




8-2023

# The Mything Link: Why Sacred Storytelling Is a Key Human Survival Strategy

Ken Baskin  
*Independent Scholar*

Follow this and additional works at: <https://scholarsarchive.byu.edu/ccr>

 Part of the [Comparative Literature Commons](#), [History Commons](#), [International and Area Studies Commons](#), [Political Science Commons](#), and the [Sociology Commons](#)

---

### Recommended Citation

Baskin, Ken (2023) "The Mything Link: Why Sacred Storytelling Is a Key Human Survival Strategy," *Comparative Civilizations Review*: Vol. 89: No. 89, Article 10.  
Available at: <https://scholarsarchive.byu.edu/ccr/vol89/iss89/10>

This Article is brought to you for free and open access by the Journals at BYU ScholarsArchive. It has been accepted for inclusion in *Comparative Civilizations Review* by an authorized editor of BYU ScholarsArchive. For more information, please contact [ellen\\_amatangelo@byu.edu](mailto:ellen_amatangelo@byu.edu).

## The Mything Link: Why Sacred Storytelling Is a Key Human Survival Strategy

Ken Baskin  
Independent Scholar

### Abstract

For several decades, societies across the globe have faced a real existential threat with challenges such as global warming. Yet no one in the elite has been able to do anything to improve conditions. We seem to be trapped in the kind of situation that Einstein described when he discussed problems that can't be solved with the logic that created them.

How can we find a new way of thinking that may allow us to address these challenges? This paper suggests a way of answering this question by exploring three others: Have other societies faced equally real existential threats? How did those that survived address them? And what does their survival mean for us today?

Drawing on work in cognitive neuroscience, the paper examines *myth as a neurobiologically grounded process* for addressing such problems, and notes that other societies facing existential challenges have been able to address them *by changing the way their people think through reinventing their mythologies*. It concludes with some ideas on the mythic reinvention that may be occurring today, which would make a more effective way of thinking available.

“What I say ought to be taken as ‘propositions,’ ‘game openings’ where those who may be interested are invited to join in – they are not meant as dogmatic assertions that have to be taken or left en bloc.” – Michel Foucault, “Questions of Method” (2000: 224)

### Introduction

From global warming to the possibility of nuclear war or another mass extinction, societies across the world face a real existential threat today. Equally upsetting, such threats have been discussed for decades; yet we have been able to do ... nothing. So, we are all trapped in the situation that Einstein described – problems that can't be solved with the logic that created them. We need a new way of thinking about the world, but what can we academics do about these threats to human survival? One line of action is to ask these three questions: Have other societies faced equally real existential threats? How did those that survived address them? What does their survival mean for us today?

In examining these questions, I reached some surprising conclusions. For instance, I realized that religion is far more than a means of worship<sup>1</sup> or comforting those who suffer or even a way that the political elites manipulate those they govern.

History shows us that religion has been a process for understanding the world, a critical survival strategy that enables cultures to create a shared interpretation of the world, group identity, and behavioral norms. At the heart of its power, religion allows cultures to manage what sociologist Robert Bellah calls the “culturally, symbolically constructed world” of daily life (2011: xv). In this paper, we’ll focus on this symbolic management at times when societies faced existential challenges that demanded new ways of thinking about the world. Those societies that *did* survive moved toward those new ways *by reinventing their myth* (Baskin and Bondarenko 2019), changing the way their members experienced the world.

My purpose here is to explore one element of religion: How myth drives cultural evolution, as part of a creative feedback loop that enables societies to survive. This idea that religious myth has been a human survival strategy is *not* part of today’s mainstream narrative about religion. Evolutionary biologist Richard Dawkins, for example, tells us that religion has no “direct survival value of its own” (2006: 200). Much mainstream thought about religion suggests that myth is a superstitious, untrue way to explain what science explains more accurately. Anthropologist Scott Atran, for example, expresses this position when he characterizes myth as stories about the “counterfactual and counterintuitive world of supernatural agents,” who religion demands people in any community worship with “hard-to-fake commitment” (2002: 4, author’s italics). Atran’s position dominates the leading school of religious studies, the Cognitive Science of Religion (CSR), where one of the key issues, not surprisingly, is why rational human beings would choose to worship clearly fictional deities.<sup>2</sup>

Despite my differences with much of what I’ve read of CSR, I want to acknowledge that I am following the path its scholars blazed, drawing deeply on both cognitive neuroscience and evolutionary psychology. In taking this path further, I want to travel through four topics:

1. An example of how mythic reinvention enabled one society to survive;
2. An examination of myth-making as behavior grounded in neurobiology;

---

<sup>1</sup> In fact, religion as worship actually seems to be mostly limited to Western monotheism, as anthropologist Marshall Sahlins points out in his last book (2022).

<sup>2</sup> Perhaps the most interesting of the analyses of why so many people believe in gods is that of psychologist Ara Norenzayan in his book *Big Gods* (2015). For Norenzayan, the evolution of the big gods of world religions is explained by the power of great, punishing gods to minimize conflict. As he puts it, “Watched people are nice people.” This position has at least two problems: First, for the vast majority of human history, when most humans lived in hunter-gatherer bands, gods were not watching and punishing. Second, China, one of the two largest cultures in the world, maintains order, not through a punishing god, but through social control, discussed toward the end of this paper.

3. An explanation of myth-making as part of a feedback loop that drives cultural evolution;
4. And, finally, what all this suggests about addressing today's existential problems.

I present these ideas in the spirit of Foucault's comment in the epigraph. Many of the ideas I'm presenting here are still new and need to be further researched and developed. So I'm not claiming to have found the "truth" about religion and myth. Rather, I'm offering an alternative way to think about religion's role in cultural evolution, at a time when we desperately need to think differently in order to evolve cultures that can help us survive.

Let me begin with an example of why I believe religion is such a powerful survival strategy.

### **The Redactor's Mythic Twist**

In 587 BCE, King Nebuchadnezzar of Babylon razed Jerusalem, capital of the Israelite Southern Kingdom, Judah, to the ground; destroyed the Temple of Solomon, where its God was believed to reside; and marched most of the remaining elite of Judah into captivity in Babylon, where they would remain for about a half century (Akenson, *Surpassing Wonder*, 1998). By all rights, Judah's culture should have dissolved and its society should have disappeared, just as that of the Northern Kingdom, Israel, had in 727 BCE, when the Assyrians demolished its capital and led its elite into exile. The Northern Kingdom would disappear, leading to the legends of the Ten Lost Tribes of Israel. Faced with this possibility, a member of Judah's elite performed what could easily be mistaken for a miracle.

This "miracle-maker" was probably the son or daughter of one of the exiles Nebuchadnezzar abducted to Babylon. Sometime around 550 BCE, this person gathered the written versions of the mythologies of both Judah and Israel and began editing them into a single narrative. He or she is often called the "Redactor" – that is, the final editor. What the Redactor produced was much of the Hebrew Bible as we know it today, a history of the relationship between the people of Israel and their God, beginning with *Genesis* and the creation of the heavens and the earth, and ending in *Kings II*, when Cyrus the Great, the Persian King, allowed the Jews to return to Jerusalem from Babylon, about 560 BCE.

In editing the pre-exilic texts, the Redactor inserted a powerful mythic twist. Throughout the Middle East of this period, people believed that being conquered meant that your god had either abandoned you or was too weak to defend you (Walton, 2006). Had the people of Judah also thought this way, as the people of the Northern Kingdom apparently had, their culture probably would have disappeared.

But the Redactor turned all that around: *God had not abandoned Judah*. Rather, by continuing to worship Canaanite gods such as Ba'al and Astarte, *the people of Judah had abandoned God*, and He had used the Babylonians to punish them for their disloyalty! Their God was not merely the god of the people of Judah. He was the One God; all other gods were false.

In this way, the Redactor's myth seems to have transformed the Jewish people from victims of the Babylonians, into active agents who had brought catastrophe on themselves. Largely because of this mythic twist, the Romans could disperse the Jews from their homeland in 70 CE, driving them out of Israel, without destroying their culture. The catastrophes that would repeatedly dog them – being thrown out of England in 1290, for instance, or out of Spain in 1492 – would be transformed from meaningless acts of prejudice and greed by Others into punishment from God for acts which they themselves had committed.

The Redactor had rewritten the culture's myth and given its people a new way to think about a world where they would be repeatedly "victimized." Except that they no longer needed to think of themselves as victims. Partly as a result, Jewish culture is still vibrant today. Not only that. The Redactor's work would create what we think of as Western monotheism and set the stage for Christianity and Islam. In turn Christianity would dominate life in Europe for more than a millennium and a half and, as we will see, provide the foundation for Western Science. The world we live in today is in many ways the result of this re-creation of the mythology of Judah and Israel in the middle of the sixth century BCE, allowing the Redactor's culture to adapt and survive.

