

# Societal collapse

**Societal collapse** is the fall or disintegration of human societies. Societal collapse broadly includes abrupt societal failures such as that of the **Mayan Civilization**, as well as more extended gradual declines of cultures, institutions, or a civilization like the fall of the **Western Roman Empire**. The general subject arises in anthropology, history, sociology, politics and other fields, and more recently in complex systems science.

## 1 Causes of collapse

Common factors that may contribute to societal collapse are economical, environmental, social and cultural, and disruptions in one domain sometimes cascade into others. In some cases a natural disaster (e.g. tsunami, earthquake, massive fire or climate change) may precipitate a collapse. Other factors such as a **Malthusian catastrophe**, **overpopulation** or **resource depletion** might be the proximate cause of collapse. Significant inequity may combine with lack of loyalty to a central power structure and result in an oppressed lower class rising up and taking power from a smaller wealthy elite. The diversity of forms that societies evolve corresponds to diversity in their failures.

### 1.1 Foreign invasions

The decline of the **Roman Empire** is one of the events traditionally marking the end of **Classical Antiquity** and the beginning of the **European Middle Ages**. Throughout the 5th century, the Empire's territories in western Europe and northwestern Africa, including Italy, fell to various invading or indigenous peoples in what is sometimes called the **Barbarian invasions**, although the eastern half still survived with borders essentially intact for another two centuries (until the **Arab expansion**). This view of the collapse of the Roman Empire is challenged, however, by modern historians who see Rome as merely transforming from the Western Empire into barbarian kingdoms as the Western Emperors delegated themselves out of existence, and the East transforming into the **Byzantine Empire**, which only fell in 1453 AD.

North Africa's populous and flourishing civilization collapsed after exhausting its resources in internal fighting and suffering devastation from the invasion of the Bedouin tribes of **Banu Sulaym** and **Banu Hilal**.<sup>[1]</sup> Ibn Khaldun noted that the lands ravaged by Banu Hilal in-

vaders had become completely arid desert.<sup>[2]</sup>

In the brutal pillaging that followed **Mongol invasions**, the invaders decimated the populations of China, Russia, the Middle East, and **Islamic Central Asia**. Later Mongol leaders, such as **Timur**, though he himself became a Muslim, destroyed many cities, slaughtered thousands of people and did irreparable damage to the ancient irrigation systems of **Mesopotamia**. These invasions transformed a civil society to a nomadic one.<sup>[3]</sup>

Encounters between European explorers and populations in the rest of the world often introduced local epidemics of extraordinary virulence. **Smallpox** ravaged Mexico in the 1520s, killing 150,000 in **Tenochtitlán** alone, including the emperor, and Peru in the 1530s, aiding the European conquerors.<sup>[4]</sup> Some believe that the death of up to 95% of the Native American population of the New World was caused by Old World diseases.<sup>[5]</sup>

## 2 Changes occurring with collapse

There are three main types of collapse:

**Reversion/Simplification:** A society's adaptive capacity may be reduced by either a rapid change in population or societal complexity, destabilizing its institutions and causing massive shifts in population and other social dynamics. In cases of collapse, civilizations tend to revert to less complex, less centralized socio-political forms using simpler technology. These are characteristics of a **Dark Age**. Examples of such societal collapse are: the **Hittite Empire**, the **Mycenaean civilization**, the **Western Roman Empire**, the **Mauryan and Gupta Empires** in India, the **Mayas**, the **Angkor** in Cambodia, and the **Han and Tang dynasties** in China.

**Incorporation/Absorption:** Alternately, a society may be gradually incorporated into a more dynamic, more complex inter-regional social structure. This happened in **Ancient Egypt and Mesopotamia**, the **Levantine cultures**, the **Mughal and Delhi Sultanates** in India, **Sung China**, the **Aztec culture** in Mesoamerica, the **Inca culture** in South America, and the modern civilizations of China, Japan, and India, as well as many modern states in the Middle East and Africa.

