Miracles and the Best System Analysis Account of the Laws of Nature:

A Theological and Philosophical Proposal



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Abstracts

Short Abstract

This thesis offers a plausible account of miracles in relation to David Lewis' Best System Analysis (BSA) conception of the laws of nature, which defines a law of nature as any regularity that earns inclusion in the ideal systematisation of all facts. The BSA conception has been largely overlooked and prematurely dismissed in the literature on miracles and divine action. This thesis challenges that neglect, establishing the theological and philosophical appeal of conceptualising miracles in terms of this understanding of the laws.

Part One situates this thesis' examination of miracles and the laws of nature in a properly theological context. I examine how three leading frameworks for divine action – interventionism, theistic naturalism, and Thomism – accommodate miracles. From this, three theological criteria are developed to assess the plausibility of any account of miracles. It should:

1. Preserve the immanence and transcendence of God;
2. Respect the causal integrity of the natural order;
3. Uphold the intrinsic wonder of miracles.

Part Two integrates this theological examination with a detailed philosophical analysis of the concept of the laws of nature. First, I establish the importance and viability of developing an account of miracles with respect to Lewis' BSA conception of the laws. Second, I offer such a 'Lewisian' account of miracles as events beyond or contrary to the BSA laws, caused by God directly or through anomic causes. Third, I contend that this account meets the three theological criteria listed above. Furthermore, one may reasonably favour this account over other accounts of miracles due to its model of concurrentism, where every natural effect is wholly produced by both

God and a natural entity, and its distinct metaphysics. Thus, this thesis concludes that the Lewisian account of miracles developed is theologically credible and philosophically robust.

Long Abstract

This thesis offers a plausible account of miracles in relation to David Lewis' Best System Analysis (BSA) conception of the laws of nature, which defines a law of nature as any regularity that earns inclusion in the ideal systematisation of all facts. The BSA conception has been largely overlooked and prematurely dismissed in the literature on miracles and divine action. This thesis challenges that neglect, establishing the theological and philosophical appeal of conceptualising miracles in terms of this understanding of the laws.

Structure

Part One (Chapters One, Two, and Three) situates this thesis' examination of miracles and the laws of nature in a properly theological context. I examine how three frameworks for divine action – interventionism, theistic naturalism, and Thomism – accommodate miracles. These frameworks have been selected because of their prominence in the contemporary discussion of divine action and they elucidate a rich range of conceptual relations between miracles and the laws. From this examination, three theological criteria are developed to assess the plausibility of any account of miracles. Any account should:

1. Preserve the immanence and transcendence of God;
2. Respect the causal integrity of the natural order;
3. Uphold the intrinsic wonder of miracles.

Part Two (Chapters Four, Five, and Six) integrates this theological examination with a detailed philosophical analysis of the concept of the laws of nature. Having defended the existence of the laws of nature and outlined the three metaphysical approaches to the laws – Humeanism, semi-Humeanism, and anti-Humeanism – I establish the importance and viability of developing an account of miracles with respect to Lewis' Humean BSA conception. Then, I offer such a

'Lewisian' account of miracles as events beyond or contrary to the BSA laws, caused by God directly or through anomic causes. I contend that this account meets the three theological criteria listed above. Furthermore, one may reasonably favour this account over other accounts of miracles due to its model of concurrentism, where every natural effect is wholly produced by both God and a natural entity, and its distinct metaphysics. Thus, this thesis concludes that the Lewisian account of miracles developed is theologically credible and philosophically robust.

Significance

In the contemporary discussion of divine action, and the field of science and religion more broadly, the subject of miracles has taken somewhat of a backseat. The Divine Action Project (DAP), 1988-2003, is the most influential and systematic examination of divine action in recent times. Miracles, however, received limited focus. Attention was centred more broadly on special divine action. A key reason for this neglect is that participants sought to maximise traction with the natural sciences. Miracles, as exceptional and wondrous events, were seen as a barrier to achieving that goal. The DAP defines much of the subsequent work on divine action in the field of science and religion, with scholars either furthering the project's findings or, more commonly, challenging its presuppositions. A trend in this scholarship is the implicit acceptance of the DAP's sidelining of miracles.

This is regrettable for two reasons. First, miracles are central to the Christian faith. They serve as loving acts of God, expressing the divine power, engendering assent to theological messages, aiding the faithful, and vitalising faith in Christ. Thus, to neglect miracles in discussions of divine action risks distorting the wider Christological, revelatory, and soteriological context of Christianity. Secondly, miracles, standardly understood as violations of the laws of nature, seem the form of divine action most in tension with the nomic structure of the universe as outlined by

modern science. Therefore, any approach to divine action that seeks a robust dialogue with science must tackle the subject of miracles.

This thesis contributes to reaffirming the importance of miracles in the contemporary discussion of divine action. I achieve this by examining the relationship between miracles and the laws of nature, particularly the BSA conception of them. This is significant because the BSA conception, while remaining philosophically prominent, has been underrepresented in the literature on miracles and divine action. A tendency in the scholarship is to view the BSA conception of the laws as (1) defining miracles out of existence and (2) relying on a wider Humean metaphysics that is theologically untenable. In light of this, this thesis advances the discussion of miracles and the laws by responding to such objections and offering a theologically grounded, philosophically meticulous 'Lewisian' account of miracles.

Furthermore, as I will argue in Chapter Four, the Thomist-dispositionalist account represents the gold standard when it comes to contemporary approaches to miracles. It incorporates a philosophically plausible view of the laws as grounded in the intrinsic dispositions of natural entities with the rich theological framework of Thomism. I contend that the Lewisian account is an appealing alternative because it (1) meets the three theological criteria developed in Part One, (2) relies on a radically different metaphysics of the laws, and (3) incorporates an alternative concurrentist model that effectively accommodates divine and natural causality. Thus, this thesis broadens the range of plausible accounts of miracles in relation to different philosophical conceptions of the laws.

Chapter Summary

In Chapter One, I examine the prevailing approach to miracles, namely, interventionism. I begin with David Hume's treatment of miracles in *An Enquiry Concerning Human Understanding* (1748),

which shaped the widespread modern view of miracles as divine interventions. I assert that the key tenets of interventionism are that (1) nature is a self-sufficient order governed by its own laws, (2) divine action and natural causality are incompatible such that God cannot act through natural causes, and (3) miracles occur by God breaking into nature. I determine that interventionism's central flaw is undermining the immanence and transcendence of God by drawing too sharp a distinction between God and nature. Finally, I evaluate the non-interventionist objective divine action approach championed by many participants of the DAP. I maintain that, while seeking to be an alternative, it implicitly relies on the same problematic God-nature relationship of interventionism.

In Chapter Two, I turn to theistic naturalism, an approach that seeks to uphold an intimate connection between God and nature. I define theistic naturalism as the position where (1) nature is inextricably connected to, dependent upon, and orientated towards God and (2) God acts *exclusively* through natural causes and processes. I examine this approach through the lenses of Denis Edwards' neo-Thomist theistic naturalism and Christopher Knight's incarnational naturalism. A key question I raise is: how may God act through nature in a way that preserves the causal integrity of natural entities? I argue that Edwards' use of the distinction between primary and secondary causation resorts too quickly to mystery and Knight's panentheism undermines divine transcendence.

Then, I examine Edwards' subjective account of miracles, where the nature of a miracle is *solely* determined by how the subject perceives the event rather than any intrinsic metaphysical feature. By drawing on the thought of Augustine of Hippo (354-430) and Thomas Aquinas (c. 1225-1274), I argue that subjective accounts deny the intrinsic wonder and absolute unknowability of miracles. This is a critical issue because it negates miracles' unique theological function of effectively vitalising faith in Christ and legitimising theological claims. Although Knight's invocation of

'higher laws' avoids this objection, I suggest his account unnecessarily restricts the modes of divine action. Thus, I conclude that theistic naturalism is an inadequate theological framework to accommodate miracles.

In Chapter Three, I consider Thomism. I argue that this position strikes an appealing middle ground between interventionism and theistic naturalism. Aquinas affirms God's intimate role in nature by God (1) giving natural substances being, (2) preserving them in being, (3) exercising their powers to achieve their own ends, and (4) ends that transcend their nature. His analogical understanding of God's existence and causality also upholds divine transcendence. While Aquinas' model of concurrentism marks an improvement on Edwards' and Knight's explanations for how God acts through nature, I question whether Aquinas respects natural causality as much as he intends. This is due to the intimate role he assigns to God's action in nature and weaknesses in his instrumental explanation of the interplay between divine and natural causality. Finally, I show that Aquinas sustains the intrinsic wonder of miracles by rendering their causes absolutely unknowable. Indeed, he provides the theological resources to overcome many contemporary objections to the possibility of miracles.

I conclude Part One by supposing that of the three theological frameworks considered, Thomism, although not without its challenges, is the most robust. Furthermore, I identify three theological criteria for assessing the plausibility of accounts of miracles. Any plausible account should:

1. Preserve the immanence and transcendence of God;
2. Respect the causal integrity of the natural order;
3. Uphold the intrinsic wonder of miracles.

Chapter Four marks the beginning of Part Two and a shift to a deeper philosophical analysis of the concept of the laws of nature. First, I offer philosophical and theological justification that there

is a single, objective set of laws and respond to the objections of Nancy Cartwright and Stephen Mumford. Second, I map out three significant metaphysical conceptions of the laws of nature – the BSA account, the universals account, and dispositionalism – each corresponding to one of the three possible approaches to the laws: Humeanism, semi-Humeanism, and anti-Humeanism.

Third, I explore the exciting tendency in current scholarship to incorporate a dispositionalist conception of the laws within Thomism. I evaluate a variety of contemporary Thomist-dispositionalist accounts of miracles, noting their appeal because they integrate a robust theological framework with a philosophically respectable conception of the laws. Nonetheless, I contend that this approach faces two issues: (1) dispositionalism can reasonably be rejected on philosophical grounds and (2) there is still the quandary for Thomism of whether the causal integrity of natural substances is sufficiently respected. Therefore, I end this chapter by outlining the importance of offering a plausible account of miracles in connection with an alternative philosophical conception of the laws.

In Chapter Five, I begin my positive construction of the Lewisian account of miracles. I defend the philosophical plausibility of the BSA laws, showing how a theistic underpinning bolsters this endeavour. Then, I respond to Nicholas Saunders' and Joel Archer's objections that it is logically impossible for there to be miracles beyond or contrary to the BSA laws. Finally, I tackle two further challenges facing the Lewisian account. I object to Richard Swinburne's notion of violating probabilistic laws and offer an alternative which, I argue, does greater justice to the received notion of law-violation. Furthermore, I outline how recurrent miracles may, to a degree, be accommodated within the Lewisian account, focussing on the particularly problematic case of the Eucharist. In turn, this chapter establishes the possibility of miracles as events beyond or contrary to the BSA laws.

In Chapter Six, I further develop the Lewisian account of miracles and defend its plausibility. I respond to James Orr's claim that the BSA Humean metaphysics, when interpreted theologically, entails occasionalism. By drawing on a counterfactual analysis of natural causation, I offer a model of concurrentism for the Lewisian account. On this model, divine causality necessitates the natural effect and natural causality has a relationship of counterfactual dependence with the same effect. I argue that this model avoids occasionalism, respects the causal integrity of nature, and preserves the immanence and transcendence of God. Moreover, by framing miracles as events outside or contrary to the BSA laws, caused by God directly or via anomic causes, the Lewisian account sustains their intrinsic wonder. Consequently, this account meets the three criteria of theological plausibility established in Part One.

Finally, I argue that this thesis' account yields certain advantages over the Thomist-dispositionalist approach considered in Chapter Four. First, I contend that the Lewisian model of concurrentism adequately explains the interplay between divine and natural causality. Secondly, it relies on a metaphysics that a theist may justifiably prefer on philosophical grounds. Thirdly, a theistic BSA metaphysics arguably accommodates the radical contingency of the natural order more effectively than dispositionalism. While such reasons do not necessitate the adoption of the Lewisian account, they establish it as a legitimate alternative.

So, in conclusion, this thesis not only advances a theologically grounded and philosophically compelling Lewisian account of miracles, but also reintegrates miracles into the heart of the contemporary discussion of divine action, where they properly belong.

Introduction

Between May and October 1917, three children, Lúcia dos Santos and her cousins Francisco and Jacinta Marto, were reportedly visited six times by an apparition of the Virgin Mary near the town of Fátima in Portugal. On the fifth visit in September 1917, Lúcia asked the apparition of 'the Lady' for a miracle because many people accused the children of deception, threatening to hang or burn them.[1] The Lady purportedly affirmed that in October she would perform a miracle.

On the 13th October 1917, approximately 70,000 visitors gathered in the rain to witness the prophesied miracle at Fátima.[2] Shortly after noon, the Sun was reported to 'dance' in the sky, casting strange lights and spinning like a wheel of fire. Avelino de Almeida, attendee of the event and reporter for the newspaper *O Seculo*, wrote: 'the Sun has trembled, and the Sun has made some brusque movements, unprecedented and outside of all cosmic laws—the Sun has "danced."'[3] This miraculous event, in defiance of all natural laws, authenticated to the crowd the legitimacy of the apparitions reported by the children. Local churches immediately filled with followers looking to renew their faith.[4] Over a century later, in 2024, more than six million pilgrims attended the Shrine of Fátima, where the Sun is said to have danced.[5]

The so-called Miracle of the Sun points towards the theological power of miracles.[6] They are the most striking and direct forms of God's action in nature. At times of great personal need or spiritual turmoil, a Christian inevitably hopes for a miracle: an exceptional, supernatural act from

[1] J. Bennett, *When the Sun Danced: Myth, Miracles, and Modernity in Early Twentieth-Century Portugal*, Charlottesville, University of Virginia Press, 2012, p. 109.
[2] Bennett, *When the Sun Danced*, p. 113.
[3] Bennett, *When the Sun Danced*, p. 115.
[4] Bennett, *When the Sun Danced*, p. 116.
[5] Santuário De Fátima, 'The Shrine of Fatima welcomed 6.2 million pilgrims in 2024', *fatima.pt* [website], Fátima, Santuário De Fátima, 2025, https://www.fatima.pt/en/news/the-shrine-of-fatima-welcomed-62-million-pilgrims-in-2024, (accessed 2 August 2025).
[6] I do not intend to comment on the historical veracity of the Miracle of the Sun at Fátima. Rather, I use it as an illustrative case to highlight the religious significance that miracles can have for believers.

God that delivers love and emboldens faith. They encapsulate, in particular instances, God's benevolent and sovereign dominion over nature. In the lucid words of Christian apologist C. S. Lewis:

> Each miracle writes for us in small letters something that God has already written, or will write, in letters almost too large to be noticed, across the whole canvas of Nature.[7]

In spite of their religious significance, miracles have a precarious status in modern intellectual thought. Since the Early Modern Period, the universe has increasingly been thought to run according to exceptionless laws. It is science's role to uncover these laws, eventually until there are no gaps left at the empirical level. On this widespread picture of nature and science, all events occur through natural causes in accordance with the laws of nature. In turn, miracles, as aberrations of nature's laws, are eliminated entirely.

It is on this basis that various modern thinkers consider miracles antithetical to a modern outlook that respects the findings and workings of the sciences. For example, notable atheist Richard Dawkins, writes: 'miracles, by definition, violate the principles of science.'[8] Similarly, John Macquarrie asserts that a Christian commitment to miracles as breaks in the natural order 'cannot commend itself in a post-mythological climate of thought.'[9] This modern suspicion reflects a deeper theological and philosophical challenge: how to conceptualise miracles in a laws-based universe without rejecting either theological or scientific integrity? This thesis explores that question by examining the concept of miracles in relation to the laws of nature, particularly David Lewis's Best System Analysis (BSA) account of them.

[7] C. S. Lewis, *Miracles: A Preliminary Study*, London, Fount Paperbacks, 1974, p. 103.
[8] R. Dawkins, *The God Delusion*, Boston, Houghton Mifflin Harcourt, 2008, p. 30.
[9] J. Macquarrie, *Principles of Christian Theology*, London, SCM Press, 1966, p. 248.

Miracles in the Field of Science and Religion

In the contemporary discussion of divine action, and the field of science and religion more broadly, the subject of miracles lies on the periphery. The Divine Action Project (DAP), 1988-2003, is the most influential and systematic examination of divine action in recent years. It consisted of a series of conferences and publications that engaged and responded to key challenges regarding God's action in the world. Miracles, however, received limited attention. Instead, special divine action, understood as 'specific providential acts, envisaged, intended, and somehow brought about in this world by God,' was given central focus.[10] Participants sought to maximise traction with the natural sciences. Miracles, as exceptional and wondrous events, were seen as a barrier to achieving that goal.[11]

The DAP defines much of the subsequent work on divine action in the field of science and religion, with scholars either furthering the findings of the project or, more commonly, challenging its presuppositions and offering alternative approaches to divine action. A trend in this scholarship is the implicit acceptance of the DAP's bracketing of miracles. For example, in *Divine Action, Determinism, and the Laws of Nature* (2019), Jeffrey Koperski only briefly discusses miracles as a subset of special divine action.[12] Similarly, in *Divine Action and the Human Mind* (2019), Sarah Lane Ritchie recognises that 'miracles were partitioned off from the stated research purview of DAP participants… Hence, miracles as such will not be discussed here.'[13]

This is not to say that there are no important contributions to the subject of miracles and divine action in the twenty-first century. For instance, in *The Legitimacy of Miracle* (2014), Robert Larmer

[10] W. Wildman, 'The Divine Action Project, 1988-2003', *Theology and Science*, vol. 2, no. 1, 2004, p. 37.
[11] Wildman, 'The Divine Action Project', p. 38.
[12] J. Koperski, *Divine Action, Determinism, and the Laws of Nature*, New York, Routledge, 2019, p. 1.
[13] S. L. Ritchie, *Divine Action and the Human Mind*, Cambridge, Cambridge University Press, 2019, p. 40n. Admittedly, Ritchie does briefly consider how different forms of theistic naturalism may accommodate miracles.

argues that *a priori* philosophical dismissals of the possibility or probability of justified belief in miracles fail. More recently, in *Miracles in Said Nursi and Thomas Aquinas: Non-Noninterventionist Approaches to Divine Action and the Sciences* (2024), Edmund Michael Lazzari provides contemporary accounts of Said Nursi and Thomas Aquinas on miracles to challenge key assumptions of the DAP. Nonetheless, the discussion of miracles remains on the fringe of the subject of divine action in the field of science and religion.

This is regrettable for two reasons. First, miracles are central to the Christian faith. In the Hebrew Bible, they primarily occur in the Moses narratives in Exodus and Numbers, and the Elijah and Elisha narratives in 1 Kings 17 - 2 Kings 13, functioning as signs and wonders to establish the power of God and engender assent to verbal theological messages.[14] Then, in the Gospels, excluding parallel accounts, Barry Blackburn counts the narration of at least thirty-five miracles performed by Jesus.[15] Indeed, all ancient sources which comment on the issue – Q, Mark, special material in Matthew and Luke, John, Acts, the Epistles, Revelation, and non-Christian testimony from Jewish and pagan sources – agree that Jesus and his early followers performed miracles.[16] These miracles serve a multifaceted role, varying in different Gospels, of authenticating God's power, proclaiming the coming kingdom, expressing Jesus' prophetic status, aiding the faithful, vitalising faith in Christ, and affirming that Jesus is the supreme object of salvific vision and knowledge.[17] Indeed, Craig Keener goes as far as saying that without miracles, 'most of the other data in the Gospels are inexplicable.'[18] So, with the centrality that miracles play in the Christian narrative, any comprehensive analysis of God's action in the world must deeply engage with them.

[14] R. W. L. Moberly, 'Miracles in the Hebrew Bible', in G. Twelftree (ed.), *The Cambridge Companion to Miracles*, Cambridge, Cambridge University Press, 2011, p. 62.
[15] B. Blackburn, 'The Miracles of Jesus', in G. Twelftree (ed.), *The Cambridge Companion to Miracles*, Cambridge, Cambridge University Press, 2011, p. 113.
[16] C. Keener, *The Gospel of John: A Commentary*, Peabody, Hendrickson Publishers, 2010, p. 314.
[17] Broadly speaking, the Synoptic Gospels primarily conceive Jesus' miracles as authenticating his mission, whereas the Gospel of John interprets Jesus' miracles as a call to faith.
Keener, *The Gospel of John*, p. 328
[18] Keener, *The Gospel of John*, p. 314.

Secondly, a key aim of contemporary approaches to divine action is to outline how God may act in the world in a way that respects the methods and findings of modern science.[19] Famously described by David Hume (1711-1776) as 'violations of the laws of nature', miracles seem the form of divine action most in tension with such methods and findings.[20] Therefore, any approach to divine action that seeks a robust dialogue with science should tackle the subject of miracles.

This thesis helps to reaffirm the significance of miracles in the present-day discussion of divine action. I achieve this by developing a plausible account of miracles in relation to the BSA conception of the laws of nature, where a law of nature is any regularity that earns inclusion in the ideal systematisation of all facts. I focus on the BSA conception because it has been little considered and oft dismissed in the literature on miracles and divine action. I seek to challenge that neglect, establishing the theological and philosophical appeal of conceptualising miracles in conjunction with this understanding of the laws.

Historical Context

Why examine miracles *in conjunction with the laws of nature*? First, since Hume, it has been paradigmatic to understand miracles as violations of the laws.[21] While this normativity does not legitimise such an understanding, it provides a strong basis for examining it. Secondly, the laws of nature, at least *prima facie*, play a central role in scientific thought. In developing a strong dialogue between theology and science on the subject of miracles, it seems fruitful to examine the theological notion of miracles with the scientific concept of the laws. Thirdly, as I now discuss, a brief historical

[19] E. Lazzari, *Miracles in Said Nursi and Thomas Aquinas: Non-Noninterventionist Approaches to Divine Action and the Sciences*, Oxford, Taylor & Francis Group, 2024, p. 1.
[20] D. Hume and S. Buckle (ed.), *An Enquiry Concerning Human Understanding*, Cambridge, Cambridge University Press, 2007, p. 100;
Lazzari, *Miracles in Said Nursi and Thomas Aquinas*, p. 1.
[21] D. Basinger, *Miracles*, Cambridge, Cambridge University Press, 2018, p. 6.

examination of the relationship between miracles and the laws demonstrates the rich conceptual challenges that are at play.

History of the Laws of Nature

In modern times, the language of 'the laws of nature' is common jargon when describing the behaviour of the universe as examined by modern science.[22] That one of the main aims of a systematic examination of nature is to discover its laws is not a timeless endeavour but a product of seventeenth-century natural philosophy.[23] Before, in Western thought, the language of 'laws of nature' primarily referred to (1) general regularities, such as the Sun rising in the morning or cows producing milk, (2) moral laws, or (3) was metaphorical.[24]

The reason that the laws did not play a central role in pre-seventeenth-century natural philosophy was the dominance of Aristotelian metaphysics in Late Scholasticism.[25] While there was great diversity among late scholastic natural philosophers, there was an unwavering commitment to the Aristotelian doctrine of substance, where all substances are a compound of matter – as pure potentiality – and substantial form – as that which actualises the potentiality of matter.[26] The regularity of nature is underpinned by the forms of natural substances, which endow them with particular powers to produce particular effects in particular circumstances.[27]

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[22] For example, David Armstrong sees one of the three tasks of modern science as uncovering the laws of nature.
D. M. Armstrong, *What is a Law of Nature?*, Cambridge, Cambridge University Press, 1984, p. 3.
[23] J. Milton, 'Laws of Nature', in D. Garber and M. Ayers (eds.), *The Cambridge History of Seventeenth-Century Philosophy, Volume 1*, Cambridge, Cambridge University Press, 2000, p. 680.
[24] J. Henry, 'Metaphysics and the Origins of Modern Science: Descartes and the Origins of the Laws of Nature', *Early Science and Medicine*, vol. 9, no. 2, 2004, pp. 77-80;
I. Silva, 'Thomas Aquinas and Some Neo-Thomists on the Possibility of Miracles and the Laws of Nature', *Religions*, vol. 15, no.4, 2024, pp.4-5.
[25] S. Nadler, 'Doctrines of Explanation in Late Scholasticism and in the Mechanical Philosophy', in D. Garber and M. Ayers (eds.), *The Cambridge History of Seventeenth-Century Philosophy, Volume 1*, Cambridge, Cambridge University Press, 2000, p. 516.
[26] Nadler, 'Doctrines of Explanation in Late Scholasticism and in the Mechanical Philosophy', p. 516.
I examine Aristotelian metaphysics in relation to Thomas Aquinas in Chapter Three.
[27] Late scholastics also drew on Aristotle's four sensible qualities of heat, cold, dryness, and moisture, adding two primary motive qualities (*qualitates motrices*), heaviness (*gravitas*) and lightness (*levitas*), to explain natural phenomena.
Nadler, 'Doctrines of Explanation in Late Scholasticism and in the Mechanical Philosophy', p. 517.

By the beginning of the seventeenth century, it was widely accepted that a new metaphysics was needed. Late scholastic natural philosophy was accused of an unintelligible ontology and giving vacuous explanations.[28] René Descartes (1596-1650) offered such an alternative.[29] He conceived of matter, not as pure potentiality that is given qualitative identity by form, but as pure extension (*res extensa*). Matter is divided up into an indefinite number of parts of various sizes, shapes, and arrangements by means of motions of differing directions and velocities.[30] The nature of all bodies is ultimately reduced to the mechanistic arrangement, motion, and collisions of passive material particles.

The role the laws of nature play in Descartes' metaphysics is that they are the instruments for change in the universe, governing how particles of matter interact with each other. The laws are 'the secondary and particular causes of the various motions we see in particular bodies.'[31] In *Principles of Philosophy* (*Principia Philosophiae*) (1644), Descartes outlines three laws of nature:

> *Law One:* Each and every thing, in so far as it can, always continues in the same state; and thus what is once in motion always continues to move.
>
> *Law Two*: All motion is in itself rectilinear; and hence any body moving in a circle always tends to move away from the centre of the circle which it describes.
>
> *Law Three*: If a body collides with another body that is stronger than itself, it loses none of its motion; but if it collides with a weaker body, it loses a quantity of motion equal to that which it imparts to the other body.[32]

[28] Molière (1622-1673), in his play *Le Malade Imaginaire* (1673), famously quips at the absurdity of an educated doctor proposing that opium induces sleep due to 'a sleep inducing power.'
Molière and C. H. Watt (trans.), *The Imaginary Invalid*, Salt Lake City, Project Gutenberg, 2005, Third Interlude.
[29] R. Descartes, 'To Regius, January 1642', in J. Cottingham, R. Stroothoff, D. Murdoch, A. Kenny (eds. and trans.), *The Philosophical Writings of Descartes, Vol. III, The Correspondence*, Cambridge, Cambridge University Press, 1991, p. 207.
[30] Nadler, 'Doctrines of Explanation in Late Scholasticism and in the Mechanical Philosophy', p. 523.
[31] Descartes, 'Principles of Philosophy', in J. Cottingham, R. Stoothoff, D. Murdoch (trans.), *The Philosophical Writings of Descartes, Vol. I*, Cambridge, Cambridge University Press, 1985, p. 240.
[32] Descartes, 'Principles of Philosophy', pp. 240-242.

Descartes derives all three of these laws from reflecting upon the immutability of God.[33] For example, with *Law One*, as God acts in a manner that is always constant, unless there are other factors, God would preserve 'the motion in the precise form in which it is occurring at the very moment when he preserves it.'[34]

The radicalness of Descartes' position is that the scholastic framework had a bottom-up conception of nature, grounding its uniformity in the forms of natural substances. In contrast, Descartes provided a top-down framework, where all change occurs through passive matter being governed by a single, objective set of externally imposed laws of nature. In turn, Descartes introduces the concept of the laws as the 'lynch-pin' of natural philosophy.[35]

History of Miracles and the Laws of Nature

The development of the modern concept of the laws of nature led to a shift in how miracles were understood. Scholastic approaches generally conceived miracles as exceptional events caused by God that natural substances, and nature as a whole, lack the power to produce.[36] This conception extended to the Early Modern Period, with Gottfried Leibniz (1646-1716) describing the received notion of a miracle as an event which 'surpasses all created powers.'[37] With the rise of a law-based metaphysics, miracles instead became defined as events caused by God that are beyond or contrary to the laws of nature, that is, as events either outside the system of laws or in violation of them.[38]

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[33] Descartes, 'Principles of Philosophy', p. 240.
[34] Descartes, 'Principles of Philosophy', p. 242.
These laws insufficiently capture the phenomena of nature. Isaac Newton (1643-1727) significantly advanced the explanatory power of the laws by rejecting Descartes' *a priori* methodology for uncovering them. Rather, Newton emphasised the importance of experimentation, providing the basis for modern science's empirical enquiry into the laws of nature.
For more on this, see: P. Harrison, 'Laws of God or Laws of Nature? Natural Order in the Early Modern Period', in P. Harrison and J. Roberts (eds.), *Science Without God? Rethinking the History of Scientific Naturalism*, Oxford, Oxford University Press, 2019, pp. 58-76.
[35] Henry, 'Metaphysics and the Origins of Modern Science', p. 97.
[36] Milton, 'Laws of Nature', p. 696.
[37] G. Leibniz, S. Clarke, and R. Ariew (ed.), *Correspondence*, Indianapolis, Hackett Publishers, 2000, p. 62.
[38] W. Pannenberg, *Systematic Theology, Volume 2*, Edinburgh, T&T Clark, 1994, p. 44.

This raised interesting conceptual challenges for the relationship between miracles and the laws. Take, as an example, Descartes' brief treatment of miracles in *Le Monde* (1664). He asks his readers to imagine a hypothetical world that consists solely of mechanical operations, with the implication being that this hypothetical world actually reflects our own. Descartes reasons 'that God will never perform a miracle in the new world.'[39] As the laws of nature are derived from the immutability of God, any deviation from the laws would unacceptably reflect a change in God. Therefore, miracles – as violations of the laws – are impossible.[40]

The spokesman of English Newtonians, Samuel Clarke (1675-1729), conceived of an alternative relation between miracles and the laws of nature. He explicitly denied any metaphysical difference between miracles and natural events. The basis of this denial is that, for Clarke, all effects are produced by God, either immediately or mediately through created intelligent beings.[41] In light of this, the laws are 'nothing else but the will of God producing certain effects in a continued, regular, constant and uniform manner.'[42] He rejected there being any independent and subsistent nature, rather affirming that the course of nature merely signifies 'that a thing usually or frequently comes to pass.'[43] Consequently, a miracle, as an event beyond or contrary to the laws of nature, is just an unusual event. The difference between miracles and natural events is simply one of regularity. There is no 'real internal difference.'[44] Clarke writes:

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[39] R. Descartes and S. Gaukroger (ed.), *The World and Other Writings*, Cambridge, Cambridge University Press, 1998, p. 32.
Peter Harrison posits that it is unlikely that Descartes actually rejected the possibility of miracles, but his system could certainly be interpreted as ruling them out.
P. Harrison, 'Laws of God or Laws of Nature?', p. 62.
[40] Baruch Spinoza (1632-1677) similarly rejects the possibility of miracles as beyond or contrary to the laws because the laws are fixed and unalterable as they are decreed by God.
B. Spinoza, J. Israel (ed. and trans.), and M. Silverthorne (trans.), *Theological-Political Treatise*, Cambridge, Cambridge University Press, 2007, pp. 81-96.
[41] S. Clarke and E. Vailati (ed.), *A Demonstration of the Being and Attributes of God and Other Writings*, Cambridge, Cambridge University Press, 1998, p. 149.
[42] Clarke, *A Demonstration of the Being and Attributes of God*, p. 149.
[43] Clarke, *Correspondence*, p. 82.
[44] Clarke, *Correspondence*, p. 83.

> a natural and a supernatural action of God are terms whose signification is only relative to us, we calling an usual effect of God's power natural and an unusual one supernatural.[45]

This brief enquiry into the history of miracles and the laws of nature points towards their intertwined, complex history. Does the existence of the laws of nature rule out the possibility of miracles? Is there any metaphysical difference between natural events in accordance with the laws and miracles beyond or contrary to them?

Method

This thesis operates at the intersection of theology and metaphysics by bringing theological concerns about miracles and divine action into dialogue with contemporary analytic accounts of the laws of nature.

The Method of Part One

The focus of Part One is distinctly theological, following a more general trend in the field of science and religion. Andrew Davison identifies the 1960s and 70s as when a field of "science and religion" emerged as a distinct sub-discipline within academic theology.[46] Since its inception, much of this sub-discipline has centred on methodological questions, examining typologies of possible relations between science and religion.[47] Peter Harrison and Paul Tyson speak of 'the one-sidedness of science–religion dialogue', where modern science throws up problems that religion,

[45] Clarke, *Correspondence*, p. 83.
[46] A. Davison, 'More History, More Theology, More Philosophy, More Science: The State of Theological Engagement with Science', in P. Harrison and P. Tyson (eds.), *New Directions in Theology and Science: Beyond Dialogue*, London, Routledge, 2022, p. 21.
[47] For example, see: I. Barbour, *Religion and Science: Historical and Contemporary Issues*, San Francisco, Harper Collins, 1997.

and more specifically theology, has to solve.[48] In recent times, there has been a shift in the field, focussing on more fine-grained questions rather than the broad categories of 'science' and 'religion.' Theological concerns are now being placed at the heart of this dialogue, promoting 'religion' from its prior role as 'junior partner.'[49]

This trend is reflected in the contemporary discussion of divine action. Ritchie speaks of a theological turn that seeks to reappropriate the subject as a properly theological question.[50] Advocates of this turn emphasise the significance of developing an apt theological and metaphysical framework to understand God's action in the world. Only once this has been attempted is it proper to outline positively how God may act in the world in a manner that is theologically, scientifically, and philosophically substantive.

Part One adopts this methodology. Before developing an account of miracles in connection with the BSA conception of the laws of nature, it situates the subject of miracles in a properly theological context. To achieve this, this thesis examines how three prominent approaches to divine action – interventionism (Chapter One), theistic naturalism (Chapter Two), and Thomism (Chapter Three) – accommodate miracles.

The value of this method is two-fold. First, these approaches have been selected because of their prominence in the contemporary divine action discussion and they elucidate a range of conceptual relations between miracles and the laws of nature.[51] Considering such options provides the

[48] P. Harrison and P. Tyson, 'Introduction', in P. Harrison and P. Tyson (eds.), *New Directions in Theology and Science: Beyond Dialogue*, London, Routledge, 2022, p. 2.
[49] Davison, 'More History, More Theology, More Philosophy, More Science', p. 24.
[50] Ritchie, *Divine Action and the Human Mind*, p. 25.
[51] I recognise, of course, that these frameworks do not exhaust the approaches to miracles and divine action. An alternative is process theism which conceptualises divine action through a process of allurement rather than control. One significant reason for not considering this approach is its abandonment of a central tenet of Christian theism, that is, God's omnipotence.
D. Fergusson, *Reformed Humanism: Essays on Christian Doctrine, Philosophy, and Church*, London, T&T Clark, 2024, p. 38.

theological grounding and conceptual arsenal for the more fine-grained analysis of miracles and the BSA laws in Part Two. Secondly, through this theological examination, various criteria that any plausible account of miracles should meet will be constructed. This will become paramount in Part Two because the 'Lewisian' account of miracles developed will be assessed by these criteria:

1. Preserving the immanence and transcendence of God;
2. Respecting the causal integrity of the natural order;
3. Upholding the intrinsic wonder of miracles.