This kind of mythic reinvention has happened repeatedly, as societies developed new ways of dealing with rapidly changing worlds. But before we examine how myth enabled them to adapt, I want to make the case that we humans are *neurobiologically* born myth-makers.

### **Myth-making as Sacred Storytelling**

What is myth? In casual conversation, people often use it to refer to false explanations, such as the Flat Earth Theory. They also use it to describe a fanciful story about gods or spirits, such as Leda and the Swan or Chinese stories of the Monkey King. In a variation of myth as this sort of story about the gods, some people think of their own stories of the gods as "true," while the stories of people with different beliefs are "just myths." Recently, I saw an Internet post asking why we talk about "Christian religion" but "Norse mythology."

Beyond this casual use, myth is very much in the eyes of the beholder. We've already noted Atran's conception of myth as counterfactual stories about supernatural beings. In other approaches:

- Sigmund Freud, with the Oedipus complex, and Carl Jung, with his “mythic archetypes,” treat myth as a matter of people’s psychological dynamics.
- Anthropologist Bronislaw Malinowski (1954) and sociologist Emile Durkheim (2008), focus on how myth validates a society’s structure and practices.
- Philosopher Mircea Eliade (1968) examines myth as a path toward a deeper spiritual life.
- Philosopher Ernst Cassirer (1955) describes it as “primitive” thought that preceded science.
- Anthropologist Clifford Geertz explains that myth is “a system of symbols ... formulating conceptions of a general order of existence” (1973).<sup>3</sup>

From my perspective, all of these are accurate but partial. For me, myth is the “stories” with which a community expresses its shared understanding of the often mysterious invisible forces that its members confront. As historian David Christian puts it, myth – he calls it “origin story” – presents “a shared map of understanding that shows members of the community their place in a rich, beautiful, and sometimes terrifying universe” (Christian 2018: 8). Before examining this definition, it’s worth explaining exactly what I mean in the overused word “story.” Any story includes important details taken from all possible details in a world, real or imagined, and orders them so that the story can be coherent and meaningful (Boje, 2001). This type of story is generally but not always narrative, as we’ll see in the many different kinds of mythic stories – from the spirit world of shamanism to the many gods of Ancient Egypt or Vedic India, the Redactor’s One True God to China’s Way of Heaven (the *Tao*), or Francis Bacon’s discussion of the scientist as torturing Nature to capture its secrets in order to enhance human life.

The power of myth arises from its many functions. Mythologist Joseph Campbell (2004) points to four – they help us make meaning in a sometimes horrible world; express a symbolic order for the cosmos; justify the community’s social system; and map life’s psychological transitions. We will focus on the first two of these functions. Before we go on to the neurobiological basis of myth, I want to emphasize one last thing: In expressing a community’s symbolic order, myth is not a “finished” story – a verbal “thing,” if you like. Rather, as in the Redactor’s reinvention, myth continually shifts as the world of its community changes. In fact, we’ll be better served thinking in terms of myth-making as an ongoing cultural process that reflects anthropologist J. Milton Yinger’s religious feedback loop. For Yinger, a group’s conditions shape its myth, and that myth drives group behavior, feeding back into shifts in the group’s conditions (1970: 89). In this way, myth-making allows communities to evolve.

---

<sup>3</sup> For a strong, brief overview of many of these approaches to myth, see Segal (2015).

When those invisible forces that they face shift, myth-making allows them to adapt to those forces, reinventing their thinking and behavior as part of cultural evolution, a key survival strategy.

As noted, my approach follows that of scholars in CSR, but takes it several steps further. For instance, much work in CSR focuses on specific brain “modules” – networks in the brain dedicated to specific tasks – that these scholars believe shape myth-making. In this way, psychologist Justin Barrett argues that one such module, the hypersensitive agency detection device (HADD), evolved to search for agents (especially predators) that threatened us so that we can respond quickly to survive. The HADD will “identify things – objects, shadows, strange lights – as agents, even given only slight evidence” (2012: 40). As a result, when we see the work of invisible forces – causing, for example, the birth of a child or a flood – the HADD leads us to assume it’s the work of agents, the spirits, gods and goddesses of myth who, as Atran tells us, must be propitiated.

While the idea of such brain modules is controversial (“Modularity of Mind” 2017), it doesn’t contradict my model of myth. As I’ll explain, the human brain/mind *does* need to know *why* things happen, and thinking in terms of agency seems to be a key way to do that. What I’m trying to do is create an expanded model of myth – a model that applies a more global understanding of how cognitive neurobiology tells us our brain/minds<sup>4</sup> work. I’ll focus on two key issues here. First, we’ll explore the process of perception, by which we transform the chaotic world around us into what neurobiologist Michael Gazzaniga (2011) calls “make-sense stories.” Then we’ll examine how this storytelling drives a feedback loop that enables human communities to adapt to their changing environments.

### “Rube Goldberg” Perception

When I look around the office where I’m writing this essay, it feels as if my eyes are recording exactly what’s “out there,” like an organic HD video camera, passively receiving an imprint of the world as it is. Cognitive neuroscientists have found that perception is much more like a Rube Goldberg machine, which goes through more than 15 steps to crack a soft-boiled egg. The perceptual models we experience are like the maps on your GPS as you drive. They reduce all the details of the territory you’re driving through to *what you need* to get where you’re going. Cognitive neurobiologist Daniel Hofmann (2020), for instance, suggests that the purpose of perception is not to show us what is actually there; rather, perception hides vast amounts of information so that we see what we need to survive, a “tiny subset of the real patterns in [our] world” (Dennett 2017: 127).

---

<sup>4</sup> I use the term “brain/mind” as a way of avoiding the controversy over whether the study of the brain (neuroscience) and mind (cognitive science) should be considered separately or together. From my point of view, either approach leads roughly to the same conclusions. So I discuss the brain/mind (cognitive neuroscience).

Consider vision. As light hits the eyes, it's conducted to the retina at the back of each eye. Each retina has more than 100 million rod and cone cells, which turn the light into electric impulses that travel to the brain through the optic nerve. The millions of points of information that these impulses provide – a field of points of information – are evidence of what's actually happening in the world out there. This field is routed through the thalamus, which acts as a sort of relay station, and then processed in about 30 areas of my brain's cortex, each of which performs a specific function.

This field of information points is decoded into images, and this processed material then goes to what Gazzaniga calls the “interpreter” module of the brain's left frontal cortex. There, it's mixed with memories and filtered through the mental models. These mental models are networks of nerve cells that store what people have learned and, so, what they *expect the world to be and not to be*. Once the interpreter module has mixed sense information with memory, this combination is processed through the related mental models. If what a person senses doesn't fit in with their mental models, the unconscious mind may filter the inconvenient information out of what the person will actually perceive. As professor of psychiatry Daniel Siegel puts it, mental models allow us to “filter our ongoing perceptions and prejudge our experiences” (2010: 152), shaping what we perceive by removing details that might make the world seem incoherent (or even meaningless).<sup>5</sup>

In this way, the brain/mind produces a series of possible scenarios. Because they exist so that we can make decisions that will enhance our survival, these scenarios have to be coherent – everything has to fit together to make sense. Coherence is so important that, when there's an important part of these make-sense stories that we don't know, the unconscious brain/mind makes up the elements and will present it to our perception as “true.” This process is called “confabulation,” and, while I was surprised to learn that the brain/mind does it, I also recognized that this fact explained far too many situations where I was sure I knew what was happening but was painfully wrong. In the last step of the process before the scenario becomes conscious, the subconscious settles on the scenario that seems most likely to ensure survival and delivers it to the conscious mind.

That, cognitive neurobiologists tell us, is how our organic GPS works. All this takes one or two seconds. In this process, the nervous system constructs the perceptual models that each of us use to make sense of the world so that we can survive. As a result, we “*never, under any circumstances [perceive] ... the object 'out there'*” (Laughlin *et al.* 1990: 337; authors' italics). That is, we live in a virtual reality, composed of symbols of an actual reality that we simply can't experience directly.

---

<sup>5</sup> To get a feeling for how powerful this filtering is, see: [www.youtube.com/watch?v=vJF698U2vo](http://www.youtube.com/watch?v=vJF698U2vo).



Yet, we're so comfortable with the process – and so used to it helping us survive – that most people assume that we do perceive the world “out there”.<sup>6</sup>

For any of us to survive, the story-like perceptual models our conscious minds receive have to answer three questions (Gazzaniga, 2011). The brain processes two of them in the amygdala in less than a second: 1) What's happening? and 2) What should I do? Whether confronted with a lion on the savannas of Kenya or a yellow light turning red in London, our brain/minds immediately answer those two questions. The resulting conscious perceptions enable us to choose to fight or run from the lion and to stop for or speed up at the yellow light. People who can't answer these questions in a way that lets them succeed in the world probably won't survive.

