. The analysis presented herein is, therefore, a focused part of a more considerable body of work. Second, China as a culture is over three thousand years old. The ancient authors whose works have had countless years to impact Chinese culture and society must receive their due regard, even though their writings may not comprehensively reflect the current regime. Shrinking the entire scope of known Chinese history to one year shows the current regime occupies only the last week and the weight of effort for determining China's temporal fingerprint reflects this distribution.

Chinese Religion

The rationale for these two caveats is laid bare in any discussion of Chinese religion. The current manifestation of authority in China, the Communist Party of China (CPC), lists atheism as the official state religion. Deferring to their long cultural history, however, the CPC grants certain freedoms to those religions that teach China's ancestral heritage.[2] To reflect this, the CPC created a new term to define religion: *chung-chiao*. This term is a combination of two words previously not paired, where *chung* roughly equates to "ancestral worship and tradition" and *chiao* is "teaching."[3] Thus *chung-chiao* means "the ancestral teachings" in English.[4] In China, currently, any religion seeking to reach the masses must endure constant state involvement and oversight to ensure that faith stays patriotic to China and focused on ancestral history.

Of the various state-approved religions, the Chinese consider three as the most prominent: Taoism (or Daoism), Confucianism, and Buddhism.[5] Taoism and Confucianism are specifically Chinese, with Buddhism being an import with very similar aspects. Importantly, all three religions are universalistic in that they attempt to focus on

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[2] Linda Woodhead, *Religions in the Modern World Traditions and Transformations* (London; New York: Routledge, 2002), 115, http://www.myilibrary.com?id=6492.

[3] Milton M. Chiu, *The Tao of Chinese Religion* (Lanham, Md: University Press of America, 1984), 2.

[4] Chiu, 1.

[5] J. J. M. de Groot, *Religion in China: Universism, a Key to the Study of Taoism and Confucianism* (New York: G.P. Putnam's Sons, 1912), 1, http://search.ebscohost.com/login.aspx?direct=true&db=h8h&bquery=(HJ+6B97)&type=1&site=ehost-live.

maintaining man's correct place within the universe's workings.[6] Taoism was the first of these religions to evolve in China, while Confucianism spawned later from an offshoot of Taoism to provide increased moral clarity and act as a balance to Taoism.[7] Buddhism was a later addition to the Chinese religious pantheon, and its acceptance occurred by making the religion more Sino-centric. Of these three religions, however, Confucianism and Taoism have had the greatest impact on Chinese culture. These two religions function as compliments to one another, "running side by side like two powerful streams through all later Chinese thought and literature."[8] An examination of their views on time, therefore, provides the essential elements to begin construction of the Chinese temporal fingerprint.

An understanding of Taoism must first begin with an examination of the central element of the religion, the Tao. As a fundamental principle, the Tao is not analogous to the leading gods of Christianity or Islam. Descriptions of the Tao vary, sometimes describing it as a force or fount of power. More often, the Tao is described as the surface of travel for the universe, with terms like "path," "way," or "road" to define the motion of what is the natural order of all things.[9] While these terms imply linearity of thought, the Tao is perceived to be circular in nature. At its core, Taoism is a religion encompassing the whole of human life and action and seeks to place it within a system of discipline and ethics, with a foundation in the observation, divination, and imitation of nature.[10] Inherently focused on defining the rhythm of life, Taoism recognizes the fundamental importance of the turn of the seasons and how they are each independent yet intertwined.[11]

Incorporated into this circular outlook is the parallel notion that time is eternal. As mentioned in chapter two, a finite time perception must indicate that the entire scope of time has a beginning and an end. Taoism acknowledges no such boundaries. As the source of power and life, the Tao must forever be impersonal, identical, supra-divine—

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[6] Groot, 2.

[7] Groot, 3–4.

[8] Wm Theodore De Bary et al., *Sources of Chinese Tradition*, 2nd ed, vol. 1, Introduction to Asian Civilization (New York: Columbia University Press, 1999), 77.

[9] Groot, *Religion in China*, 6; Chiu, *The Tao of Chinese Religion*, 4.

[10] Groot, *Religion in China*, 7–8.

[11] Livia Kohn and Michael LaFargue, eds., *Lao-Tzu and the Tao-Te-Ching* (Albany, N.Y: State University of New York Press, 1998), 172.

the ultimate and supreme for eternity, and thus timeless.[12] This concept is different from the Judeo-Christian God who is outside of time and was its creator, as the Tao is in and of the universe continually creating and destroying it in the unceasing cycle necessary for life. In many ways, Tao is more analogous to time than a deity. The seasonal cycles of creation and destruction pair with the annual revolutions of the Tao, which defines the order of the world and the process of nature.[13] The Tao, then, is an eternal structure and order within which humans must find their proper place.

The irony present in the last description is that it implies that the Tao predetermines the future, but in fact, it does not. The reason Taoists diligently study the nature around them results from their ability to choose. Humans make decisions every day, and Taoists believe that correct decisions reflect being in line with the Tao, while incorrect decisions are a deviation from the path. One description of the Tao called it "a concrete path and an abstract way," implying one correct path, but where the knowledge of ~~it~~ that path is difficult to determine.[14] Better divination of the natural order allows followers of the Tao to increase the likelihood of making correct decisions. While seemingly unimportant for banal decisions, every decision has an accumulative effect that determines one's proximity to the Tao and the correct order of nature. The Tao maintains its balance, and those that stray farthest from it do not stay that way for long.

Not straying far from the Tao is also a definitive aspect of Confucianism. This is not inherently surprising, as the backbone of Confucianism is morality, advocating for virtue and good manners.[15] These tenets reflected Confucius's belief that the war-torn China he experienced was a direct result of a decline in moral steadfastness in the leaders of his time.[16] One of the methods Confucius employed to impress the need for greater morality was to accentuate the influence of Tao on humanity. For example, Confucius said in his *Analects,* "wealth and honor are what people desire, but one should not abide

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[12] Max Weber, *The Religion of China: Confucianism and Taoism*, trans. Hans H. Gerth (Glencoe, IL: The Free Press, 1951), 28.
[13] Groot, 8, 216-217.
[14] Chiu, *The Tao of Chinese Religion*, 4.
[15] Mengyu Li, "The Unique Values of Chinese Traditional Cultural Time Orientation: In Comparison with Western Cultural Time Orientation," *Intercultural Communication Studies* XVII, no. 1 (2008): 66.
[16] Li, 67.

in them if it cannot be done in accordance with the Way."[17] Or, more directly, "[the man of service] loves learning and clings unto death to the good Way."[18]

As Confucianism is linked inexorably to Taoism in Chinese culture, it has an overlapping influence on some elements of the temporal fingerprint. Taoism represents a belief in something that, as a fundamental force of nature, is both eternal and circular. Confucianism represents a belief that mortal humans can achieve a high moral standard by emulating the better actions of their ancestors. [19] In this structure, both circularity and a deep appreciation for the past are primary temporal elements. Circularity is evident in the underlying notion of Confucianism in that what once was can come again, and that this applies to all aspects of human morality.[20] This circular framework for morality is, admittedly, not as temporally rigid as the annual turning of the seasons represented by the Tao. The framework is, however, representative of the greater circular relationship the Chinese have with their ancestors.

The ancestral lineages emphasized by Confucianism do more for the Chinese temporal fingerprint than just reinforce Taoism. By placing an emphasis on learning from the past, Confucius embedded a continuing appreciation and need to study the past within the Chinese. He did this by synthesizing the rituals of the Zhou dynasty with those of the Xia and Shang, and then presented them to his audience not as original works, but as a transmission from the past.[21] His "transmissions" provided a means for Confucius to express an appreciation for those who had gone before.[22] This is not to claim that Confucianism believes that humans of the past were better than those of today. Instead, this philosophy seeks to ease people's lives by capitalizing on the hard lessons learned by those who have experienced similar circumstances, even if those circumstances were many years in the past.

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[17] As translated it De Bary et al., *Sources of Chinese Tradition*, 1:48. In this book, the translators utilized the direct English translation of Tao to "the Way."

[18] De Bary et al., 1:52.

[19] Li, "The Unique Values of Chinese Traditional Cultural Time Orientation: In Comparison with Western Cultural Time Orientation," 67.

[20] From the *Analects*: "If the noble person is reverent, unfailingly courteous toward others, and observant of the rites, then all within the four seas are his brothers." De Bary et al., 1: 55. This statement implies that moral steadfastness must be maintained, or the individual will cycle back to immorality.

[21] Li, "The Unique Values of Chinese Traditional Cultural Time Orientation: In Comparison with Western Cultural Time Orientation," 67.

[22] Li, 67.

Combining Taoism with Confucianism provides some introductory aspects of the Chinese temporal fingerprint. These aspects highlight a past-oriented, circular culture that maintains an eternal outlook. Culture, however, is not based on religion alone, even if that religion plays dominantly within that culture's early history. Dominating a culture requires religion to have power and control, implying an organization. Unlike the structures of Christianity or Islam, where the religions developed a separate bureaucracy from that of the state, Taoism and Confucianism developed their structure in conjunction with the Chinese state.

Administration of the Masses

Paralleling the rise and belief of Taoism is the use and spread of administration within China. In the last few millennia, China's share of the world's population has been significant, usually representing somewhere around 20% of the total. China's natural geography partially explains this high percentage. China is located in an area of Asia with abundant natural resources and many geographical barriers, allowing for an almost protected niche for human development. Humans naturally quarrel with each other, however, so finding a means of controlling and ordering the population originated early in China's history.

While the exact dates for China's first administrations are lost to antiquity, scholars argue that the early basis of authority derived from control of water. Water was not just a means of transportation; it was also critical for irrigating the countless numbers of rice paddies required to feed a large population. Early administrations in China thus centered on control of water, a proper balance of crops, and a military organization to defend it.[23] As populations grew, these groups came into frequent contact with each other, providing many sources of conflict. China's history is full of various administrations rising to prominence, dominating the countryside, and then falling from power. Additionally, these different states possessed a cultural homogeneity as the result of some of China's earlier dynastic dynamics.

The first cultural change came after the Zhou dynasty replaced the Shang dynasty around 770 BC. The Zhou revolutionized legitimacy in China by mating the tenets of

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[23] Weber, *The Religion of China: Confucianism and Taoism*, 37.

Taoism with the state. Claiming that the Tao provided the order of Heaven (*tian)*, the Zhou established the Mandate of Heaven (*tianming*), claiming that the emperor was a physical link to heaven and thus responsible for ensuring that China follows the Tao.[24] Once established at the top, Taoism, and then more predominantly Confucianism, spread from the deliberate actions of the literate few. The need for legitimacy, and then the knowledge of how to survive or defeat a foe, established a demand for learned Chinese, especially in the Warring States period. During this time, philosophers wandered China freely, spreading philosophy and the state religion to any leader who would listen (or pay).[25] Aspiring Chinese leaders were keen to adopt the morals and methods of those who had already succeeded so that they might reap the same rewards and claim the mantle of Heaven.

The establishment of the Qin dynasty near the end of the Warring States period provided another major change. This particular Qin dynasty, ruling from 230-221 B.C., took power as a result of a group of leaders who were not Confucians but far more administratively minded. Called Legalists, they espoused a way of life where the people should be socially regimented, bureaucratically administered, and subject to the absolute will of the ruler.[26] This style of organization led to the Qin conquering all of China, but its over-authoritarian style also led to its quick demise. The Qin left a centralized legacy that was frequently copied by successive dynasties as a means of controlling the vast area and population of China. The centralization and bureaucratization of China that followed was unusual for a pre-industrial society, and it persists to this day.[27] This unification process finished the permeation of Chinese culture down to its lowest roots and most extensive spread, and with it went the Taoist notions on time.

China is nearly unique in the longevity of its culture. China's administrative structures did experience declines, either from interior revolutions or exterior barbarian invasions, but in every case, the Chinese culture resurged and reclaimed dominance. Part of the rationale for this durability is credited in part to China's pairing of religion and

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[24] David Andrew Graff and Robin D. S. Higham, eds., *A Military History of China*, Updated ed (Lexington: University Press of Kentucky, 2012), 20.

[25] Weber, *The Religion of China: Confucianism and Taoism*, 111.

[26] Graff and Higham, *A Military History of China*, 23.

[27] Graff and Higham, 23.

state, in that as the various states rose and fell, the needs of the Tao determined the necessary structure of the follow-on regime.[28] The robust bureaucratic structure established by the Qin also receives credit. As each new dynasty took power, either domestic or foreign, the bureaucratic leaders stood ready to serve and guide the new leader in managing China's vast populations and resources. This cycle of dynasties did not go unobserved within China where, long ago, the Chinese began to associate the cycles of stability and destruction with dynasties gaining and then losing the Mandate of Heaven.[29] While modern scholars strive to attach more socioeconomic rationales for the rise and fall of each dynasty, ancient Chinese gained fortitude knowing that in periods of hardship and chaos, peace and order would return.

Recognizing the cycle of dynasties also sheds light on how China's culture managed to absorb its invaders and Sinicize them. As providers of control and order, the Chinese would recognize successful invaders by offering up their bureaucratic services. In this way, the invaders would slowly be turned to support China by the mechanisms of state power. In this, the source of Chinese cultural durability was its keepers of the bureaucracy. Throughout China's history, the momentum of the culture lay with those who could read and write the Chinese language. The total body of literate Chinese was significant, as every person in China had access to learning their language provided they had the intellectual capacity to master it.[30] Also, these learned individuals primarily focused on domestic issues, not foreign affairs, leading to less expansionist pressure on China's leadership and thus less conflict with the outside world. [31] The outside world still existed, though, so China's intellectuals developed methods of dealing with its neighbors that would not often require force, to better focus on domestic issues. These factors combine into a remarkable internal force for the preservation of the Chinese culture against all threats.

Evidence of this cultural longevity persists today under the ruling thumb of the CPC. Mao Zedong, a founding father of the CPC and People's Republic of China (PRC), very early in his rule outlawed all ancient Chinese texts and history in order to establish a

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[28] Kissinger, *On China*, 13.
[29] Graff and Higham, *A Military History of China*, 40–41.
[30] Weber, 108.
[31] Weber, 110.

new China. However, the decree never stuck – Mao himself frequently made references to the literature of China's past to maintain his legitimacy. He also used China's longevity as a coercive device, claiming that no matter who will fight World War III, China will overcome any depredation and impose its culture and vastness on any attacker.[32] Following Mao, the PRC's next major leader built his strategy on China's cyclical history. President Deng Xioping's strategy of laying low, biding time, and building strength, reflects the historical periods where China's cultural power was low relative to other powers, and how it must respond to retake dominance.[33] Without making direct reference to this cycle, current PRC president Xi Jinping announced that the time of China's waiting is over and that it is time for China to resurge again.

