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THE TAMING OF CHANCE: TOWARDS THE SEMANTIC PERSPECTIVES OF MIRACLES

Summary: This paper explores the understanding of miracles in light of contemporary scientific progress, which integrates chance into the rational framework of probability theory. The study highlights the shift from an ontological interpretation of miracles, defined as unique, supernatural interventions by the Divine that transcend natural laws, to a semantic perspective, in which miracles are events imbued with special meaning by their observers without requiring supernatural causation. Through a critical examination of the philosophical and theological traditions of Sts. Augustine and Thomas Aquinas, the paper demonstrates how the Thomistic ontological framework, rooted in an Aristotelian understanding of chance, encounters significant conceptual difficulties within the probabilistic paradigm of modern science. In contrast, the semantic interpretation of miracles aligns more coherently with scientific advancements, including insights from the Law of Large Numbers and Shannon's theory of entropy, thereby offering a revised perspective on the nature of miracles. This work highlights the potential for a productive dialogue between theology and science, demonstrating how theological concepts can evolve in response to scientific knowledge while preserving their relevance and coherence in contemporary discourse.

Keywords: miracle, ontology, chance, probability, necessity.

Introduction

Despite the immense progress of science (which began in the 19th century), and its profound impact on the solving of many mysteries of nature, the concept of "a miracle" seems to be faring quite well, even in contemporary times. This is especially evident in everyday discourse, which relies predominantly on a non-scientific, common-sense view of the world. The apparent obviousness of the concept of a miracle fades away as soon as one attempts to inquire into its precise meaning and coherence. After all, a miracle bears a marked psychological foundation, as indicated by the Latin term *miraculum,* which is derived from the verb *mirari*. This means "to marvel". This property of a miraculous event pertains to secular, as well as religious and theological, contexts: a miracle is either a natural or supernatural event that evokes astonishment or surprise.

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It is difficult to provide an exhaustive survey of those studies that are carried out contemporarily with regards to the concept of a miracle. They are quite vast and cover the scientific, philosophical, and theological aspects of this concept (Basinger, 2018; Bersee, 2021; McGrew and Larmer, 2024; Mérő, 2018; Nickell, 2013; Pyysiäinen, 2004; Rusecki, 2006; Świeżyński, 2012). However, if a single tendency were to be indicated in connection with how a miracle is understood today in the religious context, one would need to highlight the shift from the ontological to the semantic perspective on its origin and nature. In short, the ontological viewpoint defines miracles as unique Divine acts that go beyond the laws of nature, while the semantic alternative interprets miracles as being events imbued with special meaning by their observers or recipients, without necessarily involving supernatural intervention. Further, the semantic reading of miracles remains in accord with hermeneutical methods in contemporary theology and has become the standard when miracles serve as arguments in favor of Divine action (e.g., Rusecki, 2006, p. 211–290). This paper focuses exclusively on miracles understood as observable events within the natural world and does not address miracles that have been affirmed solely by faith, such as transubstantiation in the doctrine of the Eucharist.

The purpose of this paper is to investigate the coherence of the concept of a miracle within a contemporary scientific framework in which *chance is tamed*. The *taming of chance* is a phrase coined by Canadian philosopher Ian Hacking to figuratively render a pivotal process in contemporary science in which chance events receive rigorous treatment in the theory of probability, whereby they are brought into the domain of scientific rationality (Hacking, 2009, 2007). This phenomenon has been incisively analyzed by Michał Heller in his seminal work entitled *Philosophy of chance* (Heller, 2013). The research objective of the article will be pursued by showing that the ontological interpretation of miracles as being the result of Divine intervention (which transcends the natural order of nature's operations) loses its coherence once probabilities are included in the theoretical account of the fundamental fabric of the Universe. Firstly, a concise introduction to the process of taming chance will be provided, along with a special emphasis on how some key concepts pertaining to chance evolve as they migrate to the framework of the contemporary accounts of probability. Secondly, a brief overview of the two main concepts of a miraculous event will be surveyed: the semantic concept following the tradition of St. Augustine and the ontological concept maintained by St. Thomas Aquinas. The third step will demonstrate that the Thomistic view, reliant on the Aristotelian understanding of chance events, lacks coherence and leads to a number of conceptual difficulties. It will be demonstrated why the taming of chance favors the semantic view of miracles, which squares not only this very aspect of the progress of science

