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Revisiting Natural Evil: Complex Systems, Technology, and New Arguments for Traditional Theodicies

Abstract: This paper revisits natural evil and its theological interpretation in light of recent insights from Complex Systems Science and Science and Technology Studies. Complex Systems Science shows that unpredictability and nonlinearity are intrinsic to any universe capable of generating novelty, life, and consciousness. This casts the Free Process, Natural Order, and Process Defences in a new light: God creates a cosmos governed by stable laws that, precisely because they enable openness and emergence, also make natural disasters an unavoidable by-product of a living, adaptive creation. At the same time, confronting natural evil has been a major driver of scientific and technological development. Technologies for food production, shelter or medicine have largely arisen as human responses to environmental threats and scarcity. This strengthens the Greater Goods and Soul-making Defences by showing how hardship not only shapes individual character but also stimulates inquiry and innovation. Taken together, these perspectives suggest that natural evil should not be understood as an anomaly or divine punishment, but as an intrinsic feature of a dynamic creation.

Keywords: theodicy, natural evil, complex systems, technology.

Contribution: Understanding Complex Systems Science, we should acknowledge that any universe capable of generating novelty, life and consciousness also exhibits

unpredictability and natural disasters. In addition, Technology Studies show that natural evil has been a key driver of discovery.

Use of AI: AI was used to help polish the language in some of the paragraphs of the article, and a tool with AI (Grammarly) was used to ensure language correctness of the full manuscript.

1. The Relevance of Natural Evil

Natural catastrophes frequently shake our world, and humanity is continually plagued by what is often termed natural evil. Extreme meteorological events—such as hurricanes, heat waves, and droughts, which are expected to become increasingly frequent due to global warming—alongside earthquakes and volcanic eruptions, are significant causes of death.

To grasp the scale of their impact, we can focus on climatic catastrophes, as these are the most common and those affecting the most significant number of people. Floods stand out as the most frequent extreme climatic events, accounting for 44% of climate-related disasters recorded between 1969 and 2018. During that period, they affected more than 3.5 billion people and caused 27% of the deaths associated with such disasters (Keim 2020). Meanwhile, heat waves have grown in intensity and duration due to climate change—a trend we will explore in greater detail later. Particularly catastrophic was the 2003 European heat wave, which caused more than 70,000 deaths (Ebi and Schmier 2005). Today, heat waves in Europe are estimated to cause an average of 1,500 deaths annually (Clarke et al. 2021).

Storms and hurricanes—comprising 26% of the climate-related disasters during the same period—were responsible for 62% of the deaths related to such phenomena, primarily affecting coastal areas and developing countries (Keim 2020). In these regions, socioeconomic vulnerability often exacerbates the consequences of such disasters, making recovery and adaptation especially difficult.

Natural catastrophes affect not only individuals but also the course of history. Disasters have profoundly shaped civilizations and inspired deep reflection on the problem of suffering. The cataclysmic eruption of Thera around 1600 BCE devastated the Minoan civilization on Crete, disrupted Mediterranean trade routes, and, according to some authors, may have given rise to the legend of Atlantis (Nixon 1985). Other dramatic eruptions include that of Vesuvius, which buried Pompeii and Herculaneum under volcanic ash, and what is considered the most violent eruption in recorded history: Mount Tambora in Indonesia in 1815, which reshaped the island and claimed over 70,000 lives.

Droughts have also been linked to the collapse of major civilizations. The Bronze Age collapse, for instance, is hypothesized to have resulted in part from prolonged periods of drought and famine affecting a network of sophisticated Mediterranean societies (Drake 2012). Similarly, the demise of the Mayan empire has been attributed to severe and persistent droughts. Even hurricanes have played a role in redirecting the tides of history: in 1588, violent storms scattered the Spanish Armada, preventing an invasion of England and reshaping the balance of power in Europe (Hutchinson 2014). In this sense, extreme natural events are not mere background conditions but active agents in human history.

Earthquakes, another primary form of natural disaster, have often had devastating consequences. The 1755 Lisbon earthquake—followed by a tsunami and fires—killed around 50,000 people, striking on no other day than All Saints' Day, when many were attending church services. Its impact extended far beyond the immediate human and economic toll, sparking a profound crisis of faith. For many in Europe, it became difficult to reconcile such suffering with the idea of a benevolent God. This catastrophe deeply affected Enlightenment thinkers, as illustrated in Voltaire's Candide, where a visit to Lisbon after the disaster becomes a setting for reflection on natural evil and religious superstition (Araujo 2006).