**Obliteration:** Everyone in the society dies.

Other changes that may accompany a collapse:

- **Destratification:** Complex societies stratified on

the basis of class, gender, race or some other salient factor become much more homogeneous or horizontally structured. In many cases past social stratification slowly becomes irrelevant following collapse and societies become more egalitarian.

- **Despecialization:** One of the most characteristic features of complex civilizations (and in many cases the yardstick to measure complexity) is a high level of job specialization. The most complex societies are characterized by artisans and tradespeople who specialize intensely in a given task. Indeed, the rulers of many past societies were hyper-specialized priests or priestesses who were completely supported by the work of the lower classes. During societal collapse the social institutions supporting such specialization are removed and people tend to become more generalized in their work and daily habits.
- **Decentralization:** As power becomes decentralized people tend to be more self-regimented and have many more personal freedoms. In many instances of collapse there is a slackening of social rules and etiquette. Geographically speaking, communities become more parochial or isolated. For example, following the collapse of the Mayan civilization many Maya returned to their traditional hamlets, moving away from the large cities that had been the centers of the empire.
- **Destructuralization:** Epiphenomena, institutions, processes, and artifacts are all manifest in the archaeological record in abundance in large civilizations. After collapse, evidence of epiphenomena, institutions, and types of artifacts change dramatically as people are forced to adopt more self-sufficient lifestyles.
- **Depopulation:** Societal collapse is almost always associated with a population decline. In extreme cases, the collapse in population is so severe that the society disappears entirely, such as happened with the Greenland Vikings, or a number of Polynesian islands. In less extreme cases, populations are reduced until a demographic balance is re-established between human societies and the depleted natural environment. A classic example is the case of Ancient Rome, which had a population of about 1.5 million during the reign of Trajan in the early 2nd century AD, but had only 15,000 inhabitants by the 9th century.

### 3 Population dynamics

In the general study of cultural change and population dynamics, a whole system displays complex ecosystem

changes. Organizational adaptability relates importantly to organizational diversity.

Several key features of human societal collapse can be related to population dynamics<sup>[6]</sup>

## 4 Theories

The coupled breakdown of economic, cultural and social institutions with ecological relationships is perhaps the most common feature of collapse. Jared Diamond proposes five interconnected causes of collapse that may reinforce each other: non-sustainable exploitation of resources, climate changes, diminishing support from friendly societies, hostile neighbors, and inappropriate attitudes for change.<sup>[7][8]</sup>

Joseph Tainter theorizes that collapsed societies essentially exhausted their own designs, and were unable to adapt to natural diminishing returns for what they knew as their method of survival.<sup>[9]</sup> It matches closely Toynbee's idea that "they find problems they can't solve".

### 4.1 Linking social/environmental dynamics

Modern social critics commonly interpret things like sedentary social behavior as symptomatic of societal decay, and link what appears to be laziness with the depletion of important non-renewable resources. However, many primitive cultures also have high degrees of leisure, so if that is a cause in one place it may not be in another—leisure or apparent laziness is then not a sufficient cause.

What produces modern sedentary life, unlike nomadic hunter-gatherers, is extraordinary modern economic productivity. Tainter argues that exceptional productivity is actually more the sign of hidden weakness, both because of a society's dependence on it, and its potential to undermine its own basis for success by not being self limiting as demonstrated in Western culture's ideal of perpetual growth.

As a population grows and technology makes it easier to exploit depleting resources, the environment's diminishing returns are hidden from view. Societal complexity is then potentially threatened if it develops beyond what is actually sustainable, and a disorderly reorganization were to follow. The scissors model of Malthusian collapse, where the population grows without limit and resources do not, is the idea of great opposing environmental forces cutting into each other.

For the modern world economy, for example, the growing conflict between food and fuel, depending on many of the same finite and diminishing resources is visible in the recent major commodity price shocks. It is one of the key relationships people, since the early studies of the Club of Rome, have been most concerned with.

Jared Diamond pursues these themes in his 2005 book *Collapse: How Societies Choose to Fail or Succeed*.

## 4.2 Energy return on energy invested theories

A related economic model is proposed by Thomas Homer-Dixon<sup>[10]</sup> and by Charles Hall<sup>[11]</sup> in relation to our declining productivity of energy extraction, or energy return on energy invested (EROEI). This measures the amount of surplus energy a society gets from using energy to obtain energy.