The statements of the aforementioned Chinese leaders fit within the resurgence portion for reestablishing the Mandate of Heaven. As they are leaders of an atheist government, however, the Chinese currently refer to the Mandate as a return to China's dominance of the system. But the notion remains. Some Chinese scholars, like Zhao Tingyang, call for the government to take further steps by creating a new world order based on the principles of all-under-Heaven (*Tian-xia*). Stressing that the current system of international governance cannot provide beyond the poor management of squabbling nation-states, Tingyang states that *Tian-xia* would go beyond to establish a workable framework for establishing order to the world.[34] It would focus on an ethical governance that excludes nobody – essentially utilizing Confucian ideals for establishing and maintaining legitimacy.[35] This global *Tian-xia* concept is not revolutionary. It embodies aspects of the governance structure of China established by the Zhou dynasty 3,000 years ago to support its decree of the Mandate of Heaven.[36]

Remarkably, the Chinese culture survived a number of attempts by the CPC to purge it from China. The last, and most notable, was the Cultural Revolution. Mao launched this revolution in 1966 in response to a perception that the Communist Party

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[32] Kissinger, *On China*, 288–89.
[33] Kissinger, 438.
[34] Zhao Tingyang, "A Political World Philosophy in Terms of All-under-Heaven (Tian-Xia)," *Diogenes* 56, no. 1 (February 2009): 7, https://doi.org/10.1177/0392192109102149.
[35] Zhao Tingyang, 10.
[36] Zhao Tingyang, 7.

was becoming too revisionist.[37] Claiming that the bourgeoisie still existed and was utilizing old ideas, culture, and customs to exploit the working classes, Mao called for a new purge to remove the taint of traditional Chinese culture.[38] Lin Biao, Mao's designated successor, codified the goal of the Cultural Revolution by specifying the "four olds" that needed eradication: old ideas, old culture, old customs, and old habits of the exploiting classes."[39] What followed was a ten-year power struggle for the hearts and minds of all Chinese, ending in 1976 with the death of Mao.

Instead of purging the CPC of China's ancient culture, the Cultural Revolution paralyzed it. Recognized in official Party documents as "the most severe setback" since the beginning of the Long March in 1934, the leadership of the CPC moved to repair the damage.[40] Sweeping reforms were enacted in order to restore the government's legitimacy, followed by a delegation of power within the state to lower levels. This power retrenchment gave individual Chinese more personal freedoms in their daily lives and in the conduct of business.[41] Ironically, the Cultural Revolution receives credit for inspiring the very sorts of reform that Mao sought to avoid.[42] Instead of inhibiting the Chinese from looking to the past for answers, the chaos inspired them to increasingly utilize past examples and aspects of China's ancient culture in order to rebuild. The prevalence of articles like Zhao Tingyang's, one that freely makes reference to Confucius and Lao-Tzu as sources of evidence for his argument, shows that the CPC has reversed the stance taken against China's traditional culture in the Cultural Revolution.

While no longer overtly acting under the auspices of the Mandate of Heaven, the CPC now appears to be utilizing classical Chinese philosophy in formulating its domestic and international policies. Harnessing their cultural belief in circular time, the CPC provides contemporary evidence that at least this aspect of ancient Chinese culture remains today. An inherent belief in the longevity of Chinese culture, and the utilization of it to provide a basis for reform, is still providing this impetus. Evidence of the eternal

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[37] Roderick MacFarquhar and Michael Schoenhals, *Mao's Last Revolution* (Cambridge, Mass: Belknap Press of Harvard University Press, 2006), 47.
[38] MacFarquhar and Schoenhals, 92.
[39] MacFarquhar and Schoenhals, 108.
[40] MacFarquhar and Schoenhals, 456; Tang Tsou, *The Cultural Revolution and Post-Mao Reforms: A Historical Perspective* (Chicago: University of Chicago Press, 1986), 143.
[41] Tsou, *The Cultural Revolution and Post-Mao Reforms*, 169.
[42] MacFarquhar and Schoenhals, *Mao's Last Revolution*, 459.

aspect of the Chinese temporal fingerprint requires a look into China's timekeeping devices.

Marking Time

As discussed in chapter two, the devices used for the measurement of time have given their users a measure of control over others. A culture as centralized and bureaucratized as China proved no exception to this rule. Where Western cultures established calendars so that people could synchronize their religious occasions, the Chinese centralized and bureaucratized their calendars to state power. In this, the Chinese put the power of time in the hands of the Emperor, and, as the representative of Heaven, made him responsible for its proper use.

This imperial responsibility manifested itself in the creation of the Chinese calendar and almanac. While variations of a Chinese calendar pre-date the Zhou dynasty, the dynasty took firm control of it after taking power. After attaching the emperor to heaven, the Zhou identified that the government had a solemn duty to its people to ensure they lived by the turning of the Tao. From then on, standard law was that the emperor would prescribe the calendar and rules of conduct for the people.[43] These calendars were often adjusted to represent a more accurate accounting of the imperial ability to measure time via the sun and stars. The Chinese translated increasing temporal accuracy into more precise state control of the population.

The measurement of time was thus a tool of authority.[44] Imperial calendars dictated the roles and responsibilities of the Emperor and the people for each month. An ancient Zhou calendar showed that in the first month of spring the emperor should wear blue, the emperor must symbolically break ground to open the planting seasons, and the people must be prohibited from using weapons or burning forests since spring was the period for life's rejuvenation.[45] Similar examples of life guidance exist for each month, as defined by the sun, moon, stars, and seasons. Recognizing the importance attached to time-keeping devices, Imperial Chinese rulers prohibited the spread of some of the tools

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[43] Groot, *Religion in China*, 217.
[44] Gleick, *Faster*, 35.
[45] Groot, 219-220.

used to create them. The dispersion of mechanical and water clocks was therefore suppressed to ensure the emperor's dominance over time determination.[46]

The ancient Chinese felt that they could do better than general life guidance. Around the same time that Imperial China took control of issuing the calendar, a requirement that the emperor must also issue an almanac also emerged. These almanacs were considered magical instruments, as they conveyed their holders with an ability to predict events and determine outcomes, all in accordance with the order of the universe.[47] Knowing the cyclical, and thus predictable movements of the seasons, sun, and stars provided the basis for the almanac's determinations. Interestingly, the primary officials responsible to the emperor for the almanac's creation were historiographers, not diviners.[48] Thus, the time-based regulations set forth in the almanac used past timing of events and their outcomes as the guide for determining future action, perpetuating a cycle of action. Additionally, these almanacs became more precise as the imperial measurement of time grew more accurate, ultimately allowing someone knowing their exact moment of birth to determine the best month, day, and hour to accomplish a task. Unlike the calendar, however, the almanac was quite literally a horoscope that left room for endless speculation by professional diviners.[49] As these devices began to hold more mystical power, more stringent laws were put in place to ensure they would not be counterfeited or faked, with death by decapitation being the expected punishment.[50]

The Chinese calendar and almanac provide the cultural links back to an eternal time perspective. As pervasive state-controlled devices, these artifacts reached a wide-spread audience within China and directly impacted every user's life. Additionally, recall that the primary purpose of both artifacts was to be a direct link between the user and the Tao. The calendar and almanac were, therefore, physical manifestations and reminders of the Tao's timelessness. By providing order and clarity to each turn of the Tao, these artifacts provided a means for the Chinese to similarly provide order and clarity to their actions. Failure to achieve the necessary clarity would lead to chaos in the universe, "with

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[46] Gleick, *Faster*, 35.
[47] Groot, 226.
[48] Groot, *Religion in China*, 229.
[49] Groot, 245-247.
[50] Groot, 245.

the terrible result that the phenomena of Nature will occur in the wrong seasons."[51] Populations who failed to receive their calendars and almanacs would therefore fall into disarray. Even the issuance of these artifacts was no guarantee—a calendar or almanac that was chronically wrong was often perceived as a bad omen against the ruling family, providing the basis for an uprising against it.[52] The Chinese knew that the Tao had no end and demanded a good link to it from their Emperor.

Admittedly, the conclusion that the Chinese time perspective is eternal is based purely on historical evidence. The CPC no longer dominates the calendar as Imperial China did, nor does Taoism still provide the secular basis for power. That an eternal outlook developed over thousands of years would vanish over the course of a few decades is difficult to imagine, however, especially considering the durability of the Chinese culture. This culture endured many of the CPC's oppressive reforms, emerging to guide the CPC's later leaders. A cultural shift in the Chinese temporal outlook is possible, but no direct evidence of this yet exists, therefore, an eternal outlook must remain a component of the Chinese temporal fingerprint.

One Step at a Time

The final characteristic of determining the unique Chinese temporal fingerprint lies in assessing the pace of life in China. Generalizing in this regard is difficult, as the majority of the Chinese population remains in agrarian poverty, while the thin remainder populates an upper-, and growing middle-, class. China also recently undertook, and arguably completed, its industrialization and is now attempting to move on to become a financial power similar to that of the United States and Great Britain. As a society, then, China is attempting to straddle the spectrum of development, encompassing both third-world poverty and first-world prestige. Attempting to manage the associated extremes of both fast and slow time pacing places stress on any culture that attempts it, so which aspect defines China's tempo?

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[51] Groot, *Religion in China*, 224.
[52] Jürgen Renn and Dahlem Workshop on Globalization of Knowledge and its Consequences, eds., *The Globalization of Knowledge in History: Based on the 97th Dahlem Workshop*, Max Planck Research Library for the History and Development of Knowledge Studies 1 (Berlin: Ed. Open Access, 2012), 277.

The answer is neither. Like many other aspects of human culture, the Chinese have taken the idea of the pace of life and defined it their way: *measured*. Within this term are notions that closely match the alien-ness from the introduction of this chapter. The Chinese may not have fluid, direct control of their temporal perception, but they do have the appearance of being flexible in whether they wish to go fast or slow. Ingrained into the concept is a perception of the cultural mastery of patience.[53] This is a culture that over thousands of years based its actions on the forecasting of calendars and almanacs. In order to ensure the best outcome, a decision or a deal would be delayed until the appropriate time. In the West, such delays carry a perception of wasting time, but to the Chinese these actions reflect more of a maturation of time.[54] In a sense, the space between events reflects an evolution toward an outcome, instead of a suspension of action.[55]

The Six Secret Teachings, an ancient Chinese military text, provides an example of this style of thought, stating that "the Sage takes his signs from the movements of Heaven and Earth . . . he accords with the Tao of yin and yang and follows their seasonal activity . . . he follows the cycles of fullness and emptiness of Heaven and Earth, taking them as their constant."[56] While this analysis of events occurs, the general must wait to move until the events unfold properly. "When he sees he can be victorious, he will arise; if he sees he cannot be victorious, he will desist."[57] In essence, this ancient instruction informs its user to wait for the situation to unfold properly before deciding whether to act or not. This style of thinking still pervades Chinese culture. Henry Kissinger, in his experiences interacting with the Chinese, concluded that "China will always do what China wants at its own pace."[58] This statement not only reflects the domestic focus that Chinese culture has cultivated over the millennia, but also suggests a sort of arrogance with regards to the activities of the outside world. In essence, no outsider could impose upon the strength of Chinese cultural time.

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[53] Levine, *A Geography of Time*, 44.
[54] Jullien, *A Treatise on Efficacy*, 50.
[55] Jullien, 50.
[56] Ralph D. Sawyer and Mei-chün Sawyer, eds., *The Seven Military Classics of Ancient China =: Wu Jing Qi Shu*, History and Warfare (Boulder: Westview Press, 1993), 69.
[57] Sawyer and Sawyer, 69.
[58] Kissinger, *On China*, 425.

Steadfastness, patience and arrogance do not imply a measured pace. However, these ideas do provide a basis for how the Chinese might be able to resist the increasing pace inherent in increased industrialization. Additionally, the Chinese either are, or soon will be, facing the same impacts that technology had in speeding up the American pace of life. In fact, all signs point to an impending acceleration of the Chinese way of life, especially in the urban areas. If all signs point to fast, and not a slow tempo, then how is that the Chinese stay measured? One way to see the continuing influence of classical Chinese culture in measuring modern China's pace is to analyze that nation's military perception of time.

Classics vs. Contemporaries

Part of the problem with analyzing the average pace of life in China is that the average Chinese person does not have an impact on their government. The CPC controls the people, as opposed to a democracy where the state serves the people. Examining the military arm of China serves as more of a direct representation of the pace of life in China, as the desired information is the pace of choice within the Chinese state. As this chapter has shown, the state of China has undergone many iterations and forms, but the culture of China permeates throughout. Therefore, this analysis of the Chinese military will proceed similarly, beginning with China's ancient classics before exploring more contemporary thoughts.

China's military history is turbulent. The history of China overflows with military competitions for hegemony over China, with some dynasties being short and others long. All contained eras of great bloodshed between dynasties as leaders sought a new balance. Because of the near-constant fighting, Chinese leaders learned early on not to risk everything in a decisive campaign, but instead stressed subtlety, indirection, and patient accumulation of relative advantage over the course of many years.[59] Psychological advantage became the key to victory, especially during the Warring States period, as the balance of power between rivals drove warfare to focus more on achieving victory through deception, treachery, and the use of stratagems.[60] The pinnacle of military

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[59] Kissinger, 23.
[60] Graff and Higham, *A Military History of China*, 21.

victory thus became winning a battle that shed no blood. Bloodless battles became the ideal, but ancient Chinese military writers also stated the need for coercive force, especially if the cause was just or no other option presented itself.

Time, as viewed from the ancient military perspective, sorts into three phases. These phases are the strategic preparation, waiting for the appropriate moment, and the strike. The strategic preparation phase focuses the general on attempting to set the correct stage for victory. Aphorisms abound, like "warfare is the question of the strategic balance of power" and "You must first attempt to divine the enemy's general and evaluate his talent. In accord with the situation, exploit the strategic imbalance of power."[61] The intent behind these statements is to force the general to delve into the context of battle. He must slow himself down and carefully analyze the entire scope of the field around him: the terrain, the weather, the troops, the morale. Additionally, the general must also consider what the opponent is thinking, and attempt to penetrate any ruses the foe may have put in his path. In this phase of the war, a slow, measured assessment is crucial for success, as opposed to the Clausewitzian *coup d'oeil* introduced in the chapter previous. Behind these notions is the idea that generals should not seek battles, and have the option to run away if necessary.[62] The battle should only occur if the balance of power is in favor of winning, or no other option exists.