The Method of Part Two

While Ritchie speaks of a theological turn in the subject of divine action, Davison writes: 'it would not be an exaggeration…to suppose that there is something of a "philosophical turn" taking place within the relation of theology to science at present.'[52] In this 'turn', the tools provided by modern philosophy play a central role in the field of science and religion. Philosophical categories may serve theological purposes, helping to frame appropriately certain questions. Thus, philosophy can be a useful intermediary, providing a shared dialogue when integrating scientific and theological concepts.[53] Indeed, in much the same way that theologians seek 'traction' with science to increase the credibility of their proposals, such credibility can also be increased through traction with philosophy.[54]

For more on process theism, see: D. Griffin, *Reenchantment without Supernaturalism: A Process Philosophy of Religion*, Ithaca, Cornell University Press, 2018.

[52] Davison, 'More History, More Theology, More Philosophy, More Science', p. 28.

[53] One challenge for this claim is that the supposed 'naturalistic orthodoxy' of modern Western philosophy prevents any constructive dialogue between theology and philosophy. Responding to this challenge is a recurring theme in Part Two. For now, all I will say is that I aim to overcome this challenge by understanding philosophical concepts in the context of the theological frameworks developed in Part One.
J. Orr, *The Mind of God and the Works of Nature: Laws and Powers in Naturalism, Platonism, and Classical Theism*, Leuven, Peeters Publishers, 2019, p. 5.

[54] For the importance of traction between theology and science in the discussion of divine action, see: P. Clayton, 'Toward a Theory of Divine Action That Has Traction', in R. Russell, N. Murphy, and W. Stoeger (Eds), *Scientific Perspectives on Divine Action: Twenty Years of Challenges and Progress*, Vatican City State, Vatican Observatory Publications, 2001, pp. 85-110.

In light of this, Part Two integrates Part One's theological examination with a detailed philosophical analysis of the concept of the laws of nature. The value of this is two-fold. First, how the natural order is metaphysically conceptualised mitigates how God may act in the world and the nature of miracles as aberrations of that order. Second, by considering different philosophical conceptions of the laws in the context of miracles and divine action, this thesis is able to construct an account of miracles that is both theologically tenable and philosophically engaged.

So, in Part Two, I defend the philosophical plausibility of the laws' existence, map the possible metaphysics of the laws in contemporary philosophy, and integrate this analysis with the prior examination of miracles and divine action (Chapter Four). Then, I establish the significance and viability of developing an account of miracles in relation to Lewis' BSA conception of the laws (Chapter Five). Finally, I further develop this 'Lewisian' account of miracles as events beyond or contrary to the BSA laws, caused by God directly or through anomic causes. I contend that this account meets the three theological criteria listed above and confers certain advantages compared to other prominent accounts of miracles and the laws (Chapter Six).

Scope

Given the multifaceted nature of miracles, it serves as the locus for a range of broader subjects, themes, and methods within theology. In light of this, I have had to be exceedingly selective in the topics addressed to restrict sufficiently this thesis' scope. It will be useful to discuss briefly the themes and methods that are not primarily addressed in this thesis but are, without doubt, inextricably connected to the topic of miracles.

Miracles and Biblical Scholarship

The question of whether the miracles described in the Bible took place is an exceedingly difficult one. First, there is no single Hebrew or Greek term that corresponds to the word 'miracle.' In the Hebrew Bible, the words used most regarding miracles are *)oth* ('sign') and *mopeth* ('wonder'), and in the New Testament, *sēmeion* ('sign') and *dunamis* ('power').[55] Thus, to discern what biblical events are miracles necessitates a prior concept of miracle. Secondly, biblical narratives do not adhere to modern historiographical conventions, rather participating within a broader narrative of rich theological, literary, and cultural motifs and purposes.[56] Thirdly, the assessment of the historicity of biblical miracles depends on prior metaphysical assumptions about what types of events are possible and how God may act in the world.[57] Thus, to tackle this question requires a deeply interdisciplinary approach.

In this thesis, these issues regarding the biblical scholarship of miracles are not of central concern. While I engage with biblical miracles to examine and evaluate various possible relations between miracles and the laws, I will not question the historicity of such events, rather taking their occurrence as a given. Even assuming the occurrence of miracles, I will not focus too deeply on the finer scholarly debates over how these events actually happened, such as the discussion of whether Moses parted the Red Sea or the Sea of Reeds in Exodus 14.[58] I take a more general approach, assuming that miracles of Scripture occurred in the way commonly conceived, such that Jesus really did turn the water into wine in John 2 and resurrected Lazarus in John 11, among other things. This will allow me to focus more deeply on the relationship between miracles and the laws

[55] Moberly, 'Miracles in the Hebrew Bible', p. 58;
Keener, *The Gospel of John*, p. 310.
[56] Moberly, 'Miracles in the Hebrew Bible', p. 69.
[57] For example, Keener argues that much New Testament scholarship rests on the '*a priori* assumption that excludes the supernatural from consideration.'
Keener, *The Gospel of John*, p. 320.
[58] M. Harris, 'How Did Moses Part the Red Sea? Science as Salvation in the Exodus Tradition', in A. Graupner and M. Wolter (eds.), *Moses in Biblical and Extra-Biblical Traditions*, Berlin, de Gruyter, 2007, p. 5.

of nature, contributing to the debate on the historicity of biblical miracles in as much as it relies on a prior metaphysical conception of them.

The Epistemology of Miracles

I am also largely setting to one side the question of whether it is ever rational to believe that a miracle has occurred. Since Hume's argument in *An Enquiry Concerning Human Understanding* that it is never rational to believe testimony that a miracle has occurred, this question has been a central concern in the philosophy of religion.[59] I am not focussing on this, again, partly due to a matter of scope and also because, in a sense, the metaphysical question of what a miracle is precedes whether it is ever rational to believe that a miracle has occurred. To examine the epistemological question, one must have a prior notion of what a miracle is. So, while this thesis aims to offer an account of miracles that establishes their possibility, I will not delve too deeply into epistemological issues.

Alternative Theological Criteria

In Part One, I develop three theological criteria for assessing accounts of miracles:

1. Preserving the immanence and transcendence of God;
2. Respecting the causal integrity of the natural order;
3. Upholding the intrinsic wonder of miracles.

I do not suppose that these criteria exhaust all considerations for a complete theological examination of miracles. Nonetheless, Part One establishes their importance and how they have not always been satisfactorily considered in contemporary approaches to divine action. Thus, an

[59] Key works that engage with this question are:
J. Earman, *Hume's Abject Failure: The Argument Against Miracles*, Oxford, Oxford University Press, 2000;
J. Houston, *Reported Miracles: A Critique of Hume*, Cambridge, Cambridge University Press, 1994;
R. Larmer, *The Legitimacy of Miracle*, Lanham, Lexington Books, 2014.
For a broader summary, see:
T. McGrew and R. Larmer, 'Miracles', in E. Zalta and U. Nodelman (eds.), *The Stanford Encyclopedia of Philosophy*, Summer 2024 Edition.
URL = <https://plato.stanford.edu/archives/sum2024/entries/miracles/>.

account of miracles that meets these criteria is an important contribution to the literature and reaches the standards of plausibility, in that theists have good reasons to adopt it.

The most significant theological topic related to miracles that does not play a central role in this thesis is the problem of suffering. This is not due to any perceived lack of importance, but rather to limit sufficiently this thesis' scope. The existence of suffering in the world is inseparably connected to the subject of miracles. If God can part the Red Sea or raise humans from the dead, why does God not perform more miraculous actions to prevent cases of immeasurable suffering?[60] A key claim in this thesis is that miraculous action and divine action are not synonymous. God may act in nature in a non-miraculous fashion. Thus, miracles relate to the problem of suffering in the sense that it is one form – rather than the only form – of divine action that may prevent or alleviate cases of immeasurable suffering.[61] While I consider the relation between miracles, divine action, and the problem of suffering briefly in the Conclusion, I set this aside for the main body of the thesis because its limited scope inhibits a substantial examination of this pivotal issue.

The Nature of the Lewisian Account

This thesis offers an account of miracles as events beyond or contrary to the BSA laws, caused by God directly or through anomic causes. I do not intend for this to be a complete account of miracles. Rather, it is an account of miracles *in as much as they relate to the BSA laws*. Thus, it is not that any possible event beyond or contrary to the BSA laws – such as God raising a cube of sand in an uninhabited corner of the Sahara Desert – would *necessarily* be a miracle. To make such a

[60] Some have considered this problem insuperable and therefore deny that God ever sets aside the laws of nature even once to reduce suffering. The basis of this conclusion is that if God acts in this way even once, then God would incur a responsibility to intervene in most or all cases of suffering.
See: P. Clayton and S. Knapp, *The Predicament of Belief: Science, Philosophy, and Faith*, Oxford, Oxford University Press, 2013, p. 49.

[61] The contemporary discussion of divine action has been sensitive to the fact that affirming God's action in the world heightens the problems posed in situations where God seems not to have acted.
For example, see: N. Murphy, R. Russell, and W. Stoeger (eds.), *Physics and Cosmology: Scientific Perspectives on the Problem of Natural Evil*, Vatican City State, Vatican Observatory Publications, 2007.

claim would drastically undermine the rich salvific, revelatory, and Christological context in which miracles occur. Nonetheless, since the central focus of this thesis is miracles and the laws of nature, the Lewisian account of miracles offered here is developed specifically insofar as miracles relate to the BSA laws.

Significance

A central contribution of this thesis lies in offering a theologically robust account of miracles grounded in David Lewis's Best System Analysis (BSA) conception of the laws of nature. I demonstrate in Chapters Five and Six that this prominent philosophical account of lawhood has been largely overlooked and too quickly dismissed in miracle discourse. It is commonly thought to (1) define miracles out of existence and (2) deny natural causation, leading to occasionalism. More broadly, the Humean metaphysics underpinning the BSA conception is often regarded as incompatible with theism due to its sparse ontology and perceived metaphysical naturalism. In response, this thesis develops a theistic Humean metaphysics by situating the BSA laws within a robust theological framework. I argue that this Lewisian account not only avoids the standard objections but provides a philosophically coherent and theologically faithful account of miracles as uniquely exceptional, objective divine acts.

Furthermore, in Chapters Three and Four, I contend that the Thomist-dispositionalist account represents the gold standard when it comes to contemporary accounts of miracles. It integrates the robust theological framework of Thomism with a plausible philosophical understanding of the laws in dispositionalism. In this anti-Humean approach, the laws are grounded in the causal powers of natural substances. Nonetheless, this account faces challenges on two fronts. First, dispositionalism can plausibly be rejected on philosophical grounds. Second, I question whether

the Thomist model of concurrentism – where every natural effect is wholly caused by both God and a natural agent – adequately respects the causal integrity of nature.

I argue that this thesis' account is an appealing alternative because it (1) meets the three theological criteria developed in Part One, (2) relies on a radically different metaphysics of the laws of nature, and (3) utilises a different concurrentist model that effectively accommodates divine and natural causality. In doing so, this thesis expands the scope of theological engagement with contemporary metaphysics and provides a novel alternative to the dominant anti-Humean models in the field.

More generally, this thesis provides a much-needed theological and philosophical investigation into miracles within the field of science and religion. By examining three theological approaches to divine action through the lens of how they accommodate miracles, this thesis invokes an evaluative standard that has unfortunately been overlooked in the current scholarship. Additionally, my method of integrating an examination of miracles in the broader subject of divine action confers a diversity of theological methods, concepts, and tools from the divine action debate to the sorely neglected subject of miracles. Thus, this thesis advances the scholarship on both divine action and the metaphysics of laws by offering a theologically grounded and metaphysically innovative formulation of miracles within the field of science and religion.

Chapter One: Interventionism

This chapter marks the start of Part One, where I examine three approaches to miracles and divine action, namely, interventionism, theistic naturalism, and Thomism. The aims of Part One are to develop a set of theological criteria to assess accounts of miracles, as well as to explore various conceptual relations between miracles and the laws of nature.

Section One: What is Interventionism?

1.1. David Hume on Miracles

David Hume's (1711-1776) 'Of Miracles' in Section Ten of *An Enquiry Concerning Human Understanding* (1748) is the seminal piece on miracles for modern Western philosophy. In this work, Hume aims to fashion a 'silver bullet' argument, establishing that it is never rational to believe testimony that a miracle has occurred.[1] He hopes that this argument will be 'an everlasting check to all kinds of superstitious delusion, and consequently, will be useful as long as the world endures.'[2]

1.1.1. Hume's Argument

Hume's argument consists of two parts. The first seeks to establish the maxim:

> That no testimony is sufficient to establish a miracle, unless the testimony is of such a kind, that its falsehood would be more miraculous, than the fact, which it endeavours to establish.[3]

[1] Earman, *Hume's Abject Failure*, p. 3.
[2] Hume, *An Enquiry Concerning Human Understanding*, p. 97.
[3] Hume, *An Enquiry Concerning Human Understanding*, p. 101.

Hume suggests that it is only rational to believe testimony that a miracle has occurred if the evidence for the testimony's truth outweighs the evidence against the miracle occurring. If this is the case, one can only believe that a miracle has occurred to the degree that the evidence in favour of the testimony outweighs the evidence against the miracle. Per Hume, the wise man 'proportions his belief to the evidence.'[4]

Hume then contends that the testimonial evidence for a miracle never outweighs the evidence against a miracle. First, he argues that against any miracle, there is 'firm and unalterable experience…as any argument from experience can possibly be imagined.'[5] As nothing is 'esteemed a miracle, if it ever happen in the common course of nature', there must be 'a uniform experience against every miraculous event.'[6] Our experience of the constant uniformity of nature counts as evidence against the occurrence of miracles, which are intrinsically irregular events.[7]

Secondly, in Part Two, Hume argues that the testimonial evidence for miracles is generally weak. He offers four reasons.[8] First, no miracle has been attested by a sufficient number of men of 'such unquestioned good-sense, education, and learning.'[9] Second, humans have a tendency to believe in wondrous events like miracles regardless of the evidence for them.[10] Third, miracles are primarily observed by 'ignorant and barbarous nations.'[11] Fourth, the miracle testimonies of different religions undermine their respective evidential force.[12] For Hume, the sheer strength of the

[4] Hume, *An Enquiry Concerning Human Understanding*, p. 97.
[5] Hume, *An Enquiry Concerning Human Understanding*, p. 100.
[6] Hume, *An Enquiry Concerning Human Understanding*, p. 101.
[7] I expand upon the meaning of this when considering miracles as violations of the laws of nature later in the section.
[8] Peter Harrison notes that Hume's 'tacit assumptions about historical progress and an accompanying hierarchy of cultures' in Part Two of 'Of Miracles' have largely been neglected in the contemporary discussion of Hume on miracles.
P. Harrison, *Some New World: Myths of Supernatural Belief in a Secular Age*, Cambridge, Cambridge University Press, 2024, p. 14.
[9] Hume, *An Enquiry Concerning Human Understanding*, p. 102.
[10] Hume, *An Enquiry Concerning Human Understanding*, p. 102.
[11] Hume, *An Enquiry Concerning Human Understanding*, p. 104.
[12] Hume, *An Enquiry Concerning Human Understanding*, p. 106.

experiential evidence against a miracle occurring and the general frailties of miracle reports entail that it is never rational to believe testimony that a miracle has occurred.

1.1.2. Hume's Concept of Miracles

My central concern with Hume's thought on miracles is less the nuance or plausibility of his argument, but the concept of miracles that he relies upon.[13] In a footnote, he defines a miracle as 'a transgression of a law of nature by a particular volition of the Deity, or by the interposition of some invisible agent.'[14] Then, in the main body of the text, he writes that a miracle is 'a violation of the laws of nature.'[15] Hume thinks that a miracle involves (1) a violation or transgression of a law of nature due to (2) the interposition or intervention by some Deity or invisible agent.

Metaphysically speaking, how does Hume understand a violation of a law of nature and a divine intervention? Starting with the former, some interpret Hume as considering a law-violation to be a contradiction in terms. This interpretation attributes to Hume a conception of the laws as exceptionless regularities. It stems from one of Hume's definitions of causation in Section Seven of the *Enquiry* as 'where all the objects similar to the first are followed by objects similar to the second.'[16] If a law of nature is an exceptionless regularity, then there can be no violations of or exceptions to the law. David Norton interprets Hume in this way. He asserts that in any case where

[13] For a philosophical analysis of Hume's argument, see: P. Millican, 'Twenty Questions about Hume's 'Of Miracles'', *Royal Institute of Philosophy Supplement*, vol. 68, no. 68, 2011, pp. 151-192.
For a more historical analysis, see Harrison, *Some New World*, pp. 13-23.
[14] Hume, *An Enquiry Concerning Human Understanding*, p. 101n.
[15] Hume, *An Enquiry Concerning Human Understanding*, p. 100.
[16] Hume, *An Enquiry Concerning Human Understanding*, p. 70.
Peter Millican argues that Hume is far more comfortable with the notion of causal science and genuine hidden causes than he is typically given credit for, meaning that he may have had a more robust view of causation than constant conjunction. Here, Millican falls into the camp of being a 'New Hume', supposing that Hume did not deny the existence of genuine, natural causation, but rather objected to the idea that we have an intelligible concept of causation. Millican, 'Twenty Questions', p. 169.

there is a purported violation, 'there is no violation of a law of nature because there is no law of nature, and hence, there is no miracle.'[17]

Such an interpretation, however, is contrary to the argumentative thrust of the section. Hume is not arguing that miracles are impossible, but that it is never rational to believe testimony that a miracle has occurred. The role of Part Two would be extremely odd on Norton's interpretation. Why would Hume argue that testimony for miracles is generally unreliable when he has already defined miracles out of existence?

Indeed, for the purpose of his argument in 'Of Miracles', Hume relies on a thin notion of the laws, requiring them to have three characteristics. First, since he accepts the possibility of miracles, the laws must be able to be violated. Nevertheless, secondly, the laws must hold virtually always because they are supported by 'firm and unalterable experience.'[18] Hume gives the examples of 'all men must die', 'lead cannot remain suspended in the air', and 'fire consumes wood' as statements that are agreeable to the laws.[19] These events are agreeable because they regularly occur in the common course of nature.[20] So, the laws must be violable but also ground the steady flow of natural events.

Thirdly, Hume considers the laws to exist independently of what humans think they are. While the inhabitants of Sumatra may consider it a law that water never freezes because they have never observed water freezing, it is not actually a law as water may freeze in the usual course of nature.[21] Hume speaks of events, *in fact*, violating the laws of nature even if they do not *seem* contrary to the

[17] D. F. Norton, *David Hume: Common Sense Moralist, Sceptical Metaphysician*, Princeton, Princeton University Press, 1982, p. 299.
[18] Hume, *An Enquiry Concerning Human Understanding*, p. 100.
[19] Hume, *An Enquiry Concerning Human Understanding*, p. 100.
[20] Millican, 'Twenty Questions', p. 170.
[21] Hume, *An Enquiry Concerning Human Understanding*, p. 100n.

laws. He gives the example of the raising of a feather 'when the wind wants ever so little of a force requisite for that purpose.'[22] Even though the raising of this feather would appear perfectly regular – because feathers are often raised – this event is a miracle because it happens in a way that is contrary to the laws of nature.

From these three factors, we have the central notions of a law of nature and a law-violation in 'Of Miracles.' A law of nature is an objective regularity – not necessarily exceptionless – supported by firm and unalterable experience that underpins the usual course of nature.[23] A violation of a law is an event that conflicts with such an objective regularity.[24]

In 'Of Miracles', it is less clear what Hume means by a Deity or invisible agent 'interposing' or, in more common language, intervening in nature to cause a miracle. The reason that Hume does not flesh out this idea is that his argument against the testimony of miracles predominantly rests on the notion of miracles violating the laws of nature rather than a Deity intervening in nature. The central reason, for Hume, that it is never rational to believe miracle reports is that there is 'firm and unalterable experience' against any law-violating event taking place. The fact that the event is caused by a divine intervention is not relevant to this claim. In turn, for his argument, Hume does not need to outline, metaphysically speaking, what a divine intervention is, rather leaving it unclear.[25]

[22] Hume, *An Enquiry Concerning Human Understanding*, p. 101n.
[23] I accept that this characterisation raises many questions. What makes a regularity objective and how may it underpin the usual course of nature? I examine such issues in Chapter Four when engaging with the contemporary metaphysics of the laws of nature.
[24] Millican, 'Twenty Questions', p. 170
[25] Some scholars have attempted to offer a loose description of what a divine intervention is for Hume. Millican writes that it seems to involve an 'intrusion into the natural order' and Harrison thinks Hume relies on a 'two-tiered natural/supernatural understanding of reality.'
Millican, 'Twenty Questions', p. 170;
Harrison, *Some New World*, p. 20.

1.1.3. The Influence of Hume

While much ink has been spilled on evaluating Hume's argument that it is never rational to believe testimony that a miracle has occurred, his conception of miracles as violations of the laws of nature through divine intervention has become standard for many modern thinkers.[26] David Basinger supposes that 'since the time of David Hume, miracles have often been defined by proponents and critics alike as violations of natural laws.'[27]

Furthermore, the notion of divine intervention is prevalent in much contemporary discussion of miracles and divine action. For example, Robert Larmer writes that 'the very meaning of the word "act" implies intervention', suggesting that any action from God is a divine intervention.[28] Similarly, William Alston recognises the normativity of this term, stating: 'I will follow the widespread usage in speaking of actions as *divine interventions*, even though I find the term "intervention" not wholly felicitous'.[29] Other scholars, such as Alvin Plantinga, associate divine interventions with the special acts of God, that is, specific divine actions over God's general creation and upholding of nature.[30] J. L. Mackie follows Hume's approach, understanding only miracles as divine interventions.[31]

The vagueness of the concept 'divine intervention' that one finds in Hume is reflected in much of the contemporary usage of this term. For example, many members of the Divine Action Project (DAP), the most influential and systematic examination of special divine action in recent times, took serious issue with the idea of divine intervention. Consequently, they sought to offer accounts

[26] While Hume was not the first scholar to consider miracles in this way, he is most commonly associated with this view. For an earlier conception of miracles as violations of the laws of nature, see:
Descartes, *The World*, p. 32.
[27] D. Basinger, *Miracles*, p. 6.
[28] R. Larmer, 'Defending Special Divine Acts', in G. Ganselle (ed.), *Philosophical Essays on Divine Causation*, New York, Routledge, 2022, p. 192.
[29] Alston, 'Divine Action, Human Freedom, and the Laws of Nature', p. 187.
[30] A. Plantinga, 'What is "Intervention"?', *Theology and Science*, vol. 6, no.4, 2008, pp. 369-401.
[31] J. L. Mackie, *The Miracle of Theism*, Oxford, Clarendon Press, 1982, p. 20.

of how God may specially act in the world without intervening.[32] However, while participants rejected 'divine intervention', it is rather unclear how they understood this concept. Expressing this, Plantinga writes:

> It is difficult or impossible to see what they think intervention is. Hence it is difficult or impossible to see what it is to which these writers object. If the aim is to find an account of special divine action that is not interventionistic, perhaps the first order of business ought to be to say what it is they find objectionable—what an interventionistic account, as they see it, would be like, what condition would be necessary and sufficient for a divine action to constitute an intervention.[33]

So, through Hume, I have introduced the view that miracles are violations of the laws of nature via divine intervention. While Hume's notion of a violation of the laws as an event contrary to the objective set of regularities that reflect the usual course of nature and are supported by 'firm' experience can be elucidated from his writings, it is unclear what he means by divine intervention. I then noted the prevalence of the term 'divine intervention' in the contemporary discussion of miracles and divine action, and how this vagueness is also reflected in its modern usage.

In light of this, in this chapter, first, I seek to outline the key tenets of interventionist accounts of miracles. Secondly, I examine the philosophical and theological plausibility of interventionism, placing a particular emphasis on the God-nature relationship assumed in this approach. Thirdly, I consider a key alternative to interventionism, that is, non-interventionist objective divine action (NIODA), and ask whether it fully avoids the pitfalls of interventionism.

[32] I examine the central criticisms that participants of the DAP attributed to interventionism in §2 of this chapter. I then consider the DAP's main alternative to interventionism, non-interventionist objective divine action (NIODA) in §3.
[33] Plantinga, 'What is "Intervention"?', p. 391.

1.2. The Laws of Nature in the Nineteenth Century

To establish the nature of interventionism, it will help to consider a key shift that occurred in nineteenth-century Britain regarding the concept of the laws of nature. As seen in the Introduction, the development of the modern concept of the laws in the Early Modern Period had distinctly theological roots. This theological understanding of the laws continued well into the nineteenth century. For example, in *Preliminary Discourse on the Study of Natural Philosophy* (1830), prominent natural philosopher John Herschel (1792-1871) emphasises that 'events do not succeed one another at random, but with a certain degree of order, regularity, and connection.'[34] This uniformity is a result of:

> the constant exercise of [God's] direct power in maintaining the system of nature, or ultimate emanation of every energy which material agents exert from his immediate will, acting in conformity with his laws.[35]

Although not committing to this position himself, John Stuart Mill (1806-1873) recognises the distinctly theological nature of the concept. In his *System of Logic* (1846), he writes:

> the expression law of nature is generally employed by scientific men with a sort of tacit reference to the original sense of the word law, namely, the expression of the will of a superior; the superior, in this instance, being the Ruler of the universe.[36]

All this is not to say that there were no figures who understood the laws non-theologically. Mill adopts a purely descriptivist conception of the laws as 'the fewest and simplest assumptions, which being granted, the whole existing order of nature would result.'[37] Additionally, while I have appreciated the debate regarding Hume's notion of the laws of nature, it is evident that he did not

[34] J. Herschel, *A Preliminary Discourse on the Study of Natural Philosophy*, Cambridge, Cambridge University Press, 2009, p. 35.
[35] Herschel, *A Preliminary Discourse on the Study of Natural Philosophy*, p. 37.
[36] J. S. Mill and J. M. Robson (ed.), *Collected Works of John Stuart Mill, Volume 7, A System of Logic, Ratiocinative and Inductive Books I-III*, Indianapolis, Liberty Fund, 2006, p. 316.
[37] Mill, *Collected Works*, p. 317.

understand this concept theologically. In spite of these isolated non-theistic approaches, nearly all practitioners of science, particularly in Victorian Britain, took for granted the theistic basis of the laws well into the nineteenth century.[38] However, in this period, a key shift occurred. The laws of nature became practically divorced from their theological roots.

1.2.1. Thomas Huxley on Divine Action and the Laws of Nature

Thomas Henry Huxley (1825-1895), famously dubbed 'Darwin's bulldog', was a pioneering biologist, science educator, and public spokesman for science. He was a key figure in distinguishing science from Christianity and emphasising that science is a naturalistic endeavour.[39] As part of this task, Huxley sought to tear the concept of the laws of nature from its theological moorings. His opposition to a theistic understanding of the laws is evident in his 1853 review of the tenth edition of the prominent book *Vestiges of the Natural History of Creation* (1844). This anonymous work by Robert Chambers (1802-1871) was a controversial piece that sought to offer a cosmic theory of transmutation as the natural history of creation.

Huxley launched a scathing attack on this book, which he described as 'a mass pretension of nonsense.'[40] For Huxley, the central thesis of *Vestiges* is "creation in the manner of law,' that is, the Creator working in a natural course, or by natural means.'[41] He argues that this thesis is without 'any intelligible meaning at all.'[42] To suppose that the laws of nature are manifestations of the

[38] Harrison, *Some New* World, p. 242.
[39] M. Stanley, *Huxley's Church and Maxwell's Demon: From Theistic Science to Naturalistic Science*, Chicago, Chicago University Press, 2014.
[40] T. Huxley, 'Review of 'The Vestiges of the Natural History of Creation' Tenth Edition. London, 1853', in M. Foster and W. Ray Lankester (eds.), *The Scientific Memoirs of Thomas Henry Huxley, Supplementary Volume*, London, Macmillan, 1903, p. 1.
[41] Huxley, Review of 'The Vestiges of the Natural History of Creation', p. 2.
[42] Huxley, Review of 'The Vestiges of the Natural History of Creation', p. 2.

divine will is to suppose that every event is the result of a "creative fiat', an 'interference,' an 'interposition of divine energy."[43] Such a conclusion dispenses 'totally with logic.'[44]

Here, Huxley overthrows the relationship between divine action and the laws of nature as standardly conceived for the past two centuries. The development of the modern concept of the laws arose through the idea that God is a divine lawgiver who acts in the world in an immutable way. The laws of nature are nothing more than edicts from the Will of God. However, in his review of *Vestiges*, Huxley strongly critiques this position because he dualistically opposes divine action and the laws of nature, such that any world that exclusively runs according to the laws necessarily omits any form of divine action.

In modern terms, Huxley may be described as a 'theo-physical incompatibilist.'[45] This is the position, outlined by Kirk Wegter-McNelly, that divine action and physical processes 'relate to one another in a zero-sum fashion: the operation of one necessarily precludes 'room' for the other.'[46] Huxley is an incompatibilist because he sees divine action as anomic. God cannot act through the laws of nature but only by intervening and violating the laws. In light of this, the idea of God acting through the laws of nature is without 'any intelligible meaning at all.'[47]

By posing this contrast between divine action and the laws of nature, Huxley reimagines the metaphysical status of the laws. Nonetheless, it is more difficult to discern Huxley's positive views about what the laws of nature are. At times, he offers a purely psychological understanding of them as a 'product of the mental operation upon the facts of nature which come under

[43] Huxley, Review of 'The Vestiges of the Natural History of Creation', p. 5.
[44] Huxley, Review of 'The Vestiges of the Natural History of Creation', p. 3.
[45] K. Wegter-McNelly, 'Does God Need Room to Act?: Theo-Physical In/Compatibilism in Noninterventionist Theories of Objectively Special Divine Action', in R. Russell, N. Murphy, and W. Stoeger (eds.), *Scientific Perspectives on Divine Action: Twenty Years of Challenges and Progress*, Vatican City State, Vatican Observatory Publications, 2001, p. 299. Conversely, a compatibilist approach allows an event to occur through both natural processes and the action of God.
[46] Wegter-McNelly, 'Does God Need Room to Act?', p. 299.
[47] Huxley, Review of 'The Vestiges of the Natural History of Creation', p. 2.

observation.'[48] For example, he states that the law of gravitation is purely 'a statement of the manner in which experience shows that bodies, which are free to move, do, in fact, move towards one another.'[49] Such a law has no 'existence outside the mind' and is 'merely a record of experience.'[50]

At other times, Huxley advocates a more metaphysically robust conception of the laws. He speaks of 'rules or so-called "Laws of Nature," by which the regular relation of phenomena is truly defined [and is] true for all time.'[51] Furthermore, when arguing for the law-like nature of the biological realm, Huxley asserts 'a hidden bond' that connects the most widely different organisms.[52] Here, Huxley seems to envisage the laws as brute relations that govern the workings of nature, existing outside the mind.[53]

With this more metaphysically robust understanding, Huxley puts forward a conception of nature as a self-sufficient, closed system that runs according to its own laws. He describes nature as the 'totality of all laws [of nature]' where:

> nothing happens without a cause (that is, a necessary precedent condition), and that the state of the physical universe, at any given moment, is the consequence of its state at any preceding moment.[54]

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[48] T. Huxley, 'Scientific and Pseudo-Scientific Realism', in T. Huxley, *Essays Upon Some Controverted Questions*, Cambridge, Cambridge University Press, 2008, p. 252.
[49] Huxley, 'Scientific and Pseudo-Scientific Realism', p. 253.
[50] Huxley, 'Scientific and Pseudo-Scientific Realism', p. 253.
[51] T. Huxley, 'The Progress of Science', in T. Huxley, *Collected Essays. Volume 1, Methods and Results*, Cambridge, Cambridge University Press, 2011 [1894], p. 61.
[52] T. Huxley, 'The Croonian Lecture: On the Theory of the Vertebrate Skull', *Proceedings of the Royal Society of London*, vol. 9, 1857, p. 382.
[53] Harrison, *Some New World*, p. 252.
[54] Huxley, Review of 'The Vestiges of the Natural History of Creation', p.2;
Huxley, 'The Progress of Science', p. 61.

Such a conception of nature, for Huxley, rules out any possibility of divine action. The laws are of 'universal validity.'[55] Since divine action can only occur through violating the laws and the laws are inviolable, divine action is rendered impossible.[56]

1.3. Miracles and a New Conception of Nature

Here, we see a significant shift in how nature is understood after the nineteenth century. Rather than the laws of nature deriving from God's immutability, the laws became brute aspects of the universe that are dualistically opposed to divine action. This shift can be understood in the context of what eminent philosopher Charles Taylor terms 'The Immanent Frame.'[57] The Immanent Frame denotes the cluster of modern prejudices that dominate Western society and make it so easy to not believe in the existence of God. Such prejudices include a closed-off conception of the self, the rise of exclusive humanism, the disenchantment of the world, and understanding nature as an impersonal order.[58]

Taylor considers that the shift from a theological understanding of the laws to a naturalist one contributed to nature becoming an impersonal order:

> ruled by causal laws, utterly unresponsive to human meanings…The universe itself was unresponsive, or indifferent, like a machine, even if we held that it was designed as a machine for our benefit.[59]

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[55] Huxley, 'The Progress of Science', p. 96.
[56] Huxley's divorcing of the concept of the laws of nature from its theological roots was part of his wider strategy of establishing science as a naturalistic endeavour. For more on this, see:
Stanley, *Huxley's Church and Maxwell's Demon*.
[57] C. Taylor, *A Secular Age*, Cambridge [MA], Belknap Press of Harvard University Press, 2007, p. 542.
[58] A. McGrath, 'Hesitations About Special Divine Action: Reflections on Some Scientific, Cultural, and Theological Concerns', *European Journal for Philosophy of Religion*, vol. 7, no. 4, 2015, p. 8.
[59] Taylor, *A Secular Age*, p. 280.
John Hedley Brooke highlights the rise of mechanical analogies for the natural order since the development of modern science.
J. H. Brooke, *Science and Religion: Some Historical Perspectives*, Cambridge, Cambridge University Press, 2014, p. 158.

Taylor is careful to highlight that this conception of the universe as machine-like does not necessitate the rejection of God's existence. He speaks of understanding the Immanent Frame as either open or closed. On a closed understanding, like Huxley's, the immanent world 'admits of no beyond.'[60] The natural world is all that exists and it is a closed system where all events occur in accordance with its laws. In contrast, on an open understanding, the immanent world is open to the transcendent. God is the creator of the immanent world and there is a means by which God can interact with nature.[61]

While the Immanent Frame is compatible with the existence of God, it radically reframes the relationship between God and nature. The natural world stands apart from God, such that while God created and conserves the natural order, it has a degree of self-sufficiency. Rather than the laws being edicts of the Will of God, they are brute relations in nature that govern its uniformity. This conception of the relationship between God and nature draws a sharp contrast between the natural and the supernatural, where there is 'an "immanent" world, over against a possible "transcendent" one.'[62]

This God-nature relationship lays the groundwork for the contemporary interventionist understanding of miracles. Taylor writes:

> This split [between nature and supernature] generates the modern concept of the "miracle"; a kind of punctual hole blown in the regular order of things from outside, that is, from the transcendent.[63]

This exposition of 'miracle' captures the key tenets of interventionism. An interventionist approach to miracles sees:

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[60] Taylor, *A Secular Age*, p. 550.
[61] Taylor, *A Secular Age*, p. 544.
[62] Taylor, *A Secular Age*, p. 542.
[63] Taylor, *A Secular Age*, p. 547.

