

The US Army War College Quarterly: Parameters

Volume 27
Number 4 *Parameters Winter 1997*

Article 9

11-24-1997

Time's Arrow, Time's Cycle: Metaphors for a Period of Transition

David Jablonsky

Follow this and additional works at: <https://press.armywarcollege.edu/parameters>

Recommended Citation

David Jablonsky, "Time's Arrow, Time's Cycle: Metaphors for a Period of Transition," *Parameters* 27, no. 4 (1997), doi:10.55540/0031-1723.1855.

This Article is brought to you for free and open access by USAWC Press. It has been accepted for inclusion in The US Army War College Quarterly: Parameters by an authorized editor of USAWC Press.

Time's Arrow, Time's Cycle: Metaphors for a Period of Transition

DAVID JABLONSKY

From *Parameters*, Winter 1997-98, pp. 4-27.

"The world is so full of a number of things, I'm sure we should all be as happy as kings." --Robert Louis Stevenson

In *A Child's Garden of Verses*, Robert Louis Stevenson describes this couplet as a "Happy Thought." And yet diversity in the fields of natural and social sciences is normally not a source of joy. On the contrary, scientists in both fields are usually not satisfied until they have established some kind of classification, some order out of complexity and confusion. It is an innate desire for systemic closure that can overcome even the strongest natural caution. Thus in 1758, Linnaeus attempted to classify all of life in his *Systema Naturae* (the "System of Nature").[1] And more recently, one historian concluded that "on March 5, 1953, at approximately 9:30 in the morning, the Cold War ended when Joseph Stalin breathed his last." [2]

The search for order and control in the post-Cold War transition period is no less daunting. As in all such periods, there is a natural tendency to attempt to fix a relationship between change and continuity. It is never, however, an easy matter to classify and draw reliable distinctions between the two in advance of retrospect, to ascertain what is really new and unique. How, for instance, could Herbert Hoover have known in the spring of 1930 that the accustomed past would not reassert itself? Certainly there was no guide in the experiences of the 1893-97 depression or the financial panics of 1907 and 1921. History, in short, often advances in disguise, making its appearance on stage in the mask of the preceding scene. And when the curtain goes up in such cases, there is a tendency to superimpose the past on the present, even when the present is a revolution. Nevertheless, continuity remains an important window into the past that can inform the present and the future. This is why Thucydides can seem so contemporary--why, for instance, the contest between Athens and Sparta in *The Peloponnesian War* seemed to resonate again in the Cold War, or why the expedition to Syracuse had overtones for America's "half-war" in Vietnam.[3]

In all this, classifications of change and continuity are inextricably linked to perceptions of time. Time, in turn, is an abstract concept that can best help the analyst by becoming less so. That type of transformation is often accomplished by the use of metaphors, comparisons that help give shape and form to abstractions through images that are not dependent on the weaker "like" or "as" foundations of the simile. Such are the metaphors of time as an arrow and time as a cycle. These metaphors are not new and have been widely analyzed.[4] This article examines their application at three levels of analysis concerned with international relations: the individual, the state, and the international system.[5] The purpose is to demonstrate that the metaphors have great conceptual value at each level of analysis for those attempting to understand and to order the interplay of change and continuity in the post-Cold War transition period.

The Metaphors

Time's arrow can be traced to the ancient Hebrew belief that historical processes operate in a linear framework, that events such as the Exodus were unique occurrences at particular points in time. For the first time, religious leaders put a value on history that transcended the traditional vision of the cycle (all things will be repeated forever) as they discovered history's meaning as the epiphany of God. It is a picture of history as an irreversible sequence of unrepeatable events. Each moment occupies its own distinct position in a temporal series that tells a story of linked events moving in one direction. Like an actual projectile, time's arrow cannot reverse itself in flight. And as Heraclitus discovered, it is impossible in this picture to step twice into the same river as time moves inexorably forward.[6]

Not surprisingly, time's arrow is the principal metaphor of biblical history, from God's creation of the world to the

dispatch of His Son to a particular place to die for man and rise again. Also implicit in this picture is the idea of progress in direction, an idea impossible of conception if patterns merely repeat themselves. It is an arrow of history in proper eschatological order from bad pasts to bright futures, from the Old Testament to resurrection and future bliss. As Christianity evolved, this straight line continued to trace the course of humanity from initial Fall to Final Redemption. The meaning of this history continued to be unique because the Incarnation was unique. "When the Messiah comes, the world will be saved once and for all and history will cease to exist." Five centuries later in the *City of God*, as he railed against cyclical time as a concept promulgated by "decaying and deceived sages," Augustine continued to emphasize that "once Christ died for our sins; and, rising from the dead, He dieth no more." [7]

Time's cycle in its pure metaphorical form is an opposite pole of time's arrow. Events in this picture have no meaning as distinct episodes with causal effects upon contingent history. Fundamental states remain immanent in time, forever present, never changing. And what appear to be motions are actually part of repeating cycles. Time, in short, has no direction. The differences of the past are destined to be realities of the future.

In actuality, of course, neither metaphor adequately describes the human condition. Despite the ubiquitous picture of the biblical arrow, for instance, the metaphor of cyclical time is invoked in the book of Ecclesiastes: "The thing that hath been, it is that which shall be; and that which is done is that which shall be done; and there is no new thing under the sun." And even the arrow of Messianism holds a cyclic reminder that "death is always followed by resurrection; that every defeat is annulled and transcended by the final victory." [8] In this context, history consists of cycles advancing as they turn like a large disk moving along on a railroad track--an arrow moving forward within a cycle of repetition. The cycle seeks the continuity of immanence, a set of principles so general that they exist outside of time and record a universal character, a common bond among the rich particulars of history. But each repetition must be different in order to impart a direction, a narrative power to history and thus make time intelligible. Arrows and cycles, as Stephen Jay Gould has pointed out, "need each other if we ever hope to grasp the meaning of history." Each of the poles, he concludes,

captures by its essence a theme so central to intellectual (and practical) life that Western people who hope to understand history must wrestle intimately with both--for time's arrow is the intelligibility of distinct and irreversible events, while time's cycle is the intelligibility of timeless order and lawlike structure. We must have both. [9]

Evolution and Contingency: The Permanence of Time's Arrow

In the 18th century, the enlightened version of temporal development was still fundamentally teleological in nature. The philosophers of that century, in Carl Becker's memorable phrase, "demolished the Heavenly City of St. Augustine only to rebuild it with more up-to-date materials." [10] It was, in other words, an old picture of time's arrow in a new frame, in which the philosophers ascribed to nature all that the medievals had attributed to divine Providence, and reinterpreted the moral demands of God's will as deliverances of reason. By 1800, however, a battle was joined over the history of the earth between scriptural chronology based on human traditions and natural chronology based on new geological discoveries. This new information was expressed in terms of time's cycle as an endless four-stage repetition for the earth of erosion, deposition, consolidation, and uplift, a process that demonstrated for the principal geological discoverer, "no vestige of a beginning--no prospect of an end." [11]

With these discoveries came the concept of "deep time," which struck at the comforting directional arrow of history focused on human domination of a newly formed earth ruled by human will within days of its origin. It was a concept of almost incomprehensible immensity, with humanity restricted to the last few inches on the geological mile or to an appearance on the cosmic calendar just before the singing of Auld Lang Syne. In any event, as Mark Twain pointed out, there was not much comfort to be gained no matter what the metaphor might be.

Man has been here 32,000 years. That it took a hundred million years to prepare the world for him is proof that that is what it was done for. I suppose it is, I dunno. If the Eiffel Tower were now representing the world's age, the skin of paint on the pinnacle-knob at its summit would represent man's share of that age; and anybody would perceive that that skin was what the tower was built for. I reckon they would, I dunno. [12]

The cyclic variations of the earth in deep time were more than counterbalanced by Charles Darwin's mid-19th-century theory of evolution, which added new characteristics to the linearity of time's arrow. For Darwin emphasized the contingent aspect of natural history, in which events often depend crucially upon happenings from a distant past that appeared small and trivial at the time, but gradually create a new pathway with cascading sequences of unpredictable events. In this historical explanation, the phenomenon to be explained (E) occurred because D preceded it, preceded in turn by C, B, and A. If any of these antecedents did not occur or occurred in different ways, then E would not exist or would exist in greatly altered form. Consequently, E could be explained in detail as the result of A through D--a result dependent, or contingent, upon everything that came before. But no immanent law or principle emerged in a cyclic sense. The divine tape player could hold countless scenarios; and any variant of E that came about from different antecedents in a replaying of the tape would be equally plausible, though greatly different in form and effect.[13]