The other perceptual question is: 3) Why did that happen? The brain/mind processes this question in the neo-cortex, a little after the first two questions. People who can answer accurately are much more likely to survive, because the answers can be integrated into their mental models. On the other hand, when events don't conform to the expectations of our mental models, we can expect to feel disturbingly anxious. For instance, this clash between the expectations of our mental models and the facts we experience seems to have helped create the discomfort people around the globe have felt as we struggled with the COVID-19 pandemic during the early 2020s.

It's through answering these three perceptual questions, sometimes consciously and sometimes unconsciously, that we are able to act and survive. As a result, we *Homo sapiens* are, neurobiologically, storytelling animals. When we experience an event, especially one that's not familiar, our brain/minds create a story-like model of the world that explains what happened, what we should do, and why it happened. When those events are the result of the invisible, often mysterious forces that surround us – whether terrifying, like the death of a child, or wonderful, like the sense of being one with the universe – our brain/minds are inclined to create stories that can become myths, using symbols such as spirits or gods to represent those mysterious forces. That is, we are also neurobiologically myth-makers.

Part of what makes us myth-makers is that we often need to find ways of answering these perceptual questions for whole societies. Take the case of the Redactor. For him, and his society, the answer to the first question was obvious. What happened? Judah had been invaded, its Temple destroyed, and its elite marched to a far-off land. How should the people of Judah react? At first, the answer to this second question was unanswerable. But when the Redactor turned to the third question, an answer appeared to the second: Why had Judah been conquered?

---

<sup>6</sup> There are actually two routes to the choice of response to any event. Most of the time, the results of this process are sent to the neo-cortex where a decision is generally made on a subconscious level, taking between one and two seconds. However, if the amygdala recognizes the situation as threatening, a response may be sent to the body directly through the spinal chord. This takes less than a second.

The Redactor's answer: Because its people had not worshipped only the One True God. At that point, the appropriate response – the one that would allow the society to survive – was clear: The people of Judah should stop worshipping other gods and live according to the laws of God.

### **The Myth-making Feedback Loop**

From this perspective, then, myth-making is not merely the counterfactual storytelling that Atran identifies. Rather, it is the way human communities answer the three perceptual questions when they experience events that evoke awe or terror. In the face of a natural catastrophe or the healing of a valued member of the group, being attacked by another group or an abundant harvest, myth creates “sacred stories” to understand those events. That is, myth symbolizes the invisible forces, attributing agency to spirits, ancestors, or deities. Within any community, these stories would be “debated, disputed, filtered” in “narrative exchanges about reality” (Donald 1991: 258), eventually becoming myth. In smaller communities, such as hunter-gatherer bands, these myths are often put in final form by a trusted storyteller, perhaps an elder or the group's shaman. In larger communities, these sacred stories are usually developed, if not created, by the group's elite.<sup>7</sup>

The key issues here are that this myth-making is a biologically grounded process that fulfills several important tasks. Those tasks include creating a shared way to interpret the world and group identity and storing much of the group's collective learning about how to respond to awe- and terror-evoking events.

The science of how myth affects human culture is the subject of an underappreciated book, *Brain, Symbol and Experience* (1990), written by a group of “biogenetic structuralists” – anthropologist Charles Laughlin, science writer John McManus, and professor of psychiatry Eugene d'Aquili. In the book, they draw mainly on cognitive neuroscience and anthropology to explore how we perceive, know, and respond to the world. For these co-authors, the critical function of myth is to express the shared way of interpreting the world that enables members of any society to cooperate. While Laughlin and his co-authors focus on the cognitive neurobiology of the resulting “cycle of meaning” and how it allows for deeply spiritual experience, their work also suggests how the cosmology expressed in myth seems to create the adaptive dynamic that drives cultural evolution.<sup>8</sup>

---

<sup>7</sup> In *The Power of Ritual in Prehistory* (2018), Brian Hayden discusses the archaeological evidence that now suggests secret societies seem to have arisen among complex hunter-gatherer communities about the time of the end of the Ice Age. They were composed mostly of their society's elite to create and manage the religious rituals that helped them maintain their power.

<sup>8</sup> In the cycle of meaning, the biogenetic structuralists explain the way any society's cosmology reflects its symbolic order and leads to its myth, which in turn leads to ritual. This combination of myth and

Here we come to a key distinction that scholars of CSR largely overlook. From the earliest myths that we know, the world is presented as both *chaos* – a frighteningly random series of things and events – and *cosmos* – a “systemic, multicameral, dynamic, and organic whole” (Laughlin, *et al.* 1990: 214). In some ways, myth is about living in a world that keeps moving between chaos and cosmos and often emphasizes what at least appears to be the ongoing battle between the two.<sup>9</sup> While Western monotheism, emerging since the Axial Age, has characterized this battle as between the forces of “good” and “evil,” over human history, the battle has more often been between order and chaos.

Perhaps the most powerful myth examining order and chaos in pre-Modern times is the Ancient Egyptian story of the deities Isis and Osiris, Seth and Horus, which examines the cycle of birth, death and rebirth so important to Ancient Egyptian culture. In this myth, Isis represents fertility, and Osiris, the abundance produced by the Nile River. They rule Egypt as consorts, until Osiris’ brother Seth, representing chaos, becomes jealous and kills Osiris. Isis brings him back to life long enough for him to impregnate her with Horus, who comes to represent order. When Horus grows up, he begins an ongoing battle with Seth. In many versions of the myth, their battle is not won or lost; it is part of the process of life, so that the pharaoh represents the integration of order and chaos (Assmann 2002). In some ways, this struggle between order and chaos is the prototype of mythic conflict.<sup>10</sup>

The ability to experience the world as ordered cosmos grows from what some scholars identify as the last evolutionary adaptation that allowed “archaic” *Homo sapiens* to become fully “modern,” enabling our ancestors to organize their experience around a symbolic order, such as Egypt’s cycle of birth, death, and rebirth. Anthropologist Terrence Deacon describes this ability to “inhabit a world full of abstractions, impossibilities and paradoxes” as the “defining attribute of human beings” (1997: 21-22). Donald goes further. “[S]ymbols,” he notes, “‘define’ the world (rather than vice versa)” (1991: 219).

Developing this ability to organize their world symbolically marked the beginning of an adaptive cycle that continues today. Any society’s cosmology seems to reflect its members’ ongoing interactions with their environment. That is, the symbolic order that characterizes their cosmos is the product of their ongoing experiences in day-to-day life, especially their most critical challenges.

---

ritual in turn creates the set of phenomena we think of as religion, shaping how people experience the world and live in it. Such a “religious” approach toward life is likely to remain the same as long as it enables people to meet their challenges. And when any specific approach no longer works, the feedback from the cycle can drive the sort of changes we discuss throughout this essay.

<sup>9</sup> In *The Matter with Things*, vol. II (2022), Iain McGilchrist discusses the advantages of understanding opposites as complementary (as in the yin/yang), rather than mutually exclusive. He makes a strong case for evolution being the result of the interaction between such opposites as order and chaos.

<sup>10</sup> For an overview of how this worked in several pre-Axial Age cultures, see Armstrong 2005: 45-57.

In this way, symbolic order of agricultural states, such as Ancient China or Egypt, will be very different from those that depend on herding, as with the Indo-European steppe dwellers in the Caucasus. The cosmology that forms then becomes manifested in the culture's myth, ritual, and art. Group members learn their shared identity and way of interpreting the world as they participate in these activities, all of which shape their behavior (Laughlin, *et al.* 1990).

This behavior will, of course, affect the environment of any society's members. If the results of their behavior are life-enhancing, this cycle can continue with only minor shifts. Over time, and especially in literate societies where myth is written (and therefore less flexible), changes in the environment can require new myths, resulting in cultural evolution. Sometimes, the need for those changes arises from the success produced by the society's mythology; sometimes, outside forces make new ways of living in the world, and even a new cosmology, necessary, as with the Redactor's mythic twist.

### Mythic Change and Cultural Evolution

This theory of cultural change grew from the work I did with anthropologist Dmitri Bondarenko in *The Axial Ages of World History* (2014), where we identified three periods of mythic reinvention:<sup>11</sup>

- The Neolithic Revolution (c. 9000 to 3000 BCE), as human communities grew to hundreds and thousands after the end of the Ice Age;
- The Axial Age (c. 800 to 200 BCE), during which dominant powers grew from relatively limited states to vast empires; and
- Modernity (c. 1500 CE to the present), as these empires became embedded in a world-system and both politics and economics became increasingly globalized.

In this socio-cultural feedback loop, the social structure of Eurasia's dominant societies remained stable for relatively long periods – first, as hunter-gatherer bands, then as relatively limited agricultural states, finally as sprawling empires – until conditions within and outside changed so much that they faced challenges to their survival. In each of the cases listed above, the growth in size and heterogeneity of the population, as well as advances in technology, demanded new shared interpretations of the world and ways of creating group coherence. At that point, they reinvented their myths, which, in turn, began to change the ways they thought. And their new thinking helped them to adapt to challenges that had seemed insoluble, just as the Redactor would edit his myth to create the heart of the Hebrew Bible.