There would be no surplus if EROEI approaches 1:1. What Hall showed is that the real cutoff is well above that, estimated to be 3:1 to sustain the essential overhead energy costs of a modern society. Part of the mental equation is that the EROEI of our generally preferred energy source, petroleum, has fallen in the past century from 100:1 to the range of 10:1 with clear evidence that the natural depletion curves all are downward decay curves. An EROEI of more than ~3, then, is what appears necessary to provide the energy for societally important tasks, such as maintaining government, legal and financial institutions, a transportation infrastructure, manufacturing, building construction and maintenance and the life styles of the rich and poor that a society depends on.

The EROEI figure also affects the number of people needed for sustainable food production. In the pre-modern world, it was often the case that 80% of the population was employed in agriculture to feed a population of 100%, with a low energy budget. In modern times, the use of cheap fossil fuels with an exceedingly high EROEI enabled 100% of the population to be fed with only 4% of the population employed in agriculture. Diminishing EROEI making fuel more expensive relative to other things may require food to be produced using less energy, and so increases the number of people employed in food production again.

## 4.3 Models of societal response

According to Joseph Tainter<sup>[12]</sup> (1990), too many scholars offer facile explanations of societal collapse by assuming one or more of the following three models in the face of collapse:

1. The **Dinosaur**, a large-scale society in which resources are being depleted at an exponential rate and yet nothing is done to rectify the problem because the ruling elite are unwilling or unable to adapt to those resources' reduced availability: In this type of society, rulers tend to oppose any solutions that diverge from their present course of action. They will favor intensification and commit an increasing number of resources to their present plans, projects, and social institutions.

2. The **Runaway Train**, a society whose continuing function depends on constant growth (*cf.* Frederick Jackson Turner's Frontier Thesis): This type of society, based almost exclusively on acquisition (*e.g.*, pillage or exploitation), cannot be sustained indefinitely. The **Assyrian** and **Mongol Empires**, for example, both fractured and collapsed when no new conquests were forthcoming.

Tainter argues that **capitalism** can be seen as an example of the Runaway Train model in that **generally accepted accounting practices** require publicly traded companies, along with many privately held ones, to exhibit growth as measured at some fixed interval (often **three months**). Moreover, the ethos of **consumerism** on the demand side and the practice of **planned obsolescence** on the supply side encourage the purchase of an ever-increasing number of goods and services even when resource extraction and food production are unsustainable if continued at current levels.

3. The **House of Cards**, a society that has grown to be so large and include so many complex social institutions that it is inherently unstable and prone to collapse. This type of society has been seen with particular frequency among **Eastern bloc** and other **communist nations**, in which all social organizations are arms of the government or ruling party, such that the government must either stifle association wholesale (encouraging dissent and subversion) or exercise less authority than it asserts (undermining its legitimacy in the public eye).

By contrast, as Alexis de Tocqueville observed, when voluntary and private associations are allowed to flourish and gain legitimacy at an institutional level, they complement and often even supplant governmental functions: They provide a "safety valve" for dissent, assist with resource allocation, provide for social experimentation without the need for governmental coercion, and enable the public to maintain confidence in society as a whole even during periods of governmental weakness.

### 4.3.1 Tainter's critique

Tainter argues that these models, though superficially useful, cannot severally or jointly account for all instances of societal collapse. Often they are seen as interconnected occurrences that reinforce each other.

For example, the failure of **Easter Island's** leaders to remedy rapid ecological deterioration cannot be understood



*Ahu Tongariki near Rano Raraku, a 15-moai ahu excavated and restored in the 1990s*

without reference to the other models above. The islanders, who erected large statues called *moai* as a form of religious reverence to their ancestors, used felled trees as rollers to transport them. Because the islanders firmly believed that their displays of reverence would lead to increased future prosperity, they had a deeply entrenched incentive to intensify *moai* production. Because Easter Island's geographic isolation made its resources hard to replenish and made the balance of its overall ecosystem very delicate ("House of Cards"), deforestation led to soil erosion and insufficient resources to build boats for fishing or tools for hunting. Competition for dwindling resources resulted in warfare and many casualties (an additional "Runaway Train" iteration). Together these events led to the collapse of the civilization, but no single factor above provides an adequate account.