It was this recurring possibility in time's arrow of a kingdom lost for want of a horseshoe nail that inevitably led to the unsettling focus in Darwinian theory on chance in terms of physical linkage over time, whether it was ancestral ape to modern humans or sediments of an ancient ocean basin to rocks of a later continent. At the same time, the variant of contingency in time's arrow also weakened the metaphor's sense of directional progress, a serious matter for Darwin, a citizen of Victorian Britain at the height of its empire and industrial triumph. Part of the answer was to be found in the cyclic immanence of a general law of nature such as natural selection, operating in the background of history's contingent detail and yielding the order he perceived as prevalent in the world. But the linkage of biological adaptation of species to specific local environments and the directional progress of time's arrow was always tenuous. Natural selection, for example, was never for Darwin, contrary to the popular view of Darwinism, an all-encompassing process that produced optimal results. On the contrary, Darwin recognized that the primary proofs of evolution lay in the chance imperfections that demonstrate how organisms alter through time by sub-optimal adaptive responses to changes in local environments--"descent with modification"--all without reference to progress.[14]

Time's Arrow and the Individual

The random, multiple opportunistic element in Darwin's theory was repugnant to Karl Marx, whose link to the arrow of the 18th century Deists had earned him the sobriquet of "Christian heretic." For Marx, there was still the primacy of central design, now rechristened the Dialectic. Most importantly for the German philosopher, man was a unique species who could perturb or alter the process of history. In *The Eighteenth Brumaire of Louis Bonaparte*, he captured this aspect of history as a dynamic balance between the inexorability of forces and the power of individuals. "Men make their own history," he wrote, "but they do not make it just as they please." [15]

Marx's focus on the power of individuals illustrates the fascination with the "what ifs" in time's arrow that continues to the present in popular culture. Thus there is Arnold Schwarzenegger as *The Terminator*, returned from an apocalyptic future to kill the mother of Dennis Conner to ensure that the future revolutionary leader is never born. Conversely, there is Michael J. Fox as Marty McFly in *Back to the Future*, who by returning in time threatens to alter the initial run of the contingent tape when his mother, in a variation on Oedipus, begins to be attracted to him. As a consequence, McFly must rectify apparently unimportant events that he knows, if not corrected, could mean that his parents never meet and thus end his own existence. Finally, in Frank Capra's *It's a Wonderful Life*, there is Jimmy Stewart as George Bailey, a decent hardworking owner of a Savings and Loan in the small town of Bedford Falls, who decides on suicide when he sees his company in bankruptcy even as he is charged with fraud. "If it hadn't been for me," he tells his guardian angel, Clarence Odbody (Henry Travers), "everybody would be a lot better off." [16] Clarence then shows George an alternate vision of the town, replayed in his absence and yielding entirely different but logical outcomes in terms of the personalities and economic forces. Without the apparently insignificant life of George Bailey, who imparted kindness and success to his town, the alternate world of Bedford Falls, and indeed far beyond that world, is bleak and cruel. "Strange, isn't it?" Clarence concludes at the end. "Each man's life touches so many other lives, and when he isn't around he leaves an awful hole, doesn't he?" [17]

Clarence's observation applies even more widely to the field of national security, in which the role of individual leaders in time's arrow is a constant reminder that strategy is far from being a science and that international politics, like evolution, can go down very different paths based on particular events. The Korean War, for example, illustrates this type of contingency. For absent Kim Il Sung's decision to attack southward, the Cold War might have taken an entirely different form--one without high defense budgets, increased Sino-American hostility, a militarized NATO,

and US global commitments. In fact, that long twilight war, as John Lewis Gaddis has illustrated, is a monument to the role of individuals in contingent history on both sides of the bipolar world.

What if Lenin had never made it to the Finland Station? What if Stalin had followed his mother's wishes and become a priest instead of a bank robber? What if, say Molotov and not Khrushchev had been running the Soviet Union at the time of the Cuban Missile Crisis? What if the rail line from Moscow to the Caucasus had not been built through Stavropol, so that Brezhnev, Andropov, and other Kremlin bigwigs traveling to their vacations in the south might never have met the bright young party boss of that region, who wound up presiding over the end of what Lenin began? . . . What if Henry Wallace and not Harry Truman had been President at the time the cold war began? Or if Robert Taft instead of Dwight Eisenhower had occupied the White House at the time it escalated? Or if Richard Nixon, with his well-known habits of cool-headedness in the face of crisis, had had to handle Soviet missiles in Cuba instead of John Kennedy? Or if Kennedy and not Johnson had run the Vietnam War? What peculiar twist of fate left it to Nixon, of all people, to end the cold war with the People's Republic of China during the 1970s, and to Ronald Reagan, of all people, to do the same a decade later with the Soviet Union? And, for that matter, I wonder sometimes, late at night, what Franklin D. Roosevelt would have thought the country had come to if he could have returned, four decades after his death, to find his old office occupied by someone he knew quite well, but only as a movie actor?[18]

When viewed from this perspective, the explanation of historical events in the Cold War does not lie so much in immanent principles as in the realm of contingent detail, much the way the law of gravity may explain how an apple falls but not why a particular apple fell at a particular moment from a particular tree, and why at that moment Newton happened to be sitting under that tree ready to be inspired. And yet, as Marx recognized, there is also the human uniqueness from other species that acts as a counterforce to human unity with nature in time's arrow, and that allows man at the very least to learn from time's cyclic repetition even if no overarching principles can be established. Man's cultural evolution, for instance, is vastly faster than biological change, since it is direct and Lamarckian in form with the achievements of one generation being passed by education and publication directly to descendants. Equally important, biological evolution is a system of divergence which ensures that once lineages are distinct, they are separate forever. But transmission across lineages is a major source of cultural change in human history that has only accelerated with the advent of the information-communication-transportation revolutions.[19] From this uniqueness comes the human capacity to exercise some control over contingent history and thus to impart a sense of tragedy when that control does not occur. "The terrible `Ifs' accumulate," Winston Churchill noted in this regard, as he looked back on the failure of European leaders to control events in the hot summer days of 1914.[20]

There has been very little need for such retrospect concerning the Cold War, which over and above the contingent vagaries of chance also illustrates for the student of national security the capacity of individual leaders to learn, mature, and grow, no matter how improbable or unexpected the events within time's arrow that catapulted them into key positions. President Truman, the only leader ever to authorize the military use of nuclear weapons, used his diary to vent his urge to use such weapons against the Soviet Union. But it was Truman who set the important precedent in Korea that nuclear powers do not automatically employ such weapons when they become involved in wars. And it was John Foster Dulles, renowned as the prototypical Cold War ideologue, who looked toward the eventual goal of abolishing nuclear weapons even as he moved toward George Kennan's vision of eventually transforming the Soviet Union into a normal member of the world community. In a similar manner, there was Dulles's boss, who spent most of his adult life as a professional soldier, and yet so eloquently as a politician tied together the domestic and foreign implications concerning growth of the national security state in the long twilight war:

Every gun that is made, every warship launched, every rocket fired signifies, in the final sense, a theft from those who hunger and are not fed, those who are cold and are not clothed. . . . The cost of one modern heavy bomber is this: a modern brick school in more than 30 cities. It is two electric power plants, each serving a town of 60,000 population. It is two fine, fully equipped hospitals. It is some 50 miles of concrete highway. We pay for a single fighter plane with a half million bushels of wheat. We pay for a single destroyer with new homes that could have housed more than 8,000 people.[21]

Time's Arrow, the State, and the International System

Evolution also suggests that within time's arrow the fact that human beings and the states they create learn from experience brings about new ways of doing things, whether at the level of the entire international system, or the grouping of states within that system. From a biological view, structures in the form of living organisms evolve as they adapt to local environments. In a similar manner, states and international systems may change when confronted with the implications of long-term alterations in the political, economic, intellectual, technological, and cultural environment. These changes may be gradual--like the effects of natural selection--with no discernible consequences for long periods of time. In fact, for Karl Marx the basic assumption in this regard was that only when these consequences occurred were underlying historical processes revealed. From this perspective, the cumulative effects during the Cold War of linear processes such as interdependence, the spread of democracy, the emergence of international regimes, and, ironically, fundamental problems in Marxism-Leninism only became apparent over time at the levels of state and international systems. By then the long twilight struggle was over, the result of directional movement within time's arrow that was irreversible.[22]

From another evolutionary perspective, change may occur faster as a primary reaction to a single historical event. White moths in Great Britain, for instance, turned black in response to the advent of the industrial revolution and the concomitant darkening of trees. In a similar manner, the shift from religious to secular authority that occurred in Europe during the 15th and 16th centuries was a major change in the environment that led to the growth of the modern state system. On a more recent note, slavery had been present throughout history and yet was abolished almost universally within a single lifetime in the 19th century because of the erosion of the climate of legitimacy that sustained that institution. That such a response to environment can work in both shorter and less enlightening ways was demonstrated in the chilling description of adverse incrementalism by the Protestant theologian Martin Niemoller:

First the Nazis went after the Jews, but I wasn't a Jew, so I did not react. Then they went after the Catholics, but I wasn't a Catholic, so I didn't object. Then they went after the workers, so I didn't stand up. Then they went after the Protestant clergy and by then it was too late for anybody to stand up.[23]