Should the general decide on joining in battle, then he moves on to the next phase of waiting for the appropriate moment. This phase is where the strategic forces set in motion in the previous phase reach their culmination point. Similar to the Martian "waiting is" concept, successful generals must put themselves in a strategically dominant position so they can afford to wait until the opportune moment. In this position, the general is waiting for time to produce the desired outcome, instead of forcing the result.[63] Sun Tzu, one of the earliest Chinese writers of military theory, wrote, "those that excelled in warfare first made themselves unconquerable in order to await the moment when the enemy could be conquered."[64] Similar to this, the *Six Secret Teachings*, as mentioned

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[61] Sawyer and Sawyer, *The Seven Military Classics of Ancient China =*, 134, 218.

[62] Kohn and LaFargue, *Lao-Tzu and the Tao-Te-Ching*, 208.

[63] Jullien, *A Treatise on Efficacy*, 72.

[64] Ralph D. Sawyer, Mei-chün Sawyer, and Bin Sun, eds., *The Art of the Warrior: Leadership and Strategy from the Chinese Military Classics: With Selections from the Seven Military Classics of Ancient China and Sun Pin's Military Methods*, 1st ed, Shambhala Dragon Editions (Boston: Shambhala, 1996), 106.

earlier, prescribe that a general must wait out the events without movement, staying motionless unless victory appears probable.[65] This latter quotation gives the mental impression of a coiled viper, waiting to strike until the prey is within range. While contained within these quotations, the broader work around them mandates an acceptance that the enemy can attack at any time, and the general must be ready to counter it. While either actively defending or prepared to do so, a victorious general must always be ready to unleash the final phase: the offensive.

Where deliberate thought and action defines the first two phases, the latter phase embraces speed. In this phase, the previously static or defensive general pivots from inaction to a decisive offensive. Sun Tzu says that "if the enemy opens the door you must race in" and that "it is the nature of the army to stress speed."[66] Other ancient works stressed similar maxims, stating that "being unexpected and relying on suddenness," or "being as swift as a flying arrow, attacking as suddenly as the release of a crossbow" provide keys to the attacker's success.[67] Ultimately, this focus on speed is less "speed for speed's sake," and more akin to the vicious finishing blow of a duel. The general must not hold back, and must not hesitate, for the conditions for victory have arrived.

Underlying these premises is the Chinese notion of *shi*. *Shi* has no direct western translation, but is roughly similar to the "alignment of forces," the "propensity of things," or the "potential born of disposition."[68] This topic is of such importance that Sun Tzu devoted an entire chapter to it. The notion of *shi* establishes the conditions for strategic timing on the battlefield. Where Western schools teach their generals to always look for the right time to accomplish something, the school of *shi* teaches its generals to set the preconditions for that timing. Generals, therefore, should focus more on making enemies move to their will, and respond to their call, thus seeking "victory from the situation," and not from the men fighting.[69] For a master of *shi*, the battle moves at a predetermined pace, neither fast nor slow, but inexorably toward victory. An apt description of a general

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[65] Sawyer and Sawyer, *The Seven Military Classics of Ancient China =*, 69.

[66] Sunzi and Samuel B. Griffith, *The Illustrated Art of War* (New York: Oxford University Press, 2005), 213,223.

[67] Sawyer, Sawyer, and Sun, *The Art of the Warrior*, 109, 221.

[68] Secretary of Defense, "Annual Report to the Congress on the Military Power of the People's Republic of China," July 2002, 6. For a good English description of *shi*, see also David Lai's article "Learning from the Stones: A *Go* Approach to Mastering China's Strategic Concept, *Shi*."

[69] Sunzi and Griffith, *The Illustrated Art of War*, 140.

using *shi* is that he is operating on "strategic time."[70] Instead of focusing on the pace of events, he instead focuses on the overall ebb and flow of context around and within the battle, and is thus neither hurried or sloth to decision-making. This idea of *shi* provides the basis from which a measured time perspective takes form.

The reason that these ancient works have persevered through time is that Chinese generals repeatedly put these ideas to the test and found success through them. While the Warring States period is rife with positive examples, the contemporary period also has its share. For example, during the Japanese invasion of China before World War II, Chiang Kai-Shek, the political and military leader of the Republic of China, frequently ignored the maxims set forth by his ancestors and led his men to slaughter after slaughter. Though he had the advantage in numbers, Chiang's forces were out-equipped and frequently out-maneuvered by the Japanese.[71] Only after multiple defeats and massive losses of men and equipment did Chiang finally bow to the realization that *shi* was against him and must change tactics.

Opposite of Chiang was Mao Tse-Tung, who had already learned many lessons of fighting a better-trained, better-equipped, and more mobile army. Recognizing that Japan had the initiative and *shi* was against China, Mao sought a more mobile, yet evasive way to defend from Japanese aggression, supplemented by guerilla tactics and the occasional positional battle.[72] Mao had analyzed the enemy, and determined that Japan did not have the resources or willpower to engage in an extended fight for inland China.[73] Additionally, many Western nations, like the United States, had spoken out against the invasion and began to lend their support to China. Mao's strategy focused on delaying Japan long enough that an exterior force could be leveraged to then remove Japan from China. Where Chiang's forces initially sought to fight quick, decisive battles, Mao positioned his forces to wage a protracted campaign.[74]

Chiang's actions represent the effect of western culture competing against Chinese culture for dominance. Chiang refused to acknowledge the situation and change

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[70] Jullien, *A Treatise on Efficacy*, 72.
[71] Graff and Higham, *A Military History of China*, 222.
[72] Mao Tse-Tung, *Selected Works of Mao Tse-Tung: Volume II*, vol. 2 (Foreign Language Press, 1967), 137.
[73] Tse-Tung, 137.
[74] Tse-Tung, 114.

tactics as he had western backing and training, and therefore could not see past the need to counter the Japanese Army with his own fielded force. In a time of desperation, he turned to the Chinese communists, and their leader Mao, for inspiration. Mao utilized the guidance from the Chinese classics to devise a strategy of avoiding Japanese strength and prolonging the war to incorporate a more victorious *shi*.

Despite the timelessness, and possible correctness, of ancient Chinese teachings, the Western influence continues to have effects on the Chinese military after Chiang. Two leading officers of the People's Liberation Army wrote in 1999 about the effects of technology on Chinese society, bowing to the inevitability of its accelerative effects. Additionally, these officers sought shortcuts in the ancient strategy of waiting, offering up the notion that generals should search for ways to make the conditions of victory appear sooner than they usually would: "we do not believe that all wars must gradually progress in level-by-level sequence, accumulating until a fateful moment of destiny is reached. We believe that moment is something which can be created." [75] Where a Westerner might interpret this as meaning the general must move faster to accomplish his goal, these authors instead suggested that the same general should take advantage of the multiple new domains that technology has opened up to widen the scope of strategy. By staging military effects across a broader spectrum, a wise general can now influence the Tao of war more efficiently, and thus faster, making the conditions for success appear sooner. [76] This way of thinking does recognize an acceleration of life, but seeks to encompass it within China's desired pace. These thoughts allow the strategic thoughts of the general to remain measured, while also taking advantage of modern technological gains.

Ultimately, the Chinese military desires to internally dictate its time pacing. The Chinese will not achieve this by ignoring their enemy, but by focusing more on conducting military operations outside of the traditional battlefield. Should war occur, the battles will be fought where and when China wants them to occur, and on China's terms

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[75] Liang Qiao, Al Santoli, and Xiangsui Wang, *Unrestricted Warfare: China's Master Plan to Destroy America* (Panama City, Panama: Pan American Publishing, 2002), 168–69.
[76] Qiao, Santoli, and Wang, 170.

and at their desired pace. This approach to the pacing of time is necessarily a contextual, measured approach.

Conclusion

This analysis delineated a temporal fingerprint that is nearly opposite that of the Unites States. The Chinese have an extended outlook that stems from a long cultural history. This history pairs with a possible shortening of the individual future outlook as the result of technology and industrialization. Despite these latter factors, the Chinese cultural outlook remains eternal. The staying power for these factors lies squarely in the strength their culture has built up over the many millennia of China's existence. Recorded history does not contain a time where China was not, so why would a time exist in the future where China is not? Additionally, China's perspective on time also remains circular. The secular dominance of the country ebbs and flows, but the culture has always remained and will endure endless more cycles of stability and strife. Finally, while the time pace of individual Chinese is accelerating, the pace of time at the strategic level remains measured. Relative to the rest of the world, the Chinese maintain the ability to act on their own time and at the needs of context.

With the temporal characteristics of each culture defined, the next step is to provide comparisons of each aspect of the fingerprints to determine any relative strengths or weaknesses between the disparate outlooks on time. These comparisons will provide the basis for recommendations on how to incorporate these temporal elements into military interactions with different cultural fingerprints from the United States.

Chapter 4

The Eagle and the Dragon

Time flies like an arrow. Fruit flies like a banana.
<div align="right">- Anthony Oettinger</div>

Every fingerprint is unique to the individual. Each distinct fingerprint contains a standard set of characteristics that allow for comparison. For the human fingerprint, three specific characteristics exist by which to categorize and determine its structure: arches, loops, and whorls.[1] The specific combination and shape of these three characteristics makes each fingerprint distinct from any other.

Distinguishing the differences between *temporal* fingerprints requires establishing a similar set of comparable characteristics. Table 1 below the various temporal components derived from the two cultures just analyzed, as well as a label for each section's primary characteristic.

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Table 1: Structure for Temporal Fingerprint Comparison

Characteristic	USA	China
geometry	linear	circular
basis	clock	event
sight	short	long
orientation	future	past
tempo	fast	measured

Source: Author's Original Work
</div>

As shown in the table, the primary determinants for a temporal fingerprint are its geometry, basis, sight, orientation, and tempo. The first two characteristics, geometry and basis, deal with the figurative shape of the culture's time perception, and how this shape affects their military operations. The second two characteristics, sight and orientation, pertain to that culture's temporal outlook and how it affects preparations for military operations. The final characteristic examines the desired tempo of military operations.

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[1] Sir Edward R. Henry, *Classification and Uses of Finger Prints* (London: George Boutledge and Sons, Ltd., 1900), 17.

Comparing each of these characteristics will aid in determining what, if any, strategic implications exist in an interaction between the different aspects.

Similarities

One characteristic not contained in the table above deserves comparison as it is the one temporal similarity shared by China and the US. This similarity is the accelerating pace of life experienced by the people of both countries. As described in chapter 2, the increased reliance of the US on technology, as well as the higher fidelity of time determination, has caused the acceleration of life's tempo. The Chinese, seeking to thrive in the international system established by the US, have had to meld with that system's business practices and technologies to compete. These actions measurably accelerated to Chinese lives, especially for urban populations.[2]

The militaries of both countries also show a proclivity for a prompter pace. This leads to the expectation that for both countries, when unleashing military force, they will attempt to strike as hard and as fast as possible. For the United States, the desired operational tempo would be similar to that utilized in Operation Iraqi Freedom. The coalition used a strategy known as shock and awe to rapidly overwhelm the Iraqi front-line air and ground defenses while simultaneously striking command and control facilities.[3] Operation Iraqi Freedom capitalized on the parallel warfare idea posited by David Deptula, where force is applied simultaneously across all levels of war while uninhibited by geography.[4] The breadth and width of damage was designed as an attempt to inflict strategic paralysis on Saddam Hussein and therefore deny the Iraqis the ability to establish an effective defense. The result of these efforts was the fastest mechanized ground advance in the history of warfare.[5]

Admittedly, Operation Iraqi Freedom, similar to Operation Desert Storm, required a sizeable logistical advance element to establish the necessary force needed to

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[2] The Chinese metropolis of Guangzhou ranked 4th on a list of fastest-walking cities in the world. List can be found here: http://www.richardwiseman.com/quirkology/pace_method.htm, and is based on the research established in: Levine, *A Geography of Time*.

[3] Benjamin S. Lambeth, *The Unseen War: Allied Air Power and the Takedown of Saddam Hussein* (Annapolis, Maryland: Naval Institute Press, 2013), 49.

[4] Deptula, "Firing for Effect: Change in the Nature of Warfare," 4.

[5] Lambeth, 291.

accomplish the task. This preparation phase took months to complete and may not always be available to American forces. What the US does retain as an advantage, however, is a large airborne refueler fleet that can quickly extend the range of air forces as they deploy across the globe. This grants the US the ability to rapidly deploy and mass force in the air domain in response to a political need. Additionally, the US Navy has a fleet of world-deployed surface ships armed with cruise missiles that have repeatedly proven the ability to respond quickly.[6]

The Chinese record of modern force employment does not provide comparable examples. Since the establishment of the People's Republic, China has engaged in only two wars, the Korean War and a long war with Vietnam. The Chinese were a nascent industrialized society during the Korean War and thus had yet to experience any temporal acceleration. The conflict with Vietnam extended from 1979 through 1991, with the primary military action occurring in 1979. While the People's Liberation Army (PLA) did learn many lessons from the conduct of the war, the most significant lesson learned was how *little* that knowledge mattered in the wake of Operation Desert Storm.[7] The US experience in Iraq emphasized to China the need for faster, more efficient operations.

The tactical and operational benefits of military speed were not new concepts to China. The strike portion of a Chinese military operation, the third phase described in the previous chapter, attest to this. Knowing how fast the PLA will operate in a future engagement is difficult to know without military operations to analyze. The writers of *Unrestricted Warfare* advocate, however, that the pace should be fast, and all-encompassing. One principle the authors stress is that future wars should be omnidirectional, and that the battlefield should encompass every arena reachable through technology, be it natural, psychological, military, or private.[8] Another principle is that of "synchrony," where military objectives "may now be accomplished quickly under conditions of simultaneous occurrence, simultaneous actions, and simultaneous completion."[9] Additionally, utilizing "modern, high-tech measures, this process may take

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[6] For example, President Clinton's cruise missile diplomacy in the 1990's.