but, more broadly, accords with general tendencies in which science reshapes our image of the Universe and how the knowledge of its workings is acquired. Finally, some new insights into the nature of miraculous events will be gleaned from such key outcomes of the theory of probability as the Law of Large Numbers and Shannon's theory of entropy. Undoubtedly, the consideration carried out in this study serves as yet another example of how theology can lead a fruitful dialogue with science and how it corrects its doctrines with the growth of scientific knowledge.

The taming of chance

Contemporary science is an intellectual enterprise that constantly expands its insights into the intricacies of the physical reality. It rests on the assumption that this reality is an ordered and harmonious entity. Although this order guarantees that new questions formulated by scientists will have their answers, the vastness of physical reality, as compared to the epistemic capacity of the human mind, makes its insight into the structure of the Universe limited. Renowned American physicist, Leonard Susskind, captured this point with the following reflection:

> Very likely, we are still confused beginners with very wrong mental pictures, and ultimate reality remains far beyond our grasp. The old cartographer's term *terra incognita* comes to mind. The more we discover, the less we seem to know. That's physics in a nutshell (Susskind, 2008, p. 441).

The story of chance and probability in Western thought follows a similar pattern as it proceeds from simple common-sense models of chance developed in ancient Greece to the contemporary, mathematically sophisticated theory of probability.

The first significant advance was made by Aristotle, who inquired into the meaning of chance events in a systematic way. Aristotle's universe was harmonious and orderly because it was governed by necessity. For Aristotle, the central concept that makes nature intelligible is causality: everything that happens must have a cause. An event that qualifies as chance is an event that occurs at the crossings of the chains of causality, which are accidental and unexpected to observers. Aristotle defines a chance event as follows: "the accidental, then, is what occurs, but not always nor of necessity, nor for the most part" (*Metaphysics*, XI, 1065a)[1]. Evidently, chance events must be rare because frequently

[1] Quotations of the works of Aristotle are taken from (Aristotle, 1857).

occurring chance events would jeopardize the orderliness and intelligibility of nature and the edifice of science. In other words, chance events must be exceptions, occurring infrequently within the broader framework of ordered and purposeful processes. Aristotle added: "there is no science of such a thing; for all science is of that which is always or for the most part, but the accidental is in neither of these classes" (*Metaphysics*, XI, 1065a). Consequently, chance events, which are (of necessity) rare, are excluded from the umbrella of scientific rationality because, as Aristotle claimed, science can grasp only those events that are causally linked in a perfectly (or almost perfectly) predictable way.

Undoubtedly, the Aristotelian view of chance events sets a considerable boundary on what can qualify as rational and scientifically explicable. As Heller showed in detail, the process of the taming of chance, that is, of overcoming this boundary and introducing chance under the umbrella of scientific rationality, was a complex and lengthy one, but its ultimate success was sealed with the development of the mathematical theory of probability. A key figure in this process was Swiss mathematician, Jacob Bernoulli (1655–1705), who formulated and proved the famous Law of Large Numbers (LLN). This law asserts that the average of the results obtained from a large number of trials of a random event approaches the expected value. It expresses the long-term stability of the averages of random events, consequently suggesting that events of this kind do reveal some regularities and, as such, they qualify under the regime of the scientific method. In short, chance is thus tamed (e.g., Durrett, 2019, p. 37–97). The LLN provides a direct reason why casinos and lotteries can expect long-term profits, despite having to occasionally pay large sums of money to winners (Heller, 2013, p. 47–51). Ultimately, what allowed the theory of probability to reveal its full rationality was the *theory of measure*, which was applied to probabilities by Russian mathematician Andriej Kolmogorow in 1933 (Heller, 2013, p. 101–103).

