

Is This the End? A Neurocognitive Approach to End Time Narratives (ETNs)

written by Diegesis In Mind | 1. September 2023

One morning after the school bell had rung, my classmates and I had just found our books for the day's lesson, and all of a sudden, everything darkened so quickly that we thought that the electricity had failed, which was not uncommon. Looking around we realized that the light was still on, but the darkness was so severe that the electric lamps could not penetrate it. The sky itself had not only darkened, but turned literally black, as if, in a matter of seconds, day had been switched into night. We went outside into the schoolyard to see what was happening, and I remember vividly the sensation of losing orientation and notion of time in the darkness. I thought that I might be having a dream about being in school, since it seemed to be still in the middle of the night. However, it made no sense at all, unless, for some mysterious reason, me and everyone around had miscalculated the time.

As we were looking at each other in astonishment, suddenly the thick black sky broke down on us in an outburst of unceasing thunders, and slimly black substance that seemed to be some kind of strange and unknown rain. And my next thought was "Is this the end?"

This was in 1991, in my first grade, in Ahwaz in Iran, just a few hours after Iraq had bombed the Oil fields of Kuwait. To contextualize the impact of this experience, it might be important to add that my family and I belonged to an underground Christian minority, and were deeply familiar with the images of "the sky darkening" from the Book of Revelation in the New Testament.

As long as there has been human life on earth, we have envisioned and experienced the world ending in so many different ways. Sometimes it has been by large-scale natural disasters, sometimes by minor scale and local events, either nature caused or prompted by human misbehavior, and sometimes the world comes to an end for a small group or one individual. Sometimes the world as we know it ends abruptly, and sometimes it is a matter of the gradual shattering of an inner world.

We tend to visualize the collapse of the world in vivid, dramatic images. One such image is an unstoppable flood with masses of water sweeping all life and civilization away. The deluge, the drowning of the world, as the heavens and the depths of the earth release their floodgates, is a story told as far back as the ancient Mesopotamian myths of *Atrahasis* and the *Epic of Gilgamesh*. A similar image of a great inundation, exterminating life on earth, appears in the story of Noah (Genesis 6-9), and different versions of the flood story resonate in a number of cultures from different time-periods and different places and continents. In recent times, natural catastrophes like the 2004 Tsunami that hit large coastal areas of the Indian Ocean, and Hurricane Katrina, which flooded densely populated parts of southern USA, prompted media accounts to revive these old images of horror. Expectations of catastrophic climate change tap into this imagery, with global warming causing the North and South poles of the earth melting, the sea levels rising, and species succumbing, as their natural habitats are wiped out.

Another end time image is the devouring fire as the medium of destruction. In the Book of Revelation, fire comes down from heaven and consumes God's enemies (Rev 20). Modern images of fire consuming the world emerged in the aftermath of the bombing of Hiroshima and Nagasaki in 1945. The amassment of nuclear arsenals with massive destructive capacity on both sides of the Cold War kept these terrifying images alive. When engineers lost control over the nuclear power plant in Chernobyl in 1986, aspects of this fear materialized, as images of vast devastated landscapes circulated.

However, we can also imagine global catastrophes in the form of excessive cold. The old Nordic tale of the world ending recounts a series of disasters and increasing moral decay, while increasingly harsh and cold winters make the world uninhabitable. This story culminates in the *Ragnarok*: Giants and demonic creatures attack gods and humans in a great battle, resulting in the ultimate destruction of the cosmos, including the earth, the sun, and the stars. The notion of ice and snow covering the earth in an endless winter recurred in predictions of a new Ice Age (especially during the 1970s), and still remains a threat being envisaged.

Whether in the form of ancient myths, in popularized science, or in fiction, art, or, more recently, in films, TV shows, and computer games, dramatic representations of collapsing worlds continue to fascinate us.

There are, obviously, vast differences between the genres, subtopics, and the narrative forms of these tales. Some of these narratives are associated with folktales, and some with religious traditions and practices, others are linked to scientific theories or notions. However, most of these representations have some fundamental features in common: They tend to be highly dramatic and emotionally charged, and often display a vivid imagery including the extreme ends of the emotional spectrum from horror to comfort and peace, and from ugliness and disgust to beauty and harmony.

From ancient to modern times, representations of end time scenarios have not only remained popular, but they have been instrumental in shaping people's thoughts and actions in many different contexts. Tales of the impending end have stirred fears and fueled hopes. They have been powerful tools in the hands of societal elites, maintaining obedience and submission of the masses, and they have inspired revolutionary underground movements struggling for political and social upheaval and change.

One central question remains: What makes these narratives so attractive, and why do they keep being retold and reformulated in so many different geographical, historical, cultural, religious, social, and political contexts?

"End Time Narratives" is a research initiative developed by [Professor Armin W. Geertz](#), [Professor Jesper Høgenhaven](#), and [myself](#). We are driven by our curiosity concerning this ongoing fascination with different images and narratives of the end time. We have chosen "End Time Narratives" (ETN) as a convenient umbrella term to cover a wide span of representations (oral, written, visual) of the dramatic collapse of the cosmic, social, and moral world order. The point is not primarily about terminology or genre definitions. In a sense, the term "ETN" is deliberately vague, since the idea is to capture narratives from a vast number of different genres, expressed in various media. ETNs have been investigated by scholars from different disciplines, and viewed from historical, religio-historical, theological, literary, sociological, and psychological perspectives. Our ambition is to create a platform and a framework for analyzing the attractiveness and efficacy of ETNs at a cognitive, biological, psychological, and theological level. This analysis is intended as a supplement to ongoing, existing scholarly work on, e.g., apocalyptic texts from antiquity, and contemporary apocalyptic movements and ideologies.