[7] Xiaoming Zhang, *Deng Xiaoping's Long War: The Military Conflict between China and Vietnam, 1979-1991*, The New Cold War History (Chapel Hill: The University of North Carolina Press, 2015), 191.

[8] Qiao, Santoli, and Wang, *Unrestricted Warfare*, 177.

[9] Qiao, Santoli, and Wang, 178.

the blink of an eye" to complete.[10] These concepts and their theoretical application emulate the prescriptions of Deptula's parallel warfare, but on a broader scale.

The conclusion drawn from the similarities of fast-paced lifestyles is that militarily the United States continues to set the global standard for speed. Any military seeking to conduct fast-paced operations will attempt to follow the US style of warfare to do so. This pace of warfare, however, is available only to those countries that can afford a large modern military, of which few exist. Therefore, harnessing the accelerating pace of life will continue to provide the US a temporal edge when combating cultures that attempt similarly fast military operations.

Differences

The temporal differences between these two cultures are many. The following sections will analyze each characteristic of both country's temporal fingerprints. Each section will provide an expanded definition of the pertinent characteristic. The analysis then provides relevant military examples of this characteristic. Each section finishes with a comparison of these examples to determine the interaction between different aspects of the same temporal characteristic. Of note, where the above similarity section dealt with the accelerating pace of life in China, the tempo section will focus more on the desired strategic pacing for military operations.

Geometry (Linear vs. Circular)

The characteristic of geometry pertains to how a culture views the flow of time, whether it be linear or circular. This shape reflects how a culture will treat events. Linear cultures define the entire span of time with a beginning and an end; the flow of time moves directly from one point to the next. In a circular culture, time moves without beginning or end. Additionally, these cultures perceive that time contains repeating patterns. This means that while humans make progress, the shape of human events resembles previously performed actions.

A method for discerning between these two types of temporal perceptions lies within each culture's perception of the word opportunity. Opportunity is defined as a

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[10] Qiao, Santoli, and Wang, 178.

favorable junction of circumstances or a good chance for advancement or progress.[11] In this regard, an opportunity is a welcome occurrence, but the definition provides no means for how to identify *when* this favorable set of circumstances will arise. Both linear- and circular-time cultures struggle with when opportunity exists, and they handle this struggle in different ways.

In the US, a linear-time culture, phrases that mark the fleeting measure of opportunity abound: opportunity knocks; opportunity gives one chance; never miss an opportunity; do not waste an opportunity. These pithy phrases all have something in common, namely the belief that an opportunity briefly appears and then is gone forever. This outlook of the world is decidedly linear, because the situation only arises once and then is lost forever to the past. Linear-time cultures, therefore, favor bold action when dealing with opportunity.[12] One must seize the opportunity to take advantage of it. In this regard, skill and a willingness to act are necessary to make the most of any chance.[13] Prepared or not, when chance opens the door to opportunity, one must step through or risk failure. It is no surprise, then, that members of linear cultures experience the stress of always having to be prepared and on the lookout for a better option. In a temporal outlook that only goes one way, Americans are obliged to act; they therefore often act quickly to accomplish anything.[14]

In China, a circular-time culture, some of the perception of opportunity is the same. Opportunity remains a brief moment in time for a favorable occurrence where success requires taking action. The difference from linear time is that the circular-time outlook adds two more elements to this concept. The first is that opportunities repeat—if missed it can, and will, come around again if the circumstances are right. The second is that it is possible to affect the context surrounding the development of an opportunity, fostering its development and thus encouraging it to occur. Critical to these additions is the perception that "what is going to happen" is the direct result of "what has happened," and instead of being one-way, as in a linear culture, in a circular culture these two

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[11] Merriam-Webster, Inc, ed., *Merriam Webster's Collegiate Dictionary*, Eleventh edition (Springfield: Merriam-Webster, 2014), 870.
[12] Jullien, *A Treatise on Efficacy*, 53.
[13] Jullien, 61.
[14] Jullien, 63.

concepts constantly react to each other.[15] Essentially, by understanding the cause-and-effect relationship between these two concepts the Chinese have created two points of action in dealing with every opportunity. One is the brief moment at the end where opportunity occurs, but the other is the moment at the beginning where an action is taken to shape opportunity's rise.[16] Thus, opportunity becomes less of a fleeting chance, tending more toward "the most suitable moment to intervene in a course already begun."[17]

The tension between these first and second actions of opportunity is explained by the Chinese term *shi*. Where *shi* is inherent to the potential of a situation, *shi* can be shaped by conditioning to drive a situation towards the desired opportunity.[18] Critically, understanding *shi* requires acknowledging that its potential stems solely from "the position you occupy, not from yourself."[19] The things done or accomplished do not matter as much as the as-yet unrealized advantage that those accomplishments now offer. Moreover, the Chinese favor an indirect approach as the optimal way to develop a situation.[20] Unlike the heroes of Western mythology who succeed through bold actions, the Chinese idealize themselves more as farmers who cultivate success by planting seeds of opportunity.

The dichotomy between those two perspectives is striking and provides the basis for describing a conflict between these types of cultures. Linear-time cultures must be postured to move when events dictate, otherwise an opportunity to strike will be missed. In this way, linear cultures are like a crouching tiger—muscles tensed, body and mind focused, waiting for the moment of vulnerability to strike. Circular-time cultures also prepare themselves to move, but their indirect involvement in the event's development allows for a different posture. In essence, this style of thought better matches a coiled snake – arrayed so that its muscles are relaxed, yet still able to immediately strike a presented opportunity. The tiger and the snake both posture to attack, but the tiger's

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[15] Jullien, 73.
[16] Jullien, 65.
[17] Jullien, 65.
[18] Jullien, 17.
[19] Jullien, *A Treatise on Efficacy*, 27.
[20] Jullien, 48.

posture requires a continual expenditure of energy while the snake's makes the preparation more comfortable to hold and therefore potentially more responsive.

These metaphors apply to a potential confrontation between these cultures. As the tiger prepares to pounce, its force buildup is visible and measurable. Like the US force buildup before Operation Desert Storm, the buildup is both an imminent threat and a deterrent to counter action. Its obviousness, however, and the effort required to maintain that posture, presents only a limited-time threat to the opponent.[21] The snake is a different challenge, as it is difficult to tell when, or if, it will strike. The US fought against this temporal style throughout the Vietnam War. Not wanting to cause another Korea by instigating a Chinese intervention, the US utilized a tactic of gradual escalation—in an operation known as Operation Rolling Thunder—to ensure it would not threaten China. Inherent to this logic was the experience that the snake (China) had fangs and could strike unexpectedly. The US attempted to bring the North Vietnamese to the negotiation table by utilizing increasing amounts of air power. Without knowledge of how or when the Chinese would respond, the US was forced to tiptoe their actions through North Vietnam, while hoping not to trigger an undesirable escalation.

Escalation occurred anyway, though as a function of the North Vietnamese's unexpected Tet Uffensive. The focus of Operation Rolling Thunder was to apply pressure to the North Vietnamese leadership by increasing their cost of the war and interdicting supply deliveries into South Vietnam, all as an attempt to wither the Viet Cong infestation in the South.[22] US military leaders thought that the operation was working well until the country-wide Viet Cong offensive started, disabusing them of that notion.[23] After Tet, the US military came to realize that their efforts to stop the flow of logistics into the South had not significantly hindered the Viet Cong's development at all.[24] In essence, the US had focused its efforts on a distant snake, while ignoring the one growing

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[21] A Chinese critique of Iraq in the build-up to this fight was to ask why the Iraqis did not attack the US early in its force projection phase to prevent it from occurring. John Andreas Olsen, *Strategic Air Power in Desert Storm*, Cass Series--Studies in Air Power 12 (London ; Portland, OR: Frank Cass, 2003), 236.
[22] Mark Clodfelter, *The Limits of Air Power: The American Bombing of North Vietnam* (Lincoln: University of Nebraska Press, 2006), 74–75.
[23] Clodfelter, 84.
[24] Clodfelter, 88.

under its feet. Sensing weakness, the Viet Cong snake underfoot struck in an attempt to seize the opportunity.

These experiences suggest that conflicts with circular-time countries will be different from traditional Western force-on-force war experiences. Circular cultures favor deception over overt action. They will posture patiently, waiting for the other side to make a mistake or to lose defensive readiness before striking. Moreover, they will present themselves in a manner where their readiness is difficult to ascertain. Finally, a circular-time culture focuses on the shaping phase of operations to prepare the battlefield. They will attempt to develop conditions unfavorable for the other side well before combat occurs.[25] Countering this posture within a linear-time culture is difficult yet possible, requiring a long-term strategic focus and plan for countering any adverse shaping developments. When dealing with differing temporal geometries, the strategic battlefield develops well before armies clash.

Basis (Clock vs. Event)

The basis characteristic of a temporal fingerprint provides an additional measure for reinforcing some of the distinguishing aspects of a fingerprint's geometry. This aspect defines whether a culture is either clock-based or event-based in its conception of time. These ideas relate to geometry in that, generally speaking, a clock-based culture will also be linear (e.g., the United States and Western Europe), while an event-based culture will also be circular (e.g., China and India). Exceptions exist, however, as some Arab nations, like Saudi Arabia and the United Arab Emirates, hold a linear outlook while also maintaining a traditional event-base conception of time.[26] Unlike the geography characteristic, however, temporal basis focuses on the timing of occurrences.

Unsurprisingly, clock-based cultures put a premium on measuring the passage of time. Every passing second is fleeting, generating a desire for action to keep up with the

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[25] An example of this strategy is provided through an ancient Chinese aphorism: "Thus one who excels in warfare does not await the deployment of forces. One who excels at eliminating the misfortunes manages them before they appear. Conquering the enemy means being victorious over the formless." From Sawyer, Sawyer, and Sun, *The Art of the Warrior*, 101.

[26] These cultures are predominantly Islam, which is linear-based, yet place great emphasis on ceremony and events. For example, *salat*, the traditional daily prayers, occur just after waking up, before going to bed, and three other times based on the sun's position during the day.

clock's unhurried yet inexorable pace. Failing to act, or a lack of action, is thus perceived as a waste of every precious moment that passes.[27] From the US perspective, this outlook has taken a variety of forms. Militarily, it has prompted a desire for near-constant motion in combat operations. Perhaps in an attempt to meet Clausewitz's ideal form of war, which consists of constant fighting without pause, the US military designs its operations to almost constantly apply pressure and generate effects against the enemy. First conceptualized and applied in Operation Desert Storm, this notion gained greater fidelity in Operation Iraqi Freedom where US forces applied around-the-clock pressure to the Iraqi regime. The Iraqi defense shattered as a result, failing to appear for battle in many areas of the country.[28]

A desire for action also encompasses the US political structure. As a democracy, American politicians must marshal and succor public support for combat operations.[29] When gained, politicians perceive that public support as a ticking timer set for a finite amount of time. Military operations, therefore, must be executed quickly and efficiently to achieve political objectives before this clock runs out. The US has faced this fact many times. In World War II, war weariness within the public led to increasingly destructive measures by the allies to end the war on both fronts, with the US moving from precision bombing to firebombing and then the nuclear bombing of Japanese cities.[30] During the Vietnam War, President Johnson dealt with an increasingly disaffected public whose disappointment over his handling of the conflict proved decisive in his decision not to run for a second term.[31] President Nixon also faced public pressure to finish the Vietnam War along with self-imposed pressure from campaign promises to end the conflict.[32]

Where the above examples provide examples of public temporal pressure to cease action, the opposite is also possible. One type is a demand from the public for a prompt

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[27] Jullien, *A Treatise on Efficacy*, 50.

[28] Lambeth, *The Unseen War*, 117, 139.

[29] Edward Luttwak, *Strategy: The Logic of War and Peace*, Rev. and enl. ed (Cambridge, Mass: Belknap Press of Harvard University Press, 2001), 50.

[30] As Tamie Biddle noted, the shortness of time available "had become an obsessive compulsion" driving the US political leaders to find an end to the war. See Tami Davis Biddle, *Rhetoric and Reality in Air Warfare: The Evolution of British and American Ideas about Strategic Bombing, 1914 - 1945*, Princeton Studies in International History and Politics (Princeton, NJ: Princeton Univ. Press, 2002), 267.

[31] Stanley Karnow, *Vietnam, a History*, 2nd rev. and updated ed (New York, N.Y: Penguin Books, 1997), 580.

[32] Karnow, 597.

governmental response in reaction to a perceived slight or attack. Categorically similar to a significant emotional response, this style of pressure demands responsive action as soon as possible to satiate the public's desire for vengeance. Public outcries can occur on any basis and over any possible slight or action. Three events—the bombing of the USS Maine in Cuba, the attack on Pearl Harbor and the destruction of the Twin Towers on 9/11—particularly stand out for the significant military response they engendered. The US conducted war in response to each of these actions, the first against Spain, the second against Japan, and the latter against terrorism.[33] Not all public outcries result in war, of course, but the responsibilities inherent to a democracy demand that government responds in some way to public grievance. Moreover, that demand is often tacitly accompanied by an expectation of promptness, a demand that the governing body take immediate action. Action and reaction thus describe the constant state of affairs in clock-based cultures. Motion, or the perception of it, is required to meet the needs of its cultural perception of time.

Event-based cultures experience time differently, in that every moment is an experience and these experiences give the world definition. Reality becomes defined by a process of unfolding, where the mind must adapt to each new moment revealed from the moment before it.[34] Additionally, being embedded in the unfolding process allows these cultures to gain a perception of the overall development of each event. Instead of action and reaction, event-based cultures are focused on the duality of cause and effect. Seemingly similar, the action-reaction duality is inherently *active*, while the cause-effect duality is inherently *passive*.

Comparing the experiences of an urban businessperson and a traditional farmer highlights these differing dualities. Daily, the urbanite awakes to an alarm, leaves by the appropriate hour to reach work on time, toils for a length of time, then returns home to a portion of personal time before going to sleep. This process repeats the next day. Each of these events occurs as a result of an active relationship with the clock, which defines the beginning and end of each activity.[35] Contrast this with the traditional farmer who rises

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[33] The US officially declared war in the first two cases, and less officially endorsed the use of military force in the third.
[34] Jullien, *A Treatise on Efficacy*, 72.
[35] Levine, *A Geography of Time*, 82.

with the sun, leads his cows to pasture shortly after, eventually leads them to water when it appears they have finished eating, and then returns them home later in the afternoon.[36] As opposed to being on a set schedule, the farmer works his day around the subjective well-being of his cows. While he does have actions to perform, these actions derive from his position in the overall flow of events, of which he is a semi-passive participant. The farmer does not control the position of the sun nor when the cows have had their fill.

