The Collapse of Civilizations

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History illustrates that civilizations seemingly come to an end inevitably. As the British philosopher Henry St. John, First Viscount Bolingbroke, wrote in 1738, “The best instituted governments carry in them the seeds of their destruction: and, though they grow and improve for a time, they will soon tend visibly to their dissolution. Every hour they live is an hour the less that they have to live” (McMaster University) .This quote begs the question: Why are civilizations doomed to collapse? This essay defines the term “collapse” under a civilizational context as a state when civilization stops functioning, succumbing to political disintegration, economic decline, and drastic demographical change (Preston 113).

Scholars today attribute the downfall of civilizations to a variety of factors. Some anthropologists, such as Jared Diamond, the author of *Collapse: How Societies Choose to Fail or Succeed*, argue that the cause of civilizational collapse is the mismanagement of natural resources (Diamond). Others say that uncontrollable environmental factors like climate disasters doomed many historical civilizations. This essayist believes that these arguments only touch on the apparent reasons. This essay will argue that there are two ultimate reasons for the failure of civilizations: Human civilizations fail because they are inherently complex, flawed systems, and they tend to display societal cognitive decline and diminishing returns of effectiveness to solve critical issues.

First, civilizations are structurally flawed and fragile systems of great complexity. Thus, like an intricate natural ecosystem, a relatively minor shock can cause unanticipated and fatal blows.

The idea of “complexity” refers to civilization’s heterogeneity – composed of many distinct, intertwined parts (Tainter). Political and economic systems, even in the early Mesopotamian and Egyptian eras, consist of multiple levels of organization and are characterized by the interactions of dispersed parties. This inherent complexity makes a government less flexible and competent when responding to emergencies and unexpected events (Tainter). For example, the Western Roman Empire, a notable civilization in late antiquity, collapsed suddenly during the late fifth century when Germanic tribes, such as the Goths, overran its territories. The Roman civilization’s complex bureaucratic system that relied heavily on the competency of its emperor was fraught with administrative corruption at the time (Ferguson 26). Consequently, the system was highly inefficient, unable to mobilize the necessary military resources to combat the barbaric tribes. The eventual responses were delayed. In this case, due to the complexity and fragility of the empire, a relatively minor event – the invasion of Germanic tribes – had an amplified effect on bringing a functioning Roman civilization down in just several decades (Ferguson 27).

The complicated nature of states might additionally result in their leaders being unable to foresee many impactful ramifications of their policies or decisions. The Soviet Union, under the leadership of Mikhail Gorbachev, dissolved in this way (Maranzani). When Gorbachev took power in 1985, the civilization was still a superpower. According to some estimates, its economy was 60 percent the size of America’s. The Soviets possessed more nuclear warheads than the U.S., and governments in the “Third World,” as the historian Niall Ferguson puts it, “from Vietnam to Nicaragua, had been tilting in the Soviets’ favor” (Ferguson 30). However, the communist state was incredibly vast and complex, consisting of many smaller constituent

republics and political powers. As Gorbachev pushed forth his well-intentioned “Perestroika” and “Glasnost” policies, he could not predict their actual consequences on all impactful parties due to the compounded nature of the Soviet state (Maranzani). He could not realize that the subsequent decentralization of power encouraged independence movements in the constituent republics and shifted de facto control away from Moscow. Nor could he realize that the unpopularity of Perestroika led to domestic political unrest and coups, bringing further destabilizing effects (Maranzani). Eventually, these seemingly insignificant factors generated an immense amplifier effect, toppling the Soviet Union.

Aside from the inherent complexity of civilizations, another ultimate cause of civilizational collapse is the decline of social cognition and the decreasing ability to solve critical issues. The anthropologist Joseph Tainter champions this view with his theory about the “diminishing returns on investments in social complexity,” first formulated in the late 1980s (Tainter). Tainter claims that when societies solve social challenges, such as a shortage of energy, they invest efforts to develop new layers of bureaucracy, infrastructure, or hierarchy, complicating the social structure (Tainter 3). There is then a positive relationship between social complexity and its administrative costs, contributing to an eventual societal collapse.

The fall of the Romans may be viewed from this lens. Since the Third Century Crisis, Roman agricultural output plummeted while the population enlarged, consequently causing per-capita energy availability to diminish (Tainter). The Romans tackled this issue by conquering their neighbors to loot their land, grain, slaves, and other materials of value (Powell). This move made Roman civilization more convoluted. As the empire grew, it required an expansive

bureaucracy. The costs of maintaining communications and civil government skyrocketed. According to Tainter, “emperors upon accession were often faced with an insolvent government, and rarely were able to accumulate reserves for emergencies” (Tainter 133). When new challenges like foreign invasions emerged, the empire had to respond by further investing in social complexity, which it could not achieve as effectively as before due to rising administrative costs. Such a financial crisis ended the flourishing Roman Empire within a century (Tainter 148).

The classic Mayan civilization collapsed similarly. During the Late Preclassic period, from around 400 B.C.E. to 250 C.E., the Mayan population became increasingly dense, creating a greater strain on agricultural productivity, which was less fertile owing to the slash-and-burn technique that the Mayans adopted (Good and Reuveny 864). Many Mayan tribes found a solution by waging warfare and raiding other tribes. This establishment of competitive relations had long-lasting political implications. As David Webster, an expert on the Mayans, explains, the organization of warfare called for a supreme leadership role that resulted in the emergence of a social hierarchy – a sign of increased social complexity (Tainter 153). Maintaining a hierarchy harbored huge implicit economic costs as corruption and economic stratification ravaged. Maintaining the hierarchy weakened the economy’s strength and the society’s flexibility to tackle other challenges like climate change, ultimately dooming the longevity of the Mayan civilization (Tainter 163).