Natural disasters shape individuals and societies and stand—exemplified by the Lisbon earthquake—as one of the principal forms of evil we struggle to reconcile with belief in an all-powerful, wholly good God. The problem of evil remains one of the most enduring and troubling

arguments against faith—and one frequently cited by atheists in support of their position.

In this paper, we seek to update traditional defences of God's existence in the face of natural evil by drawing on new insights from the scientific domain, particularly from Complex Systems Sciences and Science and Technology Studies. These disciplines offer fresh foundations to revitalize longstanding theodicies and, hopefully, advance our understanding of the mystery—always beyond complete comprehension—of evil.

This paper is structured as follows. It begins with a concise overview of the main arguments defending the existence of God in the face of natural evil. The following two sections explore how Complex Systems Science and Science and Technology Studies insights can shed new light on these traditional defences. Finally, the paper draws clear implications on how these contemporary perspectives can deepen our understanding of natural evil and its consequences.

2. Understanding natural evil. Main arguments

The new arguments presented in this paper broadly align with well-established theological approaches that have traditionally been used to make sense of natural evil. This section does not aim to be a comprehensive essay on theodicy but rather a concise review of key defences relevant to natural evil that will be revisited and updated in light of recent scientific insights. These defences are intricately connected, and at a deeper level, they all resonate with Leibniz's theodicy: that natural evils may be necessary to preserve a world order that is, overall, the best possible (Leibniz 1791).

The Free Process Defence argues that a consistent, law-governed universe is essential for human freedom and scientific progress. John Polkinghorne maintains that God created a world in which natural laws operate reliably, as a sign of respect for the autonomy of creation (Polkinghorne 1989). Richard Swinburne similarly argues that without predictable processes, people cannot take responsibility for their actions or make meaningful decisions (Swinburne 2004). A common illustration

is gravity: while it sustains cosmic order, it can also cause fatal accidents. Peter van Inwagen adds that a world suitable for rational creatures inevitably involves risk and suffering (van Inwagen, 2006). Some have suggested that God might intervene selectively to prevent especially severe harm. However, defenders respond that such interventions would undermine the regularity of nature on which moral responsibility and rational action depend. This approach does not claim that God wills each specific tragedy, but that the benefits of a coherent, intelligible creation outweigh the costs of occasional suffering.

Closely related to this is the Natural Order Necessity Defence, which emphasizes that biological and ecological processes inevitably involve suffering. Christopher Southgate contends that evolution depends on competition, predation, and death to generate complexity and conscious life (Southgate 2008). Michael Murray argues that pain serves essential biological functions—for example, alerting organisms to danger (Murray 2008). Without the capacity to feel pain, creatures could not learn to avoid harmful situations. John Haught points out that the richness and diversity of life emerge from the same natural processes that also produce harm (Haught 2000). From this view, expecting an evolutionary system without cost is simply unrealistic. Critics argue that an omnipotent God could have designed less painful mechanisms. Yet defenders maintain that many key features of a flourishing biosphere logically require vulnerability and loss. This approach does not assert that every instance of suffering is morally justified but that natural evil is deeply embedded in the processes that make life possible.

Process Theodicy, by contrast, reimagines divine power not as coercive but as persuasive. According to this view, God does not control outcomes directly, but lovingly invites creation toward greater value and beauty. David Ray Griffin suggests that natural evils arise independently of God's will because of the autonomy granted to the world (Griffin 1976). Charles Hartshorne similarly argues that a fully controlled universe would be sterile and devoid of novelty and freedom (Hartshorne 1984). John Cobb and Griffin describe divine action as offering possibilities rather than determining results (Cobb and Griffin 1976). Critics charge that this view weakens God's sovereignty and departs from classical

doctrines of omnipotence. However, proponents see it as a more realistic way to reconcile an evolving, dynamic world with God's goodness. Process Theodicy portrays God as intimately involved in creation, sharing its suffering and persistently working to transform it rather than aiming to explain away all evil, it emphasizes God's empathetic presence and ongoing redemptive engagement in the world's unfolding story.