---

<sup>11</sup> Bondarenko and I first uncovered this dynamic in *The Axial Ages of World History* (2014), where we compared the transformations of the Axial Age with those of Modernity. We expanded it to include the Neolithic Revolution in "Is Modernity a Third Axial Age?" (2019).

In discussing how this feedback loop has shaped the evolution of human culture, it's tempting to begin with hunter-gatherer bands and how their myth evolved into that of polities in Sumer (starting around 3000 BCE) or Xia China (c. 2070 to 1600 BCE). Bellah, in *Religion in Human Evolution* (2011), and archaeologist Brian Hayden, in *Shamans Sorcerers and Saints* (2003), provide first-class discussions of this sort. However, because sophisticated writing systems didn't emerge until about 3000 BCE, examining such early myth requires a great deal of speculation. And because the purpose of this paper is to examine this cultural feedback loop for its practical application to our own problems, I want to begin my examination with the Axial Age, which, as Egyptologist Jan Assmann notes (2011), was when writing took its place as a key tool with which elites managed societies.

The Axial Age was first identified by Karl Jaspers (1953) as a transformation that was most complete in Greece, Israel, India, and China. He dated this period from c. 800 to 200 BCE. While I use this dating, it's important to recognize that this transformational section of the socio-cultural feedback loop is not a set of discrete events perpetuating each other through cause-and-effect. Rather, the Axial Age seems more of a process, where many forces and events are interacting and new, unexpected events emerged.<sup>12</sup> So, while most of the important events of this period occur by 200 BCE, later events seem to arise in ways that tie them to the period – the appearance of Christianity and Islam (Armstrong, 2006), for example, or Buddhism in China (Fairbank and Goldman 2006). All of which is to say that events both before and after Jaspers' 800 to 200 BCE window are important to acknowledge.

Several developments, occurring at different times in different parts of Eurasia, would lead to the Axial Age transformations. For one thing, large-scale iron working began around 1200 BCE, making it possible to mass produce weapons for large armies and to travel far enough to create vast empires with multi-ethnic populations (Anthony 2007). That would enable a few Chinese states to battle for control of the empire with armies of several hundred thousands during the Warring States period (403 to 221 BCE). In addition, population had also grown so much – the largest cities grew from 40,000 in 3000 BCE to 150,000 in 1200 BCE – that new ways of governing society were needed (Modelski 2003). This population growth was complicated by increasing trade and the wealth it generated, starting around 1500 BCE, because there were now more people who wanted a share of that wealth. The result was the collapse or fragmentation of many of the dominant powers of the time (Baskin and Bondarenko 2014). The invasions of the Sea Peoples starting in the 13<sup>th</sup> Century seem to have overwhelmed polities around the Eastern Mediterranean, including Mycenae, the Hittites, and Ugarit (Sandars 1978).

---

<sup>12</sup> Roughly speaking, emergence is organic causality. Where machine action occurs as specific causes drive specific effects in deterministic chains, more complex systems unfold through emergence, where subsystems of the emerging system interact with each other *and* subsystems outside it to create results that may be unexpected. For a fuller discussion of my understanding of emergence, see Baskin 2022.

Similarly, in China the Zhou Dynasty, which had come to power sometime c. 1045 BCE, was driven from much of its territory in 771 BCE by an alliance of barbarians. China would fragment into more than 150 kingdoms, which would battle for supremacy until they became only seven during the Warring States period (403 to 221 BCE).<sup>13</sup>

These events all created existential challenges for the societies where they occurred, and, in the responses of those societies that survived, we can see the workings of the cultural feedback loop we're examining. We've already seen how it worked in the Redactor's editing the Hebrew Bible. Judah's case is different from the other three Axial Age states, because it was a small state being overwhelmed, rather than a dominant state trying to survive. For all three dominant polities, we see the transformation from "feudal" kingdoms held together by the loyalty of the king's inner circle to bureaucratic empires held together through a far more mechanical type of loyalty. We turn now to two very different Axial Age transformations and the mythic reinvention that helped them emerge, in Greece and China.

### **Greek Rationalist Myth**

Greece's political centers, especially Mycenae, flourished in the 14<sup>th</sup> and 13<sup>th</sup> centuries. But by 1200 BCE, several factors seemed to contribute to their collapse and the beginning of a "dark age" of political decentralization (see for example Dothan and Dothan 1992).<sup>14</sup> That period ended c. 700, at about the time Hesiod's poetry and Homer's epics were written down, laying out the myths of Greece's early Axial Age. Homer's *Iliad* and *The Odyssey* bring up a fascinating issue when we ask how much myth can affect the people who accept it: The Greek alliance that invades Troy is a fractious collection of small, independent states that unify to fight an Eastern enemy. Once they succeed, however, they go back to their brotherly competition. This is precisely what happened with the Greek *poleis* – the relatively small "citizen-states," as Bellah (2011) calls them – when Persia invaded Greece, first, around 490 and, then, around 480. In both cases, these polities united to defeat the invader. Once they had, they went back to their old ways, as Athens and Sparta vied for dominance. This would lead to the Peloponnesian Wars (431-404 BCE), which would severely reduce the power of Athens and undermine confidence in the myths of the gods of Olympus. I found it impossible not to wonder to what extent these similarities are coincidence.

---

<sup>13</sup> A wide range of scholars have written about the Axial Age since Jasper's early work. In this essay, I can touch on it only lightly, because my focus is the power of reinvented myth to drive cultural transformation. For those readers who want to examine it more deeply, I would suggest beginning with Bellah's *Religion in Human Evolution* (2011) or, for those who prefer a less scholarly approach, Armstrong's *The Great Transformation* (2006).

<sup>14</sup> One interesting discussion contrasts the idea that civilizations such as that at Mycenae "collapse" and fall into "dark ages" with a more adaptive approach. According to this alternative, see, for example, Scott (2017), the "dark age" interpretation assumes the Enlightenment position on progress, assuming that developing into a less complex society is abnormal. Scott argues, rather, that such phenomena are merely adaptations to specific conditions, another example of emergence.

In any case, the 5<sup>th</sup> Century BCE was clearly a time when Greece was repeatedly plunged into an intense consciousness of life as chaos. We can see the reaction to these chaotic events in the Greek tragedies of Aeschylus, Sophocles, and Euripides, beginning with Aeschylus's *The Persians* in 472 and lasting through Euripides's *The Bacchae* in 408. Over and over, these tragedians rewrote the myths told in Hesiod and Homer, calling everything into question. The conclusion that Greek culture seemed to be approaching may come through most clearly in *The Bacchae*. Dionysus, after all, is the outsider god, who embodies the dark, chaotic elements of being human. In the play, he "comes into a city and turns it upside down, leading to the destruction of those who oppose him but to a new solidarity among those who accept him" (Bellah 2011: 351). From the viewpoint I've been developing, Greek tragedy is an attempt to answer the third perceptual question in a society that had been repeatedly plunged into chaos for a century.

As a result, we see essentially good people such as Orestes and Oedipus caught up in invisible forces that would cause them near-unbearable suffering. That suffering was the poetic expression of the suffering and anxiety the people of Athens, really of all Greece, experienced throughout the 5<sup>th</sup> Century. And their answer to this question seems to be, as one historian puts it, "that words, values, men themselves, are ambiguous, that the universe is one of conflict." So, in the words of another, "only by surrendering control and embracing disorder in the service of Dionysus can men ultimately maintain order and avoid catastrophic loss of control" (Jean-Pierre Vernant; Christiane Sourvinou-Inwood, as quoted in Bellah 2011: 356). In the face of the mysterious invisible forces that I've suggested myth explores, we can maintain order in our lives only by acknowledging chaos.

At the same time, Greek scientists and philosophers were creating a different way to serve myth's functions. In earlier societies, science had mostly been performed by priests, as with the astronomers of Ancient Egypt and Babylon. Now, thinkers such as Milesian physicist Thales (c. 625-547) and Pythagoras (c. 580-500) began separating science from religion, as a way of understanding the world. Their approach would become central to philosophers such as Plato and Aristotle who used a scientific form of myth, as with Aristotle's Unmoved Mover. Curiously, while Plato denigrates traditional Greek myth, he draws on Odysseus's visit to Hades in *The Odyssey*, as a model for much of *The Republic*, especially the parable of the cave (Bellah 2011).

As the Greek Axial Age came to a close, the philosophy of Plato and Aristotle created what generalist Jeremy Lent calls the deification of reason. On one hand, Plato insisted that people trained in mathematics and philosophy should govern; on the other, he presents a god who imposed the cosmos of rational order, in Ideal Forms, for example, on what had been chaos (2017). Similarly, the great body of Aristotle's writings are dedicated to examining the rational order that appears in fields ranging from tragedy to biology to physics.