Finally, evolutionary biology also demonstrates that sudden environmental shifts can exterminate old species and create favorable conditions for the emergence of new ones, which then can result in a stable status quo for relatively long periods. The sudden demise of the dinosaur 60 million years ago in the Paleozoic era is one example. The almost psychological effect of nuclear weapons is another. Earlier military technological breakthroughs had never immediately revealed the complete results of their use. The invention of the machine gun, for instance, inspired no concomitant vision of the horrific slaughter of the Somme; nor did that of poison gas reflect an appreciation of the effect that would be produced by the first dusty, lethal cloud at Ypres. The full consequences of using the atomic bomb, however, became apparent at Hiroshima just when the world became aware of the new weapon's existence. As a consequence, the initial nuclear shock was a prime cause for a stable world order that lasted over four decades. Two states preeminent in nuclear capability, as Kenneth Waltz points out, "isolationist by tradition, untutored in the ways of international politics, and famed for impulsive behavior, soon showed themselves--not always and everywhere, but always in crucial cases--to be wary, alert, cautious, flexible, and forbearing." [24]

War and the Need for the Balance of Time's Cycle

The Cold War belongs in many ways to time's cycle. Despite its unique Orwellian mix of peace and war, it was still a struggle with massive stakes that included a geopolitical rivalry for control of the Eurasian landmass and ultimately the world, and an ideological one in which philosophy in the deepest sense of mankind's self-definition was very much at issue. The end of the Cold War, then, represents a victory at least as decisive and one-sided as the defeat of Napoleonic France in 1815, or of Imperial Germany in 1918, or of the Axis in 1945. In terms of the actual capitulation, that moment may have come at the 19 November 1990 Paris summit when Gorbachev accepted the conditions of the victorious coalition by describing the unification of Germany that had come about completely on Western terms as a "major event"--a description that Zbigniew Brzezinski has termed the functional equivalent to the acts of surrender in the railroad car at Compiègne in November 1918 and on the USS *Missouri* in August 1945.[25]

These cyclic aspects notwithstanding, no one expected to see the sudden end of the Soviet Empire in Europe, the dissolution of the Soviet state, and the repudiation of communism itself throughout that disintegrating state. "In understanding the collapse of communism and the Soviet state," Ronald Steel points out in this regard, "the strategists

in government, at universities, and in the well-financed limbo in between have been virtually irrelevant." [26] One answer to this failure was found in a renewed focus on time's arrow--an increasing emphasis after the Cold War on what are perceived as unique, irreversible forces and trends that began the great changes in the penultimate decade of this century and continue to swirl with great effect during the current transition period. Nowhere is this tendency more prevalent than in those national security issues dealing with the nature of war at all three levels of analysis.

Time's Cycle and the Individual

At the individual level of analysis, time's arrow appears to predominate in the current transition period. For many, there is a unique sense of human progress concerning warfare, stimulated in part by the escape from the Cold War without a major hot war. The relief has been particularly sharp because the Damoclean sword of great power nuclear warfare never fell. There is a natural tendency to see this as a reaction to horrific images of future wars under the new, unique technology and as a consequence of what Joseph Nye has called "nuclear learning." This type of reaction eventually penetrated all three levels of analysis, permitting the establishment of stable security regimes that encouraged both superpowers to put long-term mutual considerations above shorter-term self-interests. The result was the acceptance of formal and informal norms as a basis for behavior and rules of engagement that came to include the development of Permissive Action Links (PAL), second-strike nuclear capabilities, intrusive verification systems, and tacitly tolerated satellite reconnaissance. [27]

All this reinforces a general perception during the current transition concerning what John Mueller has described as the "obsolescence" of great power war. Mueller argues, however, that the near-term effects of the nuclear technology have been confused with a long-term trend toward ending great power conflict, caused in part by the public reaction to two world wars. Nevertheless, it would appear that at the very least, as Carl Kaysen has pointed out, "These new technologies of war have amplified the message of this century's war experiences by many decibels, and set it firmly in the minds of the wide public as well as those of political and military leaders." [28] How firmly that message has been received was illustrated in 1987 by the entertainer Michael Feinstein while performing a series of songs by Irving Berlin in the Oak Room of the Algonquin Hotel in New York City. As he rendered the 1911 hit song, "Alexander's Ragtime Band," Feinstein stopped on the line that points out the way the band plays a bugle call is "so natural that you want to go to war," struck by the anachronistic sentiment. "It's an old song," he explained. [29]

Unfortunately, time's cycle is a reminder that it is unlikely, as Prince Andrei in Tolstoy's *War and Peace* believed, that war can become so horrible that man and therefore nations will renounce it. History, in this case, is not just linear in character with precise beginnings and ends triumphantly proclaimed. It is also, in part, as Edward Gibbon pointed out in his study of the decline and fall of Rome, "little more than the register of the crimes, follies, and misfortunes of mankind." [30] From this cyclic vantage point, the horrific effects on man of new war technologies are hardly a reassuring basis for predicting obsolescence of that institution even at the great power level. The technologies of World War I, for example, washed away previous misconceptions concerning modern war in a sea of blood, leaving an indelible mark across an entire generation. The reaction of that generation was captured by Dick Diver, F. Scott Fitzgerald's protagonist in *Tender is the Night*, when he revisits the Somme battlefield after the war. "This western-front business couldn't be done again," he explains less than two decades before World War II.

The young men think they could do it but they couldn't. . . . This took religion and years of plenty and tremendous sureties and the exact relation that existed between the classes. . . . You had to have a whole-souled sentimental equipment going back further than you could remember. You had to remember Christmas, and postcards of the Crown Prince and his fiancée, and little cafes in Valence and beer gardens in Unter den Linden and weddings at the mairie, and going to the Derby, and your grandfather's whiskers. . . . This kind of battle was invented by Lewis Carroll and Jules Verne and whoever wrote Undine, and country deacons bowling and marraines in Marseilles and girls seduced in the back lanes of Wurtemberg and Westphalia. Why, this was a love battle--there was a century of middle-class love spent here. This was the last love battle. [31]

In a similar manner, time's cycle offers very little comfort in terms of restraint concerning nuclear weapons. That such restraint could break down in an age of proliferation is reinforced by time streams going as far back as 1137, when the Lateran Council banned the use of the crossbow against Christian enemies, citing that weapon as not only destructive

to mankind, but as being hateful to God. Richard Coeur de Lion reintroduced the crossbow into European wars, and many saw his death in 1199 by a bolt from that weapon as a clear expression of divine displeasure at the affront to chivalric custom which disapproved of all weapons other than sword and lance. Nevertheless, technological innovation continued to outstrip the Council's prohibitions in the years to come. By 1529, Pierre du Terrail de Bayard, *chevalier sans peur et sans reproche*, could thank God that he had always used the proper weapons against knights: the sword, the lance, and the crossbow.[32]

This discouraging cyclic immanence also extends to other weapons of mass destruction (WMD). A Japanese cult broke the taboo against use of such weapons when it used a lethal chemical nerve agent on the Tokyo subway in March 1995, killing 12 and injuring thousands. And closer to home, right-wing extremists have been involved in various plots against federal agencies and officials involving radiological materials as well as ricin, an extremely toxic biological agent, and vials of freeze-dried bubonic plague. As constraints against use of WMD continue to erode, crude designs of nuclear, chemical, and biological weapons are increasingly available in print and on the Internet even while components for such weapons continue to leak from inadequately secured facilities in the former Soviet Union. As if this dismal proof of cyclic continuity were not enough, the persistence of time's arrow in an evolutionary sense also works in adverse symbiosis. For terrorists, as the Oklahoma City bombing demonstrates, have like biological organisms made sub-optimal adaptive responses to their environment. The use of a fertilizer designed to enhance creation and growth as an effective, conventional sub-optimal substitute for WMDs is a tragically ironic confirmation of Darwin's perception of time's arrow as descent with modification.[33]

In all this, as the 20th century and the millennium come to a close, there is very little evidence and therefore little comfort from the concept of progress in time's arrow. Once again, as Barbara Tuchman illustrated in her study of the "calamitous 14th century" as a "distant mirror" of the current century, time's cycle dominates at the first level of analysis. "History never repeats itself," Voltaire said in this regard, "man always does." [34] Thus for Tuchman, there is the reflection across the ages from the century of Hiroshima and the Holocaust to a distraught age in which rules were breaking down under the pressure of adverse and violent events, not the least of which was the Black Death, the most lethal disaster in recorded history. It is this empathy that ultimately, as the famed historian pointed out, provides the only degree of comfort for the individual, a comparison that is compelling in a period of similar disarray: "If our last decade or two of collapsing assumptions has been a period of unusual discomfort, it is reassuring to know that the human species has lived through worse before." [35] It is a cyclic reassurance that at the first level of analysis lacks the grandeur and promise of progress in time's arrow, but as historians throughout the ages have discovered, provides the only realistic source of comfort. Thus Thucydides could write that given human nature, past events "will at some time or other and in much the same ways, be repeated in the future." [36] And over two millennia later as the lights went out all over Europe, Arnold Toynbee was struck by the sustenance offered by the cyclic metaphor.