1. Nature as a self-sufficient order, governed by its own laws, that God stands outside of;
2. Divine action as opposed to natural causation, meaning that God cannot act, beyond creation and conservation, through the laws of nature;
3. Miracles as occurring through God breaking into the natural order.

For God to act and cause a miracle, God must intervene and pierce through the bubble of nature, with this piercing typically understood as violating its brute laws.[64]

1.4. Examples of Interventionist Accounts of Miracles

To illustrate the prevalence of this conception of miracles in modern thought, I will now consider three thinkers who are committed to interventionism in varying degrees.

1.4.1. J. L. Mackie on Miracles

A paradigmatic example of a philosopher who advocates this approach is J. L. Mackie. In *The Miracle of Theism* (1982), Mackie considers the natural world to be self-sufficient, running by itself, where 'everything that happens results from factors within that system in accordance with its laws of working.'[65] Such laws are not merely 'statements of what always happens' but govern the course of nature.[66] This self-sufficient natural world is 'in contrast with which the theistic doctrines stand out as asserting a supernatural reality.'[67] A miracle then occurs 'when the world is not left to itself, when something distinct from the natural order as a whole intrudes into it.'[68] Such an intrusion occurs through 'a supernatural intervention…into that system from outside the natural world as a whole,' resulting in the laws of nature being violated.[69]

[64] This approach reduces God's action to two forms. First, God may create and uphold the natural order. Second, God may intervene, acting specially to cause miracles. In Chapter Two on theistic naturalism, I question this binary.
[65] Mackie, *The Miracle of Theism*, p. 21.
[66] Mackie, *The Miracle of Theism*, p. 20.
[67] Mackie, *The Miracle of Theism*, p. 13.
[68] Mackie, *The Miracle of Theism*, p. 20.
[69] Mackie, *The Miracle of Theism*, p. 21.

Quite clearly, Mackie's conception of miracles meets the three requirements of interventionism. It understands (1) the natural world as a self-sufficient entity that God stands outside of, (2) an incompatibilist approach where God can only act, beyond creation and conservation, by overruling natural processes, and (3) miracles to occur through God breaking into nature.

1.4.2. C. S. Lewis on Miracles

The famed Christian apologist C. S. Lewis (1898-1963) also adopts aspects of interventionism. In *Miracles: A Preliminary Study* (1947), Lewis examines 'the possibility or probability of the miraculous.'[70] He defines a miracle as 'an interference with Nature by supernatural power.'[71] This language of 'interference' is consonant with the interventionist view of God being outside the natural order. Such an idea is further reinforced when Lewis speaks of 'the Supernatural working its way into Nature.'[72] Moreover, he views nature as 'a vast process in space and time which is *going on of its own accord*' and God as a being 'who stands outside Nature and made it.'[73] Indeed, he holds that 'if the Supernatural is in operation, [miracles] must occur', thereby reflecting the interventionist position that God must intervene to act in the world.[74]

Also, Lewis uses an analogy that suggests nature is a self-sufficient order. He asks us to consider a fish tank that is in someone's home in wartime England.[75] By and large, what happens in the fish tank can be understood within the context of the tank. Fish move to where the food is in the tank, some fish thrive better in the tank due to the water's pH level, etc. However, in rare instances,

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Mackie is primarily concerned with deterministic laws. He thinks the concept of a violation of a probabilistic law is 'less precise.' In Chapter Five, I consider more deeply what it may mean to violate a probabilistic law of nature.

[70] Lewis, *Miracles*, p. 8.
[71] Lewis, *Miracles*, p. 9.
[72] Lewis, *Miracles*, p. 43.
[73] Lewis, *Miracles*, p. 10; p. 13.
[74] Lewis, *Miracles*, p. 62.
[75] Lewis, *Miracles*, p. 65.

external factors affect the happenings of the fish tank. For example, the rapid displacement of water in the tank can only be explained with reference to a bomb going off near the house in wartime England.[76] In a similar fashion, Lewis supposes that while nature largely runs of its own accord, external factors can intervene to affect it. This is the case with miracles where God intervenes 'to produce within Nature events which the regular 'going on' of the whole natural system would never have produced.'[77]

Of course, when comparing any two things in an analogous fashion, there will be areas of similarity and areas of difference. However, in light of the interventionist language Lewis uses, his comparison between God causing miracles and a bomb affecting a fish tank is symptomatic of an interventionist approach to miracles. It reinforces the idea that nature exists wholly in and of itself and that God lies outside in a supernatural realm, encroaching upon nature to cause miracles.

Nevertheless, I am hesitant to describe Lewis' conception of miracles as wholly interventionist. At other points in *Miracles*, he supports a more intimate connection between God and nature than that of interventionism. In an extended quote about 'the frontier between the natural and the supernatural', he writes:

> This is why, if you wish, you can always ignore Supernature and treat the phenomena purely from the Natural side; just as a man studying on a map the boundaries of Cornwall and Devonshire can always say, 'What you call a bulge in Devonshire is really a dent in Cornwall.' And in a sense you can't refute him. What we call a bulge in Devonshire always *is* a dent in Cornwall.[78]

Here, Lewis seems to support a compatibilist understanding of divine action and natural processes. In the same way that a boundary on a map of Cornwall and Devonshire can simultaneously be a

[76] Lewis, *Miracles*, p. 65.
[77] Lewis, *Miracles*, p. 59.
[78] Lewis, *Miracles*, p. 44.

bulge in Devonshire and a dent in Cornwall, a phenomenon can both be natural and supernatural, that is, a product of both natural processes and the action of God. This stands in sharp contrast with the incompatibilism of interventionism. Furthermore, there are passages where Lewis suggests that nature is imbued with the supernatural. He writes: 'The Supernatural is not remote and abstruse: it is a matter of daily and hourly experience, as intimate as breathing.'[79] This quote undermines the idea of God being outside nature, rather suggesting that God is intimately involved in all aspects of the natural order.

So, there appears a real tension in Lewis' conception of miracles. At times, he supports an interventionist conception of them, speaking of the supernatural working its way into nature and offering analogies that give the impression that nature exists in a self-sufficient bubble to which God is external. However, at other times, Lewis hints at a much more intimate connection between God and nature as well as a compatibilist relation between divine action and natural processes.

1.4.3. Alvin Plantinga on Miracles

A similar tension appears in Alvin Plantinga's thoughts on miracles. In the article 'What is "Intervention"?' (2008), Plantinga defends what he considers to be an interventionist understanding of miracles.[80] He distinguishes between God's creation and conservation of the world on the one hand and God's special divine action on the other. In building upon this distinction, he references Mackie as giving an apt description of the relationship between God and nature. The Mackie passage that Plantinga quotes is as follows:

[79] Lewis, *Miracles*, p. 45.
[80] Plantinga offers similar arguments in: A. Plantinga, *Where the Conflict Really Lies: Science, Religion, and Naturalism*, Oxford, Oxford University Press, 2011, pp. 64-90.

> What we want to do here is to contrast the order of nature with a possible divine or supernatural intervention. The laws of nature, we must say, describe the ways in which the world—including, of course, human beings—works when left to itself, when not interfered with. A miracle occurs when the world is not left to itself, when something distinct from the natural order as a whole intrudes into it.[81]

Plantinga states that 'Mackie's suggestion seems a good description of the laws of nature.'[82] As I have argued, Mackie's conception of miracles is paradigmatic of interventionism. It understands (1) the natural world as a self-sufficient entity that God stands outside of, (2) divine action to be competing against natural processes, and (3) miracles to occur through God encroaching on the natural order. Thus, the fact that Plantinga endorses Mackie's conceptions of miracles and the relation between God and nature strongly suggests that his account is also interventionist.

However, this claim is complicated for two reasons. First, he seems to support a more intimate connection between God and nature. Plantinga takes umbrage with the idea of divine interference. He writes: 'God is the creator and sustainer of the world; it's really his world. So how could he be "interfering" or "meddling" in acting in it?'[83] While Plantinga is making this point in reference to the language of 'interfering' and 'meddling', it seems apt to be applied to the language of 'intervention' as well.

Secondly, Plantinga develops a more specific understanding of miracles and divine action in light of what he calls 'the New Picture.'[84] This New Picture is offered by the rise of quantum mechanics. Instead of the world running according to deterministic laws of nature as suggested by seventeenth- and eighteenth-century science, the world ought to be understood as indeterministic, where the laws assign probabilities to the likelihood of various outcomes.[85] In light of this,

[81] Mackie, *The Miracle of Theism*, p. 20., in Plantinga, 'What is "Intervention"?', p. 375.
[82] Plantinga, 'What is "Intervention"?', p. 376.
[83] Plantinga, 'What is "Intervention"?', p. 385.
[84] Plantinga, 'What is "Intervention"?', p. 383.
[85] Plantinga, *Where the Conflict Really Lies*, p. 92.

Plantinga develops an account of special divine action informed by the Ghirardi–Rimini–Weber (GRW) interpretation of quantum mechanics.[86]

Plantinga proposes that God *always* acts in the indeterminacy of quantum mechanics to guide the workings of nature.[87] Such a position undermines Plantinga's earlier distinction between God sustaining the world and God's special divine action. For, in his theory of quantum divine action, 'God is *always* acting specially.'[88] This idea stands against the sharp distinction between God and nature implied in interventionism because nature is no longer self-sufficient, but rather constantly requires the special action of God.

Here we can see how interventionism features, in varying degrees, among modern thinkers. Mackie offers an understanding of miracles that is paradigmatic of the interventionist framework. He draws a sharp distinction between God and nature, such that God must pierce through nature's bubble, violating its laws, to act. However, with Lewis and Plantinga, there is a tension in both of their accounts. They oscillate between the sharp God-nature relation of interventionism and a more intimate, compatibilist relation.[89]

Section Two: Criticisms of Interventionism

Having outlined the key tenets of interventionism and seen the extent to which various modern thinkers are committed to this position, I now consider its key criticisms.

[86] Plantinga, 'What is "Intervention"?', p. 392.
[87] I consider a similar approach in §3 of this chapter, when I focus on Robert Russell's NIODA account.
[88] Plantinga, 'What is "Intervention"?', p. 393.
[89] In the next section, I consider why there is this tension in Lewis and Plantinga.

2.1. Interventionist Miracles are Impossible

The first criticism is that an interventionist understanding of miracles renders them impossible. Wolfhart Pannenberg raises this issue. He holds that interventionism entails that God must violate the laws of nature to cause miracles. But, for Pannenberg, the notion of a law-violation is a contradiction in terms. He writes: 'A law in the scientific sense pronounces a constant relationship between two entities or stages, most clearly in the form of the hypothetical formulation "if A, then B."'[90] A violation of the purported law 'if A, then B' happens when A occurs and B doesn't. If this is the case, Pannenberg argues that the purported law 'if A, then B' would not actually be a law at all, for there is no longer a constant relationship between the two entities or stages. Therefore, Pannenberg supposes that the 'idea of a temporary suspension [of the laws of nature] shatters the concept [of miracles].'[91]

There are two ways that an advocate of interventionism may respond. First, Mackie accepts that miracles are violations of the laws of nature, but he does not consider this to define them out of existence. He writes: 'An occasional violation does not necessarily overthrow the independently established conclusion that it *is* a law.'[92] Even if there is a violation to a particular nomic uniformity, nature may still be prescribed to behave in this particular regular way. It seems conceivable that God created nature to be governed by certain laws and that God has the power to violate these laws. Of course, what this may mean depends on a more metaphysically fleshed-out conception of laws of nature.[93] Nonetheless, the central point is that it is not definitive that the laws, by their very nature, are inviolable.

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[90] W. Pannenberg, 'Contingency and Natural Law', in W. Pannenberg and T. Peters (ed.), *Toward a Theology of Nature*, Westminster, John Knox Press, 1993, p. 106.
[91] Pannenberg, *Systematic Theology, Volume 2*, p. 45.
[92] Mackie, *The Miracle of Theism*, p. 21.
This is similar to Hume's position in 'Of Miracles.'
[93] I conduct this analysis in Chapter Four.

2.1.1. Miracles and *Ceteris Paribus* Clauses

A more common strategy for interventionist accounts is to deny that miracles violate the laws of nature. Plantinga proposes that the laws 'describe how the world works *when, or provided that, the world is a closed (isolated) system, subject to no outside causal influence*.'[94] The laws of nature do not hold *tout court*. Rather, intrinsic to every law is a *ceteris paribus* clause where the law only holds when the universe is causally closed, that is, when only causal agents within the universe are at play. He argues that the laws of nature tell us nothing about how the universe behaves when it is no longer causally closed. In cases of divine intervention, the laws no longer apply. Thus, God intervening to cause a miracle does not violate any laws.

Lewis similarly supposes that it is 'inaccurate to define a miracle as something that breaks the laws of Nature.'[95] Like Plantinga, he thinks that every law of nature has a *ceteris paribus* clause where the law holds 'under the proviso 'other things being equal' or 'if there are no interferences."[96] In turn, Lewis claims that 'all interferences leave the law perfectly true.'[97] In the case of miracles, God intervenes, setting aside the laws, and then, immediately after, the laws come back in operation, governing its effects. Regarding the immaculate conception of Mary, Lewis writes:

> If God creates a miraculous spermatozoon in the body of a virgin, it does not proceed to break any laws. The laws at once take over. Nature is ready. Pregnancy follows, according to all the normal laws, and nine months later a child is born.[98]

So, on Plantinga's and Lewis' approach, their interventionist accounts do not define miracles out of existence because miracles do not violate the laws of nature. Rather, miracles are events beyond

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[94] Plantinga, 'What is "Intervention"?', p. 374.
While, here, Plantinga speaks of the laws as being descriptive, he still considers the laws to, in some sense, govern the usual course of nature. Such governance only applies in the absence of divine intervention.
[95] Lewis, *Miracles*, p. 63.
[96] Lewis, *Miracles*, p. 62.
[97] Lewis, *Miracles*, p. 61.
[98] Lewis, *Miracles*, p. 63.

the laws, taking place when they do not apply. This is interesting because, in Hume, we saw a close consonance between law-violation and divine intervention. In contrast, modern interventionists have moved away from law-violation in virtue of conceiving the laws as having *ceteris paribus* clauses.[99]

2.2. Interventionist Miracles are Unscientific

A similar complaint is raised by John Macquarrie. He argues that an interventionist understanding of miracles 'cannot commend itself in a post-mythological climate of thought' because it is irreconcilable with modern science.[100] He sees science as relying on the worldview that the universe is a causally closed system, running exclusively according to the laws of nature.[101] Since interventionist miracles stand in direct contrast to this, requiring God to violate the laws or act beyond them, they are contrary to modern science. Where Macquarrie's complaint differs from Pannenberg's is that Pannenberg holds that interventionist miracles are logically incoherent, whereas Macquarrie makes the weaker claim that interventionist miracles are incompatible with modern science.

Plantinga and Lewis' conception of the laws as containing in-built *ceteris paribus* clauses offers a response.[102] Both would take umbrage with Macquarrie's claim that modern science relies on the universe *always* being causally closed. Instead, they would propose that it is the role of science to examine the world when it is causally closed. Any instance in which the universe is not closed, it is beyond the realm of science to investigate.[103] Thus, when God intervenes in nature, it is not the

[99] Robert Larmer makes a similar move.
See: Larmer, *The Legitimacy of Miracle*, pp. 27-52.
[100] Macquarrie, *Principles of Christian Theology*, p. 248.
[101] Macquarrie's claim is very similar to Huxley's view of the nature of science.
[102] Furthermore, if Mackie is correct and the laws can be violated, then Macquarrie's claim that science relies on the universe as a closed system, where the laws are never violated, seems to be undermined.
[103] I am not implying that if God were to intervene and cause a miracle in Beijing, then, at the very same time, there cannot be legitimate scientific experiments conducted in Oxford or that the laws do not apply anywhere in the

role of science to offer a complete causal explanation. Plantinga and Lewis can argue that the interventionist account of miracles is reconcilable with modern science because, with a developed understanding of the laws as containing *ceteris paribus* clauses, the domain of science is restricted to exclude miracles. Interventionist miracles are not contrary to, but rather beyond modern science.

2.2.1. Does science rely on inviolable laws?

Staunch critic of Intelligent Design, Robert Pennock also argues that interventionist miracles are unscientific. He claims that scientific experimentation becomes impossible if interventionist miracles occur. Pennock states that '[e]mpirical testing relies fundamentally upon use of lawful regularities of nature.'[104] For example, telescopic observations rely upon the laws governing optical phenomena. Say God causes miracles that distort telescopic observations. [105] When God does not intervene, telescopes would magnify properly but when God does intervene, telescopes would produce various distortions.[106] If this were the case, Pennock concludes that 'we could not trust telescopic observations as evidence' because we cannot be certain that they provide reliable results.[107]

The issue with Pennock's argument is that he overemphasises the fragility of scientific experimentation in light of anomalies. For Pennock, if God caused miracles that distorted telescopic observations, then all such observations would become unreliable. However, John Perry and Sarah Lane Ritchie argue that these occurrences would not threaten experiments involving telescopes. They contend that such miraculous instances would simply constitute anomalies. The

universe. Rather, in the case of God intervening in Beijing, the relevant laws do not hold only in this isolated instance, rather than across the whole of the universe.

[104] R. Pennock, 'Naturalism, Evidence and Creationism: The Case of Phillip Johnson', *Biology and Philosophy*, vol. 11, no. 4, 1996, p. 552.

[105] I will, for the moment, leave to one side an examination of whether God would cause such a miracle. In Chapter Two, I focus more deeply on the theological significance of miracles.

[106] Pennock, 'Naturalism, Evidence, and Creationism', p. 552.

[107] Pennock, 'Naturalism, Evidence, and Creationism', p. 552.

scientist would 'record it as an anomaly, restate [their] preliminary conclusion in the form of a testable hypothesis, and await more data.'[108]

Scientists often deal with anomalous events that cannot easily be accommodated within current scientific theories. Such events do not lead to the breakdown of scientific practice, but rather challenge current scientific theories, and provide 'an invitation to keep digging; to inquire further into possible mechanisms and causes for the unexplained event.'[109] Perry and Ritchie argue that interventionist miracles should also be treated in this way. While miracles are anomalous in a distinct way, in that they are impervious to scientific explanation, this does not lead to the breakdown of empirical inquiry. It just means that some events lie outside the laws examined by science.

Supplementing Perry and Ritchie's argument, it is important to recognise that just because God can intervene in nature to cause miracles, it does not entail that God will do this 'at a whim.'[110] The mere possibility of divine intervention does not entail that there will be incessant divine intervention. Theists have good reason to suppose that God will only intervene in exceptional, theologically significant circumstances, meaning the laws will hold for the vast majority of cases.[111] In turn, theists can justifiably trust the uniformity of nature and the reliability of scientific observation. Subsequently, Pennock's argument that interventionist miracles render scientific experimentation impossible is overstated.

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[108] J. Perry and S. L. Ritchie, 'Magnets, Magic, and Other Anomalies: In Defence of Methodological Naturalism', *Zygon: Journal of Religion and Science*, vol. 53, no. 4, 2018, p. 1075.
[109] Ritchie and Perry, 'Magnets, Magic, and Other Anomalies', p. 1075.
Thomas Kuhn argues for the importance of anomalies to challenge the theories and methodologies of current science, serving as the basis for potential scientific revolutions.
T. Kuhn, *The Structure of Scientific Revolutions*, Chicago, University of Chicago Press, 1996, pp. 52-66.
[110] Pennock uses this language.
Pennock, 'Naturalism, Evidence, and Creationism', p. 552.
[111] I expand upon these reasons in Chapters Two and Six.

2.3. Interventionist Miracles and Divine Inconsistency

So, interventionism can respond to the concerns that it defines miracles out of existence and is unscientific. Nevertheless, this approach has also faced extensive criticism from a more theological perspective. This view has primarily arisen from key members of the Divine Action Project (DAP). They argue that God intervening entails an inconsistency in the nature of God. While a critic rather than participant of the DAP, Nicholas Saunders aptly expresses this concern. He asks: 'How can God uphold the laws of nature with one hand, whilst simultaneously violating them by performing miracles with the other?'[112] Similarly, Robert Russell, a key figurehead in the DAP, writes:

> this approach [i.e. interventionism] is theologically problematic because it pits God's special acts against God's regular action, the latter of which is seen to be the underlying cause of nature's regularities.[113]

Expressing the general view of participants in the DAP, Wesley Wildman states:

> The DAP project tried to be sensitive to issues of theological consistency. For example, the idea of God sustaining nature and its law-like regularities with one hand while miraculously intervening, abrogating, or ignoring those regularities with the other hand struck most members as dangerously close to outright contradiction.[114]

How detrimental is this objection to interventionism? First, care must be taken with its formulation. As Lewis and Plantinga deny that divine intervention entails law-violation, they cannot be accused of supposing that 'God upholds the laws with one hand and violates them with the other.' The objection, if formulated against Plantinga and Lewis, should be stated in the style

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[112] N. Saunders, *Divine Action and Modern Science*, Cambridge, Cambridge University Press, 2002, p. 48.
[113] R. Russell, 'Divine Action and Quantum Mechanics: A Fresh Assessment', in F. LeRon Shults, N. Murphy, and R. Russell (eds.), *Philosophy, Science, and Divine Action*, Leiden, Brill, 2009, p. 354.
[114] Wildman, 'The Divine Action Project', p. 38.
This is very similar to the reason that Descartes rejects the possibility of miracles in *Du Monde*.

of Russell or Wildman, asserting that there is an inconsistency with God sometimes intervening in nature and other times upholding its order.

Plantinga argues that it is not inconsistent for God to, at times, intervene in nature so long as God has a sufficient reason to act at those particular times and not other times. He suggests that God may intervene 'to mark special occasions, or to make clear his love or his power, or to authorize what someone says, to guide history in a certain direction.'[115] Such cases may be so special that they justify God's intervention rather than merely sustaining nature's nomic regularities.

Lewis offers a different type of response. He gives a thought experiment of a race of people whose 'peculiar mental limitation compels them to regard a painting as something made up of little coloured dots which have been put together like a mosaic.'[116] On studying a piece of art, the race of people examine the different relations between the various dots, establishing certain regularities in the painting. Such regularities will 'work', in the sense that they cover most facts about the painting. However, if some dots on the painting break from these regularities, this does not reflect any inadequacy of the painter. Rather, it reflects the limited epistemic position of the race of people.[117] In an analogous fashion, Lewis supposes that interventionist miracles do not entail an inconsistency in the nature of God, but reflect the limited epistemic position of humans to examine the underlying rationale of God's action.

Here, we have two explanations for how, in principle, God may intervene without entailing an inconsistency in the nature of God. Both responses face further challenges in explaining why God intervenes in particular cases, but not others. For example, there is still the issue of why God does

[115] Plantinga, 'What is "Intervention"?', p. 308.
[116] Lewis, *Miracles*, p. 101.
[117] Lewis, *Miracles*, p. 101.

not intervene in cases of immense suffering.[118] Nonetheless, the divine inconsistency objection, as standardly outlined, is more concerned with stating that God, in principle, cannot intervene without acting in a contradictory manner.[119] Thus, at least *prima facie*, a plausible explanation for how interventionism does not lead to divine incoherence can be offered.

2.4. Interventionist Miracles Undermine Divine Immanence and Transcendence

In outlining the key tenets of interventionism, I emphasised that it relies on a sharp distinction between God and nature. Nature is self-sufficient, running according to its own laws, and God is excluded, merely upholding and conserving nature in existence. Therefore, in order to act and cause miracles, God must intervene. This approach is incompatibilist because for God to act in a way that is over and above sustaining the natural order, God must override the laws and natural processes.

Such a conception of God's relationship to nature is inadequate because it undermines God's continual providential role. Andrew Davison expresses this concern with interventionist language, writing:

> [The language of intervention] accords too great a degree of independence to creation, as if it stood over and against God in such a way that he would need to find a way to enter into it.[120]

[118] As stated in the Introduction, to limit this thesis' scope, I do not deeply examine the problem of suffering.
[119] Clayton and Knapp, *The Predicament of Belief*, p. 49.
For example, Wildman's formulation of the objection is that it seems an outright contradiction for God to uphold nature's regularities and also sometimes intervene, not that there seem particular cases where God ought to intervene but does not.
[120] A. Davison, *Participation in God: A Study in Christian Doctrine and Metaphysics*, Cambridge, Cambridge University Press, 2019, p. 232.

In a similar fashion, Mirela Oliva writes:

> Interventions are an irruption in the creation by a creator that is usually withdrawn from the world after He creates it. God is absent from the world, and He shows up only exceptionally to change some courses of events.[121]

The concern expressed by Davison and Oliva is that an interventionist approach to miracles undermines divine immanence. The Christian God is not a deist God who creates the natural order, sustains it in existence, and then lets it run its course. Rather, the Christian God plays an active and intimate role in nature. As an illustrative example of the centrality of God's providential role in Christian thought, Augustine references Matthew 10:29, writing:

> Our Saviour with His own lips tells us that not a single sparrow falls to earth without God willing it, and that God Himself clothes the grass of the field, which soon is to be thrown into the oven.[122]

2.4.1. Interventionism and Incompatibilism

The central mistake that interventionist accounts of miracles make is pitting divine and natural causality against each other. This approach sees divine and natural causality as 'if the two were in competition, or as if they were part of the same story in the same way' such that the addition of one entails the subtraction of the other.[123] It views the natural order, in the absence of divine interventions, as operating on its own, with God simply sustaining it in existence.

Such a conception of the interplay between divine and natural causality undermines the immanence and transcendence of God. Kathryn Tanner makes this point in her pivotal work *God and Creation in Christian Theology: Tyranny or Empowerment?* (1988). She writes:

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[121] M. Oliva, 'Does God Intervene in Our Lives? Special Divine Action in Aquinas', *Religions*, vol. 15, no. 4, 2024, p. 2.
[122] Augustine of Hippo and J. Taylor (trans.), *The Literal Meaning of Genesis*, Mahwah, Paulist Press, 1982, 5.21.
[123] Davison, *Participation in God*, p. 228.

> God's transcendence prohibits talk of God's working with created causality in any way that implies the parity of divine agency and created causality within a common causal nexus or plane.[124]

The interventionist approach falls foul of this by holding divine and natural causality to be in a zero-sum game, thereby operating on the same level. Regarding divine immanence, Tanner holds that natural causality should be 'immediately and entirely grounded in the creative agency of God.'[125] Interventionism does not achieve this, holding God to simply sustain the natural order in existence, but not playing any active role in the exercitation of natural causality.

Eric Lionel Mascall (1905-1993) similarly accuses interventionism of undermining divine immanence and transcendence. Describing this position's sharp God-nature distinction, he writes:

> the two orders [i.e. the natural and the supernatural] are thought of rather as if they were two apartments on adjacent floors, with a layer of soundproof packing between the natural ceiling below and the supernatural floor above.[126]

Such a conception undermines divine transcendence because God exists in the same way that natural things exist. It is just that God exists in the 'supernatural apartment' while natural things exist in the 'natural apartment'. In a sense, God is reduced and confined to the 'supernatural apartment'. Thus, there is no radical difference between created beings and God. God's immanence is undermined because God does not play an intimate role in nature, but rather exists in an alien, otherworldly supernatural realm.

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[124] K. Tanner, *God and Creation in Christian Theology: Tyranny or Empowerment?*, Fortress Press, Minneapolis, 2005, p. 94. While, strictly speaking, Tanner is focussed on ways of speaking about God, her point can be extended metaphysically.
[125] Tanner, *God and Creation in Christian Theology*, p. 91.
[126] E. L. Mascall, *The Openness of Being: Natural Theology Today*, London, Longman and Todd, 1971, p. 151.

Perhaps the interventionist may respond by drawing on an argument inspired by Huxley. Huxley contended that the idea of God acting through the laws of nature is without 'any intelligible meaning at all.'[127] For him, a compatibilist approach where God can act through natural causes is incoherent. If this is the case, then interventionism can hardly be critiqued for its incompatibilism because the alternative is untenable. For the remainder of the thesis, it will be a key aim to examine different compatibilist approaches to divine and natural causality. For the time being, it is important to recognise that incompatibilism is a historically contingent position that gained prominence in the nineteenth century as the laws of nature were divorced from their theological roots. In turn, from a historical perspective, incompatibilism is not the sole option and only gained prominence relatively recently. Therefore, setting aside this further examination into compatibilism, the interventionist approach to miracles is inadequate because it undermines the immanence and transcendence of God.

This critique sheds light on the tension within Lewis' and Plantinga's conception of miracles. I think that Lewis and Plantinga draw on an interventionist approach to miracles due to its commanding orthodoxy in modern times. Nonetheless, in seeking to emphasise the standard Christian position of God's intimate role in nature while wholly exceeding nature, they sometimes diverge from interventionism. Thereby, the tension in their thought arises through drawing on the standard interventionist approach and seeking to uphold divine immanence and transcendence, which is actually undermined by interventionism.

Moreover, many of the other criticisms levelled at interventionism arise from this approach's problematic God-nature distinction. If nature is understood as existing in a bubble independent from God, then it is legitimate to question: (1) whether God is able to break into this natural order,

[127] Huxley, Review of 'The Vestiges of the Natural History of Creation', p. 2.

(2) whether divine intervention undermines the possibility of investigating nature, or (3) whether God acts contradictorily by encroaching on a world that was created to be independent. So, in light of the fatal issue of interventionism diminishing divine immanence and transcendence, it is an unfruitful theological framework for miracles and divine action.

Section Three: Non-Interventionist Objective Divine Action

The Divine Action Project (DAP) sought to cultivate a strong dialogue between theology and science on the topic of divine action, deeply engaging with various modern scientific theories and considering their theological implications and possibilities.[128] A key outcome of the DAP was the development and widespread support by many participants for an alternative to interventionism, termed, non-interventionist objective divine action (NIODA). As discussed in §2.3, members of the DAP had grave concerns about interventionism pitting God's special acts against God's general action. In turn, they sought to develop an account where God objectively acts in nature without intervening.

As stated in the Introduction, the DAP largely sidelined the subject of miracles, meaning the NIODA approach was developed as an account of special divine action, understood as 'specific providential acts, envisaged, intended, and somehow brought about in this world by God.'[129] Nonetheless, it is appropriate to consider it in relation to miracles for two reasons.[130] First, the NIODA approach is explicitly a response to interventionism which arose in the context of

[128] For a summary of the Divine Action Project, see:
Wildman, 'The Divine Action Project', pp. 31-75.
[129] Wildman, 'The Divine Action Project', p. 37.
[130] DAP participant Keith Ward does briefly discuss miracles in:
K. Ward, 'Divine Action in an Emergent Cosmos', in R. Russell, N. Murphy, and W. Stoeger (Eds), *Scientific Perspectives on Divine Action: Twenty Years of Challenges and Progress*, Vatican City State, Vatican Observatory Publications, 2001, pp. 285-298.

miracles. Secondly, the NIODA approach is a genuinely original modern position regarding special divine action that deeply considers science. Therefore, engagement with it may fruitfully contribute to this thesis' examination of miracles and the laws of nature.

NIODA seeks to outline how God objectively acts without intervening in the natural order. Russell, a key proponent of NIODA, proposes that classical physics offers a depiction of nature as deterministic, where nature is 'a closed causal system of forces rigidly determining the motion of matter.'[131] However, a shift occurred in twentieth-century science where fields including cosmology, thermodynamics, chaos theory, the neurosciences, and quantum mechanics opened up various possibilities for interpreting nature as ontologically indeterministic. Russell defines ontological indeterminism as the position that 'nature does not always provide a sufficient efficient cause for a specific effect.'[132] The central tenet of NIODA is that God can specially act within nature's pockets of ontological indeterminism without intervening.[133] For the sake of simplicity, I focus on Russell's account of NIODA that conceives of divine action through quantum processes.[134]

3.1. Russell's Quantum Divine Action

Russell argues that the most promising approach for NIODA is to base it on quantum mechanics, with the specific philosophical interpretation that 'quantum processes are, least partially,

[131] R. Russell, 'Quantum Physics and the Theology of Non-Interventionist Objective Divine Action', in P. Clayton (ed.), *The Oxford Handbook of Religion and Science*, Oxford, Oxford University Press, 2008, p. 580.
[132] Russell, 'Quantum Physics and the Theology of Non-Interventionist Objective Divine Action', p. 580.
[133] I. Silva, *Providence and Science in a World of Contingency: Thomas Aquinas' Metaphysics of Divine Action*, London, Routledge, 2022, p. 35.
[134] Thomas Tracy (2000) also offers an NIODA account based upon quantum mechanics. John Polkinghorne (1998) draws upon the input of information in chaotic systems. Arthur Peacocke (1993) suggests a top-down model where God acts at a higher epistemic and phenomenological level than the level of science. Philip Clayton (2004) relies on theories of emergence. Nancey Murphy and George Ellis (1996) suggest God acts through the brain in virtue of quantum mechanics. What links all these approaches is that nature is, at some level, indeterministic, opening space for God to act without intervening.
Silva, *Providence and Science*, p. 34.

indeterministic.'[135] He supports the Copenhagen interpretation of quantum mechanics.[136] On this approach, per Russell, 'nature provides the necessary but not the sufficient causes for quantum events to occur' because there is no sufficient natural cause to bring about the collapse of the wave-function.[137] Consequently, on this account, God causally acts in quantum events to bring about this collapse.

Summarising his account of NIODA, Russell writes:

> My central thesis is that God acts objectively and directly in and through (mediated by) quantum events to actualize one of several potential outcomes; in short, the collapse of the wave function occurs because of divine and natural causality working together even while God's action remains ontologically different from natural agency.[138]

While there have been extensive examinations into the scientific plausibility of Russell's account, I am more concerned with its general theological framework.[139] His central thesis is that God acts in quantum events to actualize a particular outcome for the collapse of the wave function. Through such action, God can guide the workings of nature. Here, Russell supports a bottom-up approach, where the actualization of particular quantum events affects the course of nature at the macro-level.[140]

For Russell, such action by God is non-interventionist because it does not violate the laws of nature.[141] Since quantum events are indeterministic, the laws that cover these events are

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[135] Russell, 'Quantum Physics and the Theology of Non-Interventionist Objective Divine Action', p. 585.
[136] Recently, there has been an exciting examination of quantum theology beyond the Copenhagen interpretation of quantum mechanics. See:
M. Harris, 'Quantum Theology Beyond Copenhagen: Taking Fundamentalism Literally', *Zygon: Journal of Religion and Science*, vol. 58, no. 1, 2023, pp. 183-202.
[137] Russell, 'Quantum Physics and the Theology of Non-Interventionist Objective Divine Action', p. 586.
[138] Russell, 'Quantum Physics and the Theology of Non-Interventionist Objective Divine Action', p. 586.
[139] For a critique of the scientific plausibility of NIODA accounts, see: Saunders, *Divine Action and Modern Science*.
[140] For an examination of this claim, see:
E. Qureshi-Hurst, 'Does God Act in the Quantum World?', *Theology and Science*, vol. 21, no. 1, 2023, pp. 106-121.
[141] Russell, 'Quantum Physics and the Theology of Non-Interventionist Objective Divine Action', p. 586.

probabilistic, not determining what specific outcome must occur but constraining the likelihood of different outcomes.[142] When God acts to determine a particular quantum event, God produces an outcome that is within the range of possibilities allowed by the laws of nature. Therefore, God's action within quantum events is in accordance with the laws.