Aristotle, remember, was the tutor of Alexander the Great, who spread Hellenism, and its deification of reason, throughout the known world. This rational mythic order was, however, balanced with a recognition of Dionysus, appearing in mystery cults. Even Pythagoras, who very nearly deified mathematics, was reported to have attended Egyptian mystery cults (Bellah 2011). Rational myth, mixed with mystery cults, would have been practiced by the elite, while, for most people in Greece, the gods of Olympus would remain at the heart of their myth.

This distinction between elite myth/religion and its popular form has probably existed since the time when power elites began managing myth and ritual, as community size increased (Hayden 2018). The elites that governed these communities during the Neolithic Revolution often created gods who ruled the cosmos, much as they ruled human society. Where religious ritual had previously been practiced by everyone in the community together, the elite now became the performers of ritual, for which other members of the community were, at best, observers. But the new “religions” that these members of the elite created, did not erase older practices, as many people, in many societies, held on to their old ways. It took, for instance, several generations after the Redactor introduced that mythic twist before all members of the society gave up worshipping Ba'al and Astarte, just as many people in the West still practice their Christianity, even though our dominant, elite myth has become scientific.

For anthropologist Carel van Schaik and historian Kai Michel, this distinction reflects three layers of “human nature”: First, the “innate feelings, reactions, and preferences” that our species evolved with; second, the “habits, conventions, and ways of thinking” we learn from the culture we grow up in; and third, the “new maxims, practices, and institutions” that develop in response to relatively recent events (2016: 22-23). They add that the third layer takes time to feel “natural,” a conclusion cognitive neuroscience supports. As Laughlin and his co-authors point out (1990), the mental models we form when we are young largely define the way we experience the world. Only a small percentage of any society’s members are able to even conceive of the alternative such third layers present. These newest ways of thinking about the world come to stand at the heart of any society’s elite religion, while a mixture of older myths come together in popular religion.

The reason for focusing on elite myth in this paper is that the elite, who conceive it, tend to shape society, so that people throughout society learn, over time, to think in terms of the new myth. Note, for instance, how the new religions that emerged during the Axial Age are universal, ethical religions that could unite the heterogeneous populations of the Roman or Chinese empires that were forming. At first, we should expect resistance to such religions, because they threaten the assumptions upon which so many people had built their lives. That’s probably a large part of the reason that the people of Judah took more than a hundred years to accept the Redactor’s strict monotheism (Akenson 2001).



The various elite mythic orders that emerged during the Axial Age – attempts to create order in a world where chaos remained a painful reality – would contribute to the shape of history for the next two millennia. Greek rationalism was at the heart of the Roman Empire; it also made a deep impression on Western Christianity and, eventually, Western science and social structure. As late Axial Age Greek myth suggested, throughout this period, chaos remained an underlying reality that even the rationalism of Descartes and the Enlightenment could never tame.

### **Chinese Traditionalist Myth**

The distinction between elite and popular religion/myth was also important in Ancient China. During the Axial Age, popular religion/myth reflected the vast population of farmers and craftspeople needed to feed more than 40,000,000 subjects (“Population History of China” 2021) in the Warring States period. As a result, popular Chinese religion developed dozens of gods, representing the natural forces that these working people faced – a wind god, a river god, and a fire god, for example – as well as a high god, Shang Di. Its myth also recognizes a series of culture heroes, such as Fu Xi, who is supposed to have domesticated animals, or Shen Nong, celebrated for inventing the plow and hoe. All in all, it’s easy to see Chinese popular myth as fanciful, but it makes sense for the vast numbers of uneducated Chinese, especially for farmers tending the land (see, for example, Embry 1996).

For Western thinkers, accustomed to myth with divinities, the Chinese elite mythology of the Axial Age may seem alien, overly philosophical and abstract. During the Zhou Dynasty (c. 1045 to 771 BCE), elite religion had dropped its high god. In its place was the myth of Heaven and Earth: Heaven represented, much like a Platonic Ideal Form, the order and constancy that political rule and human behavior should exhibit, and Earth provided the constituents of life. It was the duty of humans to use those constituents according to the ideals of Heaven. At the heart of this mythology was the idea of the *Tao*, the Way, which humans should understand and follow. This shift in religious thinking appears to have occurred largely for political reasons – that is, the Zhou elite replaced Shang Di with Heaven largely to justify its overthrow of the previous dynasty, the Shang. The Zhou elite explained that the Shang elite behaved so badly that they had lost the “Mandate of Heaven”; the Zhou takeover of power, then, was a virtuous act. For about two centuries, the Zhou appear to have provided the order and constancy idealized in Heaven, so much so that it became the model that many Axial Age thinkers such as Confucius turned into the myth of a golden age (Schwartz 1985).

The increasing disorder of the Chinese Axial Age became clear when the Zhou were driven out of their western territories in 771 BCE. The resulting political disintegration would produce more than 150 kingdoms, fighting for more power. This warfare was, at first, ritualized conflict with extensive rules of combat among these entities’ aristocracies (Lewis 1990).

In the course of the Spring and Autumn period (c. 722 to 481 BCE), this warfare would become a “military free-for-all” in which states were absorbing each other (Fairbank and Goldman 2006). By the Warring States period, only seven of these states remained, and their conflicts became increasingly destructive; with the introduction of iron weapons, armies of hundreds of thousands became possible.

One side effect of these events was the rise of a new class, the *shi*, who had been the least powerful of the aristocratic elite. During the Spring and Autumn period, many of them had been reduced to low-ranking officials, and some became “freelance” thinkers and teachers. As the sense of being enveloped by chaos increased, they created a series of schools of philosophy, the “Hundred Schools,” each giving its own mythic twist to the ideal of following the Way of Heaven. Confucius (551 to 479 BCE) would become the best known member of this class, even though he never became a king’s advisor, as he at first hoped. Living at the end of the Spring and Autumn period, he was convinced that the “unbridled pursuit of wealth, power, fame, sensual passion, arrogance and pride” (Schwartz 1985: 83) was largely responsible for the chaos all around him. So he recommended a return to the virtuous traditions of the early Zhou kings, creating a “traditional” different way of thinking about the world.

At its heart is what philosopher Herbert Fingarette calls the “narrative of a mythic past in the service of a new ideal grounded in radically new insights into man’s essential nature and power” (as quoted in Bellah 2011: 415). To work this change, Confucius insisted that the elite would have to demonstrate *ren*, a deep concern for others, so deep that right action almost became automatic (Ebrey, 1996), thus setting an example for those they ruled. That would require a regimen of self-examination, so that people could recognize when they were being self-seeking, a conscious focus he taught his students. Moreover, Confucius recommended ritualizing a wide range of behaviors, including one-on-one relationships. Here, he pictured society as a network of dyads – one superior, the other inferior. Those dyads included king-advisor, husband-wife, father-son, first son-second son. The superior member had full authority, but also was responsible for both the welfare and behavior of the inferior. This schema became a powerful way to control people, enforcing “moral” behavior.<sup>15</sup>

Confucius’ thought would become central to the new mythic understanding of the world that would develop during the Chinese Axial Age. Perhaps it was because his mythic use of the Zhou Dynasty grounded his philosophy in tradition, in a society of farmers who appreciated the contributions of generations of ancestors.

---

<sup>15</sup> This approach toward maintaining order could be taken to disturbing lengths. In this way, many Chinese emperors protected themselves by letting their subjects know that attempting to assassinate them would result, not just in the death of the assassin, but also all those in the assassin’s social network. It appears to have been brutally effective.

The success of his approach may also have rested on the way it balanced the authoritarian tendencies of the superior/inferior dyad with an idealized aspiration for kings to rule in the best interest of their subjects. In any case, from a historical perspective, Confucius may have been more successful than he could have imagined. A wide range of other schools of thought did emerge, however, and the most important of them was Taoism.<sup>16</sup>

In many ways, the difference between Confucianism and Taoism is parallel to the distinction between Orthodox Christianity and Gnosticism in the 2<sup>nd</sup> Century CE. The first insists on conformity to a powerful leadership in all things, and the second recommends personal exploration leading to action grounded in direct experience. Taoism took many different forms. Some popular forms, for instance, emphasized the search for an elixir of immortality<sup>17</sup> and a pantheon of deities. “Primitive” Taoism, on the other hand, was an elite form that saw Confucius’ emphasis on social conformity as part of the problems of the Chinese Axial Age. For many Taoists, the extreme ritualism of Confucianism could make the lives of those who practice it an ongoing performance that both protected them and alienated them from themselves, as they lived lives that become increasingly hypocritical.<sup>18</sup>

The Taoist alternative was to treat the Way of Heaven as a matter of the underlying, mystic reality. So their model became the sage, the person who came to know how the world worked and used this knowledge to do what was best for the people. This interpretation of the Tao can be difficult for Westerners, because it begins with a very un-Western assumption: “Reversal is the movement of the Way” (Lao Tzu 1998: 8). Push too hard in one direction – as self-seeking kings or their advisors often do – and life will push back. True wisdom lies in understanding the world deeply enough to be able to *cooperate* with its ongoing dynamics – that is, follow the Way of Heaven – in order to accomplish one’s ends.<sup>19</sup>

In a world experiencing so much chaos, it comes as no surprise that the resolution of the Chinese Axial Age would favor Confucianism, with its emphasis on authority. In the millennium and half following the Axial Age, kings would occasionally use Taoist advisors, during parts of the Han Dynasty (206 BCE to 220 CE), for instance.