The general war of 1914 overtook me expounding Thucydides to Balliol undergraduates. . . . and then suddenly my understanding was illuminated. The experience that we were having in our world now had been experienced by Thucydides in his world already. I was rereading him now with a new perception--perceiving meanings in his words, and feelings behind his phrases, to which I had been insensible until I, in my turn, had run into that historical crisis that had inspired him to write his work. Thucydides, it now appeared, had been over this ground before. He and his generation had been ahead of me and mine in the stage of historical experience that we had respectively reached; in fact, his present had been my future. But this made nonsense of the chronological notation which registered my world as "modern" and Thucydides' world as "ancient." Whatever chronology might say, Thucydides' world and my world had now proved to be philosophically contemporary.[37]

Time's Cycle and the State

In the summer of 1989, the political scientist Francis Fukuyama published an article that viewed the triumph of Western liberal democracy over Marxism-Leninism as proof that Hegel's vision of an end to history had finally occurred. Like Marx, who committed a similar fallacy by establishing the proletarian revolution as the final stage in history, Fukuyama predicted "centuries of boredom" because of "the total exhaustion of viable systemic alternatives to Western liberalism." [38] It was an obituary based on the confluence of many trends that appeared unique in time's arrow as the Cold War ended, ranging from the failure of command economies to the increased permeability of

borders due to the information and communication revolutions, revolutions that had empowered the individual rather than, as George Orwell had predicted, the state. But it was also an obituary, as Michael Howard pointed out, that could be premature.

The failure of rival creeds does not mean that our own is bound to succeed, only that it has been given another chance. Both fascism and communism emerged in Europe because liberal democracy failed to live up to its expectations. If we fail again, we may expect new and similar challenges, both in our own continent and throughout the world.[39].

Such warnings also apply to the widespread view in contemporary social science that war between mature, stable democracies has been exceedingly rare--a view that has received increasing prominence in the Clinton Administration.[40] In this regard, there is an important cyclic reminder that nations don't become stable, mature democracies overnight. Instead, as a recent study demonstrates, there is a tendency in the early stages of democratization for countries to become more aggressive and war-prone as elites faced with democratization attempt to maintain their positions by using populist, nationalist themes to mobilize mass public support. The problem, as history abundantly illustrates, is that like the sorcerer's apprentice, elites find it easier to create mass allies than to control them. When this happens, hard-pressed leaders attempt to retain control of centrifugal political coalitions by using nationalistic prestige strategies that can lead to war. Thus, there was mid-Victorian Britain, positioned between the partial democracy of the 1832 Reform Bill and the full-fledged mass politics of the Gladstone era, swept into the Crimean War by the impetus of jingoistic public opinion. On a much larger scale, there was the ruling elite of Wilhelmine Germany dealing with the adverse mixture of universal suffrage and limited governmental accountability by competing with middle-class mass groups for the mantle of German nationalism in an ever-escalating process that led to World War I.[41] And on a more recent note in the current transition period, there is the case of a nuclear-armed great power like Russia making the leap from total autocracy to extensive mass democracy against the background of tense relations with its neighbors in the "near abroad," while popular support grows for radical nationalists.[42]

There are other cyclic cautionaries at the state level of analysis--all within the lingering uniqueness of time's arrow in the current transition period. Most striking is the residual uniqueness of an American governmental structure formed by the Cold War with national security concerns dominant and a military establishment transcendent. The result is a vast national security apparatus that stretches from the White House and the State Department across the Potomac to the Pentagon where over 25,000 workers man the tip of the defense iceberg, to the Central Intelligence Agency farther out in Virginia. No one expects Washington to return to the Cincinnati capital of the 1930s when the State, War, and Navy Departments were all housed in what is now the Old Executive Office Building. At the same time, however, there is the clear necessity to adjust institutions for the new era. In the previous transition period, the task was easier since the United States had so little international affairs machinery and experience, and thus could build from a fresh base that allowed its newly emerging policy elites to be "present at the creation." There is, to say the least, no comparable void in Washington during the current transition. The task, however, remains the same as in the last transition to ensure that governmental form and function proceed apace in response to historical change. Ernest May has described what happens in time's cycle when these two characteristics grow apart in capitals of nation states as a result of such change.

In Westminster, the houses of Parliament and Buckingham Palace--both structures of the Victorian era--and the Georgian and Regency offices along Whitehall are buildings for a seat of empire, not for the capital of a middle-ranking member of the European Community. The drab, modest government office blocks of Tokyo and Bonn seem equally ill-suited, given that they serve the second and third ranking powers of the economic world. None of these capitals vies with Vienna, where the magnificent Hofburg is the seat of government for a republic smaller than Indiana.[43]

The most remarkable aspect of the growth of the national security state in the Cold War was the emergence of a huge standing military force that ultimately provided the United States a balanced global reach unlike that of any great power in history. The current joint air, land, and sea effectiveness of American forces, for instance, stands in sharp contrast to the situation at the zenith of the Royal Navy's rule of the sea under the *Pax Britannica* when Bismarck noted that if the British army should land on the coast of Prussia, he would have the local police arrest it. The vastness of the force required for preserving the "long peace" while prosecuting the "long war" on a global scale was captured

by Zbigniew Brzezinski at the height of the Cold War when he noted that there were:

more than a million American troops stationed on some 400 major and almost 300 minor United States military bases scattered all over the globe. [That there were] more than forty-two nations tied to the United States by security pacts, American military missions training the officers and troops of many other national armies, and . . . approximately two hundred thousand United States civilian government employees in foreign posts all makes for striking analogies to the great classical imperial systems.[44]

This situation has clearly changed with the end of the Cold War. Downsizing is a fact of life for the US military in this transition period as it was in a cyclic perspective after the other two great conflicts of this century. The principal reason, like that at the conclusion of most wars, is that the overarching threat has virtually disappeared. Equally important, there is the public perception that there has been an erosion of the 500-year-old linkage between military and economic strength as a symbiotic means of producing predominance in world politics.[45] By the 1980s, there was already a general feeling that there was a price to pay for emphasizing military security over solvency, that the 40-year quest for military advantages in the Cold War had done nothing to protect the United States from economic decline and social disequilibrium, and in fact in many cases had exacerbated those problems. That perception was reinforced by the massive economically induced implosion of the Soviet Union that ended the Cold War. Added to that was the recognition that the "long war" for both superpowers had truly been a "long peace" for Germany and Japan, precisely because, like the tiny Duchy of Fenwick in the film *The Mouse that Roared*, their defeat in war had allowed them to separate economic growth from military capability.[46]

In the wake of the Cold War, US administrations have attempted to deal with these perceptions, acutely aware in time's cycle of the problems ranging from military readiness to civil-military relations that have resulted in the past from the familiar American pattern of postwar demobilization. In the Bush Administration, the military's base force concept still reflected in the absence of a specific threat the Cold War desire to strike a balance between multilateralism and unilateralism. That in turn guaranteed that force requirements would exceed peace dividend expectations--a trend in the face of uncertain regional threats increasingly hard to justify with generic color plans. "I'm running out of villains," General Powell remarked in this regard; "I'm down to Fidel Castro and Kim Il Sung." [47] The Clinton Administration initially turned for a solution to "assertive multilateralism," but soon retreated to the more restrictive policy of Presidential Decision Directive (PDD) 25, faced like Woodrow Wilson in time's cycle with public postwar disillusionment concerning extravagant internationalism.[48]

Time's Cycle and the International System

In the post-Cold War era, there has also been a renewed emphasis on time's arrow in the international system against the backdrop of unique trends such as those concerning global transparency and global environment. These trends are the cumulative results of the forces unleashed by the revolutions in communications, information, transportation, and technology that predated the end of the Cold War. Theorists as early as the 1970s argued that with the expansion of commerce as a result of these forces and trends, relationships based on cooperation and integration were becoming at least as important as traditional geopolitical competition. In the intervening years, liberal analysts have concluded that the unique, linear evolution of complex economic interdependence fosters peace by causing trading to be more profitable than war. Interdependent states, in other words, would rather trade than invade--a conclusion at the systems level of analysis for these theorists reinforced by the cumulative learning at the individual and state levels focused on changing values and what is perceived as the irreversible victory of liberal capitalism. From this perspective, war is a particularly counterproductive way for any rational nation-state to achieve the central goals of prosperity and economic growth.[49]

It is, however, a perspective that overreacts to forces and trends in time's arrow while ignoring the immediate and long-term implications of time's cycle. In the short-term, it is not economic interdependence that has brought about great power peace. Instead, it was the bipolar peace of the Cold War, founded on rivalry and fear of nuclear war, not desire for profit, that induced the cooperation that made economic interdependence safe and therefore possible. In a world in which there is little likelihood of large-scale conflict, states are less concerned about the dependencies that such interdependence creates and about the relative economic disadvantages that open markets produce.[50] At the same time, as leaders in the current transition period react to a variety of "unique" ethnic and religious strife

throughout the globe, the Cold War is a useful reminder that during the superpower stability of that long twilight conflict, no such condition occurred for very long in the so-called Third World, a categorization of nation-states that even owed its origins to the bipolar nature of the international system. In that world, the absence of superpower war was not synonymous with global peace; nor was the absence of system transformation through war translated into global stability. Instead, recurrent violence in an unstable "peripheral" system occurred alongside a stable "central" system, with an estimated 127 wars and over 21 million war-related deaths taking place in the developing world during the Cold War.[51]