The Greater Goods Theodicy proposes that some valuable outcomes are only possible in a world where natural evil exists. Richard Swinburne suggests suffering can lead to compassion, innovation, and resilience (Swinburne 1998). Alvin Plantinga argues that God may allow evils necessary for higher-order goods, even if we cannot fully comprehend them (Plantinga 1974). Marilyn McCord Adams contends that even extreme suffering can be integrated into a person's life narrative and redeemed through meaning (Adams 1999). Critics warn that invoking mysterious goods can make God's goodness seem inscrutable. However, supporters argue that this approach portrays suffering not as meaningless, but as potentially instrumental in fostering profound relationships and moral achievements that outweigh transient pain.

A particular variant of this approach is the Soul-Making Theodicy, which holds that suffering and hardship are necessary for moral and spiritual development. Inspired by Irenaeus, John Hick argues that humans are not created fully mature but must grow by confronting real challenges (Hick 1977). A risk-free environment would never produce courage, empathy, or resilience. Philip Quinn emphasizes that true moral excellence arises only in the face of adversity (Quinn 1993). Interestingly, recent literature on an evolutionary view on the Theodicy has highlighted that suffering has very specific benefits in the context of natural selection. For instance, Oviedo (Oviedo 2024) stresses that suffering can help fine-tune behaviour, deepen awareness, foster collaboration, shape character and moral sensitivity and support creativity. Natural evils such as disease and natural disasters thus offer opportunities to cultivate these virtues. Critics question whether extreme suffering—especially in the case of children—can ever be justified. Defenders respond that real growth requires unpredictability and the possibility of loss. Rather than viewing

suffering as pointless, this theodicy sees it as central to the development of character and the realization of human purpose.

Interestingly, recent literature has pointed to the opposite effect – that a strong faith or religious devotion (see Oviedo et al. 2025 for an example study on the benefits of the Rosary for coping) can help with coping in adverse situations. Specific examples are natural disasters (like the study about the pandemic in Giannouli, V., and Giannoulis 2020) but also illness in oneself or a loved one (such as the account of the same authors focused on Alzheimer's disease Giannouli, V., and Giannoulis 2020).

Finally, although it does not directly address natural evil, we will briefly discuss the Free Will Defence, which dates back to Augustine. This argument holds that moral evil is a necessary consequence of human freedom, and is thus closely connected to broader theodical considerations.

The following sections present our original contributions, drawing on insights from Complex Systems Science and Science and Technology Studies. These fields, we argue, offer fresh perspectives that can enrich and deepen these theological defences, offering renewed resources for thinking about the mystery—forever beyond complete comprehension—of natural evil.

3. New Arguments from Science: A Complex Systems Perspective

Our traditional understanding of nature has been profoundly overturned in the past century. Classical Science assumed an immutable, mechanistic order akin to celestial bodies' steady, predictable motion. This worldview gave rise to arguments based on a clockwork universe, where every process followed fixed laws without exception. However, the advent of Quantum Mechanics embedded fundamental uncertainty at the core of physics. At the same time, the development of Complex Systems Science has added a further layer of unpredictability to our understanding of the universe.

A complex system is defined as an arrangement of many interacting components (Mitchell 2009). Such systems appear throughout creation, not only in climate but also in the economy, ecosystems, and social interactions. They share key properties: mutual interactions among parts, feedback loops that amplify or dampen changes, and the emergence of complex, often surprising patterns from simple rules. Complexity science presents an alternative paradigm to reductionism, which explains systems merely as the sum of their parts. Instead, it reveals that the whole often exhibits emergent properties absent in any individual component. Examples include self-organization (such as economic agents coordinating markets), hierarchical structures (as seen in trophic pyramids), and adaptive behaviors (such as ecological communities adjusting to climate variations).

Emergence is unique to complex systems and entails a fundamental loss of predictability, allowing novelty to arise from known causes. The theological implications of emergence are profound. Peacocke, for instance, views emergence as the channel through which God enters and dwells within creation (Peacocke 2004; 2006). As self-organizing patterns evolve, they reveal a divine dynamic that sustains and guides the unfolding cosmos. For a comprehensive perspective, we direct readers to Mantini's recent work (Mantini 2024).

Many of the most beautiful and creative phenomena—life on Earth, human behavior, cultural achievements—are complex systems. In contrast, a linear system, where total effects are additive and proportional, cannot produce new patterns or adaptive behaviors. Creativity, freedom, consciousness, language, and art would be impossible in a purely mechanistic, linear universe. Such a sterile universe would require life to be created fully formed at a single moment, without the capacity to evolve or innovate. This echoes Hartshorne's observation of the sterility of a static universe (Hartshorne 1984). However, he was unaware of Complexity Science and did not use any of its categories to substantiate his claim.