Implicit in Russell's defence of NIODA being non-interventionist is the assumption that a divine intervention entails a violation of the laws of nature. However, as evidenced by Lewis and Plantinga, certain interventionist accounts deny that divine interventions entail law-violations. Rather, I have proposed that the binding feature of interventionism is a picture of nature as a self-sufficient order from which God is wholly excluded.

Even by these standards, Russell does not view his NIODA account as interventionist. He writes:

> It does not require God to 'break into' the causally closed processes in nature. Instead, God has created the universe ex nihilo such that some natural processes at the quantum level are insufficiently determined by prior natural events. Because nature is indeterministic, God acts as continuous creator together with nature…to bring about quantum events.[143]

Russell offers a conception of nature where divine and natural causality work together to actualize particular outcomes in cases of ontological indeterminism. In such cases, God's action is necessary for the course of nature to proceed, meaning that nature is certainly not a self-sufficient order that God is excluded from.

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[142] While Russell states that he adopts a descriptive understanding of the laws, Ritchie convincingly argues that his account relies on a prescriptive understanding.
R. J. Russell, *Cosmology: From Alpha to Omega*, Minneapolis, Fortress Press, 2008, p. 119;
Ritchie, *Divine Action and the Human Mind*, p. 49.

[143] Russell, 'Quantum Physics and the Theology of Non-Interventionist Objective Divine Action', p. 586.

3.2. Interventionism Revisited?

Nevertheless, the NIODA approach does not wholly escape the problematic God-nature relationship of interventionism. The NIODA approach assumes that God cannot act – beyond conservation – in areas of nature that are not ontologically indeterministic. God cannot act in areas of nature where there is a sufficient natural cause for a particular outcome. Expressing this view, Russell writes, 'a successful approach to NIODA must claim that the processes of nature are created by God ex nihilo with intrinsic, naturally occurring gaps.'[144] It is these 'gaps' that make room for divine action.

This central NIODA claim tacitly relies on a conception of nature as a self-sufficient order that exists apart from God. Where there are no areas of ontological indeterminism, nature continues of its own accord, not requiring, or even allowing, God's action. In turn, the NIODA approach is incompatibilist, still viewing it as a zero-sum game between divine and natural causality in areas where nature is ontologically deterministic. So, the NIODA approach implicitly relies on the same problematic God-nature relationship as interventionism. The only difference is that there are some pockets of ontological indeterminism which allow God to act without intervening.[145] In the words of Ritchie, non-interventionists try to sneak God into the natural order 'through a sort of underdetermined back door.'[146]

The NIODA approach, like interventionism, undermines the immanence and transcendence of God. It undermines divine immanence by only allowing God to act in pockets of ontological indeterminism, thereby supposing that the rest of nature operates independently from God. It

[144] Russell, 'Quantum Physics and the Theology of Non-Interventionist Objective Divine Action', p. 584.
[145] Ritchie, *Divine Action and the Human Mind*, p. 27.
[146] Ritchie, *Divine Action and the Human Mind*, p. 381.

undermines divine transcendence by adopting an incompatibilist approach to divine and natural causality, making them compete and operate on the same plane.

To further bring out these points, let us return to Mascall's description of the natural-supernatural distinction assumed in interventionism. He likened the supernatural and the natural realms to two apartments on adjacent floors, 'with a layer of soundproof packing between the natural ceiling below and the supernatural floor above.'[147] This relation between the natural and the supernatural is flawed because it expels God to an otherly supernatural realm, such that God must break through the 'adjacent floor' to act.

The NIODA approach implicitly accepts this relation of the natural and the supernatural, but adds that there are certain holes 'naturally occurring' in the floorboards allowing God to act without 'breaking' into nature. This natural-supernatural distinction is still inadequate because God is largely expelled from nature, only allowed to act in areas where natural causation is insufficient to bring about a particular effect. Thus, God's immanent role in the created order is diminished. God's transcendence is undermined because, again, God exists in the same way that natural things exist; it is just that God is in the 'supernatural apartment' while natural things are in the 'natural apartment'.

Indeed, in a way, the NIODA approach weakens God's immanence and transcendence to a greater degree than interventionism. With interventionism, God can act anywhere in nature because God can intervene and set aside any law. In contrast, with the NIODA approach, God is limited to acting in areas of ontological indeterminism. This further undercuts God's immanence because God is restricted to acting within certain areas of nature. God's transcendence is compromised

[147] Mascall, *The Openness of Being*, p. 151.

because divine action is limited, in much the same way that natural causes are.[148] Such a constraint renders God to act as a natural cause. Ignacio Silva aptly expresses this concern, writing about the NIODA approach:

> God's causal power is restricted to where there is no natural cause… Thus, divine causality is at the same ontological level as natural created causality, implying that God causes as natural causes do.[149]

In the same way that natural causes are restricted to acting within certain aspects of nature, NIODA limits God's power to acting only within areas of ontological indeterminism. So, while the NIODA approach seeks to offer a more appealing alternative to interventionism, it still implicitly draws on the same inadequate God-nature relationship.

Conclusion

In this chapter, I have examined the interventionist approach to miracles and the laws of nature. First, I outlined the key tenets of this position, which are that (1) nature is a self-sufficient order that wholly excludes God, (2) divine action and natural process are incompatible, and (3) God must break into nature to act and cause miracles. I highlighted how J. L. Mackie, C. S. Lewis, and Alvin Plantinga are, to varying degrees, committed to interventionism. Secondly, I examined criticisms of interventionism. I argued that interventionist accounts can develop plausible responses to the objections that (1) interventionist miracles are impossible, (2) interventionist miracles are unscientific, and (3) interventionist miracles lead to an inconsistency in the nature of God. A key aspect of this was highlighting the modern tendency to deny that divine interventions entail law-violations through invoking *ceteris paribus* clauses. Nonetheless, I contended that the fatal issue with interventionism is that it undermines the immanence and transcendence of God by

[148] I consider the limitedness of natural causes to a greater degree in Chapter Three.
[149] Silva, *Providence and Science*, p. 51.

drawing too sharp a distinction between God and nature. Thirdly, I considered the NIODA approach championed by participants of the DAP. I proposed that this approach implicitly relies on the same problematic God-nature relationship of interventionism.

So, the two central conclusions of this chapter are:

1. Any theologically plausible account of miracles should preserve the immanence and transcendence of God;
2. Interventionism is theologically implausible because it fails to achieve this.

Chapter Two: Theistic Naturalism

In *Divine Action and the Human Mind* (2019), Sarah Lane Ritchie speaks of a theological turn in the contemporary discussion of divine action. Advocates of this turn seek to reappropriate the subject as a properly theological question. They reject the theories of divine action offered by interventionists and non-interventionists because they presuppose an impoverished relationship between God and nature that either wholly excludes God from nature or only allows divine action in scientifically identifiable pockets of ontological indeterminism. These flawed conceptions of divine action arise from a misconception of science as being the final arbiter in the question of where God can act in the world.[1]

In contrast, those supporting the theological turn emphasise the significance of developing an appropriate theological and metaphysical framework to understand God's action in the world. This framework must consider theological questions such as: What relationship between God and nature is implied in a given theory of divine action? What do we mean by 'nature'? Is science not limited in what it can say about the possibility of divine action?[2] By engaging with these questions, this turn aims to avoid the theological failings of interventionism and non-interventionism, upholding a God-nature relationship that preserves both divine immanence and transcendence.

A key result of this turn has been the rise of theistic naturalism, the position that both theism and naturalism are true. Theistic naturalism understands nature in theological terms, where the natural world is 'always and entirely involved with divine presence and activity.'[3] It emphatically seeks to avoid the sharp God-nature relationship of interventionism. Rather, theistic naturalism views

[1] Ritchie, *Divine Action and the Human Mind*, p. 25.
[2] Ritchie, *Divine Action and the Human Mind*, p. 193.
[3] Ritchie, *Divine Action and the Human Mind*, p. 228.

nature as inextricably connected to, dependent upon, and orientated towards God. Due to this intimate connection, God does not need to break into nature or find pockets of ontological indeterminism to act. Rather, God can act through the natural order.

In this chapter, I examine the adequacy of theistic naturalism in the context of miracles and divine action. In particular, I focus on two questions:

1. Does theistic naturalism offer a God-nature relationship that preserves divine immanence and transcendence?
2. Does theistic naturalism adequately accommodate miracles?

First, I outline the key tenets of theistic naturalism, drawing on Denis Edwards' neo-Thomist theistic naturalism and Christopher Knight's incarnational naturalism. Second, I consider how these two accounts explain how God acts through nature. Third, I reflect upon the plausibility of how these accounts accommodate miracles.

Section One: What is Theistic Naturalism?

To appreciate what theistic naturalism is, it will help to have a sound understanding of what naturalism is. In contemporary philosophy, the term 'naturalism' has 'no very precise meaning.'[4] The vast majority of Anglo-American philosophers claim to be 'naturalists', and it is paradigmatic for these philosophers to offer 'naturalistic' accounts of key concepts such as mind, meaning, and value. As a result, the term 'naturalism' has become a 'slogan in the name of which the vast majority of work in analytic philosophy is pursued.'[5] Due to the widespread appeal of 'naturalism', the positions that fall under this umbrella term are varied.

[4] D. Papineau, 'Naturalism', in Edward N. Zalta & Uri Nodelman (eds.), *The Stanford Encyclopedia of Philosophy,* Fall 2023 Edition.
[5] M. De Caro and D. Macarthur, 'Introduction: The Nature of Naturalism' in M. De Caro and D. Macarthur (eds.), *Naturalism in Question*, Cambridge, Harvard University Press, 2004, p. 2.

1.1. The Nature of Naturalism

I am primarily concerned with metaphysical naturalism, the thesis that nature is all that exists.[6] In contrast, methodological naturalism, which is commonly attributed to the sciences, supposes that reality is to be explained solely through natural explanations rather than supernatural explanations.[7] This concept has featured prominently in the field of science and religion – particularly regarding Intelligent Design – with it being debated what the theological implications may be if science is committed to methodological naturalism.[8] For the remainder of the thesis, when I speak of 'naturalism', I am referring to 'metaphysical naturalism.'[9]

1.1.1. Scientific Naturalism

The paradigmatic understanding of naturalism in much of contemporary philosophy is scientific naturalism. Scientific naturalism understands nature in scientific terms: (1) nature is all that exists, (2) science determines the ontology of nature, and (3) is the primary means by which nature ought to be investigated.[10] There is no consensus among 'scientific naturalists' as to what domain(s) of science have the authority to determine the ontology of nature – and therefore reality – and be the primary means of investigating nature. Some hold that physics has this sole responsibility, whereas others have a broader conception, assigning this role to the natural sciences. For example, David Armstrong defines naturalism as the position that 'nothing else exists except the single, spatio-

[6] F. Ellis, *God, Value, and Nature*, Oxford, Oxford University Press, 2014, p. 8.
[7] What constitutes a natural explanation as opposed to a supernatural explanation is rather difficult to discern. For more on this, see:
S. Boucher, 'Methodological Naturalism in the Sciences', *International Journal for Philosophy of Religion*, vol. 88, no. 1, 2019, pp. 57-80.
[8] For those that dispute science's commitment to methodological naturalism on theological grounds, see:
A. Plantinga, 'Methodological Naturalism', *Origins and Designs*, vol. 18, no. 1, 1997, pp. 18-27;
A. Torrance, 'Should a Christian Adopt Methodological Naturalism', *Zygon: Journal of Religion and Science*, vol. 52, no. 3, 2017, pp. 691-725.
For a theological defence of science's commitment to methodological naturalism, see:
Perry and Ritchie, 'Magnets, Magic, and Other Anomalies: In Defence of Methodological Naturalism', pp. 1064-1093.
[9] For more on the relation between metaphysical and methodological naturalism, see:
P. Harrison, 'Naturalism and the Success of Science', *Religious Studies*, vol. 56, no. 2, 2020, pp. 274-291.
[10] Ellis, *God, Value, and Nature*, p. 15.

temporal world, the world studied by physics, chemistry, cosmology and so on.'[11] Finally, some scientific naturalists, such as Peter Railton, include the social and psychological sciences within scientific naturalism's arsenal of being the arbiters of reality.[12]

1.1.2. Expansive Naturalism

In spite of the prevalence of scientific naturalism, there has been a growing tendency in the last thirty years to offer alternative forms of naturalism. Critics accuse scientific naturalism of relying on a 'highly questionable metaphysical prioritisation' of science as the primary means to investigate nature.'[13] Such a problematic reliance leads to a distortion of fundamental natural concepts such as mind, meaning, and value.[14]

Subsequently, alternative forms of naturalism have been developed, often described as forms of 'expansive naturalism'.[15] Expansive naturalism holds that science does not have a monopoly on the natural order and the limits of nature ought to be expanded beyond those set by science. It is argued that there are aspects of nature that science is 'blind' to and irreducible to a purely scientific understanding. Such concepts include 'value', 'meaning', and 'reason', and should be understood as *sui generis*.[16] Although these concepts are irreducible to a scientific form of understanding, they remain part of the natural world because of the indispensable roles they play in our lives.

It is not my aim to examine whether the expansive naturalist's critique of scientific naturalism is justified. I rather seek to highlight the porous nature of naturalism. Scientific naturalism proposes

[11] Armstrong, *What is a Law of Nature?*, p. 82.
[12] P. Railton, "Naturalism and Prescriptivity', *Social Philosophy and Policy*, vol. 7, no. 1, 1989, pp. 151-174.
[13] D. Macarthur, 'Liberal Naturalism and the Scientific Image of the World', *Inquiry*, vol. 62, no. 5, 2019, p. 573.
[14] For these various criticisms against scientific naturalism, see:
M. De Caro and D. Macarthur (eds.), *Naturalism in Question*, Cambridge, Harvard University Press, 2004.
[15] Other names for this type of naturalism are 'liberal naturalism' – see (David Macarthur 2019) – and 'true naturalism – see (Fiona Ellis 2020).
[16] D. Macarthur, 'Taking the Human Sciences Seriously', in M. De Caro and D. Macarthur (eds.), *Naturalism and Normativity*, Columbia, Columbia University Press, 2010, p. 134.

that science determines the ontology of nature and expansive naturalism disputes this, broadening nature's limits beyond those set by science. In light of this disagreement, what makes both scientific naturalism and expansive naturalism forms of naturalism?

1.1.3. Naturalism and Anti-Supernaturalism

A binding feature of naturalism seems to be a commitment to anti-supernaturalism. David Papineau writes that 'the ontological component [of naturalism] is concerned with the contents of reality, asserting that reality has no place for 'supernatural' or other 'spooky' kinds of entity.'[17] Similarly, David Macarthur asserts that the basic philosophical motivation for naturalism is:

> a rejection of any commitment to the supernatural whether in the form of supernatural entities (e.g., God, Platonic Ideas) or supernatural faculties of mind (e.g., Cartesian transparency, mystical intuition).[18]

While scientific and expansive naturalists disagree on whether there are natural entities that exceed a purely scientific understanding, they are both committed to a one-world position that denies any supernatural realm set above or against nature.

This poses a challenge for the viability of theistic naturalism. If a fundamental tenet of naturalism is the rejection of the supernatural, how can the God of Christianity be accommodated in a naturalistic framework?

[17] D. Papineau, 'Naturalism'.
[18] Macarthur, 'Taking the Human Sciences Seriously', p. 124.

1.2. The Viability of Theistic Naturalism

A central theme in Fiona Ellis' work *God, Value, and Nature* (2014) is to tackle this problem and argue that 'naturalism and theism can both be true.'[19] Ellis contends that the standard naturalist rejection of the supernatural relies on a theologically contestable 'caricature' of God.[20] This 'caricature' draws the same sharp God-nature relationship that arises in interventionism, where God is excluded from the natural order, existing in an 'otherly' supernatural realm.[21] As we saw in the previous chapter, this conception of God is inadequate because it undermines divine immanence and transcendence.

Instead, Ellis contends that a more theologically palatable conception of God can be accommodated within a naturalistic framework. On this conception, nature is inextricably connected to, dependent upon, and orientated towards God. The supernatural is not some external add-on to nature or a separate, competing realm, but rather that which perfects and enriches nature.[22] On this perspective, a complete understanding of nature necessarily involves reference to God and the supernatural.

Accordingly, Ellis supposes that one can be both a theist and a naturalist. This theistic naturalism would be a one-world position because it is not committed to a second, supernatural realm. Rather God is the ground of being and the supernatural enhances nature. Moreover, Ellis contends that a theistic form of naturalism can also possess two key virtues attributed to naturalism: being empirically grounded and avoiding metaphysical flights of fancy.[23] Theistic naturalism is

[19] Ellis, *God, Value, and Nature*, p. 3.
[20] Ellis, *God, Value, and Nature*, p. 103.
[21] The tendency of naturalists to describe God and the supernatural as being 'spooky' (see Papineau (2023) and Macarthur (2010)) is indicative of the view that God is wholly excluded from the natural order and exists in a separate, quasi-natural supernatural realm.
[22] Ellis, *God, Value, and Nature*, p. 152.
[23] Ellis, *God, Value, and Nature*, p. 176.

empirically grounded because it respects the findings of modern science, not disputing any of its claims. But, like expansive naturalism, it holds that there are aspects of reality, such as the nature of God, that exceed scientific understanding.[24] It avoids metaphysical flights of fancy because a commitment to God is necessary to fully understand the natural order. God is not some odd, spooky being, wholly divorced from the natural world, but rather inextricably connected to it.[25]

Ellis is not trying to offer a knock-down argument that theistic naturalism is the best form of naturalism.[26] Rather, she highlights that theistic naturalism is seeking to fulfil the same aims as other forms of naturalism. Indeed, for Ellis, the shift from expansive naturalism to theistic naturalism is structurally similar to the shift from scientific naturalism to expansive naturalism. Both involve the claim that nature's boundaries ought to be expanded to offer a more adequate conception of nature and that this can be achieved in a way that avoids metaphysical flights of fancy and remains empirically grounded.[27] So, while the scientific naturalist and expansive naturalist may initially consider the theistic naturalist to widely depart from the framework of naturalism, Ellis contends that they ought to recognise the viability of this approach.

This argument of Ellis is extremely effective in undermining the standard critiques of accommodating God within a naturalistic framework. Nevertheless, a weakness in her approach is that it is unclear what the substantive characteristics of theistic naturalism are. She argues that theistic naturalism avoids metaphysical flights of fancy, remains empirically grounded, and rejects any notion of a theologically problematic, quasi-natural supernatural realm. However, wouldn't every theist seek to adopt a position that has these virtues? Consequently, is theistic naturalism actually the default position to which all theists should be committed? This would be odd given

[24] Ellis, *God, Value, and Nature*, p. 176.
[25] Ellis, *God, Value, and Nature*, p. 176.
[26] Ellis, *God, Value, and Nature*, p. 204.
[27] Ellis, *God, Value, and Nature*, p. 176.

the standard dichotomy between theism and naturalism and that many theologians object to naturalism.[28] So, it seems that the nature of theistic naturalism must be further fleshed-out in order to establish it as a distinct theological position.

1.3. The Nature of Theistic Naturalism

To gain a stronger insight into theistic naturalism, I consider Denis Edwards' neo-Thomist theistic naturalism, as outlined in *How God Acts: Creation, Redemption, and Special Divine Action* (2010), and Christopher Knight's incarnational naturalism, as outlined in *The God of Nature: Incarnation and Contemporary Science* (2007).[29]

1.3.1. Denis Edwards on Theistic Naturalism

Starting with Edwards, he emphatically rejects the interventionist approach considered in Chapter One on the basis that it undermines God's immanent role in nature. Foundational to his metaphysical understanding of God is that 'the Creator is present to all creatures, closer to them than they are to themselves, conferring existence and the capacity to act on every entity and every process.'[30] To act in the world, God does not intervene, but rather works in and through the natural order.[31] Here, Edwards adopts a compatibilist approach to divine action. Indeed, for him, God acts *exclusively* through natural causes.[32] On this view, there are no gaps in the causal explanation at

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[28] As an example of this dichotomy, see: Plantinga, *Where the Conflict Really Lies: Science, Religion, and Naturalism*.
Of course, it may be that this dichotomy stems from an inadequate understanding of the natures of naturalism and theism. However, I suspect that even theistic naturalists would accept the possibility of one being a theist but not a naturalist, thereby suggesting that there is more to theistic naturalism than Ellis suggests.

[29] Edwards himself does not refer to his account as a neo-Thomist form of theistic naturalism. Ritchie, in her examination of Edwards' position, describes it as a Thomistic account of theistic naturalism. Due to some key diversions from Aquinas' thought – which I explore in this chapter – I refer to Edwards' account as neo-Thomist theistic naturalism. These diversions merit this account being examined in its own right as a form of theistic naturalism rather than in the next chapter as an iteration of Thomism. Knight refers to his own position as incarnational naturalism.
Ritchie, *Divine Action and the Human Mind*, p. 227.

[30] D. Edwards, *How God Acts: Creation, Redemption, and Special Divine Action*, Minneapolis, Fortress Press, 2010, p. 62.

[31] Edwards, *How God Acts*, xii.

[32] Edwards, *How God Acts*, p. 65.

the empirical level that need to be filled by God's direct action.[33] Rather, God acts exclusively through the natural order such that every event is a product of both natural processes and divine action.

Here, Edwards brings out a central tenet of theistic naturalism. In accordance with Ellis' reflections on this approach, Edwards is committed to a one-world position that eschews any reference to an otherly, supernatural realm. He views the natural order as inextricably connected to, dependent upon, and orientated towards God. What Edwards further adds to this position is that God acts *exclusively* through the natural order.

1.3.2. Christopher Knight on Theistic Naturalism

Knight's account of incarnational naturalism further supports the claim that God acting exclusively through nature is a fundamental tenet of theistic naturalism. He similarly affirms that the universe is 'neither a benignly designed machine nor something that needs to be acted on "from the outside."'[34] Indeed, he rejects the conceptual picture that the universe can act 'on its own' apart from the immediate action of God.[35] Rather, God is 'intimately involved in every event', such that God's constant divine action in the natural world is normative.[36] Natural processes and God's action in the universe are 'as two sides of the same coin.'[37] Like with Edwards, Knight supports a compatibilist approach to divine action.

Furthermore, Knight advocates that this is the only way that God acts. He describes naturalism as the view that the universe 'develops according to "fixed instructions" of a lawlike kind.'[38] His

[33] Edwards, *How God Acts*, p. 65.
[34] C. Knight, *The God of Nature: Incarnation and Contemporary Science*, Minneapolis, Fortress Press, 2007, p. 101.
[35] Knight, *The God of Nature*, p. 122.
[36] Knight, *The God of Nature*, p. 31.
[37] Knight, *The God of Nature*, p. 31.
[38] Knight, *The God of Nature*, p. 114.

incarnational naturalism merits its 'naturalist' title because divine action is limited to 'upholding the "fixed instructions" God has given to the cosmos.'[39] By 'fixed instructions', Knight is referring to the laws of nature, limiting divine action to maintaining such laws.

In Edwards and Knight, we have brought out a key aspect of theistic naturalism which is that God acts *exclusively* through the natural order.[40] This establishes it as a distinct theological position. For many theists suppose that God can, and does, act directly in the world, independent of natural processes, in cases of miracles.[41] In understanding theistic naturalism as advocating this view of divine action, the issue of this position being so broad that all theists would advocate it is avoided.

Now, we are in a position to outline the character of theistic naturalism. Theistic naturalism understands:

1. Nature as inextricably connected to, dependent upon, and orientated towards God;
2. God to act *exclusively* through natural causes and processes.

Section Two: Divine Action and Theistic Naturalism

Theistic naturalism's approach to divine action is radically different to interventionism's. Interventionism adopts incompatibilism, leading to a theologically impoverished conception of God's relation to nature that undermines divine immanence and transcendence. In contrast, theistic naturalism adopts compatibilism, allowing God to act through natural processes and, indeed, limiting divine action to this form. Since interventionism's theological failings stem from

[39] Knight, *The God of Nature*, p. 22.
[40] Willem Drees similarly understands theistic naturalism (in his words, 'religious naturalism'), as accepting 'the world as understood by the natural sciences as God's creation' such that there are no gaps in the world for God's direct action to fill.
W. Drees, *Religion, Science and Naturalism*, Cambridge, Cambridge University Press, 1996, p. 261.
[41] This is evidenced from the fact that both Interventionism and Thomism, the two other approaches considered in Part One, reject that God exclusively acts through natural causes.

its incompatibilism, theistic naturalism's compatibilism provides good prospects that it can preserve divine immanence and transcendence.

Nonetheless, there are significant questions about how God can act through the natural order. How may God act through natural causes in a way that preserves the integrity of these causes? Does God acting through natural causes threaten divine transcendence? What God-nature relationship is implied in such an account of divine action? It is these questions that I am concerned with in this section, examining the differing approaches of Edwards and Knight in accommodating divine action within theistic naturalism.

2.1. Edwards on Divine Action

Edwards considers God to be interiorly present to the whole of creation serving as 'the very ground and source of its existence, enabling and empowering it at every moment'.[42] He seeks to emphasise that the relationship between God and nature is unique. On the one hand, it is a relationship of absolute dependency. Every natural creature completely depends upon God for its being and power to act.[43] Nevertheless, the relationship between each natural creature and God is also a relationship of radical difference.[44] Due to God's self-giving love and respect for natural creatures, there is a genuine difference between them such that each natural creature, and nature as a whole, has its own otherness, integrity, and autonomy. This difference upholds the standard Christian distinction between God and nature, but it does not 'imply distance between God and creatures.'[45]

[42] Edwards, *How God Acts*, p. 46.
[43] Edwards, *How God Acts*, p. 47.
[44] Edwards, *How God Acts*, p. 47.
[45] Edwards, *How God Acts*, p. 47.

This relationship between God and nature, as outlined by Edwards, is completely unique. In our everyday life, we typically think that an increase in dependence upon someone entails a decrease in one's freedom. An individual who wholly depends upon their partner, say in terms of finances, needing care, and decision-making, seems to have a diminished amount of freedom. When it comes to the relationship between God and creation, however, Edwards suggests that the opposite is the case; 'dependence on God and creaturely freedom and autonomy exist in direct relationship to one another.'[46] Creatures have no existence apart from God. It is God, in virtue of God's self-giving divine love, who creates creatures as the other, maintaining them in their own existence and giving them the power to act in themselves.[47]

Edwards rejects the standard distinction between God's general action of sustaining nature and God's special acts. He takes umbrage with the approach of beginning with God's general action and then looking for ways for God to act specially in the world, as is the approach of interventionism.[48] Rather, he suggests that God's general action of sustaining the natural order is solely accomplished through particular special divine acts.[49]

Here, Edwards offers a conception of divine action that is radically different from interventionism. God does not need to break into the natural order or find pockets of ontological indeterminism to act, for every event in the universe is the result of God's special actions. This preserves God's immanence because God has an intimate role in the natural order, being interiorly present to the

[46] Edwards, *How God Acts*, p. 48.
[47] Such an idea is found in the thought of Aquinas, who holds that genuine natural causation reflects God's love and goodness. He writes: 'if no creature has any active role in the production of any effect, much is detracted from the perfection of the creature.'
T. Aquinas and V. Bourke (trans), *Contra Gentiles, Book Three*, New York, Hanover House, 1955-57, 69.15.
[48] Edwards does actually refer to his approach as being non-interventionist. His approach is non-interventionist in the sense that it does not require God to break into the natural order or violate the laws of nature. His approach is not non-interventionist in the sense of requiring God to act in areas of ontological indeterminism, as is the NIODA approach.
Edwards, *How God Acts*, p. 77.
[49] Edwards, *How God Acts*, p. 50.

whole of creation. Nevertheless, there is still an absolute difference between God and nature, with creatures having their own independence from God *in virtue of* divine transcendence.[50]

Following this, it appears that Edwards' theistic naturalism can avoid the issue of undermining divine immanence and transcendence, thereby providing an appealing framework for miracles and divine action. Nevertheless, there remains the concern of whether he offers sufficient metaphysical justification to 'cash out' this God-nature relationship. How is it that natural creatures have their own independence if God is interiorly present to nature? How can natural entities have causal powers if every event is the result of God's special acts? How is divine transcendence preserved if God is interiorly present to all of creation?

2.1.1. Edwards on Primary and Secondary Causation

To answer these questions, Edwards draws heavily on Thomas Aquinas' distinction between primary and secondary causation.[51] He describes it as 'indispensable and foundational in the current dialogue between science and theology.'[52] This concept, in relation to divine action, supposes that God is the primary cause for all natural events, always providentially at work through created, secondary causes.[53] God is the primary cause of all natural effects because God is the source of being and power for all natural entities. Thus, whenever a natural entity acts as a secondary cause producing a natural effect, it acts in virtue of the being and power conferred by God as primary cause.

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[50] Edwards, *How God Acts*, p. 63.
[51] I examine Aquinas' formulation of this distinction in the next chapter.
[52] Edwards, *How God Acts*, p. 84.
Edwards' reliance on primary and secondary causation merits this position's neo-Thomist title. Nonetheless, as I will demonstrate in the next two sections, Edwards significantly departs from Aquinas' thought in his exposition of primary and secondary causation, as well as his claim that God acts exclusively through nature (which Aquinas denies).
[53] Edwards, *How God Acts*, p. 46

Edwards supposes that when God is spoken of as primary cause, the term 'cause' is used analogically.[54] God is not a cause like other causes in the world. There is an infinite difference between divine causality and natural causality. The term 'cause', when it comes to God acting, refers to 'the absolutely unique relationship between Creator and creatures, by which God confers existence on all things and enables them to be, to act, and to become.'[55] The nexus of secondary causes refers to the 'world of interacting creaturely causes.'[56] Such secondary causes have genuine causal power in virtue of God acting as primary cause. So, God's action in nature does not impinge on the causal integrity of secondary causes, but rather establishes it. For any effect produced in the course of nature, it will have God as the primary cause and a natural entity as a secondary cause, where both primary and secondary causes serve as complete causes for the given effect.

Through this, Edwards aims to preserve divine immanence and transcendence while respecting the causal integrity of nature. God is immanent because God specially acts as primary cause for every natural effect. God is transcendent because God's causal action is on a different plane to natural causation. Furthermore, the integrity of natural entities is respected because they serve as genuine, secondary causes for natural effects.

The notion of primary and secondary causation remains rather paradoxical. How can God acting as primary cause establish the integrity of secondary causes? Does a natural effect having both God and a natural entity as complete causes constitute a form of causal overdetermination, where two distinct entities are both sufficient causes for the same effect? In seeking to respond to these challenges, Edwards resorts to mystery. He writes:

[54] Here, Edwards is drawing upon Aquinas' analogical understanding of 'cause', which I examine in Chapter Three.
[55] Edwards, *How God Acts*, p. 81.
[56] Edwards, *How God Acts*, p. 46.

> A common objection to the idea that God acts through secondary causes is that it does not tell us how God acts through them. In response, it is important to say that from a theological perspective, we do not know how God's creative act works. What we know is the result of this act but not the act itself. God's creative act is what I am calling, with Aquinas, primary causality. It is an instance, one of many, where theology has to face up to and insist on what human beings cannot know.[57]

Edwards adopts an apophatic stance when it comes to explaining how God acts as primary cause through secondary causes. He justifies this approach by asserting that 'God's creative act is God.'[58] Since God is unknowable, God's creative act is unknowable. Accordingly, Edwards claims that 'a theology of divine action not only should not spell out how God acts, but should insist that this is something we cannot know.'[59]

2.1.2. The Charge of Fideism?

Here, Edwards inadvertently diverts from the thought of Aquinas. While Aquinas sought to uphold the mystery of God, he does offer an explanation of the interplay between primary and secondary causes. I examine Aquinas' explanation in the next chapter but, for now, all that is relevant is that Aquinas did offer one. Ignacio Silva affirms this, writing:

> For Aquinas the interplay between primary and secondary causes is a problem that has a metaphysically complex solution; a solution that offers a strongly nonfideistic understanding of how God providentially acts through secondary causes.[60]

Instead, Edwards seems to be influenced by Austin Farrer (1904-1968), a mid-twentieth-century Oxford theologian, whose thought is often conflated with Aquinas.[61] Like Edwards, Farrer holds that the relationship between divine and natural causality is a mystery. He writes: 'What we cannot conceive is the causal joint (as it were) between omnipotent creativity and free

[57] Edwards, *How God Acts*, p. 63.
[58] Edwards, *How God Acts*, p. 63.
[59] Edwards, *How God Acts*, p. 63.
[60] Silva, *Providence and Science*, p. 142.
[61] Silva, *Providence and Science*, p. 141.

creaturehood…How God works in creating, that is the mystery.'[62] Aside from the approach of Farrer and Edwards departing from Aquinas, the notion that the interplay between primary and secondary causes is mysterious is unappealing. There is no doubt that an appreciation of the mystery of God is a central aspect of metaphysical theology. As highlighted by Aquinas, 'we cannot perfectly know God as He is in His essence' because we can only know God through His effects, which are not proportionate to the divine perfection.[63]

Nonetheless, mystery ought not to be used as a get-out-of-jail-free card when faced with a metaphysical quandary. In the same way that God ought not to plug gaps where there is merely a lack of scientific explanation, mystery should not plug gaps where there is merely a lack of a metaphysical explanation. Rather, mystery ought to be used as a last resort 'only to be undertaken if it proves impossible to make any satisfactory conjecture' about divine action.[64] The problem with Edwards and Farrer's approach is that it resorts too quickly to fideism.

In invoking the mystery of God to avoid explaining the interplay between primary and secondary causality, Edwards insists that God's creative act is 'something we cannot know.'[65] Nevertheless, he still makes numerous claims about God as primary cause, writing that God confers existence on all natural entities, giving them causal powers, and exercising such powers. He states that it is through divine transcendence that God is able to create natural powers as 'other'. It is only when Edwards is faced with the question of whether God as primary cause undermines the integrity of secondary causes that he resorts to mystery. So, Edwards' approach simply sidesteps the paradoxical notion of primary and secondary causes, calling it mysterious when faced with

[62] A. Farrer, *Faith and Speculation: An Essay in Philosophical Theology*, Edinburgh, Neill & Co., 1967, p. 110.
[63] T. Aquinas and Fathers of English Dominican Province (trans.), *Summa Theologiæ*, London, Burns Oates and Washbourne, 1920-22, 1.2.2.
[64] J. Polkinghorne, *Science and Providence: God's Interaction with the World*, Philadelphia, Templeton Foundation Press, 2005, p. 102.
[65] Edwards, *How God Acts*, p. 63.

challenges, rather than looking to offer an explanation for this metaphysical quandary. Thus, this fideistic approach is not so much a solution as an evasion of the problem.

2.2. Knight on Divine Action

Next, we turn to an alternative form of theistic naturalism, Knight's incarnational naturalism, and how it envisages divine action. Knight rejects any interventionist understanding of God's action in the world, defending a compatibilist view where God's action is limited to 'upholding the "fixed instructions" God has given to the cosmos.'[66] Here, we see an interesting difference between Edwards and Knight on divine action. While both reject the notion of divine intervention, Edwards argues that all of God's actions are special divine actions, whereas Knight views divine action as God merely upholding the laws of nature.[67]

Knight recognises that God acting exclusively by upholding the laws has not received much support among Western theologians due to its associations with eighteenth-century deism.[68] The fear is that if God acts only by upholding the 'fixed instructions' of the cosmos, then 'special acts' of God such as miracles and responding to intercessory prayer cannot be accommodated. In response, Knight states that God could have created the universe such that its 'fixed instructions' are able to cover every possible need of humans, thereby providing loving responses that are typically associated with special acts of God. He emphasises God's supreme power which, thereby, allows God to envisage the needs of humans and accommodate loving responses in nature's laws.[69]

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[66] Knight, *The God of Nature*, p. 22.
[67] I avoid stating that Knight reduces God's action to 'general divine action' because Knight views this position as problematically connoting that the universe can exist 'on its own.'
Knight, *The God of Nature*, p. 111.
[68] C. Knight, 'Divine Action and the Laws of Nature: An Orthodox Perspective on Miracles', in D. Buxhoeveden and G. Woloschak (eds.), *Science and the Eastern Orthodox Church*, Farnham, Ashgate Publishing, 2011, p. 43.
[69] Knight, 'Theistic Naturalism and "Special" Divine Providence', p. 538.