On a larger cyclic note, realist theorists contend that economic interdependence has not only failed to lead to peace in the past, but in fact has increased the likelihood of war. By the close of the 19th century, for example, more of the world was more closely interlocked, economically and financially, than at any previous time. By 1910, Norman Angell could assert in his best-selling *The Great Illusion* that war was irrational on economic grounds since the destructiveness of modern conflict was incompatible with commerce and would thus bring modern, interdependent industrial nations to ruin.[52] Three years later, Britain was the leading market for German exports, and Britain followed the United States very closely as Germany's primary bilateral trade partner. World War I the next year appeared to demonstrate that states dependent on others for vital resources in an anarchic global system would have increased incentives to go to war in order, as Kenneth Waltz points out, "to control what they depend on or to lessen the extent of their dependency." [53] Positive trade expectations may mitigate somewhat the automatic realist equation of continued high interdependence with conflict. But at the very least, the Great War sounds a note of cyclic caution to liberals confident in the slipstream of post-Cold War forces and trends that a new day in time's arrow is dawning for the international system.[54]

That caution is amplified by other theorists who perceive global war occurring in time's cycle approximately every 100 to 150 years.[55] From these wars emerge single hegemonies that are not necessarily the most powerful states, but the ones best positioned to dominate the international system and create a period of stability. Stability is then followed by uneven rates of economic and technological growth among states that encourage efforts to change the system-- "disequilibrium" in Robert Gilpin's description, "between the existing governance of the international system and the underlying distribution of power in the system." [56] New would-be hegemonies rise accompanied by the current hegemon's decline--the result of such factors as exhaustion, bureaucratization, and loss of creativity that stem from the hegemonic efforts and the stability those efforts have created. From this perspective in the modern era, one interpretation is that change of leadership occurred when Germany challenged Britain's dominance of the international system in the late 19th and early 20th century. That challenge led to both world wars, perceived as two segments of a single global upheaval from which the United States emerged as the new dominant power. The upshot of this and similar cyclic views was that the international stability of the global system in the Cold War was not an aberrant historical event, but the peaceful phase that normally follows a period of global war and major readjustment involving, as John Lewis Gaddis has pointed out, "a brief, unsuccessful, and not even particularly interesting challenge by the Soviet Union to the hegemonic position the United States established for itself in world politics after 1945." [57]

A concomitant to such interpretations was the subsequent "disequilibrium" in the global system--reflected in the growing "declinist" view, represented in the national debates generated by the 1987 publication of Paul Kennedy's *The Rise and Fall of the Great Powers* as the Cold War was ending. From the standpoint of the public, with its general sense of American exceptionalism, nothing appeared quite so disturbing as the declinist assertions that the United States might soon share the "fall" common to every hegemon of the past. Nor was the blow softened by a growing realization, reflected in the debates, that the successful development of American political institutions and economic systems in the major axis powers of World War II might well play a prominent role in that decline. The result was ironic, with the idea of a more modest future being generally rejected by the public at the same time that a disposition not to pay for America's position in the world was increasing in the Reagan years.[58]

The declinist debates are a useful reminder that like a flea crawling in minute linearity on a hula hoop, national security analysts in the post-Cold War era may over-focus on the unique aspects of time's arrow in this transition period to the detriment of larger cycles concerning peer threats and hegemonic wars. In any event, cyclical theorists do not deny the arrow of linear evolution that prevents a precise repetition of cycles, acknowledging instead that even as cycles operate they move forward in time, always subjected to modification by non-cyclical forces. For example, the frequency and amplitude of cycles concerning recurring hegemonic wars may be diminished by the linear development in time's

arrow of nuclear weapons; by social consciousness toward war similar to that which almost completely eliminated slavery and dueling; and by growing political awareness that accelerates trends toward democratic forms of government.[59] On the other hand, if the cycles of global wars stem from uneven rates of economic and technological growth, and if there is an acceleration of that growth, hegemony may remain hegemony for increasingly shorter periods; a new hegemonic war may be just around the corner in a combination of time's cycle and time's arrow.

For other theorists, this combination renders moot any such perspective on war in the international arena, because the role of the state, the basic player at the second level of analysis, is declining. The result of current forces and trends in time's arrow, Martin van Creveld posits, will be a return to an era when "religious attitudes, beliefs, and fanaticisms will play a larger role in the motivation of armed conflict than [they have] . . . for the last 300 years." [60] It is a picture of larger cyclic continuity, in which the state loses its monopoly over armed violence even as advanced military technology becomes increasingly irrelevant for the low-intensity conflicts that will come to dominate war in the international arena. "Considering the present and trying to look into the future," van Creveld concludes, "I suggest the Clausewitzian Universe is rapidly becoming out of date and can no longer provide us with a proper framework for understanding war." [61] To which John Keegan agrees, pointing out that technology in the form of nuclear weapons long ago undermined Clausewitz's most basic dictum. Forces and trends in current international relations only further discredit this proposition. "War is not the continuation of policy by other means," he concludes.

Clausewitz's thought is incomplete. It implies the existence of states, of state interests and of rational calculation about how they may be achieved. . . . What it made no allowances for at all was war without beginning or end, the endemic warfare of non-state, even pre-state peoples.[62]

This is assuredly much too extreme a reaction to the unique directional flow of time's arrow in the current transition period. Overly focusing on linear forces and trends in the manner of the flea on the hula hoop can lead to strategic fads and fashionable theories that tend to overwhelm the cumulative, cyclic understanding of history, making it difficult for strategists to distinguish the ephemeral from the persisting and structural. The focus on global chaos and anarchy in the developing world is an example. To elevate this to the highest level of primary national security concerns ignores larger, more fundamental threats, while assuming much too prematurely the declining importance of great powers and nation-states. It is true, of course, that forces and trends in time's arrow are compromising the Westphalian state model. But given the anarchic nature of the international system, it is historically myopic to take that model as a benchmark from some golden age when all states were identical actors exercising exclusive authority within their boundaries. In reality, weaker states have frequently succumbed to coercion and imposition, and stronger ones have entered into conventions and contracts that compromised their autonomy and even territoriality. Nevertheless, the model in time's cycle has survived and continues to flourish. "In fact," one analyst points out concerning the current transition period,

while many ethnic, environmental and other humanitarian problems do cross borders, it is nation states, with their armies, governments, laws and legitimacy that are--and will remain--the dominant force in world affairs. And from the Balkans to the Mideast to Asia, the greatest threat to peace remains the ambitions of nation states and leaders who are hostile to democracy and norms of international behavior.[63]

It is incumbent on national security analysts, therefore, to remain concerned with the danger of unbalanced power as the central organizing structure in an anarchical, self-help, state-centric world. Such a focus requires, in turn, a constant consideration of possibilities concerning peer threats and hegemonic wars. This is not to succumb to either cynicism or pessimism in a time of transition remarkably absent of a major clear and present danger. It is simply to acknowledge that history is a permanent process of cooperation and competition and that this century in time's cycle has produced three major balance-of-power wars: two hot, one cold. Seen in this light, there is nothing in the current period that lessens the cyclic immanence of what Colin Gray calls the golden rule in world politics: "bad times return."

The possible fact that one might peer into the future from the vantage point of today and find no threats of major substance, is quite beside the point. One can occasionally look upward and see only blue sky. Few would draw far-reaching conclusions from that empirically unchallengeable observation of the moment. Certainly, one would not give away all of one's bad weather clothing.[64]

Conclusion

There are two basic rules that apply to the use of time's arrow and time's cycle. The first is that the relationship is not a zero-sum game: one metaphor in a given circumstance does not exclude the other. By itself, the assertion of the arrow that every moment of time is unique is unsatisfactory. Man craves the immanence of time's cycle, some underlying general ties or principles that impart order and structure by transcending the distinction of moments. In no field is this urge more evident than in the study of national security affairs. And yet time's arrow is also an important reminder that national security issues can evolve in different ways contingent on particular players, circumstances, and events.

The second rule is that the first rule does not mean that the two metaphors meld together in an undefined middle, a soft pluralism that loses the essence of each vision: the uniqueness of history and the immanence of law. There is, in fact, no blending of the two metaphors, only a coexistence in tension and fruitful interaction that offers clarity of insight on national security issues at every level of analysis. A concomitant of the arrow's unique linearity, for example, can be a perception of omnipresent progress. But long cycles demonstrate to analysts and leaders alike that the relevant past extends backward far beyond what they have previously experienced. Hubris, in other words, is extremely difficult to maintain against the broad, cyclical sweep of time. There are always reminders like the broken statue of Shelly's "Ozymandias," once king of kings, upon whose works the mighty were to look and despair.