An event-based perspective provides that culture with two possible benefits, especially when compared to a clock-based culture. One is that as a passive participant in an unfolding reality, each person is more inclined towards having patience. In Burundi, provider of the farming example above, anyone requesting an appointment with a farmer must do so based on the cycle of cows. "When the cows go to water," or "when the cows come home" are common time references, yet these events vary by hours each day.[37] Meeting someone based on one of these events thus implies a large chunk of the day within which the desired meeting may occur. While this temporal inaccuracy may make some Westerners twitch, this is a norm for event-based cultures who feel no time pressure to make things happen faster or slower than they should. They have "acceded to a logic of unfolding," allowing each event to happen by itself and of its own accord.[38]

The actions of the Burundi farmers reflect a passivity to the world's events. Strategists, however, cannot afford such nonchalance and must produce some involvement in world affairs. In an event-based culture, crafting strategy does not assume direct linkage between action and event, but instead implies a cultivation of events. This cultivation refers back to the cause-and-effect relationship introduced in the geometry section, where the Chinese perceive two events, one that causes the possibility of a desired outcome, and the other being the desired outcome itself. This mindset holds that the Chinese as an event-based culture have learned to *implicate* an event, fostering the conditions surrounding it to favor the event's rise, eventually causing it to occur.[39] Admittedly, establishing the initial event usually does require some action, but generally, this action is much smaller than one required later should the situation not develop

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[36] Levine, 87.
[37] Levine, 87.
[38] Jullien, *A Treatise on Efficacy*, 22.
[39] Jullien, vii.

favorably. This philosophy is akin to the idea that a falling snowflake can start an avalanche.

History is replete with examples of military operations in event-based cultures because clock-based cultures are a recent phenomenon. A focus on China, however, allows a determination on how this specific event-based culture utilizes its military to meet the needs of events. An overview of some of China's past dynasties reveals that the typical event that Chinese leaders sought was recognition for dominance and leadership of all-under-Heaven. This premise defined China's squabbles for millennia in what were primarily internal conflicts.[40] In the Warring States period, for example, competitors fought for control of China for almost 250 years. During this time, political leaders spent decades slowly building forces and utilizing extreme patience to avoid preemptive attacks by opponents, all with the goal of achieving dominance over them.[41]

The primarily-referenced ancient Chinese military writings descended from this same period. These works, which have guided Chinese generals for the conduct of war, are full of examples of how to use waiting and patience as a weapon. Specific to the strategic shaping of events mentioned above, the *Six Secret Teachings* advocated that excelling in warfare occurs before forces deploy, and that "one who excels at eliminating the misfortunes manages them before they appear . . . conquering the enemy means being victorious over the formless."[42] With ideals like this, one conclusion possibly drawn from ancient China was that the use of military force was more of a last resort. Indeed, many of the imperial transfers of power resulted from causes other than war, like a successful palace coup or military revolt.[43] Additionally, the Chinese understood the need for the right force employed at the correct time. From *Military Methods*: "if the army employs great force but the achievements are small, it does not understand time."[44] Implied in this statement is that an ineffective use of force means that the general did not determine the most optimal timing for its use. The fact that Chinese military history is just as filled with failures as it is with successes grants the conclusion that even event-based cultures, with

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[40] Graff and Higham, *A Military History of China*, 40.

[41] Michael Pillsbury, *The Hundred-Year Marathon: China's Secret Strategy to Replace America as the Global Superpower*, First edition (New York: Henry Holt and Company, 2015), 40.

[42] Sawyer and Sawyer, *The Seven Military Classics of Ancient China* =, 68–69.

[43] Graff and Higham, *A Military History of China*, 53–54.

[44] Sawyer, Sawyer, and Sun, *The Art of the Warrior*, 116.

their greater focus on the flow of world events, have difficulty determining the right time to take action.

Further lessons come from an examination of contemporary Chinese military conflicts. The timing and rationale behind the Chinese involvement in the Korean War provides the first example. The context of China before the Korean War was that of a nation just recovering from a civil war, with its leadership considering an invasion to conquer the remaining Nationalists who had fled to Taiwan. If the North Korean invasion caught the West off-guard, China, too, was caught by surprise as it had focused in another direction. The Chinese assumed that the North Koreans would inform them of their invasion plans, but they did not inform them of the timing of their invasion. Following the United Nations' response, three months of hard negotiation occurred between the Chinese and Soviets regarding an intervention. The Soviets needed Chinese forces to help as promised, while the Chinese repeatedly declared they needed more Soviet assistance to wage war successfully.[45]

Once committed to the fight, the Chinese crafted a scenario to lure the UN forces into a false sense of security. The first phase took place on 19 October 1950, when a small number of Chinese forces crossed the Yalu. These forces baited UN attacks and drew UN counteroffensives into an area where overwhelming ground power could smash them.[46] On November 16, these forces withdrew north and released some prisoners in an attempt to trick the UN forces into thinking the Chinese were retreating. Convinced by the ploy, UN forces continued to push north where, at the end of an overstretched supply train, they were overrun by massive human wave assaults on November 25. After six months of intense back-and-forth fighting, the war reached a stalemate around the 38th parallel, where the conflict stagnated until the armistice was signed in July 1953.

This war provides some event-based cultural perception examples. The first is in the Chinese response to the Korean situation. Despite a desire to finish their separate civil war, the Chinese halted these preparations to move a large ground force (an Army plus nine other divisions) to the China/Korean border in case the Koreans needed assistance.[47]

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[45] Xiaoming Zhang, *Red Wings over the Yalu: China, the Soviet Union and the Air War in Korea* (College station, Tex.: Texas A & M University Press, 2003), 53–54, 56, 58, 66.

[46] Zhang, 76–77.

[47] Zhang, 59.

This pre-deployment was the essential first step to the broader intervention that followed. The next major event was the UN amphibious counterattack at Inchon on 15 September 1950, and in the few weeks that followed, the Chinese leadership came to see the UN's forward progress as a threat that required a response. Interestingly, this decision was made on 5 October 1950, three days before General MacArthur's forces crossed the 38th parallel.[48] The timing of this date means that it was the growing strength of the American presence on the peninsula, not their crossing of the 38th parallel, that swayed the Chinese toward intervention.

Finally, the timing of the primary assault on 25 November 1950 is also indicative of an event-based perception. After the Chinese withdrawal north, these forces postured for another attack south at the proper time. In searching for clues that the UN forces had become overconfident, MacArthur's famous "Home by Christmas" proclamation on November 24 became an obvious indication that the time to strike had come.[49] In summary, the Chinese experience leading to their involvement in the Korea War was a patient affair where they cultivated the events before their main assault until *shi* shifted in China's favor. They did not succumb to an external time pressure for action, but instead acted when it favored them to do so. A conclusion drawn from analyzing this experience is that even when surprised by events, an events-based culture will first strive to catch back up to the pace of reality before taking additional measures to place itself in a better position. This approach of calculated response differs from a clock-based culture, which prefers a rapid riposte to a surprise. In China's case, this meant preparation and then patiently waiting for the appropriate time to strike.

Whereas the Korean War presented the event-based perspective in a defensive environment, the first stage of the protracted conflict between China and Vietnam begun in 1979 provides an offensive example. The context behind this conflict between China and Vietnam began during the Vietnam War, where the North Vietnamese gained massive amounts of military strength from its communist supporters, and legitimacy and training from surviving major military assaults from one of the world's two superpowers.

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[48] Zhang, 67.
[49] "The Firing of MacArthur," accessed May 21, 2018, https://www.trumanlibrary.org/dbq/docs/macarthur/MacArthur_DocumentSet.pdf.

As North Vietnam's strength increased, they began to favor Moscow over Beijing because the Vietnamese's historical pride and sensitivity led it to distrust its closer northern neighbor. Additionally, following their unification in 1975, the Vietnamese began to gain hegemonic aspirations, aspiring to sway its neighbors of Laos and Cambodia away from China's overarching influence. The proverbial final straw occurred in the years between 1975 and 1978, where Vietnamese border incursions increased year-on-year, with 1978 seeing 1,100 different clashes. [50]

When diplomacy failed, China turned to its military for a solution in late 1978. This tactic was unsurprising, as the People's Republic of China had often applied carefully chosen military force as a solution to border disputes with other countries.[51] Strategically, China saw a limited military engagement as a means to curb both Vietnamese and Soviet expansion while also increasing China's weight on the world stage. The operational goal was to capture the town of Lang Son, thereby endangering Hanoi directly, and then to execute a controlled retreat, all while seeking out and destroying as much of the Vietnamese Army as the Chinese could find. At its core, this conflict was designed from the outset to remind Vietnam precisely who the primary power was in Southeast Asia. [52]

China's event-based philosophy in choosing this conflict shines through in various areas. In context, the Chinese observed four critical areas that needed redressing.[53] First, they saw the rapidly re-arming and strengthening Soviet Union, countered by a weakened US and Europe, as a threat to China's survival. Second, China needed to modernize and wanted a more secure external environment while it focused inward. Third, the Vietnamese and Soviets had recently signed a mutual defense treaty that Beijing perceived to be hollow. Fourth, and finally, the PLA had not fought a war in over thirty years and needed combat experience both to ensure China's survival and prove that China was a force on the international scene. These cues, combined with approval for action from the US, placed *shi* squarely in China's favor for moving south in aggression.

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[50] Zhang, *Deng Xiaoping's Long War*, 29, 40, 41.
[51] Graff and Higham, *A Military History of China*, 267.
[52] Zhang, 42, 65–66, 104.Zhang, 42
[53] Zhang, 54-55.

The other times that China's event-based philosophy shone through are in the commencement and end of China's invasion. Attacking Vietnam required an overwhelming abundance of manpower, as China believed it had a qualitative disadvantage in equipment. Mobilizing hundreds of thousands of troops, China sent a majority of them to reinforce its northern border with the Soviet Union as it lined up over 200,000 to invade Vietnam.[54] With much of Vietnam's military deployed in Cambodia, Chinese planners determined that the balance of power favored an attack, and so, on 17 February 1979, China invaded Vietnam. Importantly, in making its assessments, China did not include tens of thousands of well-trained, experienced Vietnamese militia forces. This critical intelligence failure prevented China from achieving some of its operational military objectives.[55] However, China achieved its primary objective by capturing Lang Son, the event that triggered China's forces to return home.

While not a stunning exhibition of tactical prowess overall, this Chinese operation did have significant strategic implications. As desired, the Chinese were able to claim victory by closing to within striking distance of Hanoi before voluntarily withdrawing, proving that the country was vulnerable to China's military might. Additionally, China's actions provided evidence that the USSR's promises to its allies were hollow, as it did not come to Vietnam's aid despite a mutual defense treaty for that purpose. China's military also learned valuable lessons about fighting a modern enemy. Moreover, this attack generated significant second-order effects, in that it allegedly set back the Vietnamese economy by fifteen years as well as embroiling them into a prolonged border dispute that drained Vietnam of needed strength.[56] In short, the Chinese invasion of Vietnam was a cold-blooded, realist power play by a nation that needed to make a move internationally. China executed that move in a carefully timed and executed manner that set in motion further plans for its future development and growth.

Based on the above analysis, the idea of time pressure provides a point of friction in a conflict between clock-based and event-based cultures. Time pressure causes a need to act or perform a task based on a perception of surrounding circumstances. This idea

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[54] Zhang, 88.
[55] Zhang, 93.
[56] Zhang, *Deng Xiaoping's Long War*, 112.

covers an entire spectrum of human activity, from individuals experiencing a timed standardized test, to states attempting to maneuver within international relations. Within this concept, clock-based cultures will always feel some native pressure to act by being specifically tied to a clock.[57] Opposing them are event-based cultures who do not feel an inherent need to act and instead are content to wait until the moment for action arrives. The latter are less likely to act hastily, and more likely to take small, calculated steps. Moreover, these small steps are likely to grow into more prominent effects later.[58]

The best way to counter an event-based culture is to cause their desired events to happen when least expected. Causing this is difficult to accomplish, as it requires an understanding of the enemy's strategy and its essential timing elements. In concept, this process is similar to interfering with the enemy's strategic OODA loop. An event-based OODA loop is necessarily very large, however, as it must gather and assess multiple steams of information before coming to a decision. This size makes direct interference difficult, as the large amount of information collected can compensate for direct interference. This intelligence-heavy approach is also its weakness; intelligence can be deceived. A clock-based culture facing an event-based culture must be prepared to use deception and denial to counter-shape the opponent's world perception, giving it multiple false indications either forward or backward on their expected timescale. The ideal program is one that focuses its efforts on shifting the enemy's perception in a single time direction, increasing the chances of its effectiveness. Unlike the temporal geometry, deceiving an event-based culture is an on-going task through as many phases required to achieve the desired temporal effect.

Sight (Far vs. Short)

Moving away from geometry, the characteristic of sight is the first of two temporal aspects that address how cultures prepare for future events. Similar to human vision, temporal sight covers a spectrum, but one of human experience instead of light.

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[57] Jullien characterizes this as the pleasure related to adventure – as clock-based cultures experience each moment without true relation to the previous one, the future arrives with a bit of thrill. But this desire for adventure makes the clock-based culture *need* to act in order to achieve fulfillment – hence the inherent time pressure to do something. Jullien, *A Treatise on Efficacy*, 82.

[58] Jullien, 125.

One end of this spectrum is the very short or momentary span of time: a focus on moving from one moment to the next with no regard to what follows after. Anyone who has trained for or experienced combat may recognize this outlook from their first engagement, where training flees the mind and a focus on survival becomes paramount. Balancing this momentary temporal sight is a far-sightedness so near-infinite that it is limited only by the bounds of human imagination. Thankfully, these two bounding criteria are the exceptions more than the rule for defining human experience.

Culturally, the sight characteristic favors the middle of this temporal spectrum. A short-term culture is one that prefers moving from day to day, dealing with each event as it occurs. The future receives some regard, but one focused nearer to the present, emphasizing the coming days and weeks, rather than years. These cultures do engage in future planning—short-term cultures must still plan out future endeavors like crop planting or technology development. A short-term culture is one that prefers to focus on what is next and grudgingly plans for what follows. The opposite of short-term is a culture that favors the long-term. While acknowledging that events happen moment to moment, long-sighted cultures prefer to focus more on the future, with years and decades representing their scale of choice.