Nevertheless, this response may not completely allay the concern that Knight's incarnational naturalism leads to deism. Even if God created a world with fixed instructions that could respond to every human need, there may remain the fear that God remains distant. God is still absent in the sense that God creates the world and then lets it run of its own accord, not playing an active, immanent role in the natural order.

2.2.1. Panentheism

In answer to this concern, Knight adopts panentheism, the position that 'God is in everything and everything is in God.'[70] If God is 'in everything', then the accusation that God is an absentee landlord cannot be true. God cannot be detached from the world because God is, in some way, 'in' the world. This shift to panentheism is, for Knight, not some *ad hoc* move simply to avoid deism, but rather has strong theological precedence in Eastern Orthodox thinking.[71]

Central to Knight's defence of panentheism is offering a traditional Orthodox understanding of the incarnation. All too often the incarnation is simply taken as 'an affirmation of a particular historical event: the coming into the natural world of a particular historical individual: Jesus of Nazareth.'[72] Such a notion is alien to Orthodox thought, which draws heavily on the prologue of the Gospel of John. The incarnation is not a singular historical event but rather the completion of a process that already started in God's act of creation. In the prologue, it was not only through the *Logos* – made flesh in Christ – that 'all things came to be' but also 'all that came to be was alive with his life.'[73] Knight interprets this as not only positing an intrinsic link between the creation of

[70] C. Knight, 'An Eastern Orthodox Critique of the Science-Religion Dialogue', *Zygon: Journal of Religion and Science*, vol. 51, no. 3, 2016, p. 583.
[71] A considerable group of theologians engaged in the contemporary science-religion dialogue support panentheism. For example, see Phillip Clayton (2019) and Arthur Peacocke (1993).
Knight, 'Divine Action and the Laws of Nature, p. 41.
[72] Knight, 'Divine Action and the Laws of Nature, p. 41.
[73] Knight, 'Divine Action and the Laws of Nature, p. 41.

the cosmos and what occurred historically in the person of Jesus, but also that the *Logos* which came into the world in the person of Jesus had not previously been absent from it.

To flesh this out metaphysically, Knight engages with the thought of Maximos the Confessor (c. 580-662). Maximos saw the *Logos* of God as being manifested not only in the person of Jesus, but also in 'the words (*logoi*) of all prophetic utterance, and in the *logoi*—in the sense of underlying principles—of all created things.'[74] Christ the Creator, the divine *Logos*, is understood as having implanted in every created thing, a characteristic *logos* that manifests God's intention for that thing, giving it its particular essence and *telos* towards God. These *logoi*, though existing in created things, are uncreated because they are 'nothing other than God's presence in each thing: a manifestation of the *Logos* itself.'[75] Since God is present in all created things through their *logos*, Knight interprets Maximos as supporting a panentheistic view of creation. [76]

This panentheistic Orthodox approach leads to a conception of 'nature' that is 'quite different from that assumed in most Western understandings of divine action.'[77] Rather than considering there to be a 'pure nature' that exists in and of itself, in need of additional acts of divine grace, Knight's approach supposes that grace is normative in nature.[78] This serves as the basis for Knight's conception of divine action. He affirms that God acts in the world by upholding its 'fixed instructions' or 'laws of nature.' Nevertheless, God does not uphold these 'fixed instructions' as an absent, distant God, simply letting nature exist on its own. Rather, the laws of nature are grounded by each created thing's *logos*, which is a manifestation of the divine *Logos*.[79] Thus, God acts imminently in the natural world in virtue of being intrinsic to every created thing. By each

[74] Knight, *The God of Nature*, p. 98.
[75] Knight, *The God of Nature*, p. 98.
[76] Knight, *The God of Nature*, p. 98.
[77] Knight, *The God of Nature*, p. 100.
[78] For a seminal theological examination of 'pure nature', see: H. De Lubac and R. Sheed (trans.), *The Mystery of the Supernatural*, New York, Herder and Herder, 1967.
[79] Here, we see that Knight adopts a prescriptive understanding of the laws, where the laws make the way that reality is.

thing's very nature, which is divine, they are drawn towards their eschatological end and towards 'various intermediate goals associated with the journey towards that state.'[80]

2.2.2. Panentheism and Divine Action

Knight stresses that involvement with God is a necessary part of what it means to be natural. Thus, there is no sense in which God must 'break into' nature to act. As noted by Ritchie: 'this approach to divine action affirms that nature is made more natural as it participates in God's active presence.'[81] In light of this, Knight's incarnational naturalism avoids the pitfalls of interventionism and non-interventionism, which first assume that the natural order goes 'on its own accord' and then tries to find space for God to act.

Furthermore, Knight's incarnational naturalism offers an interesting alternative formulation of theistic naturalism compared to Edwards' approach. Knight draws heavily on the Eastern Orthodox tradition, thereby upholding a more intimate connection between God and nature than has been appreciated in much Western theology. Secondly, Knight avoids using Aquinas' distinction between primary and secondary causes, rather using the prologue of the Gospel of John as a launching pad for a conception of divine action centred on the divine *Logos*.[82]

[80] C. Knight, *Eastern Orthodoxy and the Science-Theology Dialogue*, Cambridge, Cambridge University Press, 2022, p. 46.
[81] Ritchie, *Divine Action and the Human Mind*, p. 267.
[82] Knight does sometimes express his model of divine action in terms of primary and secondary causes. However, his emphasis on the Eastern Orthodox tradition diverts from the traditional Thomist context in which primary and secondary causation normally features.
C. Knight, 'Divine Action: A Neo-Byzantine Model', *International Journal for Philosophy of Religion*, vol. 58, 2005, p. 188.

2.2.3. Panentheism and Divine Transcendence

Nevertheless, there are two central concerns with Knight's accommodation of divine action. First, can his panentheist approach uphold divine transcendence? If God is in the world, then how can God be more than, or transcend, the world?[83]

This is a significant challenge for Knight's panentheism. He writes: 'These *logoi*, though inhering in each created thing, are not themselves created. They are…nothing other than God's presence in each thing: a manifestation of the *Logos* itself.'[84] Since it is the *logos* of a created entity that determines that thing's nature and this *logos* is nothing other than the presence of God, then the nature of created entities is fully constituted by God existing within them. In this case, however, God exists in the created order, thereby negating God's complete otherness and transcendence.

In response, Knight may distinguish between a manifestation of the *Logos* and the *Logos* itself. While the *Logos* manifests itself in the *logoi* of created entities, the *Logos* itself transcends the created order.[85] Such a response is inadequate because it leads to a qualified understanding of divine transcendence. Knight still supposes that the *logoi*, that is, the manifestations of the *Logos*, are divine because they are uncreated and nothing other than the presence of God. By only allowing the *Logos* itself to transcend the natural order, divine transcendence is 'qualified and mitigated' because some part of God, that is, the *logoi*, does not transcend nature.[86] In turn, Knight's incarnational naturalism fails to do complete justice to divine transcendence.[87]

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[83] Ritchie, *Divine Action and the Human Mind*, p. 267.
[84] Knight, *The God of Nature*, p. 98.
[85] Such a distinction reflects the common Eastern Orthodox distinction between God's essence (*ousia*) and energies (*energeia*), which is standardly used to outline how God can be manifested in the universe while still transcending the universe. For more on this, see:
D. Buxhoeveden and G. Woloschak (eds.), *Science and the Eastern Orthodox Church*, Farnham, Ashgate Publishing, 2011.
[86] M. Tabaczek, 'The Image of God in Western (Christian) Panentheism: A Critical Evaluation from the Point of View of Classical Theism', *Sophia*, vol. 61, 2022, p. 637.
Tabaczek uses this language in a broader critique of panentheism.
[87] Michael Dodds makes a similar argument that panentheism inevitably collapses into pantheism by drawing on a univocal understanding of 'being' in relation to God and nature.

2.2.4. Panentheism and Creaturely Causality

Furthermore, Knight's account faces the issue of whether it respects the causal integrity of created entities. As noted, the essence of each created thing is determined by that thing's uncreated *logos*. Since the essence of each created thing is not only determined by God, but *is* the presence of God, it is unclear what room is left for a created entity to exert its own autonomy and causal power. Speaking broadly about panentheism, John Polkinghorne writes: 'such a view compromises the world's freedom to be itself, which God has given to his creation.'[88] I am not suggesting that nature must be wholly independent from God to have its own causal integrity. To do so would fall back into the pitfall of interventionism. Rather, there is a difference between recognising God's intimate role in creation while still respecting the independence of the created order, and having God's presence in creation overthrow nature's integrity. Knight's commitment to panentheism unfortunately falls into the latter category, overstating the intimate connection between God and nature in a way that undermines divine transcendence and natural causality.

To summarise this section, both Edwards' and Knight's conceptions of theistic naturalism adopt appealing theological principles, seeking to affirm God's intimate connection to nature while emphasising divine transcendence. They achieve this by contending that divine action does not compete with natural processes but that God can act through them. Where both accounts fall short is offering an adequate metaphysical explanation for how God achieves this. Edwards resorts too quickly to mystery and Knight relies on the theologically problematic position of panentheism.

M. Dodds, *Unlocking Divine Action: Contemporary Science and Thomas Aquinas*, Washington, Catholic University of America Press, 2012, pp. 166-168.

[88] Polkinghorne, *Science and Providence*, p. 20.

Section Three: Miracles and Theistic Naturalism

Now I turn to the question of how theistic naturalism may accommodate miracles. Through engaging with Edwards and Knight, I examine different theistic naturalist approaches to miracles. I focus on the conceptions of the laws of nature and the God-nature relationship adopted, as well as how they envisage the theological significance of miracles.

3.1. Edwards on Miracles

When it comes to accommodating miracles, Edwards again departs from the thought of Aquinas. As I explore in the next chapter, Aquinas views miracles as events 'produced by God's power alone on things which have a natural tendency to the opposite effect.'[89] In contrast, Edwards asks: 'What if God, out of loving fidelity to creatures, works consistently through secondary causes?'[90] He answers in the affirmative, supposing that even in miracles, 'God acts in and through the known and unknown laws of nature.'[91]

3.1.1. Edwards on the Laws of Nature

In expounding his understanding of the laws of nature, Edwards draws heavily on the thought of Catholic theologian William Stoeger. Stoeger distinguishes between two senses of the term.[92] The first sense refers to the regularities, relationships, processes, and structures in nature *as we know them through modern science*. The laws of nature, in this sense, are human models of reality as

[89] T. Aquinas and the English Dominican Fathers (trans.), *On the Power of God*, Maryland, The Newman Press, 1952, 6.2.
[90] Edwards, *How God Acts*, p. 83.
[91] Edwards, *How God Acts*, p. 84.
[92] W. Stoeger, 'Describing God's Action in the World in Light of Scientific Knowledge of Reality', in R. J. Russell, N. Murphy, and A. Peacocke (Eds.), *Chaos and Complexity: Scientific Perspective on Divine Action*, Vatican City State, Vatican Observatory Publications, 1995, p. 248.

developed through current science.[93] The second sense refers to the regularities, relationships, processes, and structures in nature *as they function in reality*.[94]

Edwards emphasises that the laws of nature *as we know them* do not wholly reflect the laws of nature *as they function in reality*. He writes: 'the laws of nature as we know them are provisional, imperfect and limited' and that there is much more to reality than we know, understand, or have adequately modelled.[95] There are two reasons for this. First, no model can fully reflect the rich tapestry of reality. No description of a goal in football can fully reflect the reality of being there, no description of the Mona Lisa can fully reflect its beauty.[96] Secondly, there are aspects of reality that modern science has not yet fully gotten to grips with and modelled accurately. Edwards argues that even at the level of physics, there is much that escapes our comprehension, including 'aspects of the quantum level of reality and the physics of complex systems.'[97]

One ambiguity in Edwards' thought on the laws is whether the gap between the laws *as we know them* and the laws *as they function in reality* can be bridged. Is it possible, in principle, for modern science to offer models of the laws of nature that accurately reflect the regularities, relationships, processes, and structures in nature as they function in reality?[98] Edwards seems to answer 'yes' to this question. He speaks of 'a whole range of secondary causes that our current science cannot yet model or cannot yet model well.'[99] The inclusion of 'yet' implies that science, in principle, can model well all secondary causes, it is just the case that current science cannot currently do this.

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[93] Edwards, *How God Acts*, p. 85.
[94] The laws, in this sense, are prescriptive because they govern the usual course of nature, making reality the way that it is.
Edwards, *How God Acts*, p. 85.
[95] Edwards, *How God Acts*, p. 86.
[96] For this reason, the laws of nature *as we know them* cannot adequately reflect personal relationships or deeply held values
Edwards, *How God Acts*, p. 87.
[97] Edwards, *How God Acts*, p. 85.
[98] Of course, this is all while still appreciating that a model can never reflect the complete richness of reality.
[99] Edwards, *How God Acts*, p. 87.

3.1.2. Edwards on Miracles and the Laws of Nature

Edwards' distinction between the two senses of the laws of nature has important consequences for miracles. He writes that a miracle:

> may take us beyond the laws of nature understood in the first sense — as our limited models of reality. But it may not be beyond the laws of nature understood in the second sense — as the relationships and processes that function in reality, which are more than we have fully understood or adequately modelled.[100]

For Edwards, all miracles occur in accordance with the laws of nature *as they function in reality*. Since he suggests that all laws of nature *as they function in reality* can, in principle, be accurately modelled by science, an adequate scientific explanation can, in principle, be offered for every miracle. It is just that some miracles exceed the laws of nature *as we know them.*

In affirming that miracles occur through secondary causes in accordance with the laws *as they function in reality*, Edwards denies any metaphysical distinction between natural events and miracles. Both natural events and miracles occur through God acting as primary cause and natural entities acting as secondary causes. Indeed, it is not even the case that natural events can be explained by current science whereas miracles cannot. He emphasises that there are natural events that cannot yet be modelled well by current science.[101] On the other side, Edwards allows for miracles that can be explained by current science. He writes:

> A person who is cured from illness in a way that science can explain, and who finds God providentially at work in this cure, so that it becomes for her a call and address by God, might well see this as a miracle, a wonderful manifestation and sign of the Spirit of God.[102]

[100] Edwards, *How God Acts*, p. 87.
[101] Edwards, *How God Acts*, p. 85.
[102] Edwards, *How God Acts*, p. 89.

Thus, any distinction between natural events and miracles, for Edwards, breaks down.

3.1.3. Edwards' Definition of a Miracle

Accordingly, a miracle occurs when:

> a person experiences God's self-communication in a particular configuration of events, in such a way that God's self-communication participates immediately in the event. God is experienced with a kind of immediacy, in and through the event.[103]

This is a subjective definition of a miracle because objective features of the event, such as being an intervention from God or violating the laws of nature, play no role in determining the nature of a miracle. Rather, a miracle is determined *solely* by how the subject experiences the event and, in particular, whether the subject immediately experiences God's self-communication.[104] In light of this, every event is a candidate for a miracle. Every event is a special act of God, in the sense of producing God-given objective effects in the created world. Therefore, every event may be experienced as an instance of God's self-communication.

So, in Edwards' neo-Thomist theistic naturalism, we see a radically different conception of miracles compared to the interventionist approach. Rather than miracles being conceived metaphysically as divine interventions, Edwards favours a subjective definition where a miracle is an event where the subject immediately experiences God's self-communication. All events, including miracles, occur in accordance with the laws of nature *as they function in reality*. As a result, all miracles, in principle, can be adequately modelled by the laws of nature *as described through science*.

[103] Edwards, *How God Acts*, p. 87.
[104] P. Harrison, 'Newtonian Science, Miracles, and the Laws of Nature', *Journal of the History of Ideas*, vol. 56, no. 4, 1995, p 533.

To more deeply examine the plausibility of Edwards' approach, I will now evaluate the key arguments for and against a subjective definition of miracles.

3.2. Arguments for a Subjective Definition of Miracles

3.2.1. The Causal Integrity of Nature

Edwards' central argument for adopting a subjective account of miracles is to not impinge upon the nexus of secondary, natural causes. His question, 'What if God, out of loving fidelity to creatures, works consistently through secondary causes?', implies that if God acts independently of natural causes, then God is not acting out of loving fidelity to creatures.[105] Hence, for Edwards, God causing miracles through natural causes in accordance with the laws fully safeguards the causal integrity of nature.

3.2.2. Respect for Modern Science

Another argument for a subjective account of miracles is to avoid any conflict with science. German Reformed theologian, Friedrich Schleiermacher (1768-1834) defines a miracle subjectively as 'merely the religious name for event.'[106] He considered any objective definition of miracles to 'bring religion into the disrepute of encroaching upon the totality of scientific and empirical judgments', thereby damaging religion's credibility in a modern intellectual context.[107] An understanding of miracles as divine interventions or direct acts of God would entail that science cannot give a complete account of all causes in nature. This, for Schleiermacher, would undermine

[105] Edwards, *How God Acts*, p. 83.
[106] F. Schleiermacher and R. Crouter (trans.), *On Religion: Speeches to its Cultured Despisers*, Cambridge, Cambridge University Press, 1996, p. 48.
[107] Schleiermacher, *On Religion*, p. 48.

the significance of science.[108] Therefore, he favours a subjective approach that leaves physics 'inviolate.'[109]

Mark Harris also makes a case for subjective miracles on the basis of science. He contends that we have good reason to think that speaking of miracles as naturally impossible or transgressions of the laws of nature is 'largely meaningless.'[110] The basis of this claim is that for any given miracle, there is a possible natural, scientific explanation. His justification is that in the context of deep time, that is, the idea that Earth has been in existence for untold ages before humanity, even events of the lowest probability become inevitable in the long history of the universe.[111] In turn, it may be possible for miraculous events, such as Moses parting the Red Sea in Exodus 14, to occur through natural causes, explainable by science.[112] With such a possibility, Harris favours prioritising the subjective dimensions of miracles.[113]

3.2.3. The Importance of Theological Context

There are also theological reasons for a subjective approach. Karl Rahner (1904-1984), who heavily influences Edwards, emphasises that in the New Testament, a miracle is a *semeion*, a sign, a manifestation of 'God's salvific activity in grace and in revelation.'[114] Such a sign cannot be discerned through purely objective factors, such as whether it violates the laws of nature. Rather, it is perceived through its salvific and revelatory context and its relation to the subject.[115] For Rahner, a miracle presupposes a 'person who is willing to allow himself to be called in the depths

[108] Schleiermacher has a lowly view of miracles, questioning their efficacy in producing faith.
F. Schleiermacher and P. Nimmo (trans.), *The Christian Faith*, London, Bloomsbury, 2016, p. 71.
[109] Schleiermacher, *On Religion*, p. 48.
[110] M. Harris, 'Miracles and the Uniformity of Nature', in K. Zwier, D. Weddle, and T. D. Knepper (Eds.), *Miracles: An Exercise in Comparative Philosophy of Religion*, Cham, Springer, 2022, p. 258.
[111] Harris, 'Miracles and the Uniformity of Nature', p. 259
[112] Harris, 'How Did Moses Part the Red Sea?', pp. 5-31.
[113] Harris, 'Miracles and the Uniformity of Nature', p. 261.
[114] K. Rahner, *Foundations of Christian Faith: An Introduction to the Idea of Christianity*, London, Longman and Todd, 1978, p. 258.
[115] Maurice Wiles also stresses the spiritual significance of miracles rather than any objective features.
M. Wiles, *God's Action in the World: The Bampton Lectures for 1986*, London, SCM Press, 1986, p. 67.

of his existence' and is able to understand the given event as a call from God and thereby respond accordingly.[116]

An event that simply violates the laws of nature, such as God raising a cube of sand in an uninhabited desert, would not constitute a miracle because of its lack of salvific and revelatory significance. Instead, Rahner argues that a miracle is determined by the purely subjective factors of the subject immediately experiencing 'divine self-communication.'[117] Certain biblical passages can be interpreted as indicating such a view of miracles. Mark 6:5 speaks of Jesus' literal inability to work miracles in Nazareth.[118] This may suggest a subjective account because Jesus' inability to perform miracles would not be grounded in any lack of power, but in the inability of the subjects to interpret the events as divine self-communication.

Notably, a subjective conception of miracles focusses on the complete wonder of the natural order.[119] If what determines a miracle is how the subject interprets the event, then every event may be interpreted as a miracle. Indeed, as argued by Edwards, every event should be understood as a miracle. Augustine, in his earlier writings, supports a similar approach. In *The Usefulness of Belief*, he defines a miracle as 'something strange and difficult which exceeds the expectation and capacity of him who marvels at it.'[120] Building upon this thought, he suggests that every event should be considered miraculous because, in a sense, every event is unusual. Augustine writes: 'Is not the daily course of nature itself something to be amazed at? All things are full of miracles, but our wonder is lessened by their repetition.'[121] This approach emphasises the wondrous, miraculous nature of all events, affirming that everything occurs through the Will of God.

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[116] Rahner, *Foundations of Christian Faith*, p. 263.
[117] Rahner, *Foundations of Christian Faith*, p. 261.
[118] I am grateful to Professor Mark Harris for providing this example during my Confirmation of Status assessment.
[119] R. F. Holland also emphasises how events with natural causes may act as signs and be of theological significance. R. F. Holland, 'The Miraculous', *American Philosophical Quarterly*, vol. 2, no. 1, 1965, pp. 43-51.
[120] Augustine, 'The Usefulness of Belief' in J. Burleigh (ed. and trans.), *Augustine: Earlier Writings*, Louisville, Westminster, John Knox Press, 2006,
[121] Augustine, *Sermo* 247, cited in J. Mourant, 'Augustine on Miracles', *Augustinian Studies*, vol. 4, 1973, p. 104.

So, there are three central arguments in favour of a subjective approach to miracles. Such an approach:

1. Respects the causal integrity of the natural order;
2. Avoids conflict with the findings of modern science;
3. Emphasises the wider theological context of miracles and wonder of the natural order.

3.3. Arguments against a Subjective Account of Miracles

3.3.1. The Intrinsic Wonder of Miracles

A central issue with this subjective approach can be elucidated through the thought of Augustine and Aquinas on miracles.[122] Augustine used the term *miraculum* in various ways.[123] While, in *The Usefulness of Belief*, he gives a subjective definition of miracles, in his later works *The Trinity* and *The Literal Meaning of Genesis*, Augustine offers a more metaphysically robust, objective definition. For example, in *The Literal Meaning of Genesis*, he writes:

> all things that have been made not in the natural development of things, but in a miraculous way to signify this grace, have had their causes also hidden in God.[124]

This quote draws a metaphysical distinction between natural events and miracles. Natural events occur through the causal powers of natural creatures whereas miracles occur more directly by a cause hidden within God.[125]

This point from Augustine also serves to undermine the Stoic claim that all events occur through fate or necessity. R. M. Grant, *Miracles and Natural Law in Graeco-Roman and Early Christian Thought*, Amsterdam, North Holland Publishing Company, 1952, p. 219.

[122] I examine Aquinas' views on miracles in greater depth in the next chapter.

[123] J. Hardon, 'The Concept of Miracle from St. Augustine to Modern Apologetics', *Theological Studies*, vol. 15, no. 2, 1954, p. 230.

[124] Augustine, *The Literal Meaning of Genesis*, 9.18.

[125] Augustine predates the modern concept of the laws of nature so he grounded the regularity of nature through the Stoic concept of seminal reasons (*rationes seminales*). For more on Augustine's conception of seminal reasons, see: J. Brady, 'St. Augustine's Theory of Seminal Reasons', *The New Scholasticism*, vol. 38, no. 2, 1964, pp. 141-158. For more on Augustine's conception of miracles, see:

Augustine's objective definition ties in with the theological function he assigns to miracles. The fact that the rod of Moses turning into a serpent (Exodus 4:3) or Jesus turning water into wine (John 2) are such unusual events that are directly caused by God means that they are particularly distinct exemplifications of God's power and poignant signs for truths about God.[126] Indeed, Augustine holds that miracles persuade even the foolish of the divine power, although they fail to recognize that all events are ultimately exemplifications of divine action.[127]

This idea is further developed by Aquinas. He distinguishes between two ways an event may be wondrous. First, an event is subjectively wondrous when the event produces wonder in an individual because the cause of the event is hidden to the individual although, in principle, it is knowable.[128] Aquinas gives the example of an eclipse as a subjectively wondrous event.[129] This event would induce wonder in a child who does not know the cause, but not in an astronomer who could explain how eclipses occur.[130] So, in these cases, the source of wonder is due to the epistemic limitations of the subject not knowing the event's cause. Secondly, an event may be intrinsically wondrous. An event is intrinsically wondrous when its cause is not merely unknown to the observer, but is, in principle, unknowable.[131]

For Aquinas, miracles are intrinsically wondrous because they are 'produced by God's power alone', with God being 'the most hidden cause and the furthest removal from our senses.'[132] Whereas science can examine natural, secondary causes to discern the conditions in which a cause

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Z. Moffatt, 'Augustinian Miracles: An Alternative to Prevailing Orthodoxies?', *Zygon: Journal of Religion and Science*, vol. 60, no. 1, 2025, pp. 58-77.

126 Augustine, E. Hill (trans.), and J. Rotelle (ed.), *The Trinity*, New York, New City Press, 1991, 3.1.11.

127 Augustine, *The Trinity*, 3.1.11.

128 Aquinas, *On the Power of God*, 6.2.

129 Aquinas, *Summa Theologiæ*, 1.105.7.

130 This is not to say that the astronomer would not find eclipses wondrous at all; it is rather that the astronomer would not find eclipses wondrous in the sense that they do not know the cause of these events.

131 Aquinas, *On the Power of God*, 6.2.

132 Aquinas, *On the Power of God*, 6.2.

is manifested, what the given effect is, and what may inhibit the manifestation of the cause, God's causal action is not susceptible to such analysis. God's action is not constrained to produce a given effect, manifest in particular conditions, or be prevented in any way. It transcends the limitations of natural causes, with God able to produce anything according to God's will. Furthermore, for Aquinas, we can only examine the nature of God's power from the effects that God produces, and these effects never reflect the full greatness of God's power.[133] Consequently, miracles transcend the entire natural order, rooting their wonder not in epistemic limitation, but in metaphysical uniqueness.

The intrinsic wonder of miracles is, for Aquinas, intimately tied to their theological function, which centres on matters of faith. First, the occurrence of miracles serves as arguments for the truths of Christianity. Aquinas writes, 'when something is done above the faculty of nature, it provides a proof of that which surpasses the natural faculty of reason.'[134] Such an approach is in line with the role of Jesus' miracles in the Gospels. Indeed, Aquinas quotes Mark 16:20, which states: 'Then the disciples went out and preached everywhere, and the Lord worked with them and confirmed his word by the signs that accompanied it.[135] Miracles confirm truths of God that cannot be justified through reason alone. It is important to note that by 'proof' Aquinas is not stating that miracles serve as rational arguments on neutral grounds.[136] Rather, when a disciple makes a particular claim and then performs a miracle, the miracle, in virtue of its sheer wonder and wider theological context, can affectively convince the observers of the claim's truth.[137]

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[133] Aquinas' reasoning for this is that while God works with all of his power, 'his effect is limited according to the determination of his will and the order of reason.'
Aquinas, *On the Power of God*, 1.2.
[134] Aquinas, *On the Power of God*, 6.9.
[135] Aquinas, *On the Power of God*, 6.9.
[136] David Fergusson argues that 'the evidential significance of miracles has been overstated since the early modern period.'
D. Fergusson, *The Providence of God: A Polyphonic Approach*, Cambridge, Cambridge University Press, 2018, p. 276.
[137] I am grateful to Professor Peter Harrison for raising this point to me.

Secondly, miracles come to the assistance of those who are faithful. Like how poverty in worldly goods merits spiritual riches and humility in this life merits exaltation, Aquinas supposes that 'faith through despising as it were things done naturally, merits after a fashion the working of miracles which are wrought above the faculty of nature.'[138] There is a tidy symmetry between the intrinsic wonder of miracles and their theological function. Since miracles occur above the natural order, they serve as uniquely legitimate signs for truths that surpass the faculty of reason and for aiding those who are committed to a Being that transcends the natural world. So, both Augustine and Aquinas hold that miracles are solely caused by God, making them intrinsically wondrous and, in turn, particularly suited to vitalise faith in Christ, act as signs for truths of Christianity, exemplify God's power, and help the faithful.

3.3.2. The Challenge for Subjective Definitions

Subjective definitions of miracles deny their intrinsic wonder. This approach differentiates miracles *solely* through how the event is interpreted, rather than any intrinsic metaphysical feature. On a purely subjective approach, all miracles occur in accordance with the laws of nature. This means that their causes are, in principle, knowable through science. At best, subjective miracles may be subjectively wondrous.[139]

This poses a challenge for the subjective approach. All things equal, an event whose cause is intrinsically unknowable is more spectacular and wondrous than an event whose cause is subjectively unknowable. This is because the wonder of the former event is rooted in absolute uniqueness rather than epistemic limitation. The occurrence of an intrinsically wondrous event in a rich theological context would, therefore, be of great religious significance. For example, God

[138] Aquinas, *On the Power of God*, 6.9.
[139] Miracles, on the subjective view, may not even be subjectively wondrous if the subject experiences the event as a form of divine self-communication and can explain the cause of the event.

acting directly to miraculously turn Moses' rod into a serpent in Exodus 4 poignantly reveals the authority of Moses and the presence of God.

As is the view of Augustine and Aquinas, the intrinsic wonder of miracles allows them to compellingly exemplify God's power, vitalise faith in Christ, justify theological truths, and aid the faithful. This is not to say that the theological value of miracles is *solely* derived from their absolute unknowability or that non-miraculous events cannot be religiously significant. Rather, it is that the absolute unknowability and intrinsic wonder of miracles make them *particularly and distinctively* effective at achieving these religious ends. Consequently, subjective definitions of miracles, in robbing them of their intrinsic wonder, undermine this efficacy, thereby compromising the unique theological function of miracles.

3.3.3. Identifying Objective Miracles

A potential challenge is that we can never definitively know whether a cause is intrinsically hidden or simply unknown to current science.[140] History has shown that many seemingly inexplicable phenomena were later explained through science. It is quite unclear what causes some future, ideal science may be able to explain.[141] Therefore, the advocate of subjective miracles may dispute the claim that miracles can only be uniquely suited to vitalise faith in Christ, amongst other things, if they are intrinsically wondrous. If observers can never establish whether an event is intrinsically wondrous, how can the intrinsic wonder of an event make any theological difference to those observers?

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[140] D. Corner, *The Philosophy of Miracles*, London, Continuum, 2007, p. 31.
Here, I am developing Aquinas' distinction between two types of wonder to (1) events whose causes are, in principle, explicable by science and (2) events whose causes are, in principle, inexplicable by science. This is a development because Aquinas preceded the rise of modern science. Nonetheless, Aquinas giving the example of eclipses as a subjectively wondrous event suggests that it is in keeping with Aquinas' thought that his distinction between subjective and intrinsic wonder may be understood in terms of scientific explanation.
[141] C. Hempel, 'Comments on Goodman's "Ways of Worldmaking"', *Synthese*, vol. 45, no. 2, 1980, p. 195.

Such a counter fails, however, because it overlooks the role theological context may play in helping the observer discern that an intrinsically wondrous event has taken place. There is good reason to think God would directly cause unusual events in theologically heightened contexts where there is a particular need.[142] Therefore, in examining whether an event is intrinsically wondrous, the theist will not only consider whether the cause of the event cannot be explained by current science, but also whether the wider context of the event is a candidate for God causing a miracle. Is the situation of such theological significance that God would act directly to vitalise faith in Christ, help the faithful, exemplify the divine power, or justify religious truths?[143]

This is not to claim that it is always a simple matter to decide whether these criteria have been met, but it is plausible that a theist may justifiably believe an intrinsically wondrous event has occurred if these theological standards have been met and the event is highly unusual, with current science not able to explain it, or even be near to offering such an explanation. Following this, a theist can justifiably distinguish between intrinsically wondrous events and events that have not yet been explained by science. Therefore, the objection that intrinsically wondrous events are not particularly suited to vitalise faith because they cannot be identified fails.

This examination highlights a significant flaw with subjective definitions of miracles. A central criterion for an account of miracles is to uphold their intrinsic wonder and subjective definitions fail to achieve this.

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[142] Again, situations may arise where a particularly distinct exemplification of God's power, vitalisation of faith, justification of religious truths, or assistance to the faithful is called for.

[143] These are not the only theological factors that may be considered. Others include the 'wider teleological pattern' that the event participates in and whether such an event is alluded to in biblical prophecy.
Larmer, *The Legitimacy of Miracle*, p. 87.

3.3.4. The Causal Integrity of Nature: A Response

Edwards' concern that an objective definition of miracles would impeach upon the causal integrity of nature relies on a theologically inadequate understanding of the interplay between primary and secondary causes. Edwards writes that, for Aquinas, a miracle occurs when 'the action of God replaces secondary causes.'[144] The idea of God replacing secondary causes is the basis of his worry that God acting independently of secondary causes would encroach upon their integrity. The language of 'replacement' suggests that God is encroaching upon the natural order, overtaking the role that ought to be assigned to natural causes.

Nonetheless, this conception of the interplay between primary and secondary causes is flawed, both in the sense of not reflecting the thought of Aquinas and relying on an impoverished God-nature relationship. For Aquinas, God does not replace the function of secondary causes when it comes to miracles. Rather, God can act as primary cause, independent of all secondary causes, to produce irregular effects.[145] Aquinas does not see God acting as primary cause to be in competition with secondary causes, overruling their role in the case of miracles. Instead, Aquinas emphasises the complete power and transcendence of God, affirming that God can produce events without secondary causes.

To think of God replacing secondary causes in the case of miracles is to undermine the transcendence of God, reflecting a competitive model of divine and natural causation.[146] More broadly, the fear that a direct action of God encroaches upon nature's autonomy relies on the theologically problematic conception of nature as a self-sufficient entity apart from God. If nature

[144] D. Edwards, 'Towards a Theology of Divine Action: William R. Stoeger, S. J., on the Laws of Nature', *Theological Studies*, vol. 76, no. 3, 2015, p. 500.
[145] E. McGowan, 'The Necessity of Primary Causes: A Critique of Denis Edwards', *New Blackfriars*, vol. 104, no. 1111, 2023, p. 329.
[146] Of course, if God can produce all effects purely through acting as a primary cause, there is the question of what substantial causal difference secondary causes actually make? I address this question in the next chapter.

wholly depends upon and is directed by the Will of God, then a direct action of God cannot impinge upon the integrity of the natural order.[147]

3.3.5. Respect for Modern Science: A Response

To respect the findings of modern science, one does not need to hold that every event occurs through secondary, natural causes and is explainable by science. In Chapter One, while I ultimately rejected interventionism, I recognised the plausibility of Alvin Plantinga's and C. S. Lewis' arguments that interventionist miracles are not contrary to modern science. Both Plantinga and Lewis constrained the role of science to examine events in the absence of divine intervention, with the laws of nature only holding in such cases. Similarly, one can maintain that it is the role of science to examine events that occur through natural causes, in accordance with the laws of nature. In this case, miracles, as events directly caused by God, would not be unscientific but rather beyond the purview of science.[148] In turn, a commitment to an objective conception of miracles need not be contrary to modern science.