Nonlinearity also means that causes and effects are not proportional: small input changes can produce disproportionately large or unexpected outcomes. This "Butterfly Effect" is exemplified by events such as the

1987 Black Monday stock market crash, triggered by minor stressors amplified by automated trading, or Spain's Great Blackout of 28th April 2025, caused by cascading failures in solar power responding nonlinearly to small perturbations in grid voltage and frequency. This intrinsic unpredictability and disproportionate response are the hallmarks of chaos.

Another fundamental property of complex systems is scale-free behavior, where the frequency of events decreases as a power law of their size. This pattern repeats across scales—whether measuring earthquake magnitudes, city populations, or wealth distribution—with many minor occurrences and few large ones maintaining a fixed relative ratio. This means catastrophic events of any size are possible, although larger ones occur less frequently.

This insight requires us to revise our understanding of natural disasters as manifestations of chaotic dynamics in complex systems. The Science of complexity itself originated in attempts to understand unpredictable climate behavior. Edward Lorenz's meteorological models of the 1960s revealed extreme sensitivity to initial conditions, laying the groundwork for chaos theory (Lorenz 1963).

For example, hurricanes operate as large-scale heat engines over warm ocean water. Slight increases in sea-surface temperature add latent heat, intensifying storms through feedback loops. Minor atmospheric variations determine whether a tropical disturbance remains mild or escalates into a devastating cyclone. Similarly, severe localized rainfall arises from merging convective clouds that draw warm air, fostering a self-reinforcing cycle highly sensitive to subtle humidity or wind changes. Extended droughts occur when stable atmospheric ridges, or "heat domes," lock into place, sustained by feedback between soil heating and air temperature. Even small shifts in upper-level winds can prolong such patterns for weeks.

Large earthquakes result when accumulated tectonic stress overcomes friction along faults. Whether moderate or catastrophic rupture depends on subtle local factors—pore-water pressure, rock roughness, stress orientation—interacting nonlinearly. While scientists can identify high-risk areas, precise prediction remains impossible.

All these natural catastrophes are by-products of the nonlinear complexity of climate and tectonic systems. As in Newtonian physics, we would lose essential adaptability and diversity if these systems were linear and mechanistic. For the environment, self-stabilizing feedbacks would vanish, causing extreme, unlivable conditions from small perturbations. Ocean ecosystems would stagnate and die without nonlinear cycles like storms and El Niño events.

For tectonics, a static mantle with laminar flow would weaken Earth's magnetic field and likely cause atmosphere loss, as theorized for Mars. This would jeopardize all terrestrial life. Thus, complex systems hosting life inherently generate catastrophic events as necessary by-products of their creative and adaptive dynamics.

Moreover, although complex systems enable disasters of any scale, large catastrophes are less frequent, providing a solid scientific foundation for the Free Process, Natural Order, and Process Theodicies. Science clarifies that unpredictability and chaos are necessary conditions for life and creativity. A purely linear nature would be sterile; a nature conducive to life inevitably entails occasional catastrophe.

4. Arguments from Technology Studies: Other Positive Effects of Natural Evil

We can enrich the arguments for the Greater Goods and the Soul-making defences by realizing that one of the benefits partially derived from the existence of natural disasters is an enhanced development of Science and Technology (Lumbreras 2023). Technoscience is, in some fundamental way, rooted in the experience of evil in general, and natural evil in particular.

In daily life, humans inevitably encounter nature as an adversarial environment. Within society, additional kinds of threats emerge. Phenomena such as resource scarcity – which, very interestingly, has been pointed to as the root cause of natural evil by Walhberg (Walhberg 2024)-, or disease pose serious dangers to the continuity of human existence. These threats are compounded by uncertainty: no one can

predict exactly when a hunt will succeed or how abundant the catch will be. Likewise, it is impossible to know in advance when a violent animal will strike or when an epidemic or drought will end.

Science, from this perspective, is humanity's attempt to understand, anticipate, and give structure to these threats. Technology, in turn, constitutes the practical response that applies this knowledge to mitigate risks and soften their consequences.

For instance, agriculture alleviates the risk of famine in societies that once depended on hunting and gathering. Weapons, meanwhile, serve both to defend against attacks and to secure resources from rival groups during hardship. In this way, it is plausible to trace each scientific and technological branch back to the specific dangers it evolved to counter, with these dangers representing natural or moral evil depending on the case.