In the end, the student of national security affairs is left with the two separate but connected images of a large disk or wheel rolling forward on a track. Each movement of the wheel is similar as a reflection of timeless principles and different because the wheel has moved forward in time's arrow. The linearity of the track ensures that the analyst remains alive to change, whether it is multi-centric forces and trends chipping away at the state-centric international system or new threats ranging from environmental shifts to the horizontal spread of weapons of mass destruction. At the same time, the cycle within the arrow is a reminder of the continuity that creates the viscosity of history. The onslaught of new forces and trends notwithstanding, the basic fact in international affairs is that it is still an anarchical, self-help, state-dominated world, in which the principles associated with balance of power as a primary management tool retain their cyclic immanence. "What seems to work best, even though imperfectly," Donald Kagan points out, "is the possession by those states who wish to preserve the peace of the preponderant power and of the will to accept the burdens and responsibilities required to achieve that purpose." [65] For the United States, many of these burdens in time's arrow will undoubtedly be unique. But the responsibilities have a cyclic basis as the country faces a situation in the post-Cold War transition period similar to that which, in Edward Luttwak's description, confronted the Roman Empire in its later stages:

The Romans did not face a single enemy, or even a fixed group of enemies, whose ultimate defeat would ensure permanent security. Regardless of the amplitude of Roman victories, the frontiers of the empire would always remain under attack, since they were barriers in the path of secular migration flows from north to south and from east to west. Hence Roman strategy could not usefully aim at total victory at any cost, for the threat was not temporary but endless. The only rational goal was the maintenance of a minimally adequate level of security at the lowest feasible cost. [66]

NOTES

1. Stephen Jay Gould, *Hen's Teeth and Horse's Toes. Further Reflections in Natural History* (New York: W. W. Norton, 1983), p. 241. See also Stephen Jay Gould, *The Flamingo's Smile. Reflections in Natural History* (New York: W. W. Norton, 1985), p. 281.
2. Robert Tucker, *Evolving Patterns in U.S.-Soviet Relations, 1933-1986* (Washington: Kennan Institute for Advanced Russian Studies, 1987), p. 26.
3. Richard E. Neustadt and Ernest R. May, *Thinking in Time. The Uses of History for Decision-Makers* (New York: The Free Press, 1986), pp. 251-66.
4. See, for example, Stephen Jay Gould, *Time's Arrow, Time's Cycle. Myth and Metaphor in the Discovery of Geological Time* (Cambridge, Mass.: Harvard Univ. Press, 1987); Mircea Eliade, *The Myth of the Eternal Return*,

trans. Willard R. Trask (New York: Pantheon Books, 1954); Stephen Toulmin and June Goodfield, *The Discovery of Time* (New York: Harper & Row, 1965); and Richard Morris, *Time's Arrow. Scientific Attitudes Toward Time* (New York: Simon and Schuster, 1984).

5. Kenneth Waltz, *Man, The State and War: A Theoretical Analysis* (New York: Columbia Univ. Press, 1959), particularly pp. 12, 230. See also J. David Singer, "The Level-of-Analysis Problem in International Relations," *The International System*, eds., Klaus Knorr and Sidney Verba (Princeton: Princeton Univ. Press, 1961), pp. 77-92.

6. Eliade, p. 104; Morris, pp. 11, 23; Gould, *Time's Arrow*, pp. 10, 58; and Herbert Butterfield, *The Origins of History* (New York: Basic Books, 1981), pp. 80-117. The focus on the two metaphors throughout the article is culture-specific, with all examples derived from the Western classical and Judeo-Christian traditions. No attempt has been made to deal with the rich and varied concepts of time in other philosophies and culture, such as Hindu, Islamic, and Confucian.

7. Morris, p. 24. Augustine divided history into six linear stages analogous to the six days of creation, ending with the stage that commenced with the birth of Christ and continued until the Last Judgment when God would bring time to an end. *Ibid.*, p. 25.

8. Eliade, p. 101. See also Morris, p. 23, and Gould, *Time's Arrow*, pp. 187, 200, who points out how the traditional depictions of the Bible in stained glass windows contain not only the arrow moving from the Old Testament to resurrection, but also the cycle within the arrow as each event of Christ's life is portrayed as a replaying of an incident in the former cycle of Old Testament history. For example, a window of King's College at Cambridge depicts Christ's rising from the tomb as corresponding with Jonah's emerging from the belly of the great fish.

9. Gould, *Time's Arrow*, pp. 15, 191; see also p. 81.

10. Carl L. Becker, *The Heavenly City of the Eighteenth Century Philosophers* (New Haven: Yale Univ. Press, 1932), p. 31. See also Stephen Toulmin and June Goodfield, *The Discovery of Time* (New York: Harper & Row, 1965), p. 233.

11. Gould, *Time's Arrow*, p. 63. The principal discoverer was James Hutton, a geologist who described the four stages as land being worn away by erosion, eventually deposited as strata in the ocean depths, which are then compacted and consolidated by heat from the weight of overlying sediments as well as the interior fires of the earth, and finally with that heat eventually causing the strata to fracture and uplift to form new continents and begin the cycle over. Gould, *Hen's Teeth*, p. 85. On Hutton, see also James Burke, *The Day the Universe Changed* (Boston: Little, Brown, 1985), pp. 249-50, and 253; and Toulmin and Goodfield, pp. 153-59.

12. Gould, *Time's Arrow*, p. 2.

13. Stephen Jay Gould, *An Urchin in The Storm: Essays About Books and Ideas* (New York: W. W. Norton, 1987), p. 13; *Wonderful Life. The Burgess Shale and the Nature of History* (New York: Norton, 1989), pp. 283-84 and 320-21; and *Flamingo's Smile*, p. 15. Randomness is used in evolutionary theory to discover changes that occur with no determined orientation, not as a general metaphor for chaos, disorder, or incomprehensibility. Chance may well describe a sequence of events without implying that each individual event has no cause. Gould, *Hen's Teeth*, pp. 334, 340, and 342.

14. Nevertheless, Darwin was able to bridge the tension between optimal design and history by looking upon progress as a cumulative side consequence of contingent history, in which the "inhabitants of each successive period in the world's history have beaten their predecessors in the race for life." Gould, *Wonderful Life*, p. 258; see also pp. 286, 289-90, and 300; Gould, *Hen's Teeth*, pp. 22, 124, 131, 159-60, 258-59 and 333; Stephen Jay Gould, *Bully for Brontosaurus. Reflections in Natural History* (New York: W. W. Norton, 1991), p. 61; and H. Butterfield, *The Whig Interpretation of History* (New York: Norton, 1945).

15. Karl Marx, *The Eighteenth Brumaire of Louis Bonaparte* (New York: International Publishers, 1963), p. 15. It was a balance, as the title of his study also illustrated, that required both time's cycle and arrow. The 18th day of Brumaire, year VIII by the revolutionary calendar of 1793, was the date that the original Napoleon staged his coup d'etat against

the Directory on 9-10 November 1799. Marx used his title to mock the rise of the Emperor's nephew, Louis Napoleon, from his presidency of France after the 1848 revolution through his coup of December 1851 to his emergence as Napoleon III. These are lessons in repetition, Marx concluded, but as Louis Napoleon demonstrated, there is also the individuality in each cycle. On the characteristic of this particular repetition, Marx wrote: "Hegel remarks somewhere that all facts of personages of great importance in world history occur, as it were, twice. He forgot to add the first time as tragedy, the second as farce . . . the Nephew for the Uncle." Ibid. See also Toulmin and Goodfield, p. 235.

16. Gould, *Wonderful Life*, pp. 287-88. See also Gould, *Urchin*, p. 13. *The Terminator*, of course, poses another problem in contingent history. If the super-robot had never been dispatched into the past to eliminate the mother of Dennis Conner, the rebels would not have had one of their members follow it to prevent the murder. Since that rebel fathers Dennis Conner in the past, the rebel leader would never have existed if the evil government in the future had not reacted with the time travel for the Terminator. At some point on the time continuum, Dennis Conner would have just disappeared.

17. Gould, *Wonderful Life*, p. 288. The implications far beyond the world of Bedford Falls refer to Harry Bailey, whose life is saved by his brother George, and as a consequence goes on to win a Medal of Honor for saving over a hundred men on a troop transport in World War II. In the alternate outcome, Bedford Falls becomes Pottersville named for Old Man Potter (Lionel Barrymore), the town miser and manipulator.

18. John Lewis Gaddis, *How Relevant Was U.S. Strategy in Winning the Cold War?* (Carlisle, Pa.: Strategic Studies Institute, 1992), p. 10. See also Robert Jervis, "The Future of World Politics: Will It Resemble the Past?" *International Security*, 16 (Winter 1991-92), 42-43.

19. See Gould, *Bully for Brontosaurus*, pp. 61-65, and particularly *Hen's Teeth*, p. 250, in which he comments on the tension between man's unity with nature and man's dangerous uniqueness:

How can we erect a picket fence when humans are so inextricably bound in nature? But how can we opt for complete continuity . . . when humans are so special, for better or for worse? We are but a tiny twig on a tree that includes at least a million species of animals, but our one great evolutionary invention, consciousness--a natural product of evolution integrated with a bodily frame of no special merit--has transformed the surface of our planet. Gaze upon the land from an airplane window. Has any other species ever left so many visible signs of its relentless presence?