Admittedly, the view that Diamond and some other historians harbor - civilizations collapse because of mismanagement of natural resources – is not without any merit. Especially in civilizations where power was more centralized, a single shortsighted decision made by the

rulers could bring resounding ramifications (Diamond). For example, the Rapanui, who built a civilization on the Easter Islands, cleared the forest for arable land and logs to help move the *moai*, colossal stone statues, from their quarries. It happened that this decision destined their civilization to collapse. In a 2001 paper, historians Rafael Reuveny and John Maxwell illustrate that the topsoil suffered from severe erosion as the forest disappeared (Reuveny and Maxwell 724). Moreover, the Rapanui could not venture into rougher waters to fish with no wood for boats. The population declined dramatically over several centuries, and when the Europeans arrived during the late 18th century, the island was nearly barren (Reuveny and Maxwell 720). The case of the Rapanui civilization does seem to validate the argument that human decisional errors, not societal structural flaws or the decreasing ability to tackle social challenges, were the culprits behind the collapse of civilizations.

However, upon closer examination aided by the tools of mathematics, the above argument fails to convince. In a comprehensive 2009 journal article written by David Good and Rafael Reuveny, published by the Oxford University Press in the *American Journal of Agricultural Economies*, the two authors conducted a mathematical modeling and simulation methodology (Good and Reuveny 866). Their models show that for the collapse of four civilizations, including the Rapanui, the human decision factor was less significant than conceived by many academicians. Even when a ruler had perfect information and impeccable resource management plans that maximized individual utility, these civilizations were still doomed to disintegrate (Good and Reuveny 870). While this paper's content is limited in that it does not provide a historical reason for this conclusion, it still suggests that civilization collapse had more to do with the structural designs of societies rather than the cognitive biases of their leaders.

What are the modern implications of the findings above? First, debating about the decline phase that the world is currently in is a waste of effort. Policymakers and citizens alike should be more concerned about a “precipitous and unexpected fall,” in the words of Ferguson, like the one that occurred to the Western Roman Empire, the Soviet Union, and many other civilizations (Ferguson 30). Second, whether it was the Romans or the Mayans, their civilizations’ downfalls were associated with economic crises, such as a severe imbalance between revenues and expenditures. Alarm bells should thus be ringing urgently today. The U.S. federal debt-to-GDP ratio is well above 120 percent (US Treasury). China’s export prices, a crucial indicator of deflationary pressure and the global economy’s health, are at their lowest levels in 14 years (Li). Such numbers are bad, but for current civilizations, the role of perception is just as imperative. These numbers can undermine the public’s faith in these powerhouses’ strengths. When one day, a seemingly random piece of grim news makes the headlines, as in the case of the collapse of the Lehman Brothers in 2007, suddenly, an overwhelming shift in public opinion might maim today’s civilizations (Ferguson 31). The complex systems of the Romans and Soviets crumpled under the blows of a series of relatively minor shocks. Since then, the world has only grown more complicated, making it increasingly brittle and fragile.

Though one cannot underestimate the danger that civilizations are now in, there are reasons to believe that humanity may be capable of avoiding armageddon. Historically, civilizations collapsed due to the diminishing ability to solve constantly arising issues. However, Tainter does simultaneously point out that if there is a significant leap in technology or productive efficiency, then civilizations may gain novel, ever more powerful tools to combat challenges effectively

(Tainter). From the 1980s, when Tainter first published his theories, impressive developments in digital technologies and artificial intelligence (“A.I. ") occurred. A.I. holds unbounded potential to be a positive game changer. The large language models are on track to become the most powerful companions. They can exponentially boost labor productivity and create new jobs in the labor market. A.I. has so much unleashed power to tackle the otherwise thorny challenges in health care, climate change, and education (The Economist). The world is in an age of technological innovation, potentially “rejuvenating” modern civilization.

Overall, this essayist argued that historical civilizations collapsed due to structural flaws in their complex designs and the effects of diminishing returns of effectiveness to solve critical issues. Civilizations often do not behave in a predictable, periodic pattern of “appear, rise, reign, decline, and fall.” Instead, they act like any other complex adaptive system. They function in equilibrium for a certain period and then may abruptly fall to pieces. Thomas Cole, an American painter and historian, highlights that the “shift from consummation to destruction and then to desolation is not cyclical. It is sudden” (Ferguson 32).

Such historical analysis indicates that today’s civilization is in an age when grave dangers and unlimited opportunities coexist. The risks lie in the notion that the world can be blind to unforeseen, deadly traps lying ahead. Many civilizations analyzed above survived several destructive wars and yet succumbed to some relatively insignificant incursion or internal unrest. Who knows what might be the harbinger of modern civilization’s fall? A COVID-like pandemic? A climate calamity? A third world war? An economic depression, far more repercussive than the 1929 or 2008 disasters? Or a combination of unfortunate events that led to a cascade of

catastrophes? In such an unpredictable era, world leaders must emphasize unity and innovation over anything, for these values withstood the test of time, sustaining some of the most glorious times in history.