The ability of ETNs to capture our attention across cultures and historical periods is a testimony to their affinity with something profoundly human, more deeply entrenched in our minds and bodies, than the intellectual and semantic implications of particular ETNs. These narratives tap into basic bodily and emotional mechanisms of our being, as they speak to our deepest fears as well as our highest hopes. We approach the universal fascination with ETNs from a bio-cultural perspective, viewing humans as constantly engaged in a process of interaction with their surroundings, and human cognition as an integral part of this interaction.

Our approach combines the “4E Movement”, which regards human cognition as being *embodied*, *embedded*, *enactive*, and *extended*, with historical and exegetical approaches. Cognition is integrated in sensorimotor action, embedded in particular environments, evolved in the need to act in those environments, and extended into material and immaterial cultural tools. Cognition evolved in humans in order to secure their survival in ever-changing and challenging environments. These cross-cultural and cross-historical traits of cognition are, however, expressed in narratives within particular cultures and historical contexts. Thus, a transdisciplinary approach has the potential to widen our perspective.

ETNs engage, directly and indirectly, with our fears of death and destruction. At the same time, they often point to possibilities for a new beginning, salvation, or redemption, beyond the catastrophic events. For recipients, these stories provide knowledge of the chain of events leading up to the ultimate disaster. They become motivational factors for organizing and preparing lives in the light of these insights. In particular, ETNs tend to work with a sharp division between those who can be saved, and those who will perish. Thus, these stories become crucial in creating and maintaining group identities.

How do ETNs achieve their effects on readers, listeners, or viewers? In our analysis, we presuppose that ETNs exercise their immense fascination, and their effects, by triggering certain underlying neurocognitive mechanisms. They achieve this through their narrative structure, which seems apt at activating particular bodily, emotional, and mental states. To analyze how these mechanisms are enshrined in the narratives, and activated in recipients, Armin W. Geertz has developed a tentative neurocognitive model for the analysis of ETNs. The model consists of nine interrelated and dynamic

mechanisms that seem to be especially prominent in ETNs. The first factor is *Embodiment*, as ETNs are loaded with sensory references, such as images that include a high degree of auditory, visual, haptic, olfactory, gustatory, and kinesthetic features. The second factor is *Emotions*. ETNs tap into and trigger a wide range of both positive and negative human emotions, in particular wonderment, fear and horror. The third factor is *Identity*. These narratives are crucial in creating a shared identity and social bond. The fourth factor is *Morality*. ETNs often contain clear notions of boundaries of what is right and what is wrong, which creates and maintains a dichotomy between in-groups and out-groups. The fifth factor is *Social Intelligence*. Humans use enormous resources on aligning ourselves with others and depicting future scenarios. ETNs respond directly to this fundamental proclivity. The sixth factor is *Authority*. ETNs contain a complex pattern of oral and written authoritative traditions, but they also serve in the process of creating authority by authoritative figures. The seventh factor is *Meaning*. Through the use of mysterious languages, and surrealistic imagery, ETNs seem to constantly provoke the fundamental human need for sense- and meaning-making. The eighth factor is *Epistemic Curiosity*. ETNs satisfy our driving need for information about the natural and social environments and, especially, our need to discern the future. The ninth factor is *Materiality*. Things and artifacts enhance and develop our senses, and our bodily and cognitive abilities. In ETNs things, artifacts, and material symbols play a defining role.

We draw on *Enactive Reading* as a useful way of applying the neurocognitive model to narratives. Enactive Reading enhances the focus on the effects of narratives (either oral, written, or visual) on recipients' bodies and cognition. Engaging with narratives mirrors our daily interaction with the surrounding world. As the narratives stimulate our sensorimotor systems and emotions, we are able to immerse ourselves into the world of these narratives. Enactive Reading helps us identify the ways in which experiencing a narrative seems to stimulate the same neural systems that would be activated if we were experiencing the narrative in real life. Therefore, we use Enactive Reading as a tool to identify the mechanisms of the neurocognitive model in ETNs, in order to assess the different responses triggered by these narratives, and the ways these narratives might have stimulated recipients to simulate their worlds.

To give a brief illustration, [Revelation 13](#) describes the terrible beast that rises

out of the sea, with ten horns and seven heads, resembling a leopard, but with feet like a bear's, and a mouth like a lion's. The beast demands the loyalty and worship of all the earth. Intertextually, this passage draws on the description of the four beasts in Daniel 7. Historically, we can point to the plausible background that created such an image. Enactive Reading does not replace or diminish these perspectives, but provides a different dimension. It focuses on the bodily and emotional aspects of the image and responses that it is likely to trigger. The terrifying beast is a hybrid creature defying default domains. Even though it rises from the sea, it does not belong to sea creatures. Its seven heads and ten horns, leopard-like shape, bear-like feet, and lion's mouth make it hard to comprehend. The viewer is struck with astonishment and is unable to predict the beast's pattern of movements, and estimate the level of its destructive potential and power. Therefore, the beast is hard to control and defeat. The trans-categorical, hybrid nature of the beast taps into and transgresses our bodily and emotional senses, and the surreal image evokes our need to make sense of and interpret a meaning behind the image, thus drawing on a range of mechanisms described by our model.

In conclusion, we propose that our neurocognitive model is a useful supplementary tool to other approaches. The model operates at a different level of analysis, identifying possible embodied, experiential elements in ETNs that stimulate recipients, thus securing the continuing appeal of these narratives across times and cultures.