Furthermore, Harris' claim that the concept of a naturally impossible event is 'largely meaningless' can be disputed.[149] In his argument, Harris draws on discussions of deep time in geology. He emphasises that events which seem highly improbable from our limited human perspective may be highly likely or inevitable in the context of deep time. Such discussions often state that deep time makes the impossible possible. For example, in 'Significance of the Rare Event in Geology' (1967), P. E. Gretener, who Harris cites, includes the quote: 'What we regard as impossible on the

[147] I examine Aquinas' justification of this claim to a greater degree in the next chapter.
[148] In Chapters Three, Four, and Six, I consider whether some miracles may occur not directly by God, but by God acting through anomic causes.
[149] Harris, 'Miracles and the Uniformity of Nature', p. 258.

basis of human experience is meaningless here. Given so much time, the "impossible" becomes possible.'[150]

This claim relies on a qualified notion of 'impossible' that includes events which occur according to a 'presently unknown physical law.'[151] This notion of 'impossible' refers to events that, from our limited perspective, seem impossible rather than genuinely impossible events that cannot happen through natural processes. Deep time does not threaten genuinely naturally impossible events because, no matter the length of time, they will never occur through natural processes. Thus, Harris' examination of deep time fails to demonstrate that the idea of *genuinely* naturally impossible events is meaningless.

Even if there are possible, but exceedingly improbable, natural explanations for miracles, this does not entail that they are the best explanations. As argued above, the theist has good reason to think that God acts directly in nature to cause intrinsically wondrous events in order to achieve certain theological ends in a particularly effective way. Thus, in contexts of great theological significance, the theist is justified in supposing that God may directly cause an event against the course of nature. So, for example, with the parting of the Red Sea in Exodus 14, while there may be natural explanations, however unlikely, citing strong winds, the eruption of Thera, and cosmic catastrophes, the theist is not compelled to accept them.[152] They can justifiably believe that this event is the direct action of God, miraculously empowering Moses to part the Red Sea, in virtue of (1) the unlikelihood of these scientific explanations and (2) the event's theological significance and miraculous character.[153]

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[150] G. Wald in P. E. Gretener, 'Significance of the Rare Event in Geology', *The American Association of Petroleum Geologists Bulletin*, vol. 51, no. 11, 1967, p. 2201.
[151] Gretener, 'Significance of the Rare Event in Geology', p. 2197,
[152] Harris, 'How Did Moses Part the Red Sea?', pp. 8-22.
[153] My aim here is not to denigrate scientific explanations for seemingly miraculous events, but rather to emphasise that such explanations do not need to be unexaminedly accepted.

3.3.6. The Importance of Theological Context: A Response

Thirdly, while it is commendable that subjective definitions highlight the centrality of theological context in the nature of miracles, an objective definition can also achieve this. Objective definitions do not suppose that metaphysical factors *solely* determine the nature of miracles, but rather that they play some role in their nature. Therefore, this approach can hold that all miracles have a single objective feature that distinguishes them from natural events and that miracles would only occur in contexts where they can serve as a sign or manifestation of God's salvific activity in grace and in revelation. A commitment to objective features of miracles does not necessitate, and should not lead to, a neglect of the subjective features.[154]

An objective approach can also explain the case of Jesus not being able to perform miracles in Mark 6:5. Jesus may not be able to perform a miracle, not due to any inability to cause an intrinsically wondrous event, but because the context does not call for such an event. As miracles only occur in particular theologically heightened contexts, the situation in Mark 6 may not have deserved a miracle. This is suggested in the passage as Jesus was amazed by the lack of faith of the crowd. It is analogous to a teacher not being able to reward a pupil, not due to the teacher lacking the power to issue a reward, but because the situation and behaviour of the pupil do not call for it. Similarly, Jesus could not perform a miracle in this situation, not due to a lack of power, but because the context did not merit one.

Finally, an objective approach to miracles can also emphasise the complete wonder of the natural order. To suppose that miracles are wondrous in a unique way (i.e. intrinsically wondrous) does

[154] Strictly speaking then, I am advocating a hybrid conception of miracles where both objective and subjective features are central to their nature. I have not framed it this way in the main body of the text as I have defined a subjective approach to miracles as *solely* understanding miracles in terms of subjective factors.

not entail that natural events are not wondrous. The objective approach can recognise that all events are wondrous in that they depend upon the Will of God and reflect divine goodness, while still appreciating a metaphysically unique category of miracles which are wondrous in a further, distinct respect.

To summarise this examination of subjective definitions of miracles: The central flaw with this approach is that it robs miracles of their intrinsic wonder, denying that the causes of these events are intrinsically unknowable. This is problematic because the intrinsic wonder of miracles allows them to fulfil their unique theological function of being *particularly* and *distinctively* suited at vitalising faith in Christ, exemplifying the divine power, justifying theological truths, and aiding the faithful. The subjective approach fails to meet this key criterion and the arguments in its favour are insufficient. Thus, an objective definition of miracles that upholds their intrinsic wonder ought to be preferred. In turn, Edwards' subjective definition of miracles, and this approach more broadly, is inadequate.

3.4. Knight on Miracles

In light of Edwards' failure to accommodate miracles, Knight's incarnational naturalism offers an interesting alternative. For Knight, the role of science is to uncover certain laws of nature which are grounded by the *logoi* implanted in created things. Such laws can be investigated by science because their effects can 'be replicated under laboratory conditions.'[155] Nevertheless, science cannot describe every law. Knight holds that there are laws of nature that supersede scientific understanding. These non-scientific laws merit being laws of nature because they are 'fixed instructions' which God has implanted in the universe from the same source as the scientific laws, namely, the *logoi* of created things.

[155] Knight, *The God of Nature*, p. 95.

It is through non-scientific laws that Knight envisages miracles occurring. He draws on the Eastern Orthodox view of miracles as 'a "breaking out" of something that is always present in the world, albeit in a way that is usually hidden from us.'[156] Rather than miracles occurring through an external intervention, nature intrinsically contains the potentiality to instantiate miracles.

3.4.1. Miracles and Higher Laws

In the case of miracles, the scientific laws of nature are set aside with 'higher laws becoming operative.'[157] These higher laws can produce effects that 'seem abnormal or unlawful in scientific terms – but that are fully lawful from a higher perspective.'[158] Such events cannot be 'replicated under laboratory conditions' because these laws reflect the 'the faithful response to God of those who recognize God as their creator and redeemer.'[159] The laws of nature that science uncovers reflects powers of created entities that can be examined through experimentation and observation, whereas the laws that miracles adhere to defy such investigation, being concerned with the eschatological and incarnational reality of nature.

Indeed, miracles constitute a 'realisation of the world's true eschatological potential', giving a foretaste of what it will be like at the fulfilment of God's purposes.[160] So, when it comes to miracles, Knight writes, 'created things are, in the deepest sense, simply becoming themselves as they are in the intention of God.'[161] Rather than miracles being an encroachment or aberration of the natural order, they are a completion of it, representing its truest form. They set aside the scientific laws because these laws are simply 'low-level' manifestations of the characteristic *logoi* of created things.

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[156] Knight, *The God of Nature*, p. 39.
[157] Knight, 'An Eastern Orthodox Critique of the Science-Religion Dialogue', p. 585.
[158] Ritchie, *Divine Action and the Human Mind*, p. 280.
[159] Knight, *The God of Nature*, p. 95.
[160] Knight, *The God of Nature*, p. 39.
[161] Knight, *The God of Nature*, p. 94.

In contrast, the higher laws reflect the *logoi* of created things in their truest nature, demonstrating more fully God's presence in creation.

Here, Knight offers an interesting way of understanding miracles in a theistic naturalist framework. Both Edwards and Knight suppose that miracles occur in accordance with the laws of nature. Where they diverge is that Edwards understands the laws in a purely scientific sense, thereby claiming that miracles, at least in principle, have a scientific explanation. Whereas Knight has a broader understanding of the laws, holding miracles to occur through higher, non-scientific laws. This means that miracles, in principle, defy scientific explanation. Thus, Knight's conception of miracles overcomes the fatal flaw of Edwards' approach because it preserves their intrinsic wonder. It offers an avenue for theistic naturalism to adopt an objective conception of miracles where they are both nomic and intrinsically wondrous.

3.4.2. Non-Scientific Laws of Nature

Nonetheless, there are other concerns with Knight's account. The first relates to his understanding of 'law of nature' and, in particular, his contention that there are non-scientific laws.[162] As we saw in the Introduction, the modern concept of the laws of nature was developed in the Early Modern Period in the domain of natural philosophy. René Descartes developed this concept in response to rejecting the late scholastic model of explanation. He invoked the laws to explain the uniform motion of matter in the universe. The concept of the laws was retained with the development of modern science in the nineteenth century, again to explain regularities within the universe. In turn, it seems that the laws of nature belong within the domain of science. For example, Walter Ott, in *The Metaphysics of the Laws of Nature: Rules of the Game* (2022), defines the laws as being:

[162] While I have focussed on the 'higher laws' that set the scientific laws aside, Knight also thinks there are higher laws concerned with the teleology of the universe that do not compete with the scientific laws, but rather compliment them.
Knight, 'An Eastern Orthodox Critique of the Science-Religion Dialogue', p. 581.

> general propositions that play the axiom role relative to a given science, where part of the axiom role involves explaining instances of the law at least in the sense of assimilating them to other cases.'[163]

Here, Ott restricts the concept of the law of nature to general propositions that are axiomatic *relative to a given science*. If the concept of the laws of nature is restricted to science, then Knight's notion of higher, non-scientific laws is absurd, unjustly expanding the notion beyond its rightful place. Robert Larmer makes a similar critique. He claims that there is no evidence for the existence of these higher laws, accusing Knight's incarnational naturalism of 'an unfalsifiable "naturalism of the gaps."'[164] Implicit in Larmer's reasoning is that any law of nature ought to be justified by empirical, scientific evidence. Since Knight's higher laws, by their very nature, supersede such evidence, a commitment to them is highly problematic.

In Knight's defence, he argues that there is theological precedence for a commitment to higher laws. The basis for this is there being a deeper rational structure to the universe that exceeds scientific understanding.[165] For example, Polkinghorne writes:

> Behind the intelligibility of the universe, its openness to the investigation of science, there lies the fact of the Word of God. The Word is God's agent in creation, impressing his rationality upon the world.[166]

Is it preposterous to describe this deeper underlying structure nomically? I take it that it is not. While such an approach would expand the concept of the laws of nature beyond the domain of science, science does not have a monopoly on the concept. For Knight, higher laws of nature are

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[163] W. Ott, *The Metaphysics of Laws of Nature: The Rules of the Game*, Oxford, Oxford University Press, 2022, p. 18.
[164] Larmer, 'Defending Special Divine Acts', p. 184.
[165] Knight, *Eastern Orthodoxy and the Science-Theology Dialogue*, p. 50;
C. Knight, *Exploring Religious Pluralism*, Cambridge, Cambridge University Press, 2024, p. 173.
He attributes to Basil the Great (330-379) the view that through creative commands, God gave rise to regular structures in the universe, which may be termed as the laws of nature.
[166] J. Polkinghorne, *The Way the World is: The Christian Perspective of a Scientist*, London, Triangle, 1992, p. 109.
A similar view is expressed in: T. Torrance, *The Christian Frame of Mind*, Colorado Springs, Helmers & Howard, 1989.

'fixed-instructions' concerned with incarnational and eschatological facets of reality, becoming operative and setting aside lower, scientific laws in the cases of miracles. These laws merit the term law because they are repeatable, always occurring when the eschatological context calls for it. It is just that such repeatability cannot be examined by science.

Nonetheless, Knight leaves some key questions unanswered such as: How may the eschatological and incarnational facets of reality be expressed in law-like form? In what sense are higher laws repeatable if not from a scientific perspective? Can humans recreate contexts so that these higher laws take place? So, while Knight's commitment to higher laws is not outright untenable, it requires further development to tackle these questions and establish its plausibility.

3.4.3. Divine Action and the Laws of Nature

What is a more significant issue with Knight's incarnational naturalism is the insistence that God must act through the laws of nature. The suggestion that divine action is *always* lawlike is dangerously close to the claim that God is bound by the laws of nature. This is untenable because it constrains the action of God, thereby undermining divine transcendence and reducing God to acting as a natural cause. God would be bound by the laws of nature in the same way that natural causes are.

Of course, Knight may distinguish between God being bound by the laws and God freely choosing to act exclusively through the laws of nature, stating that incarnational naturalism adopts the latter view. Nonetheless, this raises the further question: why would God act exclusively through the laws of nature? Such a move would still limit the ways that God act in the world, not allowing any unique, unrepeatable, direct divine action. In *The Providence of God: A Polyphonic Approach* (2018), David Fergusson speaks of the multiplicity with which God acts in the world, arguing that God's agency should be 'pluriform and differentiated, so that no one form of engagement with creation

is privileged to the detriment of others.'[167] Knight's incarnational naturalism falls foul of unduly limiting divine action to one form.

Furthermore, Knight's motivation for this move is unjustified. He holds that God only acts through the laws of nature in order to avoid any notion of the universe existing on its own, such that God must intervene.[168] Here, Knight proposes a dichotomy: either one is committed to the problematic interventionist approach or one supposes that God acts solely through the laws of nature. Such a dichotomy, however, is false. One may suppose that nature is inextricably connected to, dependent upon, and orientated towards God while maintaining that, at times, God acts directly in nature independently from its laws.[169] Accordingly, the rejection of interventionism does not necessitate the adoption of theistic naturalism. Thus, while Knight's invocation of higher laws preserves the intrinsic wonder of miracles, his broader commitment to God only acting through the laws of nature is problematic.[170]

Conclusion

In this chapter, I examined theistic naturalism's plausibility as a theological framework for miracles and divine action. First, I outlined the key tenets of theistic naturalism, which are:

1. Nature is inextricably connected to, dependent upon, and orientated towards God;
2. God acts *exclusively* through natural causes and processes.

[167] Fergusson, *The Providence of God*, p. 11.
[168] Knight, 'Divine Action and the Laws of Nature', p. 47.
[169] In the next chapter, I outline how Thomism attempts to tread this middle ground.
[170] Robert Russell and Amos Yong have proposed similar conceptions of miracles to Knight, where miracles occur through a transformation of the laws of nature, which can only be discerned in light of the New Creation. Such proposals similarly face the issue of overly restricting divine action to only acting through the laws of nature.
Russell, *Cosmology: From Alpha to Omega*, pp. 298-327;
A. Yong, *The Spirit of Creation*, Grand Rapids, Eerdmans, 2011, pp. 102-133.

I noted how theistic naturalism offers an intriguing alternative to interventionism. By adopting a compatibilist view of divine action, it seems able to overcome interventionism's fatal flaw of undermining divine immanence and transcendence. I then explored two models of how God may act through the natural order. I argued that Denis Edwards' use of the distinction between primary and secondary causation resorts too quickly to mystery and Christopher Knight's panentheism undermines divine transcendence and the causal integrity of the natural order. Thus, there is a real challenge of offering an account of how God acts through nature in a way that preserves its causal integrity.[171]

Finally, I considered how theistic naturalism may accommodate miracles. I argued that Edwards' subjective approach neglects the unique theological function of miracles by robbing them of their intrinsic wonder. While Knight's incarnational naturalism avoids this issue through the invocation of higher, non-scientific laws, his commitment to God solely acting through the laws of nature implicitly relies on a problematic God-nature relationship. Therefore, there are significant issues with accommodating miracles within theistic naturalism.

Another contribution of this chapter is the establishment of two further criteria for any plausible account of miracles. In the previous chapter, I emphasised the importance of preserving the immanence and transcendence of God. In this chapter, through examining how God may act through nature, I highlighted the need to respect its causal integrity. In outlining the flaws with a subjective approach to miracles, I underlined the significance of upholding their intrinsic wonder.

[171] I do not mean to bury this approach dead in the water. There are other accounts of how God acts through nature beyond Edwards' and Knight's models. For example, pneumatological naturalists such as James Smith (2010) and Amos Yong (2011) offer accounts for how God acts in nature through the Holy Spirit. Nonetheless, Ritchie raises similar concerns about whether this approach respects the causal integrity of nature.
Ritchie, *Divine Action and the Human Mind*, p. 336.

So, along with considering theistic naturalism an inadequate theological framework for accommodating miracles, we may state that any theologically plausible framework should:

1. Preserve the immanence and transcendence of God;
2. Respect the causal integrity of the natural order;
3. Uphold the intrinsic wonder of miracles.

Chapter Three: Thomism

In this chapter, I consider Thomism as a third framework for accommodating miracles and divine action. In the last fifteen years, there has been a particular emphasis on the utility of Thomas Aquinas' (1225-1274) thought for the contemporary discussion of divine action in the field of science and religion.[1] Michael Dodds, in *Unlocking Divine Action: Contemporary Science and Thomas Aquinas* (2012), draws parallels between Aquinas' analogical understanding of causation and the expanded conception of causation suggested by modern science. Mariusz Tabaczek, in *Divine Action and Emergence: An Alternative to Panentheism* (2021), develops his own theological understanding, inspired by Aquinas, of the theory of emergence. Then, in *Theistic Evolution: A Contemporary Aristotelian-Thomistic Perspective* (2024), he offers a constructive model of 'the most up-to-date Thomistic version of theistic evolution.'[2] Ignacio Silva, in *Providence and Science in a World of Contingency: Thomas Aquinas' Metaphysics of Divine Action* (2022), engages with Aquinas' doctrine of providence and account of natural contingency. He argues that such an engagement informs the contemporary debate on divine providential action by offering a theologically robust alternative to the NIODA approach of the Divine Action Project. Simon Maria Kopf, in *Reframing Providence: New Perspectives from Aquinas on the Divine Action Debate* (2023), examines the prudential-ordinative theory of Aquinas, suggesting a reframing of providence in terms of the virtue of prudence.

Due to the recent engagement with Thomism, it is an apt theological approach to consider in this examination of miracles and divine action. Moreover, *prima facie*, Thomism strikes an appealing middle ground between interventionism and theistic naturalism. Like theistic naturalism and unlike interventionism, Thomism supports a compatibilist approach where God can act through the

[1] David Fergusson has remarked on the regained momentum in recent literature of Thomist approaches to divine action.
Fergusson, *The Providence of God*, p. 225.
[2] M. Tabaczek, *Theistic Evolution: A Contemporary Aristotelian-Thomistic Perspective*, Cambridge, Cambridge University Press, 2024, p. 13.

natural order. But, like interventionism and unlike theistic naturalism, it allows God to act directly in nature when it comes to miracles. Thus, there appears strong prospects that Thomism is a plausible theological approach to miracles and divine action.

In examining Thomism, I continue with the evaluative framework developed at the end of the previous chapter, asking whether it:

1. Preserves the immanence and transcendence of God?
2. Respects the causal integrity of the natural order?
3. Upholds the intrinsic wonder of miracles?

In Section One, I lay the metaphysical groundwork for Aquinas' model of divine action through his conception of God as pure being (*esse purus*) and the complete ontological dependence of natural substances upon God. In Section Two, I consider Aquinas' analysis of the interplay between primary and secondary causation as an explanation for how God acts through nature. I question whether Aquinas' instrumental explanation of this interplay fully allays the concern that the causal integrity of nature is not sufficiently respected. In Section Three, I shift focus to Aquinas' account of miracles. I examine the metaphysical distinction between miracles and natural events, the nature of miracles by cooperation, as well as how Aquinas' approach may enhance the contemporary discussion of miracles.

Section One: God's Relation to Nature

1.1. God as Pure Being

Central to Aquinas' metaphysics is the Aristotelian doctrine of hylomorphism, where each substance is a compound of matter and substantial form.[3] Matter is pure potentiality, and form

[3] Lazzari, *Miracles in Said Nursi and Thomas Aquinas*, p. 86.

'makes matter, that which exists in potentiality, exist in actuality'.[4] For example, a human is a compound of matter and the form of humanity, with the form of humanity signifying that whereby a human being is a human being.[5] While the form of humanity determines the essence of a human, it does not necessitate that any particular human exists. For one can know the essence of a human without knowing whether any human exists.[6] Consequently, the essence of a natural substance is distinct from any actual existing thing which instantiates that essence.

This point underpins Aquinas' position that the existence of all natural substances is derived from God, who is pure being, *esse purus*. The *esse*, or existence, of a substance is nothing other than its act of being itself. It must be caused by either the substance's essence or an external agent.[7] The substance's essence cannot be the cause of its existence because nothing can be the sufficient cause of its own existence.[8] Thus, it must be caused by some external agent. Here, Aquinas invokes God as the cause of each natural substance's existence. As each natural substance needs a cause for its existence, there must be a being whose existence is its own essence.[9] If there were no such being, then there would either be an infinite or circular regress. This would be inadequate because there is still no true source of existence for contingent substances, the can is just kicked further down the road without a proper resolution.[10]

Aquinas argues that God's existence is identical to God's essence. To achieve this, he offers a dichotomy: if God's existence is distinct from God's essence, either God's existence must be caused by God's essence or God's existence must be caused by an external agent.[11] Aquinas denies that God's existence can be caused by God's essence because, again, nothing can be the sufficient

[4] C. Shields and R. Pasnau, *The Philosophy of Aquinas*, New York, Oxford University Press, 2016, p. 30.
[5] Aquinas, *Summa Theologiæ*, 1.3.3.
[6] T. Aquinas and G. Leckie (trans.), *De Ente et Essentia*, New York, Appleton-Century-Crofts, 1965, 77.
[7] Silva, *Providence and Science*, p. 85.
[8] Aquinas, *Summa Theologiæ*, 1.3.4
[9] Silva, *Providence and Science*, p. 86.
[10] Silva, *Providence and Science*, p. 86.
[11] Aquinas, *Summa Theologiæ*, 1.3.4

cause of its own existence.[12] Furthermore, nothing exterior can cause God's existence because God is the 'first efficient cause.'[13] In rejecting both options, Aquinas concludes that God's essence must be identical to God's existence.[14]

This distinguishes the nature of God's existence from the nature of natural substances' existence. Natural substances are a compound of matter and form where their essences are to be *this* or *that* kind of being. Furthermore, their existence is not entailed by their essence but rather caused by God. In contrast, God is not *this* or *that* kind of being, but rather being simpliciter. In virtue of God's existence being God's essence, God exists necessarily as pure being, *esse purus*.[15] Dodds affirms this idea, writing: 'God's being transcends the whole order of creaturely existence'.[16]

While the nature of God's existence secures divine transcendence, God remains immanent to the natural order by being the cause of existence for all natural substances. Aquinas draws on the Platonic notion of participation to explain the ontological dependence of natural creatures upon God. Silva outlines three requirements for a participatory relationship to hold:

1. A source that possesses the perfection in question;
2. A participant subject that possesses the same perfection in some restricted way; and
3. That this participant has received this perfection in some way from, or in dependence on, the higher source.[17]

Each natural substance gains its *esse*, its existence as *this* or *that* particular thing, through receiving existence from God, who is perfect being, and possessing it in some partial or restricted way.

[12] Aquinas, *Summa Theologiæ*, 1.3.4
[13] Aquinas, *Summa Theologiæ*, 1.3.4
[14] Aquinas, *Summa Theologiæ*, 1.3.4
[15] Silva, *Providence and Science*, p. 86.
[16] Dodds, *Unlocking Divine Action*, p. 206.
[17] Silva, *Providence and Science*, p. 87.

This participatory relation between God and natural entities provides a metaphysical basis for how we may speak of God. Aquinas walks a tightrope between emphasising the complete otherness and transcendence of God, while appreciating the intimate connection between God and nature. God exists on another plane to natural substances but natural substances completely depend upon God for their existence. Consequently, although we may assign the same predicates to God and creatures, such as saying 'God exists' and 'Carlos Alcaraz exists', they are not applied to God and creatures with the same intelligible content (*ratio*). No name is predicated univocally of God and creatures.[18] For when the term 'existence' is ascribed to a human, we signify a perfection that is distinct from that human's essence, as the nature of a human does not entail that any one human exists.[19] Whereas when 'existence' is applied to God, we do not intend to signify something distinct from God's essence, for God possesses no property that is distinct from God's essence.[20]

When we speak of God, we do so analogously. Creatures are analogous to God because the perfections of creatures exist in God 'in a more excellent and universal way'.[21] For example, God is good transcendentally, beyond all categorisation, not being good in *this* or *that* way but rather in being pure, complete goodness. In contrast, creatures are good because they participate imperfectly in the transcendental source of goodness, namely, God. So, for Aquinas, the name of

[18] J. Wippel, *The Metaphysical Thought of Thomas Aquinas: From Fine Being to Uncreated Being*, Washington, Catholic University of America Press, 2000, p. 567.

[19] I appreciate the debate, stemming from Immanuel Kant (1724-1804), over whether 'existence' is a predicate. I am merely using it as an example because I have just discussed the metaphysical nature of existence in the thought of Aquinas. If one denies that 'existence' is a predicate, my analysis equally applies to any predicate that can be applied to both God and created substances.
I. Kant, P. Guyer, and A. Wood (eds. and trans.), *Critique of Pure Reason*, Cambridge, Cambridge University Press, 1998, pp. 563-569.

[20] Aquinas argues that God is absolutely simple, consisting of no parts or composition.
Aquinas, *Summa Theologiæ*, 1.3.7.
For more on divine simplicity, see: E. Stump, 'Aquinas on Being, Goodness, and Divine Simplicity', *New Blackfriars*, vol. 104, no. 1114, 2023, pp. 780-795.

[21] S. Oliver, *Creation: A Guide for the Perplexed*, London, Bloomsbury T&T Clark, 2017, p. 68.

certain perfections as they are realised in creatures may be applied to God analogically because creatures are ordered to God as its principle and cause.[22]

1.2. God's Upholding of Nature

The metaphysics of God's existence and the ontological dependence of natural substances upon God ground Aquinas' position on how God upholds the natural order. Before delving into this, it will help to draw some distinctions.

First, Aquinas distinguishes between divine providence and divine government. Divine providence concerns 'the order of things foreordained towards an end' and divine government concerns 'the execution of this order'.[23] Kopf describes divine providence as: 'if God's knowledge and will are the cause of all things, a position he holds to be true, then the reason of all these effects must in a way exist in the divine mind.'[24] Such providence is not simply that God knows the order of things to an end, but that God also wills the order of things to an end. In the words of Kopf, 'it is not merely an order but also an ordering.'[25] Divine government is then 'the execution, exercise, implementation, or realisation of [the order of things to an end]'.[26] God does not execute the divine order from a distance but plays an intimate role. Indeed, Aquinas emphatically affirms that 'God operates in the operations of nature'.[27] When I speak of God's action in the natural world, I am thereby concerned with what Aquinas would call divine government.

[22] Wippel, *The Metaphysical Thought*, p. 568.
[23] Aquinas, *Summa Theologiæ*, 1.22.3.
[24] S. M. Kopf, *Reframing Providence: New Perspectives from Aquinas on the Divine Action Debate*, Oxford, Oxford University Press, 2023, p. 110.
[25] Kopf, *Reframing Providence*, p. 111.
[26] Kopf, *Reframing Providence*, p. 111.
[27] Aquinas, *On the Power of God*, 3.7.

Secondly, Aquinas is committed to the Aristotelian four kinds of causes: final, efficient, formal, and material. The material cause is 'the subject that receives the effect of action' such as the piece of marble that is sculpted into a statue.[28] The formal cause is what is received in the matter and makes the substance *that* kind of being.[29] The efficient cause is the agent whose action determines the effect, such as a sculptor carving the statue.[30] The final cause is the aim that starts and guides the action of the efficient cause.[31] What justifies each of these causes being a kind of cause is that they all share a relation of dependence with their effects, which is at the core of Aquinas' understanding of causality.[32]

In *Summa Theologiae*, Aquinas contends that God acts as a formal, efficient, and final cause in nature. God does not serve as a material cause because this type of cause is not a principle of action.[33] Nonetheless, God does serve as the final cause for all natural things because every operation is for the sake of some good and nothing is good except in as far as it participates in a likeness to the supreme good, which is God. It follows that 'God Himself is the cause of every operation as its end'.[34] For the remainder of this section, I outline how God acts as a formal cause in nature. In the next section, I examine how God acts as an efficient cause in nature.

[28] Aquinas, *Summa Theologiae*, 1.105.5.
[29] Aquinas, *Summa Theologiae*, 1.105.5.
Silva, *Providence and Science*, p. 61.
[30] Silva, *Providence and Science*, p. 60.
[31] For more on Aquinas' conception of causation, see: Dodds, *Unlocking Divine Action*, pp. 11-44.
[32] Silva, *Providence and Science*, p. 59.
[33] Aquinas, *Summa Theologiae*, 1.105.5.
While God does not act as material cause, primary matter still 'comes from God and retains a likeness to him.'
M. Tabaczek, *Divine Action and Emergence: An Alternative to Panentheism*, Notre Dame, University of Notre Dame, 2021, p. 192.
[34] Aquinas, *Summa Theologiae*, 1.105.5.

1.2.1. The Foundational Moments of God's Action in Nature

God's formal action in nature occurs because God gives 'created agents their forms and preserves them in being.'[35] As discussed, God is 'the essentially self-subsisting being.'[36] Anything that exists must derive their existence from participating in God's perfect being. Thus, the forms of natural substances, and the powers entailed by their formal natures, gain existence from God.

As well as giving them existence, God also preserves the forms and powers of natural substances. Aquinas distinguishes between two types of causal chains. There are *per se* causal chains and *per accidens* causal chains.[37] In a *per se* causal chain, the posterior causes continuously depend upon the primary cause of the chain for their causal powers. An example of a *per se* causal chain is a person moving a stick which moves a rock. The causal power of the stick to move the rock continuously depends upon the person, who is the primary cause. If the person stopped moving the stick, then the causal power of the stick to move the rock would also cease.[38] In contrast, in a *per accidens* causal chain, the posterior causes do not continuously depend upon the primary cause for their causal power.[39] Think of the lineage of a family; a child is begotten by their mother, who is begotten by their mother, who is begotten by their mother. In this chain, each child's existence depends upon their mother, but once the child has been begotten, they exist independently of their mother. If the mother stopped existing, the child would still exist.

Aquinas views the causal relation of the existence of natural powers and God as a *per se* causal chain. Since God is pure being, the existence of any natural substance at any one time must depend upon God. It is not simply that God creates natural powers and then they subsist wholly

[35] Aquinas, *Summa Theologiae*, 1.105.5.
[36] Aquinas, *Summa Theologiae*, 1.44.1.
[37] G. Kerr, *Aquinas and the Metaphysics of Creation*, Oxford, Oxford University Press, 2019, p. 103.
[38] Aquinas, *Summa Theologiæ*, 1.46.2.
[39] Aquinas, *Summa Theologiæ*, 1.46.2.

independent of God. Their existence depends upon God continually acting upon and sustaining the natural substances.[40] For Aquinas, God is not a God of deism who simply creates a 'clockwork' universe and then lets it do its own thing. God is intimately involved in the natural order by creating natural substances and their powers, and continually upholding them in existence.

Silva refers to these two ways of giving natural substances the power to act and preserving that power as the 'foundational moments' of God acting in nature.[41] They are the means by which God acts as formal cause in nature by creating and 'preserving the forms and powers of [natural] things.'[42] These foundational moments of God lay the metaphysical groundwork for the usual course of nature.

1.2.2. The Metaphysics of the Natural Order

Each natural substance has a particular set of active powers, in virtue of its substantial form, that enables the substance to be causally active. Aquinas writes, 'the active principle [or powers] of a thing follows its form, which is the principle of action.'[43] As recognised by Gloria Frost, a substance's active powers do not enable 'a generic sort of causal influencing.'[44] Rather they delimit the range of effects that the substance can produce. For example, fire has the active powers of warming objects, burning objects, and producing light, but not of slicing bread or cooling water.

Nonetheless, just because fire has the causal power to burn objects, it does not follow that fire can burn every object. Fire can burn cotton but not concrete. Aquinas proposes that in any causal interaction, there must be a substance with an active power and also a substance that is amenable

[40] Shields and Pasnau, *The Philosophy of Aquinas*, p. 177.
[41] Silva, *Science and Providence*, p. 99.
[42] Aquinas, *Summa Theologiæ*, 1.105.5.
[43] Aquinas, *Summa Theologiæ*, 3.13.1.
G. Frost, 'Three Competing Views of God's Causation of Creaturely Actions', in G. Ganselle (ed.), *Philosophical Essays on Divine Causation*, New York, Routledge, 2022, p. 67.
[44] G. Frost, *Aquinas on Efficient Causation and Causal Powers*, Cambridge, Cambridge University Press, 2022, p. 99.

to be acted upon by a substance with that particular active power. What active powers can act upon a given substance is determined by that substance's passive powers.[45] A substance's passive powers, in the words of Alfred Freddoso, delimits 'the range of effects that might be produced in it when it is acted upon by suitably situated agents in appropriate circumstances'.[46]

It is through the active and passive powers of natural substances that the course of nature proceeds. For any active power, there is a corresponding passive power.[47] Fire burns cotton because fire has the active power to burn and cotton has the passive power to be burnt. However, fire does not burn concrete because concrete does not have the passive power to be burnt. Regularities within the natural order are produced through the systematic exercising of active powers upon passive powers. Frost affirms that efficient causes do not operate in isolation from each other but that each 'natural efficient cause and its patient is plugged into a network of other efficient causes.'[48] If a substance with a given active power acts upon a substance with the corresponding passive power, a given effect is *typically* produced.

The word 'typically' is crucial because Aquinas makes conceptual space for contingencies within the natural order. He recognises that 'there is sometimes found to be a falling away from the regular course of nature'.[49] Aquinas explains that the failure of the causal relation between efficient cause and its effect, and thus the source of contingency, can occur due to three reasons:

1. A limitation in the cause itself;
2. A limitation in the material thing that the cause acts upon;
3. The encounter of many efficient causes.[50]

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[45] Aquinas, *Summa Theologiæ*, 1.25.1.
[46] A. Freddoso, 'God's General Concurrence with Secondary Causes: Pitfalls and Prospects', *American Catholic Philosophical Quarterly*, vol. 68, no. 2, 1994, p. 138.
[47] Aquinas, *On the Power of God*, 6.1.
[48] Frost, *Aquinas on Efficient Causation and Causal Powers*, p. 192.
[49] Aquinas, *Contra Gentiles,* 3.64.8.
[50] Silva, *Science and Providence*, p. 73.