Miracles: between Augustine and Aquinas

There are two major philosophical perspectives that provide distinct interpretations of miracles: the *semantic* and the *ontological*. Both perspectives find their origins in the thought of two prominent Christian thinkers: St. Augustine and St. Thomas Aquinas, respectively. As Rusecki explained, the main purpose of miracles (according to St. Augustine) was theological. They are to symbolically communicate the Divine plan of mankind's salvation and to assure its credibility (2006, p. 35–50). Augustine claimed that events considered as miraculous do not need to be any more exceptional than any other natural phenomenon because nature – in its entirety – is one grand miracle. This claim flows

from Augustine's firm belief that all that occurs in the Universe according to the laws of nature deserves to be called miraculous as it follows the order instituted by God. Ultimately, it is God Himself who acts in all that takes place in nature. Moreover, Augustine introduced some other qualifications of miraculous events; namely, how they show their importance to the human mind is that they occur *rarely* and as such they *attract more attention* and cause *astonishment*. Augustine's view of miracles is primarily semantic because he associates them with gaps in the knowledge of nature and they take on their due significance when they are interpreted in the domain of religion (St. Augustine, 2003, The City of God, X.12, X.16–18, XXI.7, XXI.8).

The semantic perspective suggests that miracles do not arise from a direct intervention by God but depend rather on how individuals interpret experienced events within their framework of faith. A miracle becomes a "sign" of Divine presence, not because it disrupts the physical law, but because believers perceive it as bearing religious importance. This approach avoids the theological complications associated with God "breaking" the established laws of nature. Instead, it emphasizes the role of human perception in attributing sacred meaning to certain occurrences, thereby allowing individuals to view ordinary events as being filled with Divine significance. This approach, then, treats miracles as coming from the personal, spiritual interpretation of events rather than from the overt exercise of supernatural force.

One of the most influential articulations of the ontological view of miracles comes from St. Thomas Aquinas, for whom three characteristics define miracles: they are perceptible by the senses, they transcend the created order, and their cause is God (e.g., Rusecki, 2006, p. 89–106). Aquinas wrote:

> A miracle properly so called is when something is done outside the order of nature. [...] So for a miracle is required that it be against the order of the whole created nature. But God alone can do this, because, whatever an angel or any other creature does by its own power, is according to the order of created nature; and thus it is not a miracle. Hence God alone can work miracles (Aquinas, 1981, Summa Theologica I.110.4).

He considered miraculous events to be "supernatural" or beyond nature, not because they break the natural law but because they express God's omnipotence in ways that surpass human understanding. Divine interventions, through which miracles occur, should not be taken as God violating the Universe but as rather revealing a deeper level of rationality that extends beyond creation. This attests to his particular concern in how to justify the objective, which is, independent of interpretation and context, the nature of miracles. From this view, miracles embody God's consistent purpose, rather than his occasional disruption of nature's regularities. They reveal a special relationship between God and creation,

in which the divine will dynamically shapes reality. Thus, miracles act as signs of God's real presence in the world, transcending natural boundaries to create moments of the Divine-human encounter.

It turns out that, in addition to his predominantly ontological account of miracles, Aquinas resorts to some more psychological qualification of these kinds of events. In doing this, he makes a clear reference to the works of St. Augustine. who asserted that a miracle exceeds human expectations regarding how nature should behave so much so that it should cause astonishment. Moreover, the cause of such an event must be hidden (Aquinas, 1952, *De potentia Dei*, q. 6, a. 2). In his *Summa Contra Gentiles*, Aquinas reaffirmed this point by stating:

> Things that are at times divinely accomplished, apart from the generally established order in things, are customarily called miracles. [...] So, a thing that has a completely hidden cause is wondrous in an unqualified way, and this the name, miracle, suggests; namely, what is of itself filled with admirable wonder, not simply in relation to one person or another. Now, absolutely speaking, the cause hidden from every man is God (Aquinas, 1975, *Summa Contra Gentiles*, III.101).