Mainstream interpretations of the history of Easter Island also include the slave raiders who abducted a large proportion of the population and epidemics that killed most of the survivors (see [Easter Island History#Destruction of society and population.](#)) Again, no single point explains the collapse; only a complex and integrated view can do so.

Tainter's position is that social complexity is a recent and comparatively anomalous occurrence requiring constant support. He asserts that collapse is best understood by grasping four axioms. In his own words (p. 194):

1. human societies are problem-solving organizations;
2. sociopolitical systems require energy for their maintenance;
3. increased complexity carries with it increased costs per capita; and
4. investment in sociopolitical complexity as a problem-solving response reaches a point of declining marginal returns.

With these facts in mind, collapse can simply be understood as a loss of the energy needed to maintain social

complexity. Collapse is thus the sudden loss of social complexity, stratification, internal and external communication and exchange, and productivity.

#### 4.4 Toynbee's theory of decay

The British historian Arnold J. Toynbee, in his 12-volume magnum opus *A Study of History* (1961), theorized that all civilizations pass through several distinct stages: genesis, growth, time of troubles, universal state, and disintegration. (Carroll Quigley would expand on and refine this theory in his "The Evolution of Civilizations".<sup>[13]</sup>)

Toynbee argues that the breakdown of civilizations is not caused by loss of control over the environment, over the human environment, or attacks from outside. Rather, societies that develop great expertise in problem solving become incapable of solving new problems by overdeveloping their structures for solving old ones.

The fixation on the old methods of the "Creative Minority" leads it to eventually cease to be creative and degenerates into merely a "Dominant minority" (that forces the majority to obey without meriting obedience), failing to recognize new ways of thinking. He argues that creative minorities deteriorate due to a worship of their "former self," by which they become prideful, and fail to adequately address the next challenge they face.

He argues that the ultimate sign a civilization has broken down is when the dominant minority forms a **Universal State**, which stifles political creativity. He states:

First the Dominant Minority attempts to hold by force - against all right and reason - a position of inherited privilege which it has ceased to merit; and then the Proletariat repays injustice with resentment, fear with hate, and violence with violence when it executes its acts of secession. Yet the whole movement ends in positive acts of creation - and this on the part of all the actors in the tragedy of disintegration. The Dominant Minority creates a universal state, the Internal Proletariat a universal church, and the External Proletariat a bevy of barbarian war-bands.

He argues that, as civilizations decay, they form an "Internal Proletariat" and an "External Proletariat." The Internal proletariat is held in subjugation by the dominant minority inside the civilization, and grows bitter; the external proletariat exists outside the civilization in poverty and chaos, and grows envious. He argues that as civilizations decay, there is a "schism in the body social," whereby *abandon* and *self-control* together replace *creativity*, and *truancy* and *martyrdom* together replace *discipleship* by the creative minority.

He argues that in this environment, people resort to archaism (idealization of the past), futurism (idealization

of the future), **detachment** (removal of oneself from the realities of a decaying world), and **transcendence** (meeting the challenges of the decaying civilization with new insight, as a Prophet). He argues that those who Transcend during a period of social decay give birth to a new Church with new and stronger spiritual insights, around which a subsequent civilization may begin to form after the old has died.

Toynbee's use of the word 'church' refers to the collective spiritual bond of a common worship, or the same unity found in some kind of **social order**.

The great irony expressed by these and others like them is that civilizations that seem ideally designed to creatively solve problems, find themselves doing so self-destructively.

## 4.5 Systems science

Researchers, as yet, have very little ability to identify internal structures of large distributed systems like human societies, which is an important scientific problem. Genuine structural collapse seems, in many cases, the only plausible explanation supporting the idea that such structures exist. However, until they can be concretely identified, scientific inquiry appears limited to the construction of scientific narratives,<sup>[14]</sup> using **systems thinking** for careful story telling about systemic organization and change.