20. Winston S. Churchill, *The World Crisis 1911-1914* (New York: Charles Scribner's Sons, 1928), p. 274.

21. John Lewis Gaddis, *Strategies of Containment* (New York: Oxford Univ. Press, 1982), pp. 133-34. See also Gaddis, *How Relevant Was U.S. Strategy*, p. 11.

22. John Lewis Gaddis, "International Relations Theory and the End of the Cold War," *International Security*, 17 (Winter 1992-93), 16-17, 39-40. See also John Lewis Gaddis, *The United States and the End of the Cold War. Implications, Reconsiderations, Provocations* (New York: Oxford Univ. Press, 1992), pp. 155-67.

23. Gould, *Hen's Teeth*, p. 278. See also, Gaddis, *United States and the End of the Cold War*, p. 179; and John Mueller, *Retreat From Doomsday. The Obsolescence of Major War* (New York: Basic Books, 1989), pp. 11-12. For a similar demise of dueling, see Mueller, pp. 9-11.

24. Kenneth Waltz, *Theory of International Politics* (Reading, Mass.: Addison-Welsey, 1979), p. 173. See also Gaddis, *United States and the End of the Cold War*, p. 109.

25. Zbigniew Brzezinski, "The Cold War and Its Aftermath," *Foreign Affairs*, 71 (Fall 1992), 31-49.

26. Ronald Steel, "The End and the Beginning," in *The End of the Cold War. Its Meaning and Implications*, ed. Michael J. Hogan (Cambridge, Eng.: Cambridge Univ. Press, 1992), p. 105. On the perception of the suddenness of the event, see General Powell's 27 September 1991 comments to the Senate Armed Services Committee: "We have seen our implacable enemy of 40 years vaporize before our eyes." R. J. Jeffery Smith, "Initiative Affects Least Useful

Weapons," *The Washington Post*, 28 September 1991.

27. "Nuclear weapons did not cause the condition of bipolarity; other states by acquiring them cannot change the condition." Waltz, *Theory of International Politics*, p. 180. Nye, "Nuclear Learning and U.S.-Soviet Security Regimes," pp. 371-402. See also Alexander L. George, "Factors Influencing Security Cooperation," *U.S.-Soviet Security Cooperation*, pp. 655-78; Robert Jervis, *The Meaning of the Nuclear Revolution* (Ithaca, NY: Cornell Univ. Press, 1989); and Michael Mandelbaum, *The Nuclear Revolution: International Politics Before and After Hiroshima* (Cambridge, Eng.: Cambridge Univ. Press, 1981).

28. Carl Kaysen, "Is War Obsolete? A Review Essay," *International Security*, 14 (Spring 1990), 61. See also, Mueller, pp. 220-21; Mueller points out that a jump from the 50th-floor window may seem more horrible than one from a fifth floor. But those who find life immensely satisfying (like any great nation content with the status quo) are unlikely to do either. *Ibid.*, p. 116. See also Gaddis, *United States and the End of the Cold War*, pp. 105-18.

29. Mueller, p. 52.

30. Edward Gibbon, *The History of the Decline and Fall of the Roman Empire*, ed. J. B. Bury (London: Methuen, 1909), I, 85-86. See also Leo Tolstoy, *War and Peace* (Harmondsworth, UK: Penguin, 1957), Book 3, Part 2, ch. 25; Colin S. Gray, "Villains, Victims, and Sheriffs: Strategic Studies and Security for an Interwar Period," *Comparative Strategy*, 13 (October-December 1994), 358; and Gaddis, *United States and the End of the Cold War*, p. 186.

31. F. Scott Fitzgerald, *Tender is the Night* (New York: Charles Scribner's Sons, 1934), p. 57.

32. Michael Glover, *The Velvet Glove. The Decline and Fall of Moderation in War* (London: Hodder and Stoughton, 1982), p. 99. See also John Keegan, *A History of Warfare* (New York: Alfred A. Knopf 1993), pp. 321, 323. Initially, knights would execute any crossbowmen taken prisoner. *Ibid.*, p. 333.

33. Jessica Stern, "Terrorism Multiplied," *The Washington Post*, 17 July 1996, p. 19.

34. Barbara W. Tuchman, *A Distant Mirror. The Calamitous 14th Century* (New York: Alfred A. Knopf, 1978), p. xiv. See also James Westfall Thompson, "The Aftermath of the Black Death and the Aftermath of the Great War," *American Journal of Sociology*, March 1920, who compares the aftermath of World War I with that of the Black Death and finds the same problems ranging from economic chaos, social unrest, and profiteering to depraved morals, wild expenditure, and frantic gaiety.

35. Tuchman, p. xiii. The French medievalist Edouard Perroy touched on this aspect in a study of the Hundred Years' War, written while hiding from the Gestapo during World War II: "Certain ways of behavior, certain reactions against fate, throw mutual light upon each other." *Ibid.*, p. xiv.

36. Thucydides, *History of the Peloponnesian War*, trans. and ed. Rex Warner (Harmondsworth, UK: Penguin, 1976, 1996), p. 48.

37. Arnold J. Toynbee, *Civilization on Trial* (New York: Oxford Univ. Press, 1948), pp. 7-8. See also Colin S. Gray, "Strategic Sense, Strategic Nonsense," *The National Interest*, No. 29 (Fall 1992), p. 12.

38. Francis Fukuyama, "The End of History?" *The National Interest*, No. 16 (Summer 1989), pp. 3, 18. See also Gaddis, *United States and the End of the Cold War*, pp. 180, 186; and Gaddis, "International Relations Theory," pp. 44-45.

39. Michael Howard, "Cold War, Chill Peace," *World Policy Journal*, 10 (Winter 1993-94), 30.

40. See, for example, Anthony Lake, "The Reach of Democracy: Tying Power to Diplomacy," *The New York Times*, 23 September 1994, p. A-35; and *A National Security Strategy of Engagement and Enlargement* (Washington: GPO, February 1996), pp. 32-34. President Clinton has at times extended the hypothesis far beyond the more generally accepted limitations, as he did on 1 April 1994: "Democracies are far less likely to wage war on other nations than

dictatorships are." Charles F. Hermann, "Democracies and War: One of Many Security Issues," *American Defense Annual*, ed. Charles F. Hermann (New York: Lexington Books, 1994), endnote 5, p. 298. For proponency of this view that mature, stable democracies have rarely, if ever, fought wars against each other, see Michael Doyle, "Liberalism and World Politics," *American Political Science Review*, 80 (December 1986), 1151-69 and Bruce Russett, *Grasping the Democratic Peace* (Princeton, N.J.: Princeton Univ. Press, 1993). For skeptics of this view, see Christopher Layne, "Kant or Cant: The Myth of the Democratic Peace," *International Security*, 19 (Fall 1994), 5-49; and David E. Spiro, "The Insignificance of the Liberal Peace," *ibid.*, pp. 50-86. For a subsequent rebuttal, see Bruce Russett, "The Democratic Peace: `And Yet It Moves,'" *International Security*, 19 (Spring 1995), 164-75.

41. Edward D. Mansfield and Jack Snyder, "Democratization and the Danger of War," *International Security*, 20 (Summer 1995), 5-38. The authors find no contradiction between their statistical finding that democratizing states are particularly war-prone and the widespread view that war between stable, mature democracies has been very rare. See "Correspondence," *International Security*, 20 (Spring 1996), 197.

42. Mansfield and Snyder, pp. 6, 36.

43. Ernest R. May, "The U.S. Government, A Legacy of the Cold War," *The End of the Cold War*, p. 217.

44. Zbigniew Brzezinski, *Between Two Ages: America's Role in the Technotronic Era* (New York: Viking, 1970), p. 34. See also Robert W. Tucker and David C. Hendrickson, *The Imperial Temptation. The New World Order and America's Purpose* (New York: Council of Foreign Relations Press, 1992), p. 14.

45. "Europe, in short, launched itself on a self-reinforcing cycle in which its military organization sustained, and was sustained by, economic and political expansion. . . ." William H. McNeil, *The Pursuit of Power* (Chicago: Univ. of Chicago Press, 1982), p. 143. See also Kennedy, *Rise and Fall of the Great Powers*, p. xvi, original emphasis: "The history of the rise and later fall of the leading countries in the Great Power system since the advance of western Europe in the sixteenth century . . . shows a very significant correlation *over the longer term* between productive and revenue-raising capacities on the one hand and military strength on the other."

46. Gaddis, *United States and the End of the Cold War*, pp. 157-58, and Kennedy, *Rise and Fall of the Great Powers*, pp. xx-xxi. See also Walter Lippmann's definition of solvency: "If its expenditures are safely within its assured means, a family is solvent when it is poor, or is well-to-do, or is rich. The same principle holds true of nations." *U.S. Foreign Policy: Shield of the Republic* (Boston: Little, Brown, 1943), p. 10.