To better describe this comparison, a car analogy is useful. A short-term culture is akin to the driver of a vehicle. The driver has an idea of the destination and the path to get there, but is more focused on the operation of the car and the vehicles surrounding it. A long-term culture is like a passenger in the car, content to look out the window and observe the world as it goes by while focusing on the destination. This passenger could also participate in more immediate matters by aiding the driver in navigation, looking for police, and indicating possible accidents. This passenger's focus, however, is more on where they are going than on these other temporary, present-based activities.

As these are elements of a temporal spectrum of activity, a middle ground is also definable. A moderate temporal outlook provides a balance between short- and long-term positions. The sight comparison does not work as well, for while the moderate outlook is equitable to 20/20 vision, it does not imply that this temporal stance is perfect or the ideal. Instead, think of the moderate outlook as the observer in a self-driving vehicle. Sitting behind the wheel, this person is still responsible for monitoring traffic, but by not

having to drive or navigate, is mentally freed to ponder the destination similar to the passenger from the long-term culture.

Of the two cultures examined, the United States favors an active driver, or short-term focus, while China prefers to be a passenger, or more long-term focused. For example, individuals in the US favor fast-food options for the short-term convenience they provide, while ignoring the long-term health consequences of consuming low-quality food. Strategically and politically, the US has had three National Security Strategies published in the last eight years, and four in the last sixteen. Each of these strategies reflects a change in political leadership of the country, which occurs every two to four years with the election cycle. Rapid changes in leadership additionally affect the US military's operations, providing variable levels of guidance and restrictions that affect how the military conducts its business.

Separately, the US military prefers the middle temporal sight characteristic. Hard-won experience from the events of the Cold War has crafted a machine that often expends effort on planning for a multitude of world events, while also maintaining a ready posture to respond to any event in the world at a moment's notice. As the culture of the US becomes increasingly short-term, however, this stance has become more challenging for its military to maintain.

An example of this tension comes from a comparison of US military occupations of other countries. The first is Japan, where the US provided occupation forces following the end of World War II until the Treaty of San Francisco came into effect in April of 1952. Before the occupation, the military crafted many options for occupying Japan. Most, like Operation Downfall, dealt with the expected need to invade a hostile Japan determined to fight to the bitter end.[59] Strategists prefer options, however, and in May 1945 MacArthur ordered his staff to prepare an alternate option should Japan surrender before its invasion occurred. Dubbed Operation Blacklist, this military option prescribed the arrival, basing, and posture requirements for up to twenty-two Army divisions supported by additional naval and air elements.[60] Following the articles outlined in the

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[59] Eiji Takemae, Robert Ricketts, and Sebastian Swann, *Inside GHQ: The Allied Occupation of Japan and Its Legacy* (New York: Continuum, 2002), 37.
[60] Takemae, Ricketts, and Swann, 39–40.

Potsdam Proclamation, the deployed members in support of Blacklist later stayed in place until a peaceful, democratic Japan rose up ready to rejoin the world.[61] Pairing deployed force with a long-term vision for the future, the Allied occupation of Japan successfully renewed a nation, resurrecting it from the wreckage of the old in just seven years of effort.[62]

Fast forwarding fifty years to the invasions of Iraq and Afghanistan, the story in these countries is very different (and remains on-going). The United States invaded Afghanistan near the end of 2001 in response to the terrorist attacks on the World Trade Center in New York City. The goal of this invasion was to remove the Taliban from power in Afghanistan, thereby taking away a haven for Al Qaeda recruitment and training.[63] The US invasion of Iraq in 2003 followed, in a quest to topple the regime of Saddam Hussein and remove the threat of terrorism while also eradicating the Iraqi threat of Weapons of Mass Destruction.[64] While both of these conflicts have officially ended, military operations to ensure the safety and stability of both states remain ongoing as of this writing.

Some of these issues derive from the US's application of short-term answers to what is a long-term problem. Unlike Japan, the military occupations of both Iraq and Afghanistan are disproportionately small. At the height of its occupation, the US had 166,000 troops in Iraq and another 100,000 in Afghanistan.[65] These troop numbers are proportionately equal to the 430,000 troops deployed for the security of Japan, in that they represent a ratio of 5.7 troops per 1,000 citizens. This ratio was sufficient for Japan, which remained relatively peaceful during its transition. This ratio was insufficient though for Iraq and Afghanistan, where analysis of past successful stability operations would dictate a necessarily higher ratio of 13 to 20 troops per 1,000 citizens given the

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[61] Takemae, Ricketts, and Swann, 41.

[62] The early crucible of the Cold War and both country's resultant needs for each other certainly helped this process along as well.

[63] "The U.S. War in Afghanistan | Council on Foreign Relations," accessed March 21, 2018, https://www.cfr.org/timeline/us-war-afghanistan.

[64] Lambeth, *The Unseen War*, 19.

[65] Danielle Kurtzleben, "CHART: How The U.S. Troop Levels In Afghanistan Have Changed Under Obama," NPR.org, accessed March 21, 2018, https://www.npr.org/2016/07/06/484979294/chart-how-the-u-s-troop-levels-in-afghanistan-have-changed-under-obama; "Chart: U.S. Troop Levels in Iraq," CNN, accessed March 21, 2018, https://www.cnn.com/2011/10/21/world/meast/chart-us-troops-iraq/index.html.

transitional instabilities.[66] Additionally, the US's political leadership set time-based deadlines for ending the contemporary conflicts, instead of the condition-based requirements utilized for Japan.[67] These declarations allowed the occupation opponents to wait until US and coalition forces departed before continuing the fight. Since the departure, Iraq came under siege from a group known as the Islamic State of Iraq and Syria (ISIS) which conquered almost half of Iraq and Syria before a new coalition achieved ISIS's defeat at the end of 2017.[68] In Afghanistan, a military presence has remained since the end of official occupation in 2014 as the security situation remains under constant threat from the still-fighting Taliban.[69] At the time of writing, the Taliban have re-conquered more than a third of Afghanistan, and US forces are deploying back into the area.[70]

What is clear from this analysis is that the US military still retains some capability to solve long-term problems. Iraq and Afghanistan remain as state entities. Increasingly, however, the US military is being applied as short-term solutions for longer-term problems. The irony is that this preference has exacerbated instead of solved these problems. In each case above, the military stabilized the area but was then scaled back in strength and capability, allowing for a resurgence in the destabilizing elements. The American preference for a short-term temporal culture is hampering the US military from effecting a necessary moderate temporal stance. Especially when a temporally-balanced approach to warfare is required, a political preference to impose short-term solutions will have ramifications should the US militarily combat another long-term temporal culture.

As an example of a far-sighted culture, China's history can provide examples of how this outlook affects their way of war. As mentioned earlier, Chinese leaders from the Warring States period maintained long periods of patience. These warlords were

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[66] Broemmel, Jarett, Terry L. Clark, and Shannon Nielsen. "The surge can succeed." *Military Review* 87, no. 4 (2007): 110.

[67] "Agreement Between the United States of America and the Republic of Iraq On the Withdrawal of United States Forces from Iraq and the Organization of Their Activities during Their Temporary Presence in Iraq," n.d.

[68] Alex Lockie, "ISIS Has Been Militarily Defeated in Iraq and Syria," Business Insider, accessed March 21, 2018, http://www.businessinsider.com/isis-military-defeat-iraq-syria-2017-11.

[69] CBS/AP, "U.S. Formally Ends the War in Afghanistan," accessed March 21, 2018, https://www.cbsnews.com/news/america-formally-ends-the-war-in-afghanistan/.

[70] "The U.S. War in Afghanistan | Council on Foreign Relations."

primarily focused on the objective of claiming all-under-Heaven, and slowly cultivated their power as a means to do so, sometimes waiting decades for a favorable power balance before executing an attack. Additionally, the writings and speeches of Mao Tse-Tung provide examples. In his work on protracted war, Mao outlined to his people the necessity of his strategy to achieve victory against Japan in World War II. Instead of utilizing Western-style military tactics, which the Japanese were better at and had not worked for China, Mao advocated looking to the future.[71] What he saw was a Japan that was currently strong yet slowly fading against a solidifying Western advance.[72] Mao's long-term focus saw a future where Japan would not exist, thereby devising a strategy that kept the Chinese as a military force in being – a constant threat to the Japanese occupation that avoided large decisive battles to maintain its destabilizing effects.

A more recent example comes from the China-Vietnam conflict. While initially begun to curb Vietnamese expansionism, the conflict degenerated into a decade-long border skirmish that slowly bled the Vietnamese of strength until they capitulated. Throughout the engagement, the Chinese held firm to their desired end state until the Vietnamese finally gave in and signed the terms dictated to them by Deng Xiaoping.[73] The combat experience China gained from battling taught many things, but one strategic lesson learned was that China could afford to wage sustained, low-intensity conflicts in remote areas for long periods of time.[74] This strength favors China's long-term approach of slowly applying pressure to an area to achieve its ends, without needing to apply more military force later.

Utilizing China and the US as examples, the ramifications of a conflict between a short-time culture and a far-oriented one are troubling. A short-sighted culture is most likely to bring the strength required to win the battles, but a far-sighted culture will have the endurance required to contest the overall war. The United States invaded Iraq and achieved the necessary numbers of battlefield victories to claim success. However, the long-term needs of force and security went unmet, allowing additional problems to arise that required extra military attention. In Afghanistan, the US has never fully

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[71] Mao Tse-Tung, "On Protracted War," June 26, 1938.
[72] Mao Tse-Tung, 196.
[73] Zhang, *Deng Xiaoping's Long War*, 217.
[74] Zhang, 218.

accomplished the eradication of the Taliban. As a group that has taken a long-term view in its political stance, the Taliban have continued to find ways to survive, fight, and contest control for the Afghan state. The Taliban's resilience is reminiscent of the North Vietnamese who fought against the Chinese, the French, the Japanese, the French *again*, the South Vietnamese, and finally the United States before achieving their vision of a unified Vietnam.[75]

The previous paragraph is not to claim that a far-sighted culture will always persevere in a conflict against a short-sighted one. The Vietnam and Afghanistan experiences serve better as a warning to short-sighted cultures that wish to engage militarily against far-sighted cultures. Victory will require the short-sighted culture's strength to out-last the idea contained behind the far-sighted culture's longevity. This process will require much up-front military strength that stays in place to fight the inevitable irregular war that follows. With enough control, as it was in Japan, the short-sighted country can establish the necessary rule of law and enforcement required for the occupied country to sustain itself.[76] Only after this point can strength be slowly withdrawn. When combating a long-term foe, one must come prepared to deal with problems over the long-term, it is the nature of their culture to continue to provide them as such.

Orientation (Future vs. Past)

Along with sight, the orientation characteristic of a temporal fingerprint provides another aspect of how a culture prepares for the future. Orientation refers to the eras that cultures turn to for solutions to a problem. In terms of time, these eras consist of either the traditional, past-honoring category or a future-oriented, progress-minded category. As one part of orientation, future cultures look to create a better future, or look to things that will be available in the future to solve problems. Many of these solutions require development or creation to meet a need. Innovation is touted as the end-all-be-all solution to many of the issues currently experienced.

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[75] Yuen Foong Khong, *Analogies at War: Korea, Munich, Dien Bien Phu, and the Vietnam Decisions of 1965*, Princeton Paperbacks (Princeton, N.J: Princeton University Press, 1992), 228.
[76] Takemae, Ricketts, and Swann, *Inside GHQ*, xliii.

Future-oriented cultures also tend to regard each problem that appears as a new one, never before seen. The circular logic at play within this culture is that if the problem had appeared before, then the problem already has a solution . . . thus it is not a problem. If personal experience was insufficient, the experience of others could take its place. If no experience applies, then it is indeed a problem whose solution requires blazing a new path forward to an answer. The benefit to this style of thought is that it forces a large group of people to think through problems in new ways. The downside is inefficiency in having everyone work through their problems this way.

Unlike future-based cultures, a culture with an orientation toward the past assumes that many problems already have solutions, and the problem-solver must search the past for answers. For some traditional cultures, this search is quite literal. The Pueblo, for instance, find it perfectly acceptable to stop their actions in the middle of a problem to consult with their ancestors.[77] This consultation takes the form of a ritual, necessarily involving many of their elders to ensure the best response. While this form of ancestor worship is a stark example of past-orientation, many cultures have similar aspects. The Chinese, for example, revere their dead and therefore treat the words of those who have died with great importance.[78] Ancient Chinese classics on war continue to see reference in modern Chinese culture because they are revered words written by knowledgeable ancestors.

These differences in orientation have an impact on these culture's militaries, specifically regarding how they prepare for its use. In the future-oriented United States, this means planning. Meticulous, repetitive planning for a plethora of situations that, should any of them arise, now require that plan to be translated into reality.[79] In effect, military planners are generating theories for success that require translation into practice, with each theory being nothing more than an educated guess at reality.[80] The US military institutionalized this practice with the Joint Operational Planning Process (JOPP). The JOPP provides military members with a process for how to think through a tasked

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[77] Rifkin, *Time Wars*, 50.
[78] Kenneth Dean, *Taoist Ritual and Popular Cults of Southeast China*, 1. paperback print (Princeton, NJ: Princeton Univ. Press, 1995), 4, 7.
[79] Jullien, *A Treatise on Efficacy*, 3.
[80] Jullien, 4–5.

problem.[81] Utilizing a step-by-step methodology, the JOPP provides questions needing answers as well as specific tasks requiring completion.[82] Ultimately, this process represents a standardized problem-solving process designed to produce a strategy.

Interestingly, the JOPP also represents the US military's counter-balance to its future-orientated parent culture. In a country of spirited free-thinkers used to solving their problems in different ways, JOPP provides these thinkers with a framework and a mechanism for corralling scattered thought processes into a useful cohesive. It is a structure constructed from experience and knowledge and built to impart these to individuals who are culturally inclined not to go searching the past for solutions. In effect, the US military forces its forward-looking members to examine history before innovating possible answers, providing a balanced temporal approach.