This interpretation of technoscience as a response to evil must be balanced by acknowledging another dimension of Science—one inspired by a noble, disinterested drive to know the natural world and ourselves. From the beginnings of Greek philosophy, this tension between pure curiosity and utilitarian motives has been evident. Sánchez Meca (2013) illustrates it through the contrast between Socratic rectitude and the sophists' rhetoric, which became a paid service and a political tool. While Science aims to comprehend reality, Technology aspires to reshape and dominate it Prehistoric stone tools were created to improve hunting and food preparation rather than to analyze mineral composition. Similarly, mastering fire was not a theoretical endeavor but a means to stay warm and repel predators. Astronomy developed not solely out of wonder about the heavens but also to forecast seasonal cycles vital to agriculture.

However, pragmatic Technology is far from the only pattern. Some discoveries arose unexpectedly from theoretical inquiry, such as antibiotics. Conversely, as mentioned earlier, some scientific work focuses purely on expanding our understanding without regard for immediate applications. Although both approaches coexist, this article will primarily adopt the perspective of Technology as a practical response to threat. It will explore how evil, in the form of necessity and danger, has shaped technological development, without claiming to offer a complete account

of all motivations or the entire history of technoscience, a task too vast for this format.

Plentiful food supplies would have removed the impetus for agriculture and the related development of astronomy to time sowing and harvests. A mild climate would have reduced the need for architectural innovation to build protective dwellings. In each case, we can trace technological advances back to a specific necessity—and each necessity to a perceived threat.

Researchers have also explored whether environmental adversity stimulates technoscientific progress. Zachos, Pagani, Sloan, Thomas, and Billups (2001) examined Earth's climate over the past 65 million years using oxygen isotope ratios in fossilized foraminifera shells, data gathered by the Ocean Drilling Program (Stein 1991). These isotopic records reflect the temperature conditions in which the organisms lived. Zachos's analysis revealed long-term trends, periodic cycles, and exceptional anomalies. Significantly, periods of climatic instability coincided with bursts of biodiversity and the emergence of new species groups. In more recent prehistory, the most transformative episodes in human evolution—such as the rise of the genus Homo, bipedalism, and the use of tools—aligned with eras of pronounced climatic fluctuation. This evidence suggests that unstable conditions may create windows of opportunity for both biological and cultural innovation.

There has also been speculation about how material scarcity relates to empire-building. Some of the largest empires in history—the British, Mongol, Russian, Qing, Spanish, French, and Abbasid—emerged or prospered in regions lacking abundant natural wealth. Only under such circumstances does the imperative arise to dominate neighboring resources, forming the foundation for imperial expansion and maintenance.

Social evils complement natural evils as the source of danger that Science and Technology try to comprehend and conquer. Had humanity lived free of conflict, for example, it is doubtful the Metal Ages would have arisen. Although copper's earliest uses were ornamental, its widespread adoption came from making weapons. As Roland (2016) observes, war and Technology influence each other reciprocally: technological advances

transform warfare, and warfare accelerates technological progress. A modern example is World War II, which spurred the development of Operations Research, now fundamental to many fields. The Cold War similarly shaped the trajectory of space exploration (Van Creveld 2010).

It is interesting to realize that certain thinkers, including contemporary techno-optimists, understand social evil as a consequence of scarcity, which is a natural evil. For instance, Gendron (1977), known for coining the term "digital native," claimed that envy, ignorance, and violence would vanish in a world of abundance. This view, arguably simplistic, overlooks that envy can stem from nonmaterial comparisons: even in abundance, disparities in social bonds or professional success would remain.

Many techno-optimists keep this sort of belief, thinking that Technology will eventually conquer all scarcity and drive costs of essentials like food, housing, and healthcare to near zero (Diamandis & Kotler 2012), under the assumption that technological progress is accelerating and that every problem is ultimately solvable. For some transhumanists, as will be discussed later, this includes the elimination of disease and even death itself. In their vision, Technology is destined to overcome evil as a whole, first natural evil and then moral evil, creating a future where humanity has finally subdued every threat through Technology.

Although extreme techno-optimistic views are simplistic and naïve, one key idea remains: it is because of natural evil (and the remaining evils) that Science and Technology have been developed, unlocking the phenomenal potential of humanity. Adversity builds strength for souls but, adding to the Soul-making defence, it builds knowledge and structure for societies.