History includes many examples of the appearance and disappearance of human societies with no obvious explanation. The abrupt dissolution of the Soviet Union in the course of a few months, without any external attack, according to Johan Galtung was due to growing structural contradictions brought on by geopolitical overreach, which could not be resolved within the existing socio-political systems.

Although a societal collapse is generally an endpoint for the administration of a culture's social and economic life, societal collapse can also be seen as simply a change of administration within the same culture. Russian culture would seem to have outlived both the society of Imperial Russia and the society of the Soviet Union, for example. Frequently the societal collapse phenomenon is also a process of decentralization of authority after a 'classic' period of centralized social order, perhaps replaced by competing centers as the central authority weakens. Societal failure may also result in a degree of empowerment for the lower levels of a former climax society, who escape from the burden of onerous taxes and control by exploitative elites. For example, the black plague contributed to breaking the hold of European feudal society on its underclass in the 15th century.

## 5 Examples of civilizations and societies that have collapsed

### 5.1 By reversion or simplification

- Hittite Empire
- Mycenaean Greece
- The Neo-Assyrian Empire
- Indus Valley Civilization
- Angkor civilization of the Khmer Empire
- Han and Tang Dynasty of China
- Anasazi (disputed)
- Western Roman Empire, Decline of the Roman Empire
- Izapa
- Maya, Classic Maya collapse
- Munhumutapa Empire
- Olmec

### 5.2 By absorption

- Sumer by the Akkadian Empire
- Ancient Egypt by the Libyans, Nubians, Assyria, Babylonia, Persian rule, Greece, Ptolemaic Dynasty, and the Roman Empire<sup>[15]</sup>
- Babylonia by the Hittites
- Etruscans by the Roman Republic
- Ancient Levant
- Classical Greece by the Roman Empire
- Dacians by the Roman Empire
- Eastern Roman Empire (Medieval Greek) of the Byzantines by the Arabs and Turks
- Modern North East Asian civilisations
- Qin, Song, Mongol and Qing China
- Tokugawa Shogunate of Japan, ending with the Meiji Restoration
- Aztecs by the Spanish conquest of the Aztec Empire
- Incas by the Spanish conquest of the Inca Empire

### 5.3 By extinction or evacuation

- Cahokia
- Original Rapa Nui civilization on Easter Island (disputed)
- Lost cities
- Norse colony on Greenland
- Original Polynesian civilization on Pitcairn Island
- Malden Island

## 6 See also

## 7 References

- [1] The Great Mosque of Tlemcen, MuslimHeritage.com
- [2] Populations Crises and Population Cycles, Claire Russell and W.M.S. Russell
- [3] Ibn Battuta's Trip: Part Three - Persia and Iraq (1326 - 1327)
- [4] Smallpox: Eradicating the Scourge
- [5] The Story Of... Smallpox – and other Deadly Eurasian Germs
- [6] Population crises and cycles in history, A review of the book *Population Crises and Population cycles* by Claire Russell and W M S Russell.
- [7] Jared Diamond on why societies collapse TED talk, Feb 2003
- [8] Diamond, Jared M. (2005). *Collapse: How Societies Choose to Fail or Succeed*. New York: Viking Books. ISBN 0-14-303655-6.
- [9] Tainter, Joseph A. (1990). *The Collapse of Complex Societies* (1st paperback ed.). Cambridge: Cambridge University Press. ISBN 0-521-38673-X.
- [10] Homer-Dixon, Thomas (2007), "The Upside of Down: Catastrophe, Creativity and the Renewal of Civilization" (Knopf, Canada)
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- [12] Tainter, Joseph (1990), *The Collapse of Complex Societies* (Cambridge University Press) pp. 59-60.
- [13] The Evolution of Civilizations
- [14] T.F. Allen, J.A. Tainter et al. 2001 Dagnet Ecology: The Privilege of Science in a Postmodern World. BioScience
- [15] Clayton (1994) p. 217

## 8 Further reading

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- Collection of articles based on Societal collapse scenarios

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