What connects these two quotes is Aquinas' insistence on minimizing the subjective interpretation of miracles by establishing an objective criterion for their evaluation. This criterion assumes the existence of an absolute and knowable boundary that distinguishes the domain of natural forces from what is exclusively reserved to the Divine causality. The existence of such a boundary aligns with the Aristotelian and Thomistic belief that the Universe is ruled by necessity, and each course of events can be potentially deduced from the first principles of nature (Aquinas, 1975, *Summa Contra Gentiles*, II.4–5). It is the claim of the existence of this boundary that will lead to a marked conceptual inconsistency with the onset of the contemporary scientific method.

An irrational tension

There is no doubt that, as scientific knowledge progresses, many phenomena, once attributed to Divine Intervention, receive natural explanations. A famous example is Isaac Newton's theory of gravity, which explained planetary motion but could not account for the solar system's long-term stability. Newton supposed that it might require Divine intervention to correct gravitational perturbations. Using Newtonian mechanics, Pierre-Simon Laplace demonstrated that small, self-correcting perturbations ensure the solar system's stability. When asked about God's role, Laplace famously remarked (so it is believed), "I had no need of that hypothesis" (Pedersen, 2007, p. 256–269). Through

a constant revision of its claims, based on the buildup of empirical material (as well as theoretical insight), the contemporary scientific method results in a constant broadening of what falls under the regime of scientific explanation. As argued in detail by Grygiel, the uncertainty as to what constitutes the boundaries of natural order in its entirety is the main source of inconsistency with Aquinas' ontological view of miracles (Grygiel, 2021). It turns out that the standard cognitive model of the formation of religious beliefs may be effectively used to align the dynamics for the development of science with the semantic approach to the understanding of the nature of miracles (De Cruz and De Smedt, 2015, p. 161–165; Murray and Goldberg, 2010, p. 183–189).

The rigid setting of boundaries for what falls into the domain of science leads to an additional source of inconsistency in Aquinas' treatment of miracles. It is not difficult to observe that, purely from the point of view of the event itself, a chance event is indistinguishable from a miracle, as both are *rare* and *unpredictable*. Rarity finds its justification in the point that frequent natural chance events would jeopardize the harmony of the workings of natural causes, much the same as a frequently intervening God would abuse his power beyond what is often referred to as *potestas ordinata* and ultimately steer towards *occasionalism*. Since rarity in itself is not enough, as even natural causes can bring about rare events, exceptionality assures that these events do not follow naturally established patterns. Moreover, in both cases, the cause is hidden: chance events are accidental. So, their causes are unknown, and miracles are effected by a transcendent God. It is evident, then, that what distinguishes chance events from miracles lies in their cause, be they natural or supernatural, and purposes, which may be accidental or intentional, and which are not discernible from the event alone. In other words, to truly differentiate between a chance event and a miracle, one must move beyond the event itself and engage with its context and interpretation. With regard to chance events, Aquinas made the following comment:

> There is nothing to prevent certain things from happening by chance or fortuitously in reference to their proximate causes, but not as regards Divine providence... For it is accidental that a man finds a treasure which he intended not to look for, but it is not accidental to God, who ordered that he should find the treasure for some good purpose (Aquinas, 1981, Summa Theologica I, 103.7).

There is no doubt that God, as the primary cause, sustains the existence of all things and the laws of nature that allow chance events to occur. However, He does not act as their immediate cause. Although, in these events, God works through proximate causes without suspending natural laws, there arises a certain tension within the created order because its operations bear the mark of accidentality, which deflects from the Greek insistence on the order of nature ruled by

necessity. Aquinas' response to a such state of affairs, namely, that chance events are not caused by God but only foreseen by His providence, seems somewhat unnatural. It looks like a compromise between what cannot be fully accommodated by scientific rationality and what calls for some rational explanation in which God comes in handy to fill the gap and render these events purposeful.