Before finishing this reflection, it is necessary to acknowledge that catastrophes are not purely natural. They are affected by human beings in several ways.

First, human beings alter the dynamics of the complex systems that host us, driving them into regimes where extreme events are more frequent and intense. Global warming is the most notable of these interventions. Similarly, deforestation disrupts the carbon and water cycles, reducing ecosystems' ability to absorb fluctuations. Furthermore, deforestation and the destruction of mangroves and coral reefs diminish the natural

barriers against storms and rising sea levels. It is in our hands to stop and reverse these processes if we wish to avoid, among other undesirable consequences, an increase in the frequency and intensity of these extreme events.

On the other hand, the intensity with which these phenomena affect us—their impact—is also under the influence of human decisions. The location of housing in vulnerable areas, such as low-lying coasts or valleys prone to flooding, greatly increases the risks associated with these extreme phenomena. Likewise, the lack of adequate infrastructure—such as efficient drainage systems, protective dikes, safe shelters, or robust electrical grids—intensifies both material damage and the loss of life. The lack or insufficiency of alarm systems, emergency plans, and evacuation protocols further aggravates vulnerability, making effective preparedness and response to disasters much more difficult.

This new understanding makes us re-evaluate the distinctiveness of natural and moral evil, which are linked in a far more subtle way than the abandoned Theodicy of Punishment used to propose, where natural evil was a punishment for humanity's sins. We ourselves have an input on the impact of natural disasters. We have the ability to understand and predict them better through Science; and the possibility of limiting their impact using Technology and wisdom. A Process Defence can also include the flourishing of Science and Technology as one of the evolving products of a dynamic creation.

Conclusions: New Arguments for Traditional Defences

In this paper, we have explored how Complexity Science and Science and Technology Studies can deepen our understanding of natural evil and reinforce several traditional theodicies.

First, the universe is best understood as a network of complex systems, composed of interacting components whose collective behavior cannot be reduced to the sum of their parts. Emergent patterns and intrinsic unpredictability are defining features of such systems. Only in this kind of universe can genuine novelty arise: life, consciousness, and culture

could not have emerged in the sterile, static framework of purely linear dynamics. Yet a necessary consequence of nonlinearity is that relatively minor causes can produce disproportionate effects. Natural disasters—hurricanes, droughts, earthquakes—are thus unavoidable by-products of a world in which adaptability and creativity depend on a degree of unpredictability.

This picture lends new support to the Free Process, Natural Order, and Process Defences. On this view, God creates a genuinely free world, ordered by dependable natural laws that nevertheless leave space for openness, emergence, and growth. Natural evil is therefore not a defect in creation or a punitive intervention, but the shadow side of a cosmos designed to be lively, self-organizing, and capable of surprise.

Second, human encounters with natural and social evils have been a central driver of scientific inquiry and technological innovation. Faced with threats such as epidemics, hostile environments, and resource scarcity, human communities have developed agriculture, tools, medicine, infrastructures, and institutions to reduce uncertainty and mitigate harm. Over time, many branches of technoscience can be traced back to the specific dangers they arose to address. Science and Technology thus appear as greater goods that have, in significant measure, emerged from humanity's efforts to confront natural evil.

At the same time, our actions now shape both the frequency of disasters—through climate change, deforestation, and the disruption of ecosystems—and their impact—through choices about urban planning, infrastructure resilience, and emergency preparedness. This blurs the classical distinction between natural and moral evil and underscores our shared responsibility for the consequences of catastrophes. A Process Defence can therefore be extended to include the growth of Science and Technology themselves as evolving products of a dynamic creation in which God continually invites cooperation rather than unilateral control.

These reflections strengthen the Greater Goods and Soul-making Defences. Adversity not only contributes to personal growth in virtues such as courage, compassion, and resilience; it also stimulates the search for understanding and the construction of social structures that protect and uplift. Many of the most significant scientific discoveries,

technological advances, and moral achievements would likely not exist in a world without the challenges posed by natural and social evils.

Taken together, these two lines of argument suggest that natural evil is woven into the very processes that make life possible and meaningful, and that human responses to evil through Science and Technology can transform suffering into opportunities for growth. In this way, the Free Process, Natural Order, Greater Goods, Soul-making, and Process Defences all receive renewed grounding and vivid illustration. Rather than a meaningless anomaly, natural evil is revealed as an intrinsic feature of a dynamic creation that honours divine freedom and invites humanity to responsible, creative participation.

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