As already discussed, in natural substances, there is an intrinsic composition of two co-principles. The form of the thing, which is a principle of being and perfection, determining its own specific essence and ways of acting.[51] Then, the matter of a thing, which is a principle of potentiality and 'deficient and imperfect', determining how it is acted upon.[52] Due to natural things being such a composition, their causal powers are imperfect, sometimes not producing the given effect, either due to an inadequacy in the substance acting or the substance being acted upon.[53] Finally, natural contingency may occur when multiple causes accidentally clash, producing a result that has no determinate cause, in the sense that there is no established unity between the purported causes and the given effects.[54]

1.2.3. Where are the laws of nature?

From a modern perspective, it is interesting that the concept of the laws of nature does not play a central role in Aquinas' metaphysics of the natural order. The key reason for this is that Aquinas predates the development of the modern concept of the laws in the seventeenth century. In the few times that Aquinas does speak of 'the laws of nature' in relation to the behaviour of nature, he seems to identify the laws with formal causation. For example, when speaking of the Eucharist, he writes: 'every change made according to nature's laws is a formal change'.[55] Subsequently, Silva concludes that for Aquinas 'the notion of the laws of nature, if at all useful, was nothing but a metaphor to refer to formal causality.'[56]

The minimal role that the laws of nature play in Aquinas' metaphysics of the natural order raises interesting questions regarding the applicability of Aquinas' thought to the contemporary

[51] Aquinas, *Summa Theologiæ*, 1.25.1.
[52] Aquinas, *Summa Theologiæ*, 1.25.1.
[53] In Chapter Four §3.1.1., I examine a debate amongst Thomists as to whether a cause fails to manifest its effect only due to external impediments or sometimes due to internal deficiencies.
[54] Silva, *Science and Providence*, p. 75.
[55] Aquinas, *Summa Theologiæ*, 3.75.4.
[56] Silva, 'Thomas Aquinas and Some Neo-Thomists on the Possibility of Miracles and the Laws of Nature', p. 5

discussion of miracles and divine action. What relevance does Aquinas' thought have for modern science, which often utilises the concept of the laws of nature? To what extent is Aquinas' reliance on formal causation consonant with contemporary approaches to the laws? Does Aquinas' metaphysics of the natural order offer an alternative to the prevailing orthodoxy of understanding nature in nomic terms?

I consider such questions in the next two chapters. For now, what is important is that Aquinas grounds the regularity of the natural order through the powers possessed by natural substances in virtue of their respective forms. God plays a central role in this because, in virtue of being *esse purus*, the existence and preservation of all natural substances and powers are derived through participation in God's perfect existence.

Section Two: God's Action Through Nature

Aquinas does not limit God's action to giving existence to and preserving natural substances. Additionally, God acts through the natural order. Aquinas writes, 'God causes the action of every natural thing by moving and applying its power to action.'[57] Central to Aquinas' explanation for how this occurs is his notion of instrumental causation.

2.1. Aquinas on Instrumental Causation

Andrew Davison asserts that Aquinas had a 'notably 'high' view of instruments', insisting that they are genuine causes of their effects.[58] In the case of a craftsman using an axe to chop wood, the axe

[57] Aquinas, *On the Power of God*, 3.7.
[58] A. Davison, ""Tools are for Workers:" Machine Learning as an Instrumental Cause', *Philosophy, Theology and the Sciences*, vol. 11, 2024, p. 159

serves as a genuine cause of the chopped wood. This is because the wood is chopped through the action that arises from the axe's native power, which is to chop.[59] Aquinas writes:

> it is by an action proper and connatural to itself that every instrumental agent carries out the action of the principal agent; thus, by processes of dissolving and dividing, natural heat generates flesh, and a saw, by cutting, plays its part in completing the work of making a stool.[60]

Affirming the genuine causality of instrumental causes does not undermine the causal contribution of the principal agent who uses the instrument. While the wood is chopped through an action connatural to the axe's active causal powers, the axe could not exercise its powers if it were not wielded by the craftsman. Subsequently, Aquinas holds that:

> whatever agent applies active power to the doing of something, it is said to be the cause of that action. Thus, an artisan who applies the power of a natural thing to some action is said to be the cause of the action.[61]

Therefore, Aquinas views both the instrument and the principal agent who uses the instrument to be causes of the given effect. Moreover, it is not the case that the instrument and the principal agent are both partial causes of the effect. The instrument wholly causes the effect because it is 'the thing itself that acts, and the power by which it acts.'[62] The principal agent wholly causes the effect because 'the power of a lower agent [i.e. the instrument] depends on the power of the superior [i.e. principal] agent.'[63] It is the principal agent who applies the power of the instrument to produce the effect. Consequently, Aquinas holds that 'it is not unfitting for one action to be produced by an agent and its power [i.e. the instrument]'.[64] The effect is produced wholly by both the instrument and the principal agent, but in different ways.

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[59] Frost, *Aquinas on Efficient Causation and Causal Powers*, p. 209.
[60] Aquinas, *Contra Gentiles*, 2.21.7.
[61] Aquinas, *Contra Gentiles*, 3.67.4.
[62] Aquinas, *Contra Gentiles*, 3.70.5.
[63] Aquinas, *Contra Gentiles*, 3.70.5.
[64] Aquinas, *Contra Gentiles*, 3.70.5.

In the previous chapter, I introduced the Thomist distinction between primary and secondary causation in relation to Denis Edwards' conception of God's causal action as primary cause and a natural entity's causal action as secondary cause. Aquinas also used this distinction in relation to effects produced through instruments. The principal agent acts as primary cause, exercising the power of the instrument, and the instrument acts as secondary cause, producing the effect through its active powers.[65]

When an agent uses an instrument to produce an effect, Aquinas distinguishes between two types of effect. The first pertains to the instrument's own nature.[66] For example, it is the proper effect of an axe to cut, meaning that chopped wood is a proper effect of the axe. The second pertains to the principal agent and exceeds the nature of the instrument.[67] So, while it is a proper effect of an axe to produce chopped wood, it is not a proper effect to make a bed. The act of bed making is nothing other than the chopping of wood, but it requires the principal agent to chop the wood *in a particular way*, such that the production of the bed exceeds the power of the axe.[68]

2.2. Aquinas' Concurrentism

In the same way that the principal agent uses the instrument to produce an effect that pertains to the instrument's nature and an effect that exceeds the instrument's nature, God acts through natural substances to produce an effect that pertains to the substance's nature and an effect that exceeds the substance's nature.[69] First, the powers of natural substances are moved by God to act and achieve their proper effect. As an axe cannot cut without a craftsman, all natural substances

[65] Kopf, *Reframing Providence*, p. 128.
[66] Aquinas, *Summa Theologiæ*, 3.62.1.
[67] Aquinas, *Summa Theologiæ*, 3.62.1.
[68] Frost, *Aquinas on Efficient Causation and Causal Powers*, p. 209.
[69] Silva, *Science and Providence*, p. 100.

cannot act without God applying their powers. This is because God is the source of all power and action. So, fire can only achieve its proper effect of heating through God. Second, when God acts through a natural substance, an effect that transcends the substance's nature is produced, namely, 'instantiated being.'[70] This is attributable only to God because the existence of all created entities is derived from God's perfect being. Silva describes these two ways that God acts through nature as 'the dynamic moments'.[71]

Like with instrumental causation, both God and a natural substance each serve as a complete, efficient cause for a given natural effect. In *Contra Gentiles*, Aquinas writes:

> the same effect is not attributed to a natural cause and to divine power in such a way that it is partly done by God, and partly by the natural agent; rather, it is wholly done by both, according to a different way.[72]

Moreover, since the power of natural causes is derived from, continually depends upon, and is exercised by the divine power, God is the more immediate cause for any given natural effect.[73]

Here, we have Aquinas' concurrentist model of divine action. Concurrentism strikes the centre ground between occasionalism – where God is the sole true cause in nature – and mere conservationism – where God only creates and upholds natural entities in their being.[74] Concurrentism supposes that for any natural effect, God acts contemporaneously as an immediate cause in a certain 'general' way while a natural entity acts also as an immediate cause in a 'specific'

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[70] Silva, *Science and Providence*, p. 100
[71] Silva, *Science and Providence*, p. 99.
[72] Aquinas, *Contra Gentiles*, 3.70.8.
[73] Silva, *Science and Providence*, p. 100.
Similarly, Aquinas holds that the principal agent is the more immediate cause of the effect compared to the instrument.
[74] A. Freddoso, 'God's General Concurrence with Secondary Causes: Why Conservation is not Enough', *Philosophical Perspectives*, vol. 5, 1991, p. 554.
The issues with mere conservationism are similar to the interventionist God-nature model considered in Chapter One. It undermines God's intimate role in the natural order, neglecting God's immanence and transcendence.

way.[75] For Aquinas, God wholly produces a natural effect by giving the natural cause existence, preserving it in being, and exercising its power for its own end and an end that transcends its nature. The natural agent wholly produces the same effect through this exertion of its power.

Aquinas adopts a compatibilist approach to divine action. Contrary to interventionism, divine and natural causality are not in competition. Rather, like theistic naturalism, God can act through the natural order. Such an approach affirms the immanence of God because every natural effect is directly caused by God. Nonetheless, God's transcendence is also preserved because God's causal action is on a different plane to natural substances. While natural substances cause effects through their specific active powers in virtue of their forms that are exercised by God, God's causal action through natural agents arises in virtue of God's complete being and power, serving as the absolute basis for all action in nature.

2.3. Objections to Aquinas' Concurrentism

2.3.1. Fideism

In the previous chapter, I criticised Edwards' conception of the interplay between primary and secondary causation because he resorts too quickly to mystery. Aquinas' concurrentism avoids this charge. He goes to great lengths to outline how God and a natural substance can both sufficiently cause a natural effect. He justifies the claim that God and natural creatures operate on different causal planes through his notion of God as pure being, such that God exists and acts in a manner that is radically different. Furthermore, Aquinas outlines four ways that God acts in the natural world. God:

1. Gives being to natural substances and their powers (Foundational Moment);
2. Upholds natural substances and their powers in being (Foundational Moment):

[75] Freddoso, 'God's General Concurrence with Secondary Causes: Why Conservation is not Enough', p. 554.

3. Exercises the powers of natural substances to achieve effects connatural with their nature (Dynamic Moment):
4. Exercises the powers of natural substances to achieve effects that exceed their nature (Dynamic Moment).

In outlining how God acts through natural causes in exercising their powers, Aquinas draws heavily on his notion of instrumental causation, where a principal agent may act through an instrument in such a way that both the agent and the instrument are each whole causes of the effect. Such a detailed explanation is a far cry from Edwards' emphasis on mystery when it comes to explaining the interplay between primary and secondary causation. So, while Edwards' (lack of an) explanation is rightly charged with fideism, Aquinas' approach is quite clearly not guilty of this.

2.3.2. Occasionalism

Although avoiding the issue of fideism, there is the concern of whether Aquinas' detailed explanation adequately respects both divine and natural causality. With the intimate role that God plays in nature, does Aquinas leave any space for natural agents to exert their own causality? While various modern thinkers have accused Aquinas of inadvertently committing himself to occasionalism, a weakness with these accusations is that they fail to engage with the full metaphysical arsenal of Aquinas.[76] Consequently, I will now examine whether Aquinas preserves the causal integrity of natural causes through his notion of God as pure being, instrumentality, and an analogical understanding of causation.

Aquinas himself recognises the paradoxical notion of attributing the cause of an effect wholly to two different agents. He considers the objection that 'it does not seem possible for one action to proceed from two agents'.[77] On this objection, two distinct agents cannot both be sufficient causes

[76] Silva, *Providence and Science*, p. 141.
[77] Aquinas, *Contra Gentiles*, 3.70.2.

for the same effect since this would lead to causal overdetermination. With the intimate role that Aquinas assigns to God in the natural order, it seems that natural causes would have to step aside, losing their genuine causality.

Aquinas' metaphysics provides two sources for a response. First, through his conception of instrumental causation, Aquinas contends that two agents can both be the whole cause of a given effect.[78] The axe is the whole cause of the chopped wood in the sense that it is the axe which actually chops the wood in virtue of its form and active powers. The craftsman is the whole cause of the chopped wood in the sense that they confer power onto the axe, using it as an instrument. In a similar fashion, for Aquinas, the same effect can be wholly attributed to both a natural cause and God because it is the natural cause that actually produces the effect and it is God who uses the natural cause as an instrument.[79]

Secondly, and relatedly, Aquinas argues that two agents can both be whole causes of a single effect, so long as the two agents are whole causes 'in different ways.'[80] With the craftsman and the axe, both are able to be whole causes of the chopped wood because the axe produces the chopped wood in virtue of its active power being exercised and the craftsman produces the chopped wood by exercising the power of the axe. Analogously, both God and a natural agent can be whole causes of a single effect because they causally act in different ways. Thomist scholars are keen to emphasise that Aquinas holds a non-competitive view of divine and natural causality, where divine and natural causality act on different planes. This, thereby, allows the causal powers of natural substances to be exercised *via* the power of God. For example, James Dominic Rooney, OP, states of Aquinas' position:

[78] Aquinas, *Contra Gentiles*, 3.67.4.
[79] Aquinas, *Contra Gentiles*, 3.70.5.
[80] Aquinas, *Contra Gentiles*, 3.70.5.

> The causal order by which God causes the existence of everything, consequently, is in no apparent conflict with the way in which created entities relate to each other as cause and effect.[81]

Similarly, Kopf argues that the objection that Aquinas does not accommodate both divine and natural causality 'only holds if the term 'cause' is predicated univocally, that is, in the same sense or respect, of both agents'.[82] As Aquinas uses the term 'cause' analogically when speaking about God, he thereby avoids the threat of offering a contradictory conception of how God and natural agents can both sufficiently cause a given natural effect.[83]

2.3.3. A Further Issue?

While these two responses help to ease the concern of accommodating both divine and natural causality, they do not wholly assuage the issue. Starting with Aquinas' reliance on instrumental causation, there are key differences between God's relation to natural substances and a natural principal agent's relation to its instrument. The natural principal agent is only the cause of the application of the instrument in two ways: exercising the power of the instrument for its own end and for an end that exceeds its nature. In contrast, God not only exercises the power of the natural substance for its own end and for an end that exceeds its nature, but also gives the natural substance being and preserves it.

Of course, with any analogy, there will be points of similarity and difference. Indeed, Silva warns against asking more from the analogy than it can provide.[84] He suggests that a common misinterpretation of Aquinas' concurrentism stems from a failure to understand it in relation to

[81] J. P. Rooney, 'The Metaphysics of Creation: Secondary Causality, Modern Science', in E. Stump and T. J. White (eds.), *The New Cambridge Companion to Aquinas*, Cambridge, Cambridge University Press, 2022, p. 117.
[82] Kopf, *Reframing Providence*, p. 126.
[83] Tabaczek makes the same claim.
See: Tabaczek, *Divine Action and Emergence*, p. 209.
[84] I. Silva, 'Revisiting Aquinas on Providence and Rising to the Challenges of the Divine Action Project', *The Journal of Religion*, vol. 94, no. 3, 2014, p. 285.

his doctrines of analogical and instrumental causation.[85] This leads to one erroneously conceiving of God's divine action as involving a prior movement to the actual causing of the natural agent, and hence a different causal relation, meaning the same effect is not attributed to both God and the natural agent.[86]

I, however, am not making this claim. Having deeply engaged with Aquinas' notions of analogical and instrumental causation, I am questioning whether the intimate role God has in natural processes leaves any room for genuine natural causation. While Aquinas aims to ease this concern through his instrumental explanation, I have highlighted differences between the God-natural substance relation and the principal agent-instrument relation. Then, the question I am asking is: Do these differences undermine the efficacy of Aquinas' instrumental explanation for the interplay between divine and natural causality?

It seems so. The principal agent does not give existence to or preserve the instrument. The axe exists whether the craftsman exists or uses the axe. There is a clear sense in which the axe exists independently from the craftsman. Furthermore, the craftsman cannot chop the wood without the axe. The axe has its own unique powers, completely independent of the craftsman, that need to be exercised to chop the wood. The causal power of the axe to chop the wood seems derived from the axe's independence from the craftsman and its unique power to chop.

To bring out this point, consider an alternative analogy between a craftsman and their axe. Say that there is an 'all-powerful' craftsman who not only applies the power of the axe but also creates and continuously upholds the existence of the axe. In this case, it is far less convincing that the axe plays any causal role in the chopping of wood. The existence of the axe, its powers, and the

[85] Silva, *Divine Providence and Contingency*, p. 129.
[86] Silva, *Divine Providence and Contingency*, p. 129.

exercising of its powers would all depend upon the craftsman. It doesn't seem that there is any causal role left for the axe, in and of itself, to fulfil. The axe is merely a causally inert vassal through which the craftsman exerts their causal power to chop the wood.

Of course, the relation between the 'all-powerful' craftsman and the axe is closer to the relationship between God and natural substances.[87] The point here is not that Aquinas' instrumental explanation of the interplay between divine and natural causality completely fails. Rather, it is that the additional causal role God plays in creating and upholding natural substances relevantly distinguishes this relationship from Aquinas' agent-instrument analogy. It is far less clear how God and natural substances can both be whole causes of a given natural effect compared to a craftsman and an instrument. Thus, it seems an open question for Aquinas' account as to how God and natural substances can both play a significant causal role in the workings of nature. With the intimate causal role Aquinas attributes to God, it is difficult to see what causal role is left for natural substances to exert.

Moving onto the Thomist response that Aquinas understands divine and natural causality analogically, meaning that they are on different planes and not in competition. While the metaphor of divine and natural causality operating on 'different planes' is a useful Thomist metaphor because it highlights the difference between divine and natural causality, it is not wholly accurate. Although divine and natural causality are distinct, they both remain forms of causality that produce the same effect. As highlighted by Silva, the notion of dependence is central to Aquinas' conception of causation.[88] So, Aquinas holds that for a given effect, the effect has a relation of dependence upon both the natural substance and God. The claim I am making is that the dependence of natural effects upon God is so strong, even granting the different causal roles of God and natural

[87] I have not outlined the metaphysics of how the 'all-powerful' craftsman would give the axe existence. The point I am making is that if this were the case, it is far less clear that the axe has its own causal power.
[88] Silva, *Providence and Science*, p. 58.

substances, that it is unclear what substantive causal role natural substances have. Subsequently, while Aquinas emphatically rejects occasionalism, it is not wholly convincing that his account avoids this position.[89]

2.3.4. A Different Interpretation?

Another way that Thomist scholars have sought to safeguard natural causality is to more clearly distinguish between God's causal role and the causal role of natural substances. Petr Dvořák interprets Aquinas' concurrentism as stating that God, in virtue of being *esse purus*, produces the actuality of the natural effect, while the natural agent, as an instrument, produces the effect in its specific nature.[90] This is a different interpretation because it supposes that it is *solely* natural substances that produce the specific determination of a given natural effect; God plays no immediate role. Dvořák writes: 'Aquinas seems to be saying that a secondary cause produces actuality of the effect in virtue of divine power as its instrument, yet its specific nature by itself only.'[91] For example, with a match lighting a candle, God, through the lit match, causes the being of the candle's burning flame and the lit match *solely* causes the determinate nature of the lit candle (i.e. a burning flame). This interpretation seeks to safeguard natural causality by assigning it an exclusive role in determining the particular nature of natural effects.

Nonetheless, the issue with this approach is that it leads to God being a partial cause of natural effects. This is problematic for two reasons. First, it conflicts with Aquinas' claim that both God and a natural substance are each complete causes of a given natural effect. If God plays no immediate causal role in determining the particular nature of natural effects, God cannot be a

[89] I discuss Aquinas' arguments against occasionalism in Chapter Six.
Aquinas, *Contra Gentiles*, 3.69.
[90] P. Dvořák, 'The Concurrentism of Thomas Aquinas: Divine Causation and Human Freedom', *Philosophia*, vol. 41, no. 3, 2013, p. 622.
Frost also advocates this interpretation.
See: Frost, *Aquinas on Efficient Causation and Causal Powers*, p. 222.
[91] Dvořák, 'The Concurrentism of Thomas Aquinas', p. 622.

whole cause. Secondly, it undermines divine immanence and transcendence. Divine immanence is undermined because there is an aspect of the usual course of nature that God is excluded from, namely, determining the particular nature of natural effects. Divine transcendence is undermined because, when it comes to the particularisation of natural effects, divine and natural causality are in competition, such that a natural agent fulfilling this causal role precludes God playing any immediate role.[92] Consequently, this interpretation of Aquinas is inadequate.

To summarise this section: Thomism emphatically avoids the interventionist position of expelling God from nature, rather affirming that God can work through the natural order in a way that safeguards divine immanence and transcendence. Furthermore, Thomism marks an improvement on Denis Edwards' and Christopher Knight's accounts of how God acts through nature; Edwards resorts too quickly to mystery and Knight's commitment to panentheism undermines God's transcendence and the causal integrity of the natural order. In contrast, Aquinas offers a detailed explanation, based on his notion of God as pure being, instrumentality, and an analogical understanding of causation, of how God may act through natural causes without impugning their integrity. Nevertheless, the intimate role Aquinas assigns to God's action in nature and relevant dissimilarities between the God-natural substance relation and the principal agent-instrument relation mean that, in spite of his efforts, the causal integrity of natural substances is not decisively secured. Thus, the Thomist model of concurrentism, while offering an in-depth metaphysical explanation of the interplay between divine and natural causality, is not without its challenges.

Section Three: Aquinas on Miracles

In the previous section, I highlighted a key similarity between Thomism and theistic naturalism: both adopt a compatibilist approach where God can act through nature. Where Thomism diverts

[92] This is also contrary to Aquinas' emphasis on the compatibility of divine action and natural processes.

from theistic naturalism is in its accommodation of miracles. While theistic naturalism supposes that miracles occur through secondary causes in accordance with the laws of nature, Aquinas considers miracles to be caused directly by God. He defines a miracle as an event whose effects 'are produced by God's power alone on things which have a natural tendency to the opposite effect or to a contrary mode of operation."[93] We can see two main requirements for an event to constitute a miracle. First, the event must be produced solely through the power of God. Second, the effects of the event must be contrary to the effects that are produced by the natural tendency of the substances involved in the event.

Aquinas distinguishes between three types of miracle.[94] First, a miracle may be above nature (*supra naturam*), where God produces an effect that nature is wholly incapable of producing.[95] For example, nature is not able to give life to corpses. Therefore, the resurrection of an individual would constitute a miracle that is above nature.[96] Secondly, a miracle may be contrary to nature (*contra naturam*) when the substances involved in the miracle retain a disposition contrary to the effect produced by God.[97] For example, it is the disposition of fire to burn. Thus, in Daniel 3, when Shadrach, Meshach and Abednego were put in the furnace but did not burn, this event was a miracle contrary to nature.[98] Thirdly, a miracle may be beyond nature (*praeter naturam*), when God produces an effect that nature can produce, but in a manner that nature cannot.[99] For

[93] Aquinas, *On the Power of God*, 6.2.
[94] Aquinas, *On the Power of God*, 6.2.
Aquinas offers a similar categorisation of miracles in *Summa Theologiæ*, 1.105.8.
Here, the categorisation is miracles that (1) nature is absolutely unable to do, such as the sun going backwards, (2) nature is able to do, but not to that particular substance, such as giving a blind man sight, and (3) nature is able to do in that substance, but not in that particular way, such as Jesus turning water into wine.
[95] Aquinas, *On the Power of God*, 6.2.
[96] Aquinas, *On the Power of God*, 6.2.
[97] Some Aquinas scholars are reticent to consider miracles as contrary to nature. For example, Dodds writes: 'In all of these actions, God's influence is not contrary to nature.' Similarly, Silva writes that God 'could not act against the [natural] order.' Later in this section, I distinguish between two ways that Aquinas understands nature and how, in one of these senses, God may act contrary to nature.
Dodds, *Unlocking Divine Action*, p. 253;
Silva, 'The Possibility of Miracles and the Laws of Nature', p. 2.
[98] Aquinas, *On the Power of God*, 6.2.
[99] Aquinas, *On the Power of God*, 6.2.

example, nature can turn water into wine but only by a grapevine absorbing water and then the grapes being turned into wine. By bypassing this process, Jesus' turning water into wine at the wedding in Cana (John 2) was a miracle beyond nature.[100] So, for Aquinas, a miracle may be above, contrary to, or beyond nature.[101]

As discussed in the previous chapter, Aquinas associates a unique theological function with miracles. In virtue of miracles being caused by God alone, occurring above, beyond, or contrary to nature, the cause of a miracle is absolutely unknowable to humans. This is because God's action is not constrained like natural causes and we can only know about God's power from the effects produced, which never reflect the full greatness of God's power.[102] The absolute unknowability of the causes of miracles makes them intrinsically wondrous. This intrinsic wonder means miracles are uniquely exceptional events and particularly suited to vitalise faith in Christ, justify religious truth, exemplify God's power, and help the faithful.

3.1. Miracles by Cooperation

One possible tension in Aquinas' approach is his analysis of miracles by cooperation. He assigns two ways that humans may play an active role in miracles.[103] The first is by impetration, where the faith of humans merits the working of a miracle.[104] The second role that humans can play is by cooperation. Aquinas recognises that there are biblical stories of humans working miracles.[105] He

[100] Aquinas, *On the Power of God*, 6.2.
[101] For an analysis of the various conceptions of miracles as *supra*, *contra*, and *praeter* nature among the scholastic thinkers, see: L. Schumacher, 'Beyond', 'Above', or 'Against' Nature? Early Scholastic Debates on the Status of Miracles', *Archivum Franciscanum Historicum*, vol. 116, no. 1-2, 2023, pp. 3-33.
[102] Aquinas, *On the Power of God*, 1.2.
[103] Angels can also play these two roles as well as an additional third. This third role is that angels can 'dispose matter for the working of a miracle' such as collecting the dust of the dead who by God's power will return to life. Humans cannot play this role because 'human spirits, through being united to bodies, cannot act on external objects save by means of the body to which in a sense they are chained'.
Aquinas, *On the Power of God,* 6.4.
[104] Aquinas, *On the Power of God,* 6.9.
[105] Aquinas, *On the Power of God,* 6.4.

references Acts 6:8 as stating that 'Stephen, a man full of God's grace and power, performed great wonders and signs among the people' and 1 Corinthians 12:9-10 which discusses humans receiving the gifts of miraculous powers.[106]

In outlining how humans may cooperate in the working of miracles, Aquinas writes that they 'act somewhat as instruments of the divine power for the accomplishment of a miracle.'[107] This reference to instrumentality suggests that humans may play a causal role in miracles. As discussed in §2.2, Aquinas' analysis of how God acts through natural causes relies on his notion of instrumental causality. In the same way that natural substances, per Aquinas, are causes of natural effects through their powers exercised by God, it seems that humans would be the causes of miracles when endowed with miraculous powers exercised by God.

3.1.1. Miracles and Instrumental Causation

Aquinas does distinguish between the instrumentality of humans in miracles and the instrumentality of natural substances in natural events. In the case of miracles, humans do not possess 'a permanent habitual power' to perform the miracle.[108] The human is given an impermanent power which is 'only evoked at the presence of the principal agent [i.e. God].'[109] Whereas, when a natural substance exercises its power to produce an effect, the effect is proper to the substance. In virtue of the fire's form, it has an active power, essential to the nature of the fire, to burn.

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[106] Aquinas, *On the Power of God,* 6.4.
[107] Aquinas, *On the Power of God,* 6.4.
[108] Aquinas, *On the Power of God,* 6.4.
[109] Aquinas, *On the Power of God,* 6.4.
Aquinas compares these impermanent miraculous powers to 'intentions', which are temporary effects a substance produces which are not proper effects according to the form of the substance and last only as long as the principal agent acts, such as light in the air or a mirror producing a reflection.
Aquinas, *On the Power of God*, 5.1.

Despite these differences, in miracles by cooperation, it still seems that the given human is a cause of the miracle because (1) God gives the human the power to cause a miracle, (2) God upholds it, albeit temporarily, in existence, (3) God exercises its power for its own end and (4) for an end that transcends its nature. In this case, with miracles by cooperation, both the given human and God would each be the whole efficient cause of the miracle. For example, let us take Peter's resurrection of Tabitha in Acts 9:36-43 as a miracle by cooperation. God temporarily gave Peter the power to perform resurrections, Peter exercised this power, acting as an instrument for God, meaning that both Peter and God are each whole causes of the resurrection of Tabitha.

What are the consequences if, as I have argued, Aquinas' metaphysics suggests that humans can be the causes of miracles along with God? It would conflict with Aquinas' definition of miracles as solely caused by God. Is this problematic? There seems two reasons why Aquinas suggests that miracles are solely caused by God. First, it is to emphasise God's complete sovereignty over nature. Aquinas compares God to an emperor. In the same way that only the emperor can change the empire's laws, only God can 'work miracles by acting independently of the natural course.'[110] Nevertheless, allowing humans to cause miracles by cooperation does not impugn upon God's sovereignty. This is because these humans only possess the powers to perform miracles temporarily, through the will and power of God. Even in miracles by cooperation, miracles occur by God's sole command.[111]

The second reason that Aquinas states that miracles are solely caused by God is to preserve their intrinsic wonder. As specified, in virtue of God's causal action being absolutely hidden, the cause of miracles is, in principle, unknowable. This makes miracles intrinsically wondrous, meaning that they are particularly suited at achieving various theological functions. There is a concern that

[110] Aquinas, *On the Power of God,* 6.4.
[111] Aquinas, *On the Power of God,* 6.4.

allowing humans to cause miracles would undermine their intrinsic wonder, threatening their distinct theological significance.

3.1.2. The Knowability of Causes

This fear hinges on the question of whether the causal power of humans, in the case of miracles by cooperation, would be, in principle, knowable. There seems to be three factors to knowing the nature of an efficient cause:

1. The nature of the effect that the cause produces;
2. The conditions required for the cause to be exercised;
3. What substances can be acted upon by the cause so that the effect is produced.[112]

These factors are reflected in Aquinas' thought. He writes: 'a power must be defined by its act', that is, by the effect it produces.[113] The conditions required for the power to be exercised must also be considered, as he states that the power of fire 'is indeed confined to heating, but on the presupposition of those prior causes that are required for fire to act.'[114] Then, Aquinas' recognition of passive powers reflects an appreciation of the role the object acted upon plays in the causal process.

For humans, knowledge of secondary causes is gained through examining their effects on multiple occasions.[115] Purely from observing fire burning cotton once, one would not know the causal power of fire. Was the burning cotton an effect of the fire? Were the fire and burning cotton both effects of the same cause? Can fire only burn cotton? If the fire did burn the cotton, what else was

[112] My discussion here is restricted to efficient causation. The factors required to know other types of causes would be different. For example, final causation places a greater emphasis on purpose compared to efficient causation. Although, this is not to say that purpose may play no role in efficient causation.
[113] T. Aquinas and J. Rowan (trans.), *Quaestiones Disputatae de Anima*, St. Louis, B. Herder Book, 1949, 13.
[114] Aquinas, *On the Power of God*, 5.8.
[115] In contrast, God's knowledge of causes arises from God being the cause of all things. Consequently, God's knowledge of causality is more immediate and complete than humans'.
T. Aquinas and R. Mulligan (trans.), *Quaestiones Disputatae de Veritate*, Chicago, Henry Regnery Company, 1952, 2.4.

required for this to happen? Must the cotton be prepared in a particular way to burn? Such questions can only be answered through observing fire over multiple occasions, examining the various effects produced and the conditions in which these effects occur. Thus, a mere single observation of fire cannot lead to knowledge of this substance's causal power.[116]

In light of this, the knowability of natural causes arises, not only from their limited nature to produce particular effects in particular conditions, but also from the repeatability of these causes, allowing them to be examined. An appreciation of this opens the avenue for miracles by cooperation to be absolutely unknowable, even if they are caused by humans. The power that a human possesses when causing a miracle is a temporary power, only given to them for the specific purpose of acting as an instrument for the miracle. Such powers are not repeatable at the will of the given human.[117] As knowledge of a created cause requires the cause's repeatability and the temporary miraculous powers God gives to humans are singular, the nature of these causes cannot, in principle or practice, be known. Therefore, although, on my interpretation, miracles by cooperation are caused by both God and humans, the causes of these events remain absolutely hidden, preserving their intrinsic wonder and unique theological function.

So, I have argued for a reinterpretation of Aquinas' conception of miracles by cooperation where the given humans are, along with God, causes of these miracles. This reinterpretation is motivated by the similar role instrumentality plays in these miracles and natural events. Such a development does not threaten God's sovereignty because it is God who gives those humans the temporary powers to perform miracles. The intrinsic wonder of miracles is upheld because, in virtue of the non-repeatability of these miraculous powers, the causes of these events remain unknowable.

[116] Hume offers a similar argument in *An Enquiry Concerning Human Understanding*. I examine this argument in Chapter Six.
[117] Aquinas, *On the Power of God*, 6.4.

3.2. Objections to the Possibility of Miracles

To further examine the plausibility of Aquinas' approach to miracles, I now look at the various objections that Aquinas considers regarding the possibility of miracles and his responses. Furthermore, I consider how these responses map onto contemporary issues with miracles, thereby evaluating the relevance of Aquinas' thought to the contemporary scholarship.

3.2.1. The Divine Inconsistency Objection

Many of the objections that Aquinas considers centre on the claim that God causing miracles would lead to some inconsistency in the nature of God. For instance, in *On the Power of God*, the second objection that Aquinas reflects upon is that God acting against nature would be to act against Himself, which is contradictory.[118] Therefore, God cannot act against the order of nature.[119] Aquinas also examines more refined objections, exploring how God acting contrary to nature may lead to inconsistencies in God's wisdom, will, and goodness.[120]

In responding to these objections, Aquinas distinguishes between two senses of nature. First, there is the particular nature of a natural thing which 'denotes the relation of a particular cause to a particular effect.'[121] For example, the particular nature of fire would be to heat things. Secondly, there is the universal nature which denotes the relation of each natural thing to God.[122] God is able to act contrary to the particular nature of a natural thing so long as this act is in accordance with the universal nature, 'the supremely universal nature, dependent on God in relation to all creatures'.[123] So, in this sense, God can act contrary to the natural order without acting against Himself.

[118] Aquinas, *On the Power of God,* 6.1.
[119] Aquinas, *On the Power of God,* 6.1.
[120] Aquinas, *On the Power of God,* 6.1.
[121] Aquinas, *On the Power of God,* 6.1.
[122] Aquinas, *On the Power of God,* 6.1.
[123] Aquinas, *On the Power of God,* 6.1.

Aquinas holds that when establishing the course of nature, God 'preordained whatsoever he would at some time do independently of that course'.[124] Here, he is making the point that God's enactment of miracles is not some meddling to fix nature's deficiencies. The establishment of the natural order serves an important function, reflecting the goodness and wisdom of God. Nevertheless, always upholding the natural order is not the highest normative standard for God. Rather, God has established that certain events will be above, beyond, or contrary to nature, further reflecting God's wisdom and goodness in other ways.

This inconsistency objection has a modern correlate in the contemporary discussion of miracles.[125] As discussed in Chapter One, many participants of the Divine Action Project objected to the notion of God intervening in nature on the basis that it would lead to a contradiction in the nature of God. Of course, there are differences between how this objection is formulated in modern times. It is standardly understood in terms of the laws of nature, with God upholding the laws with one hand and violating or acting beyond them with the other. Secondly, the objection is standardly expressed against the interventionist approaches to miracles considered in Chapter One.

Nonetheless, Aquinas' thought still bears fruit in highlighting how many of the inconsistency objections rest on a theologically problematic understanding of nature. He contends that God intended for creation to be regular in as much as this serves divine providence. In a revealing quote in *On the Power of God*, Aquinas writes:

[124] Aquinas, *On the Power of God,* 6.1.
[125] Indeed, it has an Early Modern correlate in René Descartes' rejection of the possibility of miracles in *Du Mond*e, which I examined in the Introduction.

> It is fitting that the course of nature be observed forasmuch as it is ordained by divine providence: wherefore if it be in the order of divine providence that something be done otherwise, there is no reason why it should not be.[126]

In this quote, Aquinas draws a harmony between natural events and miracles. Both types of events play their roles in God's government of nature as established by divine providence. Both types of events are exemplifications of God's perfect wisdom, but in different ways. Natural events, in occurring through the powers of natural substances, reflect that God created the world in his likeness. Miracles help humans in achieving their ultimate salvific end. Thus, the usual course of nature – and in contemporary language, events occurring in accordance with the laws of nature – are not exceptionlessly normative.