---

<sup>16</sup> For a full treatment of these other philosophical schools, the reader can check out Schwartz (1985) and Graham (1989).

<sup>17</sup> This quest for immortality is believed to have been the source of the discovery of gunpowder in the 9<sup>th</sup> Century CE (Temple 2007).

<sup>18</sup> Readers interested in getting a deeper understanding of this problem may enjoy the film *Curse of the Golden Flower* (2006), an almost-Shakespearean tragedy about a fictional emperor during the Tang Dynasty.

<sup>19</sup> One of the great Taoist exemplars of Chinese literature is Kongming, a monk who serves as advisor to general Liu Bei in *The Romance of the Three Kingdoms* (c. 1321). One cinematic treatment that makes his approach clear is *Red Cliff* (2008). In this same work, we can see how the self-seeking of leaders such as Cao-Cao lead to their failures.

During this time, these two mythic ways of being in the world would interact, as their proponents responded to each other. Eventually, the ideal leader would be characterized as king (Confucian) on the outside and sage (Taoist) on the inside (Schwartz 1989). What may be most impressive about the Chinese Axial Age is how successful its myth proved to be, transforming the chaos of the Axial Age into long-term order that was also innovative.

In the period between the end of the Axial Age and the rise of the West (c. 1500), China would become one of the wealthiest, most powerful, and most technologically advanced polities in the world. Those technological advances include gunpowder, guns, and flame throwers; paper and printing; compasses, the rudder, and manned flight with kites; and machines for mass production (Temple 2007). And in the middle of the 15<sup>th</sup> Century, China would build the largest sailing ships and the greatest fleets before the First World War, sending emissaries all over Eurasia and, some thinkers insist, to the New World more than half a century before Columbus (Menzies 2002).

### **Modernity's Myth-making**

Starting c. 1500 CE, Western Modernity emerged from the same type of chaos that we saw during the Axial Age. Up through the High Middle Ages (c. 1000 to 1300), Western Europe was dominated by its land-owning aristocracy and the princes of the Church.<sup>20</sup> This social structure would break down under the pressure of a series of events. In 1241, the Mongol invasion nearly conquered Vienna and did create the first economic world-system (c. 1250 to 1350) from Beijing to Brussels, accelerating the growth of a wealthy commercial class across Western Europe (Abu-Lughod 1989).

Then, the Black Plague (1347-1351) killed off something like a third of the population, indiscriminately taking peasants and Princes of the Church. This further damaged the power alliance of Church and aristocracy, first, by showing the Church impotent before the Plague and, second, by opening new positions of power for the commercial class. With Gutenberg's invention of the printing press in the mid-1400s, and the growth in literacy it encouraged, Protestantism became possible, giving members of the commercial class a religious partner with which to engage the Church/aristocracy alliance.

---

<sup>20</sup> The economic structure of the West's High Middle Ages was more complex than I can present it here. For example, as Jean Gimpel points out in *The Medieval Machine* (1976), an initial industrial revolution occurred, roughly between 900 and 1300, which would start building the manufacturing and commercial class that flourished at the end of this period.

The resulting religious wars, especially the Thirty Years War (1618 to 1648) and the English Civil War (1642-1651), created a desire for order,<sup>21</sup> which partly led to the scientific myth that became dominant in the 18<sup>th</sup> Century.<sup>22</sup>

The mythic twist that would lead to Western science as the source of Europe's symbolic order emerged, as the Axial Age transformations had, from the older order that it replaced. The Late Medieval (c. 1300 to 1500) Christian had reflected Thomas Aquinas's (1225 to 1274) "Christianization" of Aristotle.<sup>23</sup> For Aquinas, God and his creation were rational. Studying the natural world, then, could lead humans to understand Him better. The church would eventually accept this position, and in the next few centuries, many of the most important pre-scientific thinkers were either employed or supported by the Church, including Roger Bacon (1220-1292), William of Ockham (1287 to 1347), Nicolas Copernicus (1473 to 1543), and Johannes Kepler (1571 to 1630). We can also see how deeply pre-scientific Christianity was intertwined with the emergence of Western science in the work of Isaac Newton (1642 to 1726), who was deeply religious and wrote so much on topics like alchemy and Biblical interpretation that economist John Maynard Keynes called him "the last of the magicians."

As that mythic twist developed, a new kind of thinker, the scientist, had been emerging along with these proto-scientists (Wootton 2015). These early scientists were mostly astronomers such as Nicolaus Copernicus, Kepler, and Galileo Galilei (1564-1642). They perfected the use of mathematics to interpret direct observation of phenomena that Aristotle had examined through philosophy. As a result, Kepler recognized a degree of precision in the movement of heavenly bodies that led him to write, "My aim is to show that the machine of the universe is not similar to a divine animated being, but similar to a clock" (as quoted in Dolnik 2011: 182).

This mythic twist culminated in the works of several 17<sup>th</sup> Century thinkers, especially Francis Bacon and René Descartes. In his *Novum Organum* (1620), Bacon (1561 to 1626) criticized the speculative methods of Medieval churchmen, calling for "a total reconstruction of science, the arts, and human knowledge" (Gillespie 2009: 37). To make that reconstruction, he proposed that the search for knowledge should be grounded in scientific research, rather than religious speculation. The scientist's job would be to "torture" nature into giving up its secrets.

---

<sup>21</sup> The spectacle of Catholic and Protestant armies slaughtering each other to determine who most truly followed the Prince of Peace must have terrified the Western European elite. As Theodore Rabb puts it, the "specter of total anarchy raised by the new military tactics, the unprecedented slaughter, and the lawlessness of international relations seemed to have brought Europe to the edge of the abyss" (1975: 119).

<sup>22</sup> For a full discussion of the socio-economic dynamics that led to the Thirty Years War, as well as the horrors it caused, see Wilson (2009).

<sup>23</sup> For a full discussion of how deeply Western science was grounded in Late Medieval Christianity, see especially Gillespie (2009) and Freely (2012).

As a result of this knowability, Bacon predicted that scientific innovation would produce more and more devices, such as the printing press, which enhance human life, ultimately allowing us to create the “Empire of Man” – a society where we human beings could be far more safe and comfortable. This belief in the knowability of matter appears today in the writings of those scientists who look forward to the time when science will enable us to understand everything, and those things that now seem mysterious will prove to be transparent. As science writer Michael Shermer puts it, “I believe the truth is out there” (2011: 34). And the job of the scientist is to find that truth.

Descartes (1596 to 1650) would help complete Modernity’s symbolic order by integrating Bacon’s ideas about science with a linear model of a Clockwork Universe. Science, he believed, would “make man master and possessor of nature,” thereby providing security (Gillespie 2009: 190). For him, certainty was the key: Thus the scientist should examine only that which could be known with certainty. In addition, he explained that matter came in two forms. Most matter is *res extensa*, dead stuff that could only move when an outside cause impacted it; the only exception is the *res cognitans* of the human mind, which is how humans can learn about nature and transform society. Applied to human beings, this philosophy created the body/mind dualism that philosophers continue to argue today. It seems to have developed from the Late Medieval Christian belief that human beings are part animal (body) and part God (spirit). So we humans have the ability to initiate chains of cause and effect by exercising our God-like spirit/mind.

The formation of Modernity’s mechanical symbolic order is, of course, far more complex than I can describe in this essay. In addition, this mechanical order has repeatedly been challenged by the more processual model in the works of Gottfried Leibniz or Alfred North Whitehead.<sup>24</sup> Like the ongoing challenge Taoism presented to Confucianism in the mythic order of Axial Age China, the West’s dominant mechanical paradigm continues to be challenged by a process-oriented model. I focus here on the mechanical order because it sits at the heart of Western culture and reflects the way of thinking that is making it so difficult to address our current existential challenges. And, like the mythic orders in Axial Age Greece and China, the West’s mechanical myth resulted from generations of chaos, which resulted in the mythic twist that would enable members of society to develop a new way of thinking.

The order of the Clockwork Universe was cemented in place with Newton’s publication of the *Principia Mathematica* in 1687. Here he articulated this order’s cosmology, written in the language of numbers to describe the ongoing movement of a world of distinct “things” driven, deterministically, by the law of cause-and-effect.