That approach is especially interesting when considering that the Chinese military is attempting to do the same, but in reverse. China's past-oriented culture generates near-automatic responses from its population to utilize past solutions as an answer without considering possible alternatives. The military, especially, is fond of its stratagems, pithy one-liners that provide generals with suggestions on how to solve a problem. Despite warnings to maintain flexibility and not apply them by rote, Chinese generals have been guilty of doing just that, often with poor results.[83] To counter this cultural sensitivity to the past, the PLA is attempting to get its people to look more toward the future. Utilizing a structure similar to JOPP, the PLA devises its strategy through utilization of some rules and laws for its development.[84] This structure receives reinforcement through examples of leaders from China's past who achieved their status by looking forward to the future. Mao and Sun Tzu receive special emphasis for their abilities at foreknowledge.[85] The PLA thus uses past examples of success to prevent its planners from conforming blindly to the past. This method forces members of the PLA to use their minds for solving current-day problems with an eye for their effect on the future.[86]

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[81] Joint Publication 5-0, "Joint Operation Planning," August 11, 2011, IV–1.
[82] Joint Publication 5-0, IV–6.
[83] Xuanming Wang, Yi Liu, and Kok Kiang Koh, *Thirty-Six Stratagems: Secret Art of War* (Singapore: Asiapac, 1992), 1.
[84] Academy of Military Science Military Strategy Dept., *Science of Strategy*, ed. Shou Xiaosong (Beijing: Military Science Press, 2013), 10.
[85] Academy of Military Science Military Strategy Dept., 24.
[86] Academy of Military Science Military Strategy Dept., 25.

Comparing these two military cultures demonstrates that both are trying to counter their prevailing cultural norm to find more balanced thought. Because of this, neither military culture appears to have an inherent asymmetric advantage from their baseline temporal orientation. US military members can, and are encouraged to, learn and process historical examples to take advantage of the lessons of those who have gone before. Likewise, members of the PLA are encouraged to think outside the box militarily in an attempt to innovate new solutions for this rapidly changing world. Both approaches come with inherent downsides originating from individual capacities for overcoming cultural bias. However, this conclusion only applies in comparison to these two specific military cultures as they tend toward the middle of the spectrum. The balanced approaches attempted by both nations should put these cultures into a position of advantage against any other temporal culture that lacks the wherewithal to achieve a similar position.

Tempo (Fast vs Measured)

The last temporal characteristic for comparison is that of a culture's natural tempo. This characteristic is unique in that it requires a direct comparison between cultures to have meaning. For instance, a culture with a set speed may appear to be fast when compared to one culture, yet slow when compared to another. These same tempo considerations apply when comparing military speeds as well. For example, France currently lacks the quantity of full-spectrum capabilities necessary to contest against the United States at equivalent speeds, but had more than enough to outpace the forces of Muammar Gaddafi in Libya.

Regarding pace setting, the United States military is the unquestioned leader. Utilizing its massive military to achieve precision effects in parallel operations, the US has set the gold standard since Operation Desert Storm in what it means to be fast. It re-set the standard again in Operation Iraqi Freedom where it conducted the fastest ever mechanized land advance. The basis for this speed is the US's ability to collect, process, and usefully render large quantities of information.[87] The US military is then able to take this information and pair it with precision weaponry that can be delivered from a

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[87] Academy of Military Science Military Strategy Dept., *Science of Strategy*.

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distance, achieving effects all across a battlespace. Thus, the US has combined the elements of space and time into a concept and then compressed it, removing the enemy's capability of coping by trading space for time.[88]

What the US's speed advantage has meant for most of the rest of the world is that they must hurry up to catch up. China, however, sees increased speed as only a part of the solution. As part of its measured strategic tempo, China does recognize the value of moving quickly. A failure to accelerate its military operations would equate to a more significant Chinese military failure in the future, which is undesirable.[89] China, however, does not want to entirely divorce itself from its Active Defense posture as an enabler for its continued peaceful rise. This doctrine outlines an early strike against an aggressor to prevent them from quickly achieving domain dominance. It also leverages China's vast territory, population, and industrial complex to maintain the Chinese military as an active fighting force.[90] China would simultaneously seek the initiative in strategic narratives, providing evidence for self-defense as the rationale for the preemptive attack.[91] China is modifying this doctrine to now place the combined arms of the PLA into a joint, multi-domain, resiliently-controlled structure that has enough depth to withstand a potential assault should preemption fail.[92] Instead of relying upon geographical space, China is modifying its force to have enough resilience to defeat a parallel approach attacking it.

What the Chinese military is pursuing is a strategy of denial developed specifically to counter the doctrine of the United States. The PLA is additionally developing a force that can reach out and deny the US its basing options in the seas around China, while going after the deployed force's command and control nodes to debilitate the US's information-based style of warfare.[93] This force provides the necessary preemptive attack option, while the PLA relies on its modular structure with reinforced connections to absorb any remaining shock that the US could employ back at China.[94] In essence, this is a strategy of retarding the US's desired pace and rendering its

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[88] Academy of Military Science Military Strategy Dept., 124.
[89] Academy of Military Science Military Strategy Dept., 131.
[90] Dean Cheng, "China's Active Defense Strategy and Its Regional Impact," The Heritage Foundation, accessed March 22, 2018, /testimony/chinas-active-defense-strategy-and-its-regional-impact.
[91] ibid.
[92] Academy of Military Science Military Strategy Dept., *Science of Strategy*, 332.
[93] Cheng, "China's Active Defense Strategy and Its Regional Impact."
[94] Academy of Military Science Military Strategy Dept., *Science of Strategy*, 333.

style of warfighting ineffective. It is also a strategy of measured pacing. In designing a force structure around the idea of absorbing or deflecting an attack, the Chinese are seeking to limit the US's ability to dictate pace by maintaining a constant capability to respond.[95] Continually having a capability for a response provides the Chinese with timing options, a necessity for any successful strategy.[96]

The Vietnam War provided a precedent for this type of response. During that war, the United States tactically outfought the Vietnamese. By destroying thousands of trucks on the Ho Chi Minh trail, US military leaders assumed they had the Viet Cong suppressed and were making progress toward peace.[97] The Tet Offensive of 1968 disabused the US of this notion when thousands of Viet Cong rose up across the South to overthrow the regime.[98] Fighting in a manner that the US was better-equipped to handle, the US quickly suppressed the Viet Cong across most of the country, though some hotspots like Hué and Khe Sahn required up to two months to quell. At Tet's culmination, the Viet Cong were non-existent, the North Vietnamese had suffered losses but were still standing, and the US suffered a psychological defeat.[99] This defeat was strong enough that the sitting US President announced he would no longer run for a second term.[100]

So how did the United States, using what was, at the time, the fastest information operations available to it, lose to Vietnamese whose only pace appeared to be slow? The answer lies in North Vietnam's ability to use its measured cultural time to control the pace of the war. It could do this because the US never challenged North Vietnam's supremacy of the North, granting an almost safe area from which to operate. The US did send in thousands of aircraft sorties to apply pressure as part of Operations Rolling Thunder and Linebackers I and II, but this singular-domain-only effort was not enough;

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[95] These concepts of absorption, deflection, while also striking are very reminiscent of martial arts philosophies. For an example, see Wing Chun. This martial arts style is about being "soft" enough to absorb an incoming attack while also being strong enough to immediately counter: "An Interview With Grandmaster Yip Man from 1972," *My Way of Wing Chun* (blog), July 11, 2013, https://mywayofwingchun.com/2013/07/10/interview-with-wing-chun-grandmaster-yip-man-1972/.

[96] Everett C. Dolman, *Pure Strategy: Power and Principle in the Space and Information Age* (London; New York: Frank Cass, 2005), 9.

[97] Karnow, *Vietnam, a History*, 50.

[98] Clodfelter, *The Limits of Air Power*, 84.

[99] Karnow, *Vietnam, a History*, 558.

[100] Karnow, 580.

North Vietnamese leadership maintained the time and information they needed to craft strategy and plans.

Additionally, the North Vietnamese used the traditional concept of buying time with space. Instead of applying it to an invading army, they reversed it by expanding their operations outside of the contested country, effectively gaining space to buy time. This strategy became the North's focal point for contesting US control of the South and the US did not inflict enough damage to stem the flow of supplies.[101] These supplies arrived overland via any number of combinations of the over 16,700 kilometers of roadway built for the Ho Chi Minh Trail.[102] These supplies also arrived by sea along the coastline, by air through Cambodia, and electronically – the latter for money laundering schemes that provided funding for North Vietnamese to purchase supplies while deployed to the South.[103] Of all these supply routes, the US's only success was in stopping the sea route, and this it accomplished inadvertently via the US Navy's local control of the sea.[104]

Finally, the North Vietnamese measured temporal pacing was evident in the timing of their substantial offensive operations against the South. These operations marked the points in time where the North Vietnamese willingly switched from a slower, prolonged war mentality, to that of a faster sudden strike. Importantly, in determining the timing for each of these operations, the leadership of North Vietnam felt no external temporal pressure to conduct these operations and instead based their decisions off of measurements of the relative balance of power in the region. For the Tet Offensive of 1968, the North Vietnamese had determined that the battlefields were deadlocked, but that they held the upper hand through the increasing numbers of Viet Cong forces; they expected that a coordinated assault against the South would spur a popular uprising.[105] This perceived advantage utilized poor intelligence and the operation failed.

The next operation was the Easter Offensive of 1971, which was a calculated move taken by the North Vietnamese to affect both the US presidential election campaign

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[101] Clodfelter, *The Limits of Air Power*, 88, 90.

[102] Phong Đặng, *5 Hồ Chí Minh Trails*, First edition (Hanoi: Thế Giới Publishers, 2012), 152.

[103] Đặng, 16.

[104] The US Navy suspected some supply transport, but never confirmed the presence of the systemic operation actually in effect. See: Đặng, 299.

[105] Karnow, *Vietnam, a History*, 549.

as well as the proceedings at the negotiation table.[106] By late 1970, South Vietnam was militarily weak, the United States was leaving, and North Vietnam was at a new peak of military strength, providing a favorable balance of power to the North. The most critical timing consideration, however, was that the North's leaders were old, ailing, and wanting to end the decades of struggle.[107] Instead of waiting for the US to depart entirely, they deemed the balance good enough and attacked. This operation achieved some of its limited objectives in gaining and holding territory in the South but did not achieve its overall mission of toppling South Vietnam. This final objective was prevented by the United States executing the fastest operational force deployment seen at that date to support the South.[108] The US leveraged the remainder of its forces in place to quickly stage the rapidly arriving elements, achieving an operational-level surprise against the North Vietnamese.

The last operation was the successful invasion and conquering of South Vietnam by the North. With the US military absent from the region, the North Vietnamese began a slow program of massive logistical buildups along the Ho Chi Minh Trail and small probing attacks around the edges of South Vietnam.[109] The probes slowly grew larger, and more successful, with various towns beginning to fall. Absent an American presence, the North became aggressive, accelerating their tempo in March of 1975 with the goal of capturing Saigon before the end of May. The North Vietnamese perceived that they were racing the clock at this point – momentum was on their side, but an American response could have again stalled the massive push.[110] This response never arrived and Vietnam stands united ever since.

Some lessons the US military learned from its experience in Vietnam still echo today. The *temporal* lessons, however, have not been fully appreciated. When a fast culture is fighting a measured temporal one, it must get at the heart of the enemy's strategy-making to affect it. In Vietnam, the US failed to inject any confusion into the North's strategic OODA loop, instead allowing the North Vietnamese to make their

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[106] Karnow, 654.
[107] Stephen P. Randolph, *Powerful and Brutal Weapons: Nixon, Kissinger, and the Easter Offensive* (Cambridge, Mass: Harvard University Press, 2007), 4.
[108] Randolph, 114.
[109] Karnow, *Vietnam, a History*, 678.
[110] Karnow, 681.

decisions on their own time. Unfortunately, in this protracted war, direct attacks against the North's OODA loop would have only made the North move slower, providing the opposite of the desired effect. The US needed to find a way to make the North move faster, as it was during these faster-paced operations that the US could leverage its military advantage. Information operations were the missing mechanism in Vietnam—the US needed to convince the North that it was *weaker* than it appeared and incite the North to make additional errors in timing. These victories could then have been leveraged for psychological advantage for the US, bolstering domestic support for the long conflict.

Crafting this informational illusion will be difficult for the US to accomplish. Appearing weak is not its strong suit. As an alternative, the US should explore deception operations that make it appear stronger than it is. These will upset the balance of power calculations run by measured time cultures, possibly preventing them from making an attack. Admittedly, this tactic works better in scenarios outside of war, where the US desires to maintain peace. In a protracted war, the US needs the enemy to move faster and make mistakes, and false displays of strength are not the solution here. A better option is for the US to learn to slow down and take the time necessary to achieve the correct effects, not merely the ones achieved through easy bombing. In Vietnam, frequently the US went after trucks and neglected the population of the South—the very same population that was harboring Northern infiltrators.[111] Ultimately though, the US military must be politically allowed to take the necessary time to achieve its objectives the first time, or——if Iraq, Afghanistan, and Vietnam are any indication——it will have to return again and again to patch up the problem.

Implications

This chapter analyzed the various characteristics of a culture's temporal fingerprint by comparing the United States and China, two countries with different aspects. The purpose of this analysis was to determine any advantages or necessary improvements the US must make when conducting operations against any culture with temporal aspects that differ from the US. It assumed that if the US encountered a culture

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[111] Đặng, *5 Hồ Chí Minh Trails*, 412.

like itself, its current style of military operations is well-suited for the operation. What follows is a summary of these military lessons from each of the characteristics:

Regarding temporal acceleration, the US maintains its lead in military speed records for accomplishing tasks in conventional warfare. This advantage will begin to erode unless reinforced, as other cultures are catching up.

Combating a difference in temporal geometry is difficult, as circular cultures heavily favor correctly preparing the battlespace through shaping operations that take as long as necessary. To counter, the US must learn to analyze these preparations, divine their purpose, and attempt to interfere in ways that disrupt the overall enemy strategy. This approach will most likely require leveraging elements of national power outside the military to match subtlety with subtlety.

Event-based cultures also pose a problem for the US's clock-based fingerprint. These cultures prefer to wait for the appropriate conditions before taking action, as opposed to the clock-based culture's desire to base its movements on a specific time. Information is this contest is vital, as it provides the event-based culture with the principal determinants for action. The US must emphasize information operations, especially deceptive ones keyed against the desired enemy strategy. These operations must remain ongoing throughout all phases of the struggle to maintain maximum effectiveness.