However, one needs to be careful of matching Aristotle and Aquinas too closely on the issue of chance in medieval thought, which was influenced by the Christian doctrine of creation, as it developed the concept of *contingency*, which, as Heller pointed out, makes "the world open to probability" (Heller, 2013, p. 29). Although this opening neutralizes the possibility of deriving the laws governing the Universe solely from the first principles, Aquinas' reliance on deductive reasoning in deciphering the mysteries of the Universe as empirically observed is quite evident (e.g., Aquinas, 1986). Based on these considerations, it seems plausible to infer that, from a purely ontological point of view (unrelated to any interpretative contexts), chance events, which are regarded as "accidental", create a zone of uncertainty in which a rare and unexpected event can equally qualify as an occurrence of chance or as a miracle. Ultimately, this renders Aquinas' ontological perspective on miracles inconsistent.

As was explained above, the taming of chance means that chance events are no longer relegated to the zone of irrationality, but that the regularities they display can be captured by means of the theory of probability. This, in turn, opens up the possibility to reconcile these events with the ontological view of the *mathematicity of the Universe*, in light of which mathematical structures underpin the most fundamental fabric of the Universe (e.g., Heller, 2006). Most importantly, however, these structures can be regarded as having a causal influence on the Universe's dynamics, whereby they orchestrate the regularity of events that occur in the physical reality. Therefore, if the fundamental fabric of the Universe includes probabilities, they will assume a direct causal role that, in contrast to the accidentality of chance events in the Aristotelian-Thomistic view, becomes a means for the ordinary operations of the Universe. Consequently, the taming of chance comes as a relief to the tension effected by the accidentality of chance in the pre-scientific scheme, as God no longer has to fill a space that constitutes a breach in rationality with His providence. Instead, He can fully exercise his governance of the Universe, including the chance events that are characterized by rarity and unpredictability. Since these characteristics are also proper to miracles, it seems more rational that God prompts such events through natural causes rather than by influencing them with His special intervention. This inference shows more coherence from the theological point of view because it underscores the sufficiency of the created order to carry out the Divine plan in its entirety, rather than demanding God make occasional interventions to supplement what the natural order falls short of.

The combination of this outcome with the conclusions presented by Grygiel regarding the impact of the development of science on the coherence of the concept of a miracle, reaffirms the inconsistency of the ontological perspective of miracles as proposed by St. Thomas Aquinas. It turns out that God has space for bringing forth rare and unexpected events in the domain which could fall under the regime of a precise mathematical theory, such as quantum mechanics or nonlinear dynamics and chaos theory. Although this may initially raise concerns as to whether the idea of an omniscient God can be maintained under such circumstances, the prevalent view that the Universe and its complexity arise due to the interplay of *chance* and *necessity* has generated a theological response. This is best known from Arthur Peacocke's famous metaphor of God the Creator as a composer or, as Peacocke emphasized, "an Improvisor of unsurpassed ingenuity" (Peacocke, 1993, p. 174–177). In a nutshell, similar to how the composer of a fugue explores the potentialities encoded in the law-like structure of this musical form, God the Creator uses chance (set by the probabilities) to explore the potentialities immanent in the laws of nature to bring forth new entities beyond the expectations of an observer. A deep consistency appears between Divine purpose and intention and the unfolding of events in the Universe, which are orchestrated by the interplay of chance and necessity. Undoubtedly, these purely naturally generated events interpreted as the workings of an intentional agency favor the semantic, and not the ontological, perspective of miracles.