---

<sup>24</sup> Readers interested in a fuller examination of the rise and development of the West’s unique symbolic order can consult Stephen Gaukroger’s *The Emergence of a Scientific Culture* (2006).

The idea of science that Bacon and Descartes described now became the mythic order in which Western society would be grounded. It would be expanded by other thinkers. For instance, Thomas Hobbes (1588 to 1679) was so terrified by the religious passions the wars of religion had unleashed that he removed religion from the social realm, and, in *Leviathan*, published 1651, replaced the idea of the king as God's representative with the idea that kings ruled as the result of a social contract between the governed and their leader. To make this switch, he insisted that without a powerful leader society would be reduced to the "state of nature," that is, a "war of each against each." Human beings in society, he argued, were, first, as separate as the parts of a clock and, second, motivated almost entirely by self-interest. Religion was not integral to governing society. It was an add-on that each king should decide for those he governed. This mechanical symbolic order would be further reinterpreted throughout the Enlightenment (late 17<sup>th</sup> to late 18<sup>th</sup> centuries), introducing the ideas that the deterministic law of cause-and-effect created Progress and that the West represented its vanguard.

In many ways, the mythic order provided by this mechanical notion of science was nearly as successful as Bacon thought it might be.<sup>25</sup> It did help create order from the chaos that the West had experienced. In spite of periodic warfare, the political order has remained relatively stable, interrupted by chaotic shocks such as the two world wars and the Cold War. Still, following each of these wars, order has reasserted itself. Moreover, the overall arc of history has reflected the Enlightenment belief in progress. In the 300 and some years since the *Principia Mathematica* appeared, life expectancy has increased dramatically; science has made jaw-dropping advances in our understanding of the world; technology has been equally astounding, connecting people all over the globe, for instance; and a majority of people have been lifted out of poverty.

Today, we can see this symbolic order in the widest variety of phenomena – from the way medical science treated the human body as a machine to the economics based on the Invisible Hand manifested in the computable balance between supply and demand or to the belief that industrial waste is an "externality" – an unwanted product of manufacturing that needs merely to be disposed of.

At the same time, this very success has created the existential problems noted at the beginning of this paper. And in spite of these issues being recognized and discussed for decades, these challenges have continued to intensify, a case of problems that can't be solved with the mindset that created them.

What, then, are we to do?

---

<sup>25</sup> For a full discussion of how science unfolded, see Baskin 2020.

**Conclusion: The Lesson of Mythic Reinvention**

As we examined these transformations, Bondarenko and I (2014) noticed that they largely fell into a regular pattern: Initial chaos, followed by widespread experimentation, intensifying chaos, more experimentation, and, finally an often-chaotic period of consolidation, in which a new way of dealing with the world emerged.

This pattern suggested that we are now in the final stage of Modernity's transformation. Just as the last century of the Axial Age was a period in which each of the Axial societies began acting on what they had learned, the 21<sup>st</sup> Century seems to be a time in which the lessons of Modernity must be compiled and implemented. Particularly striking is the parallel between China's Warring States period and the World Wars of Modernity.

So the questions I want to conclude this essay with are: What are the lessons learned in Modernity, especially in the West? And how can we implement those lessons in a reinvented myth?

For one thing, Western Modernity illustrates the dynamics of the cultural feedback loop I've examined in this essay. It began with a growing sense of chaos as the old social order cannot adapt to events, both outside – the Mongol invasion and its results – and inside – the growing power of the commercial class. As this order broke down, members of the elite transformed the older myth, launching a period of experimentation, dominated in the West by the emergence of Western science and capitalism. These behaviors, in turn, transformed society in unexpected, sometimes chaos-producing ways. In the West, one of these surprises is the way practicing the linear science built on the work of Bacon and Descartes led, in the 20<sup>th</sup> Century, to the realization that the world is far more complex than their mechanical symbolic order would allow.

As the technology Bacon championed produced scientific instruments ranging from CAT scans to particle accelerators, it became clear that the world is a far more mysterious, deeply interconnected place, first emphasized in the physics of Einstein and quantum mechanics,<sup>26</sup> than the mechanical symbolic order could have predicted. Today, faced with challenges that are largely products of the last 300 years of experimentation, we also face the need to reinvent our mythology to resolve the conflicts between these ways of seeing the world.

---

<sup>26</sup> The philosophical discussions about the implications of this “new” physics would become so confusing that some physicists were content to reply to questions about them with the comment, “Shut up and calculate.” On one hand, quantum mechanics has been so successful that extended philosophical speculation wastes time that could be used to make important contributions. On the other, some physicists are reluctant to entertain the implications these speculations have for reinventing the West's symbolic order. For a good short discussion, see Baggott (2021).



As writers such as Nobel Prize winner in Physics Robert Laughlin (2005) and astrophysicist Lee Smolin (2013) suggest, one approach to reinventing Western myth is at hand – reinterpreting science through the process-oriented symbolic order of Leibniz and Whitehouse.

The workings of such a processual approach have become more and more central to work in many fields over the last 50 years. As we've seen, current cognitive neurobiology, thanks to tools such as CAT scans, has shown how complex and non-linear human perception is, to the point where Hoffman (2020) suggests that our perceptions are much like the Indian notion of *maya* – that the world we perceive is an illusion created by our sensory and cognitive limitations. Similarly, medical science learned that disease is not merely the breakdown of the body as an outside force bears down on it, as the mechanical model of the body suggests. In many cases, such as autoimmune diseases, disease reflects the body trying to adapt to conditions in both the body and the outside world. Nor is evolution the simple cause-and-effect process pictured by the Modern Synthesis, where random genetic mutation in the DNA changes body type and those changes are tested by Natural Selection. It can also reflect the effects of environmental conditions, chemical markers on the DNA passed from parent to child, and even a response to learning.<sup>27</sup>

This shift to a more complex way of thinking about the world has also resulted in the rise of new, multi-disciplinary fields of study, from complexity science to systems theory, both of which suggest that our world does not work by cause-and-effect, but, rather, through emergence.

Unfortunately, this essay isn't long enough to include a detailed examination of this new way of thinking. There is however, a growing library of work extending the process orientation of Leibniz and Whitehead, which, like earlier myth, is being "debated, disputed, filtered" in "narrative exchanges about reality" (Donald 1991: 258). Among the most interesting of these discussions are those of Laughlin (2005), Smolin (2013), and psychiatrist Ian McGilchrist (2022). In the deeply interconnected, highly processual world they envision, industrial wastes are no longer mere "externalities" that need to be disposed of; economics is no longer a dance of precise equations; and we humans are no longer distinct individuals. Rather, we are all parts, not merely of our social networks, but of the network of life on this planet, where no network member can be truly healthy unless we also take care to ensure the health of our ecosystems and the social systems that are ultimately dependent on those ecosystems (see Latour 2017).

---

<sup>27</sup> This emerging understanding of evolution is often called the Extended Evolutionary Synthesis. One excellent book that examines it is Jablonka and Lamb's *Evolution in Four Dimensions* (2014).

It's my hope that by interpreting the findings of science through this processual symbolic order, we can transcend the West's compulsive insistence on mechanical order, recognizing that order and chaos are not mutually exclusive states of being, but deeply interconnected states that, together, drive evolution. And, just perhaps, through this new scientific myth, we can begin to adapt to the existential threats that challenge us today.

As I noted in my introduction, I do not present these thoughts as the "truth." At best, this essay may become part of the back-and-forth by which a new interpretation of our scientific myth emerges. The linear model, after all, has been unable to help our societies address challenges that have been clear for decades. So our survival may depend on our ability to reinterpret what we've learned from science in a way that makes it possible to address those challenges. It is, I am convinced, essential for us to develop a new symbolic order, and this paper is my contribution to that discussion.

## References

- Abu-Lughod, Janet L. 1989. *Before European Hegemony: The World System A.D. 1250-1350*. New York: Oxford University Press.
- Akenson, Donald H. 2001. *Surpassing Wonder: The Invention of the Bible and the Talmuds*. Chicago, IL: University of Chicago Press.
- Anthony, David W. 2007. *The Horse, the Wheel, and Language: How Bronze-age Riders from the Eurasian Steppes Shaped the Modern World*. Princeton, NJ: Princeton University Press.
- Armstrong, Karen. 2006. *The Great Transformation: The Beginning of Our Religious Traditions*. New York: Alfred A. Knopf.
- Assmann, Jan. 2002. *The Mind of Egypt: History and Meaning in the Time of the Pharaohs*, trans. A. Jenkins. Cambridge, MA: Harvard University Press.
- Assmann, Jan. 2011. *Culture, Memory, and Early Civilization: Writing, Remembrance, and Political Imagination*. Cambridge: Cambridge University Press.
- Atran, Scott. 2002. *In Gods We Trust: The Evolutionary Landscape of Religion*. Oxford: Oxford University Press.
- Baggott, Jim. 2021. "Calculate but don't shut up." *Aeon*. <https://aeon.co/essays/shut-up-and-calculate-does-a-disservice-to-quantum-mechanics> (accessed 10/12/2022).
- Barrett, Justin L. 2012. *Born Believers: The Science of Children's Religious Belief*. New York: Free Press.
- Baskin, Ken. 2020. "Bacon's Playbook: An Unorthodox Exploration of the Social Institutions of Western Modernity." In *The Evolution of Social Institution: Interdisciplinary Perspectives*, eds. D. M. Bondarenko, S. A. Kowalewski, and D. B. Small.