Far-sighted cultures challenge the US's shorter vision through their proclivity to wage protracted wars. Far-sightedness is what gives strength to the longevity of many cultures, and this strength will manifest itself in long-term measures for survival. Combating this culture requires enough strength to win the test of wills, but also political endurance to carry the burden as long as necessary. Moreover, the US's clock-based characteristic is a weakness to this aspect, as a desire to set end dates for operations will only strengthen any far-sighted opposition. Ultimately, the US will have to combat its natural tendencies while also fighting its far-sighted opponent in these scenarios.

The US's temporal orientation was one of the few bright spots in this analysis. In seeking to balance its culture's desire to always look forward, the US military has established structures and processes for its members to consider the entire picture, past included, when planning operations. A disadvantage inherent in this structure is that it

relies on its people to do the appropriate research and gain the necessary knowledge themselves, instead of imparting it to them. Increased emphasis on the past's value could aid US military members in gaining the appropriate appreciation and knowledge. As currently structured, the JOPP puts the US in a decent position to handle a differently-oriented temporal culture, but always with room for improvement.

If orientation was a strength, the US's favored tempo is a potential weakness when facing a measured opponent. Measured-tempo opponents desire to maintain a self-controlled balance of options between fast or slow pacing, selecting the option that suits context best. In comparison, the US only wants to move fast. Speed works fine if the opponent is also attempting to move fast, but has less success against opponents who deliberately move at a slower pace. Throw in the temporal variation offered by a measured-tempo culture and the US could find itself operationally surprised by unexpected developments. Controlling information is a necessary step in this environment, but re-learning how to move slowly—or *deliberately*—is also necessary.

Unfortunately, the US military cannot hope to achieve all of the necessary changes listed above to gain a temporal advantage in all characteristics. Specifically, leveraging the instruments of national power and marshaling the necessary political patience for temporal operations occurs at higher levels of the US government. In these two cases, the best the military can achieve is to educate its civilian leaders while also requesting the desired grand-strategic effects. Moreover, the military can and should invest more in information operations. The USAF's establishment of the 14F Information Operations Air Force Specialty Code, as well as the expected opening of a training schoolhouse for them, are both excellent steps in this direction.[112] This structural change indicates that the USAF is actively attempting to remedy an organizational deficiency. Having trained social engineers whose full-time job is manipulating the information presented to opponents is a definite need for the US military.

The most considerable hurdle the US military must confront is that of building a set of operations that it can conduct slowly and deliberately. Current USAF doctrine on

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[112] "AF Officials Announce Creation of Info Ops Tech School," U.S. Air Force, accessed March 23, 2018, http://www.af.mil/News/Article-Display/Article/1457978/af-officials-announce-creation-of-info-ops-tech-school/.

irregular warfare focuses on what the Air Force can provide via its current tenets of speed, range, and flexibility.[113] What these ideas lack is another necessary characteristic: persistence. To fight a slow fight, the Air Force must begin to invest in assets that can cheaply persist for intelligence gathering and mission support activities. Large, long-duration UAVs have some value in these environments, but are expensive to procure, operate, and maintain over the course of extended operations. Smaller, cheaper drones that connect directly to the local embedded commander and have long endurance are a necessary asset for slowing down. Additionally, these drones could also be armed with small explosives, providing a small measure of airpower without having to call in bigger, faster, much more expensive airpower assets.[114] The USAF's investment in the light attack aircraft program is an excellent intermediate step for providing airpower in slower situations. These aircraft will provide an extra offensive layer of local support before more advanced fighters must respond.

Of all the changes listed as necessary, the latter one of slowing down is the more important one to undertake and will be the most difficult one to embrace. In an age of tightening budgets, adding another task to the armed services is less than desirable. Done smartly, however, slower might be cheaper in the long run. Replacing expensive long-term high-performance fighter patrols with large numbers of cheap drones should save the USAF money over the long run, especially considering the additive costs of logistics, airframe maintenance, and the use of flight hours on airframes with limited lifespans.[115] Additionally, correctly executing operations at the right tempo instead of hurrying through the motions will ensure that the US military will not have to redeploy to solve the problem, again saving taxpayer dollars. The US's cultural short-term focus is the preventative mechanism here – it is time to find the strength and endurance necessary to take on the right missions now, instead of continually having to repeat spectacular efforts for mediocre results in the future.

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[113] "Annex 3-2 Irregular Warfare: Introduction to Irregular Warfare" accessed March 23, 2018, http://www.doctrine.af.mil/Portals/61/documents/Annex_3-2/3-2-D01-IW-Introduction.pdf.

[114] The Syrians have already proved this concept by attacking a local Russian airbase with home-made drones in early January 2018. See: https://www.cnbc.com/2018/01/11/swarm-of-armed-diy-drones-attacks-russian-military-base-in-syria.html

[115] Over-use of the F-22, for example.

Chapter 5

Conclusion

But, believe me, my dear boy, there is no more powerful adversary than those two: patience and time – they will do it all.
- Leo Tolstoy

When General Tommy Franks was designing a force for the war in Iraq that would be quick and agile, he said that "speed kills;" unfortunately speed can also kill good judgment.
-Robert Jervis

Predicting the future is an incredibly difficult task. Take the weather, for instance. How often is it claimed that weather forecasters are "always wrong," yet they still manage to keep their jobs? They have job security in the little-known fact that weather forecasters have an accuracy rating of almost eighty percent correctness within forty-eight hours of any weather event.[1] This accuracy percentage increases as time decreases. Perhaps predicting the weather, and thus the future, is easier than it appears?

Predicting the weather does have a leg up on other predictive elements though. First, people have a vested interest in what the weather will be like every day. It has an impact on the clothes worn to the activities conducted (one cannot go ice skating outside on a hot summer day). Resultingly, the weather industry has benefited from increased investment in the tools necessary to conduct weather forecasting. These tools provide a second advantage: they provide an ability to make increasingly accurate measurements of known phenomena. Powerful weather radars provide data that combines with personal, amateur, and professional weather stations to provide a plethora of information to a weather forecaster. Computer modeling of the weather provides an additional advantage. Increasingly powerful computers and the proliferation of data collection leads to progressively accurate weather forecasting models. It is a system designed to improve upon its inherent accuracy, based on known and predictable weather patterns.

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[1] J. D. Rudd, "Meteorologists Are Always Wrong, Right? Wrong," KSHB, November 2, 2014, https://www.kshb.com/weather/weather-experts/meteorologists-are-always-wrong-right-wrong.

Unfortunately, human activities cannot reach the same level of predictability. Sociologists have developed various frameworks, like the Rational Actor Model, as a means for describing portions of human behavior. The characteristic of free will, however, suppresses these models' usefulness. The problem lies in the impossibility of knowing what another person is thinking unless they share what is on their mind. Even then, it is difficult to tell if they are lying or telling the truth, even to themselves.

What is possible is developing empathy for the subject. By trying to understand cultural experiences, one slowly begins to develop a sense of what it means to think like a person of that culture.[2] It is, for this reason, that understanding and applying another culture's time perspective to a planning process makes sense. Guessing what the opponent will do requires thinking like them, and part of this requires gaining an understanding of their temporal state. A failure to understand the other side has caused wars, so it behooves strategists to grasp this additional piece of information as another predictive element.[3]

Knowledge of the opponent's temporal fingerprint also allows for increased clarity in the planning process. Applying this philosophy to an opponent's time sense aids in assessing its potential impact, especially when combined with the US's focus on effects-based operations. Without this understanding, a planned effect can have different temporal implications for either side, possibly lessening its overall impact. Moreover, understanding how an effect will interact with the opponent's time perspective provides insight into how their thinking can suffer from interference. Thinking temporally, therefore, provides a means for breaking the opponent's OODA loop.

This scenario is not a mere tactical consideration, as the strategic level also has an OODA loop. John Boyd talked about how each level of war had its loop, nestled within the slower processing loop of the level of war above it.[4] Logically, this construct does apply above the tactical and operational realms. The Chinese openly acknowledge the OODA loop's influence on strategy, referring to it as a specific rule for its crafting, calling it "observation – judgment – decision-making – action."[5] If time is the mechanism

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[2] Jervis, *Why Intelligence Fails*, 195.
[3] Jervis, 1.
[4] Hammond, *The Mind of War*, 141.
[5] Academy of Military Science Military Strategy Dept., *Science of Strategy*, 27.

utilized for interfering with an opponent's OODA construct, then the target is the "OO" section of OODA: observation and orientation. The desired effect is to make the opponent believe that their correct sense of time is in error, and therefore rely on the erroneous one provided . . . in short, making them substitute their reality for ours.

Ultimately, convincing an opponent to accept our truths as their own is the goal of every information operation. The cyber domain provides an excellent example of this, as hackers try to utilize social engineering to convince unwitting individuals to do what they should not.[6] The best hackers spend hours at their craft, creating a product that looks and feels exactly how the receiver expects it should, all to increase the likelihood that a person would click on a nefarious link or download a malicious attachment.[7] Unfortunately, the pressures of war do not always grant strategists enough time to create such sophisticated tools for socially engineering their opponents. Moreover, gaining a complete understanding of the opponent, including their sense of time, is traditionally a job for intelligence. For the crafting of strategy, however, this is not always the case.

Strategists, to create a better strategy, must generate an empathic bond with their foe, requiring them to understand the who and what that force is countering. Strategists, therefore, must have an understanding of the opponent similar to intelligence officers. This paper makes four recommendations to meet the temporal need of military strategists:

1) Planners should consider assumptions about enemy time in their work. The deliberate planning process already includes considering assumptions regarding the circumstances around a crisis. However, it does not in any way link these assumptions to the foe's perception of time.[8] Where planning does consider time at all, it is through an understanding of our nation's desired end state and the US's temporal limitations involved or preventing its achievement.[9] This latter perspective needs to expand to the foe's involvement in the interaction. For example, if the US is limited in their domestic willpower for a situation, strategists must consider how an adversary could exacerbate this situation, similar to how the North Vietnamese utilized strategic narratives to drive further domestic pressure against US involvement. Alternatively, knowing how the foe perceives time could drive additional strategic effects. For example, if the enemy culture is event-based, strategists

[6] Martin C. Libicki, *Cyberspace in Peace and War* (Annapolis, Maryland: Naval Institute Press, 2016), 143.
[7] Pat Engebretson, *The Basics of Hacking and Penetration Testing: Ethical Hacking and Penetration Testing Made Easy*, Second Edition (Amsterdam ; Boston: Syngress, an imprint of Elsevier, 2013), 127.
[8] Joint Publication 5-0, "Joint Operation Planning," II–23.
[9] Jeffrey M. Reilly, *Operational Design: Distilling Clarity from Complexity for Decisive Action* (Maxwell Air Force Base, AL: Air University Press, 2012), 10.

should seek to understand what situations drive that event and what manipulations of it bring the US an advantage.

2) Strategists should include this temporal analysis of the foe into JOPP. The adversary's temporal fingerprint deserves inclusion within the construction of the foe's observed system, which currently focuses on developing an understanding of the enemy's political, military, economic, social, information, and infrastructure (PMESII) elements.[10] While the JOPP does state a need to analyze the "psychological characteristics of adversary decision making," the inclusion of the temporal element should be stated overtly, or strategists will miss it.[11] Once included in the observed system, the JOPP should also include the cultural view of time as a potential barrier to achieving the desired system. Strategists should focus on how the adversary's temporal fingerprint interacts with the US's and how this interaction might help or hinder in achieving the desired outcome. This comparison assists in defining the length of time required for an operation by asking, for example, the following: if the enemy has a longer-time sight perspective than the US, does that add to the length of time expected before achieving the desired or, if already achieved, maintaining it? While counterfactual, imagine if a temporal understanding was an institutionalized part of pre-war planning before the Vietnam War. Would US leaders still have believed in any solution if they truly understood the depth of North Vietnam's conviction regarding achieving their goals, having already spent decades pursuing them?

3) Planners need a temporal tool-kit. Essentially, this kit becomes a shortcut for strategic planners to reference and quickly determine the appropriate comparisons between temporal fingerprint characteristics. Developing these tools will require some level of cultural understanding and study. However, some of its aspects may already be freely available. Hofstede Insights, for examples, provides a free, online, cultural analysis tool that provides a country's temporal sight and allows comparison of this characteristic between countries.[12] As a source, this website has additional value in the possible extrapolations it allows. Additional research should focus on its various aspects, such as asking how a country's individualism relates to a clock-based temporal outlook? Alternatively, can a higher score in Hofstede's indulgence category be linked to a fast, or accelerating pace of life? Importantly, this study does not recommend the US hire this specifc company for cultural studies or to develop temporal tools. However, it is a possible source of information for developing such tools.

4) Finally, the Department of Defense should construct temporal fingerprints for, at least the five primary opponents to the United States as identified in the National Security Strategy. This study analyzed China, leaving Russia, the

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[10] Reilly, 6.
[11] Joint Publication 5-0, "Joint Operation Planning," III–9.
[12] See: https://www.hofstede-insights.com/product/compare-countries/

Democratic People's Republic of Korea, the Islamic Republic of Iran, and the various extremist organizations remaining for analysis.[13] These new temporal analyses should then receive inclusion to the planning processes that involve these countries. This involvement provides a means for updating the plans to include their temporal effects. Additionally, future planners and strategists should understand the value of time for the planning process. This understanding will increase their potential for empathy, therefore granting them a better chance to draft good products. This latter recommendation is a slow process, however, as these individuals must receive proper training before being unleashed to evolve current planning products. For something of this importance, slower may be better, however.

Time matters, and how each culture perceives time is different and matters greatly. It is time to move past mirror-imaging cultural temporal values to achieve an actual understanding of what makes each culture tick. While time adds another level of uncertainty to any problem, the reality is that this uncertainty has always existed. Combatting time as an element of uncertainty requires developing the tools and processes needed to move beyond uncertainty and into the realm of certainty.

Contemporary context necessitates a need to once again interfere with our opponent's thinking. For twenty-five years the US has maintained a technological edge over its possible foes. Where the differences were once vast, these advantages have been slowly dwindling as the US's adversaries have advanced countering technologies. The winnowing advantage gap shows that it is time to start thinking again. Money will not provide all the technological answers. China is already establishing itself to fight a Cold War against the US. The other enemies listed in the NSS are circling. Hard power is not the primary answer anymore, and technology is increasingly expensive. As Winston Churchill once apocryphally stated: "Well, gentlemen, now that we are out of money it is time to start thinking." Now, it is time to start thinking about time.

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[13] "National Security Strategy of the United States of America," December 2017, accessed March 25, 2018, https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905.pdf.

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