It turns out that the intuitive preference for an interventionist understanding of Divine action has prompted modern scholars in theology to explore ways of reconciling Divine interventions and miracles with natural laws as revealed by contemporary science. For instance, the idea of top-down causation, championed by Arthur Peacocke, views God as influencing creation holistically, acting on entire systems rather than individual parts, and so allowing divine action to shape the cosmos within its natural order (Peacocke, 1995). Another model posits that God operates at the quantum level, subtly guiding outcomes through the inherent indeterminacy of quantum events. This approach envisions God's influence as being orchestrated at a micro-level, affecting larger phenomena while simultaneously adhering to the framework of natural laws (Murphy, 1995). On one hand, these models do present a vision of Divine action as being an intervention that integrates with, rather than disrupts, the natural workings of the universe. On the other, however, they continue to face the objection of implying an incomplete design, as if God needs to intervene to adjust the natural order to achieve his goals. This view risks portraying God's creation as being inherently flawed, requiring periodic fixes or adjustments. Additionally, the notion of intervention suggests that God's will might be inconsistent, as it implies he established natural laws only to occasionally supplement them through miracu-

lous acts. By contrast, non-interventionist theology posits that God achieves His aims through a primordial order in which everything is carefully set to unfold according to divine purpose. In this view, God does not need to alter the natural world through miracles because creation is already aligned with His intentions (e.g., Murphy, 2006, p. 127–128).

The taming: new insights

It turns out that the taming of chance, and in particular its two results, the Law of Large Numbers and Shannon's theory of entropy, can serve as a means of further insight into the nature of miraculous events. As was previously mentioned, the Law of Large Numbers provides a scientific basis for understanding regularities in chance events, offering an alternative to the Aristotelian-Thomistic claim that chance lies beyond scientific rationality and requires the introduction of accidentality into the fabric of the Universe. Regarding miracles, this law implies that even extremely rare and unexpected events may occur naturally in large populations or over many repeated trials. For example, among billions of people, there may be some instances of seemingly miraculous recoveries or other extraordinary occurrences that defy expectations. The LLN clarifies that rare events are statistically inevitable in large ensembles but do not require supernatural causes for their explanation. Moreover, this perspective considers that an individual observer or recipient of a miracle is not isolated but is an integral part of the Universe and its vast network of interrelated events. From this viewpoint, what might appear to be an isolated miraculous event can be understood as the natural outcome of the complex interplay of countless factors within the cosmic system. This inference aligns with the non-interventionist semantic view, which interprets miracles as naturally occurring events whose rarity and extraordinary nature make them easily perceivable as miraculous.

At this point, one could raise a legitimate concern regarding the applicability of the LLN to the narratives of miracles, particularly in the context of the New Testament, which presents a significant concentration of miraculous events within a relatively short period of time. The LLN, however, does not preclude the occurrence of such clusters: it describes the convergence of observed averages to the expected probabilities occurring over a large number of trials without reference to the temporal distribution of rare events. Even a packed series of low-probability events may still fit within the bounds of statistical plausibility without the violation of natural laws. Consequently, such clusters do not call for the return to an ontological interpretation of miracles as events beyond natural order. Viewed semantically, they may be taken as theologically

significant concentrations of meaning, which are embedded in specific historical contexts and read as signs of Divine action. This approach preserves the integrity of both the probabilistic worldview and the theological significance of the events in question, while avoiding the metaphysical overflows presented by the ontological model.

Another valuable insight into the nature of miracles as chance events can be gleaned from Shannon's theory of entropy (e.g., Borda, 2011, p. 11–13). According to this theory, the amount of information $I(x)$ conveyed by event x is related to its probability $p(x)$ by the formula: $I(x)= - \log p(x)$. This relationship shows that events occurring with a low probability also carry a large amount of information. For instance, one can consider the case of a medical diagnosis for a patient who undergoes routine testing. Results fitting entirely within normal ranges provide little new information, as they confirm what is already known. However, if they unexpectedly produce rare and unusual outcomes, then they reveal something meaningful, perhaps the early onset of a condition that would have otherwise remained hidden. In the context of miracles, this suggests that low-probability events have the potential to convey powerful and transformative messages. Their rarity and extraordinary nature may easily prompt observers to reevaluate their deeply held beliefs or opinions. In theological terms, miracles may serve as concentrated acts of Divine communication. By encapsulating a profound message within a single extraordinary event, a miracle can provoke immediate and significant reactions, such as a conversion or a renewed sense of faith. This interpretation aligns with both biblical and non-biblical accounts of miracles, which often depict them as catalysts for a rapid transformation. The concentrated nature of a miracle's impact may achieve results that prolonged, incremental divine activity might not, precisely because of its surprising and information-rich character. Shannon's theory thus provides a framework for understanding how the low probability of miracles enhances their communicative power, making them uniquely suited to effect profound and immediate change.