- Baskin, Ken. 2022. "Big History and the Principle of Emergence." *Journal of Big History* 5 (1): 77-91.
- Baskin, Ken and Dmitri M. Bondarenko. 2014. *The Axial Ages of World History: Lessons for the 21<sup>st</sup> Century*. Litchfield Park, AZ: Emergent Publications.
- Baskin, Ken and Dmitri M. Bondarenko. 2019. "Is Modernity a *third* Axial Age?" *New Trends in Social and Liberal Sciences*, 4 (2), pp. 1-23.
- Bellah, Robert N. 2011. *Religion in Human Evolution: From the Paleolithic to the Axial Age*. Cambridge, MA: Belknap Press.
- Boje, David M. 2001. *Narrative Methods for Organizational & Communications Research*. London: Sage Publications.
- Campbell, Joseph. 2004. *Pathways to Bliss: Mythology and Personal Transformation*. Novato, CA: New World Library.
- Cassirer, Ernst. 1955. *The Philosophy of Symbolic Forms*, trans. Ralph Manheim. New Haven, CT: Yale University Press.
- Christian, David. 2004. *Maps of Time: An Introduction to Big History*. Berkeley, CA: University of California Press.
- Christian, David. 2018. *Origin Story: A Big History of Everything*. New York: Little, Brown and Co.
- Dawkins, Richard. 2006. *The God Delusion*. New York: Mariner Books.
- Deacon, Terrence W. 1997. *The Symbolic Species: The Co-evolution of Language and the Brain*. New York: W.W. Norton & Co.
- Dennett, Daniel C. 2007. *Breaking the Spell: Religion as a Natural Phenomenon*. New York: Penguin Books.
- Dolnick, Edward. 2011. *The Clockwork Universe: Isaac Newton, the Royal Society & the Birth of the Modern World*. New York: HarperCollins.
- Donald, Merlin. 1991. *Origins of the Modern Mind: Three Stages in the Evolution of Culture and Cognition*. Cambridge, MA: Harvard University Press.
- Dothan, Trude and Moshe Dothan. 1992. *People of the Sea: Search for the Philistines*. New York: Macmillan Publishing.
- Durkheim, Emile. 2008. *The Elementary Forms of the Religious Life*. Mineola, NY: Dover Publications.
- Ebrey, Patricia B. 1996. *Cambridge Illustrated History of China*. Cambridge: Cambridge University Press.
- Eliade, Mircea. 1968. *Myth and Reality*, trans. W. R. Trask. New York: Harper Torchbooks.
- Fairbank, John K. and Merle Goldman. 2006. *China: A New History*, 2<sup>nd</sup> ed. Cambridge, MA: Belknap Press.
- Foucault, Michel. 2000. "Questions of method." In *Power*, ed. J. D. Faubion, New York: The New Press.
- Gaukroger, Stephen. 2006. *The Emergence of a Scientific Culture: Science and the Shaping of Modernity 1210-1685*. Oxford: Clarendon Press.
- Gazzaniga, Michael S. 2011. *Who's in Charge? Free Will and the Science of the Brain*. New York: HarperCollins.

- Geertz, Clifford. 1973. *The Interpretation of Cultures*. New York: Basic Books.
- Gillespie, Michael A. 2009. *The Theological Origins of Modernity*, Chicago: University of Chicago Press.
- Gimpel, Jean. 1976. *The Medieval Machine: The Industrial Revolution of the Middle Ages*. New York: Barnes and Noble.
- Graham, A. C. 1989. *Disputers of the Tao: Philosophical Argument in Ancient China*. Chicago: Open Court.
- Hayden, Brian. 2003. *Shamans, Sorcerers, and Saints: A Prehistory of Religion*. Washington, D.C.: Smithsonian Books.
- Hayden, Brian. 2018. *The Power of Ritual in Prehistory: Secret Societies and Origins of Social Complexity*. Cambridge: Cambridge University Press.
- Hobbes, Thomas. 2017. *Leviathan*. New York: Penguin Classics.
- Hoffman, Donald. 2019. *The Case Against Reality: Why Evolution Hid the Truth from Our Eyes*. New York: W.W. Norton and Co.
- Jablonka, Eva and Marion J. Lamb. 2014. *Evolution in Four Dimensions: Genetic, Epigenetic, Behavioral, and Symbolic Variation in the History of Life*, revised ed. Cambridge, MA: The MIT Press.
- Jaspers, Karl. 1953. *The Origin and Goal of History*, trans. M. Bullock. London: Routledge.
- Lao Tzu. 1998. *Tao Te Ching*, trans. Victor H. Mair. New York: Quality Paperback Book Club.
- Latour, Bruno. *Down to Earth: Politics in the New Climatic Regime*. Cambridge: Polity Press.
- Laughlin, Charles D., John McManus, and Eugene G. d'Aquili. 1990. *Brain, Symbol & Experience: Toward a Neurophenomenology of Human Consciousness*. Boston, MA: Shambhala Publications.
- Laughlin, Robert B. 2005. *A Different Universe: Reinventing Physics from the Bottom Down*. New York: Basic Books.
- Lent, Jeremy. 2017. *The Patterning Instinct: A Cultural History of Humanity's Search for Meaning*. Amherst, NY: Prometheus Books.
- Lewis, Mark E. 1990. *Sanctioned Violence in Early China*. Albany, NY: State University of New York.
- Malinowski, Bronislaw. 1954. *Magic, Science and Religion and other Essays*, ed. R. Redfield. Garden City, NY: Anchor Books.
- Menzies, Gavin. 2002. *1421: The Year China Discovered America*. New York: Harper Collins publishing.
- Modelska, George. 2003. *World Cities: -3000 to 2000*. Washington, DC: Faros 2000.
- "Modularity of Mind." 2017. *Stanford Encyclopedia of Philosophy*. <https://plato.stanford.edu/entries/modularity-mind/#DoubAbouMassModu> (accessed 10/09/2022).
- Norenzayan, Ara. 2015. *Big Gods: How Religion Transformed Cooperation and Conflict*. Princeton, NJ: Princeton University Press.

“Population History of China.” 2021. *Wikipedia*.

[https://en.wikipedia.org/wiki/Population\\_history\\_of\\_China](https://en.wikipedia.org/wiki/Population_history_of_China) (accessed 10/07/2022).

- Sahlins, Marshall. 2022. *The New Science of the Enchanted Universe: An Anthropology of Most of Humanity*. Princeton, NJ: Princeton University Press.
- Sandars, N. K. 1978. *The Sea Peoples: Warriors of the Ancient Mediterranean*. London: Thames and Hudson.
- Schwartz, Benjamin I. 1985. *The World of Thought in Ancient China*. Cambridge, MA: Belknap Press.
- Scott, James C. 2017. *Against the Grain: A Deep History of the Earliest States*. New Haven, CT: Yale University Press.
- Segal, Robert A. 2015. *Myth: A Very Short Introduction*, 2<sup>nd</sup> ed. Oxford: Oxford University Press.
- Shermer, Michael. 2011. *The Believing Brain: From Ghosts and Gods to Politics and Conspiracies – How We Construct Beliefs and Reinforce Them as Truths*. New York: St. Martin’s Griffin.
- Siegel, Daniel J. 2010. *Mindsight: The New Science of Personal Transformation*. New York: Bantam.
- Smolin, Lee. 1997. *Time Reborn: From the Crisis in Physics to the Future of the Universe*. Boston: Houghton Mifflin Harcourt.
- Temple, Robert. 2007. *The Genius of China: 3,000 Years of Science, Discovery & Invention*. Rochester, VT: Inner Traditions.
- Van Shaik, Carel and Kai Michel. 2016. *The Good Book of Human Nature: An Evolutionary Reading of the Bible*. New York: Basic Books.
- Walton, John F. 2006. *Ancient Near Eastern Thought and the Old Testament: Introducing the Conceptual World of the Hebrew Bible*. Grand Rapids, MI: Baker Academic.
- Wilson, Peter H. 2009. *The Thirty Years War: Europe’s Tragedy*. Cambridge, MA: The Belknap Press.
- Wootton, David 2015. *The Invention of Science: A New History of the Scientific Revolution*. New York: Harper Perennial.
- Yinger, J. Milton 1970. *The Scientific Study of Religion..* New York: Macmillan Publishing Co.