47. Ronald D. Asmus, *The New U.S. Strategic Debate* (Santa Monica: RAND Arroyo Center, 1993), p. 66.

48. For the 17 preconditions for US participation in Security Council votes on peace operations as well as for the actual involvement in such operations, see the Clinton Administration's *Policy on Reforming Multilateral Peace Operations* (Washington: GPO, May 1994). For the evolution from draft PDD 13 in May 1993 to PDD 25 a year later, see Mark M. Lowenthal, *Peacekeeping in Future U.S. Foreign Policy* (Washington: Congressional Research Service Report 94-2605, 10 May 1994), p. 14.

49. Robert O. Keohane and Joseph S. Nye, Jr., *Power and Interdependence: World Politics in Transition* (Boston: Little, Brown, 1977); Stephen D. Krasner, ed., *International Regimes* (Ithaca, N.Y.: Cornell Univ. Press, 1983); Gaddis, "International Relations Theory, pp. 16, 41; Mueller, p. 219; Richard Rosecrance, *The Rise of the Trading State: Commerce and Conquest in the Modern World* (New York: Basic Books, 1986), pp. 13-25 and "A New Concert of Powers," *Foreign Affairs*, 71 (Spring 1992), 64-82; Dale C. Copeland, "Economic Interdependence and War. A Theory of Trade Expectations," *International Security*, 20 (Spring 1996), 5-41; and Paul A. Papayoanou, "Interdependence, Institutions, and the Balance of Power. Britain, Germany and World War I," *ibid.*, pp. 42-76.

50. Robert J. Art, "A U.S. Military Strategy for the 1990s: Reassurance Without Dominance," *Survival*, 34 (Winter 1992-93), pp. 7-8; and Alexander L. George, "Factors Influencing Security Cooperation," in *U.S.-Soviet Security Cooperation: Achievements, Failures, Lessons*, ed. Alexander L. George, Philip J. Farley, and Alexander Dallum (New York: Oxford Univ. Press, 1988), pp. 655-78.

51. Ruth Leger Sivard, *World Military and Social Expenditures 1989* (Washington: World Priorities, 1989). See also Charles W. Kegley, Jr., "Explaining Great Power Peace: The Sources of Prolonged Postwar Stability," *The Long Postwar Peace: Contending Explanations and Projections*, ed., Charles W. Kegley, Jr. (New York: Harper Collins, 1990), p. 8; Michael Brecher and Jonathan Wilkenfeld, "International Crisis and Global Instability: The Myth of the 'Long Peace,'" *ibid.*, ch. 3; and Eliot Cohen, "Distant Battles: Modern War in the Third World," *International Security*, 10 (Spring 1986), 186.

52. Mueller, pp. 30, 37. See also Gaddis, *United States and the End of the Cold War*, p. 168; and J. D. B. Miller, *Norman Angell and the Futility of War: Peace and the Public Mind* (New York: St. Martin's, 1986). After the war, Angell reiterated these points, emphasizing that he had never claimed that war would not occur, just that it was irrational. James Lee Ray, "Threats to Protracted Peace: World Politics According to Murphy," *The Long Postwar Peace*, p. 320. Nevertheless, Angell also demonstrated considerable optimism about the effect of war's economic futility on the incidence of conflict when he asserted that "not only is man fighting less, but he is using all forms of physical compulsion less . . . because accumulated evidence is pushing him more and more to the conclusion that he can accomplish more easily that which he strives for by other means." Norman Angell, *The Great Illusion: A Study of the Relationship of Military Power in Nations to Their Economic and Social Advantage* (London: William Heinemann, 1910), pp. 268-69.

53. Waltz, *Theory of International Politics*, p. 106.

54. Mearsheimer, "Back to the Future," pp. 5-56. Interdependence "will probably lead to greater security competition" because nations dependent on outside sources for central economic supplies "will fear cutoff or blackmail in time of crisis or war." John J. Mearsheimer, "Disorder Restored," *Rethinking America's Security*, ed. Graham Allison and Gregory F. Treverton (New York: W. W. Norton, 1992), p. 223. For the role of trade expectations see Copeland, particularly pp. 16-25; for the effect of the pattern and level of economic ties between Germany and Great Britain on pursuit of balance of power politics, see Papayoanou, pp. 53-74.

55. See, for example, George Modelski, ed., *Exploring Long Cycles* (Boulder: Lynne Rienner, 1987); Robert Gilpin, *War and Change in World Politics* (New York: Cambridge Univ. Press, 1981); Joshua A. Goldstein, *Long Cycles: Prosperity and War in the Modern Age* (New Haven, Conn.: Yale Univ. Press, 1988); and William R. Thompson, *On Global War: Historical-Structural Approaches to World System Analysis* (Columbia, S.C.: Univ. of South Carolina Press, 1988).

56. Gilpin, p. 232.

57. Gaddis, "International Relations Theory," p. 49. See also Thompson, pp. 277-80; Gaddis, *United States and the End of the Cold War*, pp. 186-90; Goldstein, p. 260; and Robert C. Johansen, "Do Preparations for War Increase or Decrease International Security?" *The Long Postwar Peace*, pp. 227-28.

58. Paul Kennedy, *The Rise and Fall of the Great Powers. Economic Change and Military Conflict from 1500 to 2000* (New York: Random House, 1987). See also Mancur Olson, *The Rise and Decline of Nations: Economic Growth, Stagflation, and Social Rigidities* (New Haven, Conn.: Yale Univ. Press, 1982); Aaron L. Friedberg, *The Weary Titan: Great Britain and the Experience of Relative Decline, 1895-1905* (Princeton, N.J.: Princeton Univ. Press, 1988). For the debate, see Peter Schmeisser, "Taking Stock: Is America in Decline?" *New York Times Magazine*, 17 April 1988, pp. 24-27, 66-68, 96; Joseph S. Nye, Jr., "Understating U.S. Strength," *Foreign Policy*, No. 72 (Fall 1988), pp. 105-29; Samuel P. Huntington, "The U.S.--Decline or Renewal?" *Foreign Affairs*, 67 (Winter 1988-89), 76-96; Paul Kennedy, "Can the U.S. Remain Number One?," *The New York Review of Books*, 16 March 1989, pp. 36-42; Henry R. Nau, *The Myth of America's Decline: Leading the World Economy into the 1990s* (New York: Oxford Univ. Press, 1990); Joseph S. Nye, Jr., *Bound to Lead: The Changing Nature of American Power* (New York: Basic Books, 1990); and Paul Kennedy, "Preparing for the 21st Century: Winners and Losers," *The New York Review of Books*, 11 February 1993, pp. 32-44.

59. See, for instance, Gilpin, pp. 7, 215, who speculates that the nuclear revolution may have made future hegemonic wars impossible; Goldstein, p. 366, who points out that "great-power war cannot continue to recur indefinitely while wars become exponentially more destructive"; and Mueller, pp. 3-13, for the linear development of changing social

consciousness. See also Gaddis, *United States and the End of the Cold War*, pp. 188-89.

60. Martin van Creveld, *The Transformation of War* (New York: The Free Press, 1991), p. 214. See also Brian Jenkins, *New Modes of Conflict* (Santa Monica, Calif.: RAND, 1983), p. 17, who concludes that based on the unique forces and trends in time's arrow, "warfare in the last quarter of the twentieth century may well come to resemble warfare in the Italian Renaissance or warfare in the early seventeenth century before the emergence of national armies and more organized modern warfare."

61. Van Creveld, p. 58; see also pp. 49-57 and 205-08.

62. Keegan, pp. 3 and 5. Wisdom is to be learned "in the denial that politics and war belong within the same continuum." Keegan, p. 392. The development of nuclear weapons was "the logical culmination of the technological trend in the western way of warfare, and the ultimate denial of the proposition that war was, or might be, a continuation of politics by other means." Ibid., p. 391.

63. Jeremy D. Rosner, "Is Chaos America's Real Enemy?" *The Washington Post*, 14 August 1994, p. C-1. For the cyclic onslaughts on and durability of the Westphalian model, see Stephen D. Krasner, "Compromising Westphalia," *International Security*, 20 (Winter 1995-96), 115-51.

64. Gray, "Villains, Victims, and Sheriffs," pp. 354, 357.

65. Donald Kagan, *On the Origins of War and the Preservation of Peace* (New York: Doubleday, 1995), p. 42.

66. Edward Luttwak, *The Grand Strategy of the Roman Empire* (Baltimore: Johns Hopkins Univ. Press, 1976), p. 137.

Dr. David Jablonsky (Colonel, USA Ret.) is the Professor of National Security Affairs in the Department of National Security and Strategy at the US Army War College. He is a graduate of Dartmouth College and the US Army War College, has an M.A. from Boston University in international relations, and holds M.A. and Ph.D. degrees in European history from Kansas University. Dr. Jablonsky has held the Elihu Root Chair of Strategy and the George C. Marshall Chair of Military Studies at the War College. His most recent books are *Churchill and Hitler, Selected Essays on the Political-Military Direction of Total War and Paradigm Lost? Transitions and the Search for a New World Order*.

Reviewed 24 November 1997. Please send comments or corrections to carl_Parameters@conus.army.mil