Conclusions

As the inquiry carried out within this paper nears its conclusion, it is fitting to offer several final remarks which will produce a more general impact and significance from the inquiry's outcomes. As was already indicated in the introduction, these outcomes reveal new dimensions in which the dialogue between science and theology can flourish. They concern an important problem connected with how to understand the ways in which God interacts with the world and communicates His messages to people. In particular, these outcomes revealed

the constant need to reevaluate the meaning of rationality, which continues to unveil its new incarnations with the progress of science. These incarnations, in turn, project significantly on how the human mind shapes the idea of God and how it comes up with a conceptually consistent picture that integrates the immanent world discovered by science with the existence and providential activity of God as a transcendent and fully rational entity.

There is no doubt that miracles, as constantly experienced through subsequent generations, present the challenge of being integrated into the scientifically driven, dynamic image of the world. The presented inquiry has demonstrated that the taming of chance, as a sure instance of expanding the limits of rationality, does not do away with the category of a miracle. Rather to the contrary, by making a strong reference to the classical teachings of St. Augustine, it reinforces the semantic perspective on miracles. By framing miracles as deeply personal and interpretative, rather than ontologically disruptive, the semantic concept offers a way to harmonize belief in miracles with the empirical reliability of the scientific worldview. This approach, while perhaps less visually spectacular, maintains a coherent image of God as a constant, subtle force within creation, inviting believers to find meaning not in the inexplicable, but in the profoundly interconnected design of natural order. Also, the semantic concept, which views miracles as faith-based interpretations without divine intervention, addresses many of these issues, including the "God of the gaps" problem and the difficulties of specifying where and how God interacts with nature. May the following excerpt, taken from Michał Heller, serve as a closing remark to what this paper has hopefully been able to convey: "[God] is present everywhere so much that He is invisible. You cannot see the marks of God because everything is His mark" (Heller et al., 2016, p. 314).

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Oswajanie przypadku: ku semantycznej koncepcji cudu

Streszczenie: W prezentowanym artykule zaprezentowana została analiza rozumienia cudów w świetle współczesnego rozwoju nauki, który włącza przypadkowość w racjonalne ramy teorii prawdopodobieństwa. Analiza ta wskazuje na zauważalne przesunięcie od ontologicznej interpretacji cudów, definiowanych jako unikalne, nadprzyrodzone interwencje Boskie, które przekraczają prawa natury, do perspektywy semantycznej, w której cuda są zdarzeniami obdarzonymi szczególnym znaczeniem przez ich obserwatorów, bez potrzeby odwoływania się do nadprzyrodzonego sprawstwa. Poprzez krytyczne zbadanie filozoficznych i teologicznych tradycji św. Augustyna i św. Tomasza z Akwinu, artykuł ukazuje, w jaki sposób tomistyczne ramy ontologiczne, zakorzenione w arystotelesowskim rozumieniu przypadku, napotykają istotne trudności koncepcyjne w paradygmacie probabilistycznym współczesnej nauki. Natomiast interpretacja semantyczna lepiej współgra z osiągnięciami naukowymi, w tym z wnioskami płynącymi z prawa wielkich liczb i teorii entropii Shannona, oferując zrewidowaną perspektywę na naturę cudów. Osiągnięte rezultaty stanowią przyczynek dla owocnego dialogu między teologią a nauką, ilustrując, w jaki sposób koncepcje teologiczne mogą ewoluować w odpowiedzi na ustalenia nauki, jednocześnie zachowując swoją aktualność i spójność w współczesnym dyskursie.

Słowa kluczowe: cud, ontologia, przypadek, prawdopodobieństwo, konieczność.