The enactment of miracles does not result in a tension with God's upholding of nature because both types of event occur in the appropriate situations as ordained by divine providence. For Aquinas, God does not start with a universe that runs fixed to its usual course and then changes his mind to squeeze in miracles. Rather, miracles already have their appropriate role as established by divine providence. Many of the objections that God causing miracles would lead to an inconsistency rest on the problematic notion that nature, at its truest level, should be fixed. In response, Aquinas highlights that, at its deepest level, nature should be understood as dependent upon and directed by the Will of God. This means that God can act contrary to the powers of natural substances without encroaching upon nature or leading to a divine inconsistency.

3.2.2. Miracles are Impossible

Another type of objection that Aquinas considers is less concerned with miracles leading to an inconsistency in the nature of God and more to do with nature rendering miracles impossible. He

[126] Aquinas, *On the Power of God,* 6.1.

outlines two formulations of this objection. The first holds that it is impossible for any event to occur that is beyond, above, or contrary to the natural order. On this objection, Aquinas writes:

> Since then things that are contrary to the course of nature are impossible in nature, for instance that a blind man be made to see, or a dead man to live, they imply the opposite of the aforesaid proposition. Therefore, God cannot do what is contrary to the course of nature.[127]

The second formulation centres on the nature of active and passive powers. The usual course of nature occurs through the interplay between active and passive powers. Fire typically burns cotton because fire has the active power to burn and cotton has the passive power to be burnt. For any active power in the natural order, there exists a corresponding passive power.[128] Aquinas, in formulating this objection, says that there is no natural active power directed 'to things contrary to the course of nature: and consequently neither is there a natural passive potentiality [or power]'.[129] Since there is no natural passive power directed at things contrary to the course of nature, such events are impossible. The objection holds: 'things that are contrary to the course of nature are impossible through something lacking to creatures, although not by reason of a defect in God's powers.'[130]

In response to the first formulation, Aquinas draws a distinction between an effect that is produced through intrinsic principles within nature and an effect that is produced through extrinsic principles outside nature. He accepts that for a 'dead man to return to life clearly involves a contradiction if we suppose that his return to life is the natural effect of an intrinsic principle.'[131] By their very nature, a dead man lacks the power to gain life. Nevertheless, when God brings a

[127] Here, Aquinas is assuming that God cannot do the contradictory.
Aquinas, *On the Power of God,* 6.1.
[128] Aquinas, *On the Power of God*, 6.1.
[129] Aquinas, *On the Power of God,* 6.1.
[130] Aquinas, *On the Power of God,* 6.1.
[131] Aquinas, *On the Power of God,* 6.1.

dead man back to life, God does not act through an intrinsic principle of the dead man but rather through an external principle, namely, God's complete power.[132] Thus, what is impossible from the powers intrinsic to nature is not impossible from the powers of God. Subsequently, it involves no contradiction for God to act above, beyond, or contrary to the natural order.

3.2.2.1. Obediential Potentiality

Regarding the second formulation, Aquinas argues that all creatures have an obediential potentiality. This is a potentiality possessed in comparison with God. It allows God to reduce any creature to a 'higher act than can be reduced by a natural agent.'[133] Aquinas describes this passive power as obediential because it follows that 'every creature obeys its Creator'.[134] The source of natural substances' obediential potentiality is that all substances are a partial composite of matter (which is then perfected by a particular form). Since God created matter, the divine power extends over it, allowing God to move any given matter immediately to any particular form.[135] In turn, all natural substances have a corresponding passive power in relation to God's power that allows them to be acted upon by God in a way that is above, beyond, or contrary to nature.

Frost expresses this idea, writing that the obediential potentiality is 'the passive potentiality in creatures, which corresponds to God's unlimited active power.'[136] Similarly, Silva describes the obediential potentiality of created things as 'a metaphysical inclination to receive from, and respond to, God whatever God wants to offer, or to request from, the creature'.[137] This conception of obediential potentiality further affirms Aquinas' commitment to a conception of nature that, at its deepest ontological level, is dependent upon, orientated towards, and directed by the Will of

[132] Aquinas, *On the Power of God,* 6.1.
[133] Aquinas, *Summa Theologiae*, 3.11.1.
[134] Aquinas, *On the Power of God,* 6.1.
[135] Aquinas, *Summa Theologiae*, 1.105.1.
[136] Frost, *Aquinas on Efficient Causation and Causal Powers*, p. 150.
[137] Silva, 'The Possibility of Miracles and the Laws of Nature', p. 3.

God. While natural things have their own natural active and passive powers, allowing the course of nature to unfurl, ultimately they are directed by God, allowing them to behave in ways that are above, beyond, or contrary to nature. Silva affirms this, writing:

> Miracles, then, are rooted in the very metaphysical constitution of creatures, and, as such, are deemed possible both from the perspective of the creator (given God's infinite power) and from the perspective of the creature (given this inclination inherent to their being a creature).[138]

Similarly, Edmund Lazzari views Aquinas' metaphysics of obediential potentiality as affirming that miraculous action is 'an inherent aspect of creaturely metaphysics rather than a capricious overriding or corrupting of creaturely natures.'[139] So, in response to the objection that there is no natural passive power in natural substances that allows God to directly act upon them, Aquinas can affirm that there is no such *natural* power. Nonetheless, he affirms that there is an obediential potentiality that allows God to act directly upon natural things.

This type of objection that Aquinas considers bears some resemblance with contemporary objections that the laws of nature preclude the possibility of miracles.[140] Both objections suppose that there are regularities in the natural order that cannot be broken. The objection that Aquinas considers grounds these regularities in the forms of natural substances and in modern times this is understood in nomic terms.

Aquinas' thought helps develop a response to the modern objection because he affirms that the order of nature depends upon the Will of God. Nature is not autonomous in the sense of running

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[138] Silva, 'The Possibility of Miracles and the Laws of Nature', p. 3.
[139] Lazzari, *Miracles in Said Nursi and Thomas Aquinas*, p. 117.
[140] Pannenberg, *Systematic Theology, Volume 2*, p. 45.
This criticism leads Pannenberg to offer a subjective conception of miracles as unusual events that occur in accordance with the laws of nature. Such a conception of miracles faces the criticism, outlined in Chapter Two, that it undermines the intrinsic wonder and unique theological function of miracles.

completely apart from God. Rather, the order of nature ultimately rests upon God. Whatever the laws of nature are – indeed, if there are such *things* as the laws – in an appropriate theological framework, they must ultimately depend upon and be directed by God. In light of this, God can set the laws of nature aside in order to fulfil divine providence. Thus, the concept of God acting above, beyond, or contrary to the natural order, or, in modern terms, violating or acting beyond the laws of nature, is not contradictory.[141]

3.2.3. 'Integrity of the Natural Order' Objection

A third type of objection that Aquinas responds to is that miracles impinge upon the integrity of nature. Aquinas formulates this objection by first supposing: 'Whatsoever God has done once it would not be unbecoming if he did it always.'[142] It would be unbecoming of God to always act in nature independently of natural causes, thereby entailing occasionalism, because 'natural things would be deprived of their operations'.[143] Therefore, it is unbecoming for God to act at any time in nature independently of natural causes.

In response to this issue, Aquinas affirms:

> Every created thing is ordered to its own operation by God: and thus it is not unfitting if by divine providence a certain effect is produced without the co-operation of nature.[144]

[141] How this idea is fleshed out metaphysically depends upon the nature of the laws of nature. It depends upon factors such as whether the laws actually govern natural events or just describe regularities in the universe. I engage with these issues further in Part Two. For now, I only seek to develop a theological framework for examining the relationship between miracles and the laws of nature. After such a framework has been developed, I will inspect the more philosophical issues.
[142] Aquinas, *On the Power of God,* 6.1.
[143] Aquinas, *On the Power of God,* 6.1.
[144] Aquinas, *On the Power of God,* 6.2.

Again, since it is the ultimate purpose of natural substances to fulfil divine providence, God acting directly in nature independently of natural causes to fulfil the divine plan cannot encroach on their integrity.

This concern is very similar to Edwards' view that God acting independently of natural causes would undermine their integrity. As we saw in Chapter Two, Edwards' objection relies on a mistaken conception of the interplay between primary and secondary causation, where he views God replacing the causal role of secondary causes rather than being able to act independently of them. We can further ease Edwards' concern with the realisation that God acting independently of secondary causes, in a sense, serves to preserve their significance. It upholds and respects their specific role in divine providence. The integrity of secondary, natural causes is not grounded in all effects in nature occurring through them, but rather secondary, natural causes exercising genuine causality as much as needed for the providential ordering of creation.

Conclusion

Of the three approaches to miracles and divine action considered in Part One, Thomism is the most robust. Theistic naturalism faced the challenges of potentially undermining the intrinsic wonder of miracles and overly restricting God's action. Thomism avoids these issues by supposing that miracles occur through the direct action of God or, as I suggest, God endowing created agents with temporary, singular powers to cause miracles. Interventionism views miracles as also occurring directly through God but this approach relies on a sharp God-nature distinction that undermines divine immanence and transcendence. Thomism is not guilty of such an accusation, affirming God's intimate role in nature by God (1) giving natural substances being, (2) preserving them in being, (3) exercising their power to achieve their own ends, and (4) ends that transcend their nature. Thus, when God acts to cause miracles, God is not breaking into a distinct order, but

acting directly in an order that is inextricably dependent upon and orientated towards God.[145] In light of this, Thomism strikes a theologically appealing middle ground between interventionism and theistic naturalism.

This is not to say that Thomism does not face challenges. First, there is the question of the applicability of Thomism in contemporary thought, where the regularity of nature is standardly conceptualised in nomic terms, a concept that plays a minimal role in Thomism. I address this issue in the next chapter. Secondly, while Aquinas' model of concurrentism marks an improvement on Edwards' and Knight's explanations for how God acts through nature, I argued that it remains unclear whether this model definitively respects natural causality. This is due to the intimate role Aquinas assigns to God's action in nature and weaknesses in his instrumental explanation, particularly the dissimilarities between the God-natural substance relation and the principal agent-instrument relation.

This chapter also concludes Part One. From the three theological approaches considered, I have developed three criteria for assessing accounts of miracles:

1. Preserving the immanence and transcendence of God;
2. Respecting the causal integrity of nature;
3. Upholding the intrinsic wonder of miracles.

I do not suppose that they exhaust the theological standards for assessing an account of miracles. Nonetheless, they are important evaluative factors that have not been adequately accommodated in many contemporary approaches to miracles and divine action. Therefore, I conclude that these three criteria form a strong basis for evaluating the plausibility of accounts of miracles.

[145] For this reason, Thomism is not interventionist in the sense described in Chapter One.
Lazzari, *Miracles in Said Nursi and Thomas Aquinas*, p. 132.

Chapter Four: Miracles and the Philosophy of the Laws of Nature

This chapter marks the beginning of Part Two. The focus of Part One has been distinctly theological. I examined three approaches to miracles and divine action – interventionism, theistic naturalism, and Thomism – and developed three evaluative standards for assessing the plausibility of accounts of miracles:

1. Preserving the immanence and transcendence of God;
2. Respecting the causal integrity of nature;
3. Upholding the intrinsic wonder of miracles.

Throughout this examination, a 'philosophically thin' notion of the laws of nature has been used. Interventionists draw on a prescriptivist understanding where the laws govern the natural order, forming a self-sufficient bubble that God must break in to act. C. S. Lewis and Alvin Plantinga view the laws as containing *ceteris paribus* clauses, only holding in the absence of divine intervention. Theistic naturalists envisage God acting through the laws of nature. Denis Edwards distinguishes between the laws *as they function in reality* and the laws *as known by modern science*, suggesting that, in principle, the gap between these two senses can be bridged. Christopher Knight sees the laws as the fixed instructions that God endows in the *logoi* of created entities. Such fixed instructions may exceed scientific understanding, making space for non-scientific laws, by which miracles occur. Thomas Aquinas does not rely on the concept of the laws, rather grounding the uniformity of nature in terms of formal causation and the powers of natural substances.

This chapter aims to integrate this theological examination within a detailed philosophical analysis of the concept of the laws of nature. This is significant for four reasons. First, while Thomism was

the leading model of miracles and divine action considered in Part One, it does not rely on the concept of the laws of nature. Therefore, the question arises as to whether the Thomist approach must reject the widespread (but certainly not universal) modern philosophical commitment to the laws? Or, can it be integrated within a philosophically respectable understanding of them? Second, by considering various philosophical conceptions of the laws and their relation to the prior theological examination, this thesis aims to develop an account of miracles that is theologically faithful and metaphysically substantive. Third, only by going among the philosophical weeds of the laws of nature may deeper theological and philosophical perspectives on miracles be brought to the surface. Fourth, by studying philosophical approaches to the laws that have been overlooked in the theological literature, such as the Humean Best System Analysis (BSA) conception, this thesis aims to explore new avenues regarding the relationship between miracles and the laws of nature.

With this in mind, this chapter first argues that the existence of a single set of objective laws of nature is theologically and philosophically reasonable. Secondly, it considers the main metaphysical understandings of the laws of nature. I recognise the theological significance of this analysis because how the natural order is conceptualised influences the nature of miracles and divine action. Thirdly, I engage with the appealing tendency in current scholarship to integrate Thomism with a dispositionalist conception of the laws. Nonetheless, I end the chapter by justifying the importance of offering a plausible account of miracles in relation to an alternative philosophical conception of the laws, compared to dispositionalism.

Section One: Are there Laws of Nature?

For much of this thesis, I have taken it as a given that there are such things as the laws of nature. The interventionist and theistic naturalist approaches considered in Chapters One and Two make

this assumption. Nonetheless, Thomism demonstrates that the concept of the laws is historically contingent and that the uniformity of nature may be grounded in different ways. Indeed, as discussed in the Introduction, the modern concept of the laws developed in the Early Modern Period. Therefore, it is not necessary to understand nature in nomic terms. This raises the question: are there laws of nature?

Standardly, nomological realists suppose that there is a single, objective set of laws which exist independently of humans and that it is a role of science to uncover these laws.[1] Such laws either describe or govern fundamental regularities to which all natural phenomena adhere.[2] The central case for there being laws of nature is the widespread and reliable regularities observed in nature. The positing of laws explains such regularities, grounding them in a fundamental, objective, nomic reality.[3] Moreover, it is contended that science has provided strong evidence for the existence of such laws. For example, Mark Harris describes quantum mechanics as 'the most successful theoretical framework in the entire natural sciences', providing the hope that it may 'form a fully comprehensive account of natural physical laws.'[4]

While a commitment to the laws is often associated with physical reductionism, where all of reality is ultimately reduced to the entities and processes studied by physics, it need not be. A commitment to physical reductionism is plagued with the difficulties of failing to do justice to the findings of other sciences when trying to express them in purely physical terms.[5] One can be committed to there being laws of nature and hold that there are laws discovered by biology and chemistry, that are irreducible to physical laws.[6] In this thesis, I remain neutral as to whether the laws of nature

[1] T. Hildebrand, *Laws of Nature*, Cambridge, Cambridge University Press, 2023, p. 1.
[2] C. Hoefer, 'For Fundamentalism', *Philosophy of Science*, vol. 70, no. 5, 2003, p. 1403.
[3] Hoefer, 'For Fundamentalism', p. 1402.
[4] Harris, 'Quantum Theology Beyond Copenhagen', pp. 186-187.
[5] Hoefer, 'For Fundamentalism', p. 1409.
[6] Such a position faces the tension of respecting the distinct nature of these different types of law, not succumbing to physical reduction, while still affirming a unity between these laws.
For more on this, see: T. Tahko, *Unity of Science*, Cambridge, Cambridge University Press, 2021, pp. 38-40.

are purely physical, rather offering a conception of miracles in relation to the laws that is compatible with both positions.

There are also theological reasons for a commitment to the laws of nature. As outlined in the Introduction, the development of the modern concept of the laws stems from the view that God is immutable and will always act in the same way, entailing fundamental regularities in nature.[7] More recently, Alexander Pruss argues that a world that runs according to a single, unified set of laws exhibits significant epistemic and aesthetic value, meaning that it is reasonable that God would create such a world.[8] Similarly, James Orr writes:

> once one grants the existence of [a] maximally perfect being who is the sole ultimate causal origin of physical reality, then there may be good grounds to suppose that regularities observed hitherto are relatively close approximations of the principles of uniformity and systematicity with which God causally determines the nomological structure of the world.[9]

Having outlined some philosophical and theological reasons for thinking, at least *prima facie*, that the laws of nature exist, I now turn to two philosophical arguments against their existence or in favour of their diminution.

1.1. Cartwright's Dappled World

1.1.1. *How the Laws of Physics Lie*

Nancy Cartwright is a central figure in the contemporary philosophical critique of the laws of nature. In *How the Laws of Physics Lie* (1983) she argues that fundamental laws – that is, laws that reflect a deeper structure of reality which explains why observed regularities occur – can either

[7] Harrison, 'Laws of God or Laws of Nature? Natural Order in the Early Modern Period', p. 61.
[8] A. Pruss, 'God, Chance and Evolution', in W. Simpson, R. Koons, and J. Orr (eds), *Neo-Aristotelian Metaphysics and the Theology of Nature*, New York, Routledge, 2022, p. 378.
[9] Orr, *The Mind of God and the Works of Nature*, p. 28.

have great explanatory power or be true, but not both.[10] She writes: 'fundamental equations are meant to explain, and paradoxically enough the cost of explanatory power is descriptive adequacy.'[11] The standard picture is that there is a finite set of fundamental laws that are universal and exceptionless, with every natural event occurring in accordance with them. So, while there are complex and varied phenomena in nature, such phenomena are not properly basic but arise from the interaction of these fundamental laws. Cartwright disputes this picture by examining what, in current science, would be the prime candidates for fundamental laws.

She uses the example of the law of gravity defined as: 'two bodies exert a force between each other which varies inversely as the square of the distance between them, and varies directly as the product of their masses.'[12] Cartwright argues that this law does not universally describe how bodies behave because some bodies are charged. Therefore, the law of gravity, as expressed above, is false.[13]

Perhaps, Cartwright considers, a *ceteris paribus* clause can be added to the law of gravity, which states:

> If there are no forces other than gravitational forces at work, then two bodies exert a force between each other which varies inversely as the square of the distance between them, and varies directly as the product of their masses.[14]

While this law may be true, it is not very useful and lacks explanatory power. This law solely applies in highly idealised circumstances where gravitational force is the only force at play. In turn, with the *ceteris paribus* clause added, the law of gravity becomes irrelevant to more complex situations

[10] N. Cartwright, *How the Laws of Physics Lie*, Oxford, Oxford University Press, 1983, p. 2.
[11] Cartwright, *How the Laws of Physics Lie*, p. 2.
[12] Cartwright, *How the Laws of Physics Lie*, p. 57.
[13] Cartwright, *How the Laws of Physics Lie*, p. 57.
[14] Cartwright, *How the Laws of Physics Lie*, p. 57.

that reflect the behaviour of bodies in everyday life. For Cartwright, this example points towards a broader issue:

> For the fundamental laws of physics do not describe true facts about reality. Rendered as descriptions of facts, they are false; amended to be true, they lose their fundamental, explanatory force.[15]

Another potential response to Cartwright is to suppose that there are unknown 'super' laws.[16] Such laws would cover the interactions between bodies when, say, multiple forces are at play. Thereby, these laws would be true and have explanatory power, covering complex, interesting situations that reflect the behaviour of bodies in everyday life. The central issue with this approach is that in most cases 'we have no good empirical reason to suppose [that a super law exists]'.[17] Cartwright adopts a heavily empiricist approach where 'we should believe only in laws for which we have evidence'.[18] She rejects any form of *a priori* intuitions or abstract arguments for the structure of nature, rather supposing that '[w]e best see what nature is like when we look at our knowledge of it.'[19] As we have no empirical evidence that such super laws exist, we should not believe that they do.

1.1.2. *The Dappled World: A Study of the Boundaries of Science*

In *The Dappled World: A Study of the Boundaries of Science* (1999), Cartwright advances these arguments, considering what metaphysical picture is offered by the most successful scientific practices. She takes umbrage with the picture of nature as a 'simple, elegant and abstract structure of a system of axioms and theorem,' where the laws adopt a pyramid structure, all arranged in a hierarchy with

[15] Cartwright, *How the Laws of Physics Lie*, p. 54.
[16] Cartwright, *How the Laws of Physics Lie*, p. 70
[17] Cartwright, *How the Laws of Physics Lie*, p. 70.
[18] Cartwright, *How the Laws of Physics Lie*, p. 12.
[19] Cartwright, *How the Laws of Physics Lie*, p. 13.

physics at the pinnacle.[20] Instead, she proposes that the laws of nature form a patchwork, where the different domains of science are:

> tied together to co-operate in different ways and in different bundles when we need them to solve different problems. Their boundaries are flexible: they can be expanded or contracted; they can even come to cover some of the same territory. But they undoubtedly have boundaries. There is no universal cover of law.[21]

Again, Cartwright's motivation for this picture of nature is her empiricism. Take the example of quantum physics which is often championed as having overthrown classical physics. Cartwright argues that this is not the case in actual scientific practice because both are used depending on the kinds of problems trying to be solved and the techniques of the community trying to solve them.[22] She rejects any argument that while *in practice* we use classical physics, *in principle* it has been overthrown. The practice of science guides her metaphysics and it tells us that quantum physics 'works in only very specific kinds of situations that fit the very restricted set of models it can provide.'[23]

As a result, Cartwright is reticent to extrapolate the value of physics beyond those established by scientific practice. While physics may work within the confines of the laboratory where the conditions can be arranged just so, it does not necessitate that physics works outside in the real world.[24] The rare occasions where physics does work outside the lab is when 'nature fortuitously resembles one of our special models without the enormous design and labour we must normally devote to making it do so'.[25] In emphasising the limits of various scientific domains, Cartwright

[20] N. Cartwright, *The Dappled World: A Study of the Boundaries of Science*, Cambridge, Cambridge University Press, 1999, p. 1.
[21] Cartwright, *The Dappled World*, p. 6.
[22] Cartwright, *The Dappled World*, p. 2.
[23] Cartwright, *The Dappled World*, p. 2.
[24] Cartwright states that laws need 'nomological machines' to generate them – that is, idealised conditions where laws may arise – and laws only hold on the condition that the machines run properly.
Cartwright, *The Dappled World*, p. 59.
[25] Cartwright, *The Dappled World*, p. 2.

adopts nomological pluralism, the doctrine 'that nature is governed in different domains by different systems of laws not necessarily related to each other in any systematic or uniform way; by a patchwork of laws.'[26]

Cartwright draws on a metaphor of Pierre Duhem (1861-1916). There is the French mind which sees things in a unified, elegant manner, incorporating everything into 'the single system'.[27] In contrast, there is the English mind. The English mind is piecemeal, holding various different strands of information, without much systematisation or the imposition of abstract order. It focusses on making specific things work in response to specific issues, plugging gaps here and there without a rigid concern for the system as a whole. Relating this metaphor to the disagreement between a realist about the laws who sees the world as a unified, nomic whole and Cartwright's nomological pluralism, it is almost theological as: 'The realist thinks that the creator of the universe worked like a French mathematician. But I think that God has the untidy mind of the English.'[28]

1.1.3. Response to Cartwright's Arguments

First, it is important to consider what conception of the laws Cartwright is critiquing. In *How the Laws of Physics Lie*, she takes issue with the notion of there being universal, exceptionless laws in physics. In *The Dappled World*, she disputes the position of nomological fundamentalism, which holds that there is a single system of laws that every event in the universe adheres to. Cartwright leaves space for there being laws of nature which are not related in any systematic way.[29]

[26] Cartwright, *The Dappled World*, p. 31.
[27] Cartwright, *How the Laws of Physics Lie*, p. 19.
[28] Cartwright, *How the Laws of Physics Lie*, p. 19.
[29] Cartwright develops her metaphysics of the natural order in terms of capacities. However, she leaves it rather unclear regarding the nature of capacities, focussing on 'what capacities do and why we need them', rather than 'what capacities are.'
N. Cartwright, *Nature's Capacities and their Measurement*, Oxford, Oxford University Press, 1989, p. 9.

She does not intend to offer knock-down arguments against nomological fundamentalism. Cartwright recognises that her illustration of 'the piecemeal and bitty fashion' in which modern science operates is a "far cry' from showing that the system must be a great scientific lie.'[30] Instead, her arguments intend to show that nomological pluralism is a more plausible picture of nature in light of modern science. This is underpinned by her mantra: 'guarantee nothing a priori, and gather our beliefs about laws, if we must have them at all, from the appearance of things.'[31]

How may one respond to Cartwright? One route is to question whether Cartwright actually 'guarantees nothing a priori and gathers beliefs about laws from the appearance of things'. Her position of nomological pluralism makes metaphysical claims that exceed what can be established from the practices of science. Nomological pluralism is the view that nature is governed by a patchwork of laws, in different domains by different systems of laws not related to each other in a single systematic or uniform way. All the practice of science, per Cartwright, tells us is that current science has not uncovered universal laws that form a single system. In advocating nomological pluralism, Cartwright goes beyond the practice of science to hold not only that science has not uncovered a single system of laws, but that, *in reality*, there is no single system of laws. Here, a metaphysical shift is made. So, in comparing nomological pluralism with nomological fundamentalism, it is not that nomological fundamentalism makes 'extravagant' metaphysical assumptions while nomological pluralism sees the world as it is. Both positions are metaphysical, going beyond the findings of science.

Even if Cartwright accepts that her position relies on some metaphysical claims, she may contest that her picture of a dappled world is still nearer to the practice of science than the picture of the unified world. This claim seems to rely on a particular image of the unified world as running

[30] Cartwright, *The Dappled World*, p. 11.
[31] Cartwright, *The Dappled World*, p. 11.

according to a set of laws that are 'few in number', 'simple', and 'all-embracing'.[32] Such an image seems a far cry from how current science understands the world.

Nevertheless, the unified picture offered by nomological fundamentalism does not require that the laws are few in number, simple, and all-embracing. All it requires is that there is a single system of laws. This system may be incredibly complicated and messy with numerous caveats when different laws come into contact and when certain laws apply. This 'messy' unified system would be more in line with the practice of modern science compared to the 'simple' unified system. Indeed, it is not a million miles from Cartwright's dappled world. Both draw on the practices of modern science to suggest that the interplay between laws is very complicated. Cartwright's position makes the metaphysical claim that there is no deeper, unified connection between the laws. The 'messy unified' picture makes the metaphysical claim that there is a unified connection that is just as messy as indicated by current science.

The point here is not that nomological fundamentalism is far superior to nomological pluralism but that a plausible case can be made for defending nomological fundamentalism. Once it is appreciated that nomological pluralism makes metaphysical claims that go beyond the practice of science and that nomological fundamentalism can appreciate the messy and complex roles of the laws in modern science, the gap between these two positions is narrowed. Subsequently, Cartwright's arguments for nomological pluralism do not deal a death blow against nomological fundamentalism. Instead, they serve to establish the viability of nomological pluralism. Therefore, one is still justified in supporting nomological fundamentalism to explain the observed regularities of nature.

[32] Cartwright, *The Dappled World*, p. 10.

1.2. Mumford's Lawlessness

Stephen Mumford offers a different type of argument against the laws of nature. Whereas Cartwright disputes the 'unified' picture of the world, Mumford accepts this but contends that 'a law-free metaphysics gives us everything we thought we wanted laws for, and might do so in a better way.'[33] He attempts to offer an argument that shows that a metaphysics of laws is 'unworkable.'[34]

The argument begins by offering the following dilemma:

[1] Either the laws have [A] some governing role or [B] not.[35]

He contends that if one chooses the latter horn, one does not have a metaphysics of laws. For Mumford, any nomological realist – that is, someone who is committed to a metaphysics of laws of nature – must suppose that the laws 'add something to nature such that the world would be significantly different were they not there'.[36] For something to exist, it must make a difference to the world and the only way that the laws can make a difference is by determining the history of the world or the connection between properties.[37] In light of this view, the nomological realist must choose [A].

However, with this choice, Mumford raises another dilemma:

[33] S. Mumford, *Laws in Nature*, London, Routledge, 2004, p. 143.
[34] Mumford, *Laws in Nature*, p. 143.
[35] Mumford, *Laws in Nature*, p. 143.
[36] Mumford, *Laws in Nature*, p. 145.
[37] Mumford, *Laws in Nature*, p. 146.

[2] If [A] there is a governing role for laws, then such laws are either [C] external to the things which they govern or [D] they are internal to them.[38]

If one chooses [C], then an explanation of how laws externally govern things is needed. Such an option, for Mumford, is a dead-end because 'no acceptable and credible account can be given of how laws of this kind could govern their so-called instances externally.'[39] Here, Mumford draws on a problem raised by Bas Van Fraassen, called the *problem of inference*.[40] This problem questions what about a given law *necessitates* that the law is true. If it is a law that all As are Bs, what is it about the law that ensures whenever an A occurs, it will be a B? Advocates of this problem suppose that no adequate explanation can be given.

As an illustrative example, Mumford thinks that David Armstrong's universals account of the laws of nature falls foul of this issue. I examine Armstrong's account in more detail in §2.2. For now, all that is necessary to know is that Armstrong considers a law of nature to be a necessary connection between universals, where universals are properties or relations that are 'genuinely identical in different particulars.'[41] A concern that Mumford and many others raise with Armstrong's account is why the necessary relation N between, say, universal A and universal B, necessitates that whenever A is instantiated, B is also instantiated. In the pithy words of David Lewis:

> But I say that *N* deserves the name of 'necessitation' only if, somehow, it really can enter into the requisite necessary connections. It can't enter into them just by being a name, any more than one can have mighty biceps just by being called 'Armstrong'.[42]

[38] Mumford, *Laws in Nature*, p. 143.
[39] Mumford, *Laws in Nature*, p. 146.
[40] B. Van Fraassen, *Laws and Symmetry*, Oxford, Oxford University Press, 1989, p. 39.
[41] D. M. Armstrong, *Universals and Scientific Realism*, Cambridge, Cambridge University Press, 1978, p. 19.
[42] D. Lewis, 'New Work for a Theory of Universals', *Australasian Journal of Philosophy*, vol. 61, no. 4, 1983, p. 366.

Mumford sees this objection as indicative of a wider issue with the external governing conception of the laws; no account can offer an adequate explanation of how these laws can govern.[43]

Therefore, for Mumford, option [D] is the last viable choice. He outlines various ways in which option [D] may be fleshed out, such as the laws being reduced to, identified with, or supervening upon the essences of properties.[44] Mumford's objection with this approach is that the laws cannot govern that to which they are internal. He writes:

> The simple question raised by this side of the dilemma is how something could govern, or play any determining role in, that to which it was reducible. It can be seen that precisely the same can be asked of supervenience and constitution.[45]

In light of this, Mumford holds that since [C] and [D] are not viable options, then neither is [A] and since the alternative [B] is lawlessness, there is no viable metaphysics of laws.[46]

1.2.1. Response to Mumford's Argument

How may one respond to Mumford's argument against nomological realism? I will not attempt to offer a definitive rebuttal but rather sketch out potential responses to the various stages of the argument. Mumford is aware of some of these responses and attempts to counter them. Nevertheless, I aim to show how Mumford's argument relies on numerous assumptions about the laws that are hotly contested. I dispute many of these assumptions more deeply in the remainder of Part Two.

The first stage of the argument claims that anyone committed to a metaphysics of laws must hold

[43] Another issue that Mumford raises with external governing conceptions of laws is 'quidditism'. I set this issue aside for the moment because I examine it in more depth in Chapter Six.
[44] Mumford, *Laws in Nature*, p. 153.
[45] Mumford, *Laws in Nature*, p. 153.
[46] Mumford, *Laws in Nature*, p. 143.

them to govern. There are various conceptions of the laws of nature which reject this view. They suppose that the key role of the laws is to explain and that this can be achieved without them governing. For example, there are 'Humean' accounts which view the laws of nature as some set of regularities in the universe. In such accounts, the laws explain natural events by systematising the workings of nature and highlighting the underlying patterns.[47] They reject Mumford's view that the laws must determine the history of the world or the relation between properties.

A second claim in Mumford's argument is that there is no adequate account of laws externally governing their instances. Mumford directs this attack to Armstrong's universals account. In response, Armstrong argues that his account *does* explain how the laws govern. For Armstrong, a law of nature is a necessary relation between two universals, say A and B. Since there is a bond between universals A and B and it is the exact same universals whenever A and B are instantiated, Armstrong sees it as trivially true that whenever A is instantiated, B must be also. He writes:

> For if a certain type of state of affairs has certain causal effects, how can it not be that the tokens of this type cause tokens of that type of effect? The inference is analytic or conceptual.[48]

So, for Armstrong, Mumford's objection is baseless because it is a conceptual truth that if there is a necessary connection between universals, certain regularities would necessarily follow.

The third claim that Mumford's argument makes is that the laws of nature are not able to govern anything to which they are internal. Alexander Bird disputes this claim because he advocates a

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[47] A. Bird, *Nature's Metaphysics: Laws and Properties*, Oxford, Oxford University Press, 2007, p. 2.
Furthermore, there are counterfactual accounts of the laws which hold that for it to be a law that 'all As are Bs', there must be a form of counterfactual dependency of As on Bs. Such a counterfactual relation is weaker than Mumford's governing requirement.
See: M. Lange, *Laws and Lawmakers: Science, Metaphysics, and the Laws of Nature*, Oxford, Oxford University Press, 2009.
[48] D. M. Armstrong, 'The Identification Problem and the Inference Problem', *Philosophy and Phenomenological Research*, vol. 53, no. 2, 1993, p. 422.

dispositionalist conception of the laws of nature, where the laws supervene upon the dispositional character of properties.[49] While I explore Bird's dispositionalism in greater depth in §2.3, his central claim is that the dispositional character of properties can underpin certain regularities in nature. A particular property's dispositional character determines that given a particular stimulus condition is met, a particular manifestation will be produced.

If the laws of nature supervene upon, are reducible, or identical to these properties, Bird supposes that they can still govern. The laws can govern the set of regular events that follow from the interplay of dispositional properties. While the laws are internal to the properties, the 'set of events is itself external to the power and the law.'[50] Therefore, Bird holds that internal laws are able to govern their instances.

These possible avenues show that there is a rich debate with many claims central to Mumford's argument. Such debate highlights that it is far from an 'open and shut case' that Mumford demonstrates the unworkability of a metaphysics of laws. In light of this and my examination of Cartwright's thought, I suppose that the position that there is a single, objective set of laws of nature remains plausible.

Section Two: The Metaphysics of the Laws of Nature

Given the plausibility of there being laws that form a single, objective, unified system, a further question naturally follows: metaphysically speaking, what are the laws of nature? This is significant

[49] Interestingly, Mumford also supports a dispositionalist understanding of properties. Where Bird and Mumford disagree is that Mumford thinks that a dispositionalist understanding of properties eliminates the need for the laws of nature, whereas Bird still makes conceptual space for the laws. For more on Mumford's conception of dispositionalism, see:
S. Mumford, *Dispositions*, Oxford, Clarendon Press, 1998.
[50] Bird, *Nature's Metaphysics*, p. 196.

theologically because how the natural order is conceptualised metaphysically mitigates how God may act in the world and the nature of miracles as aberrations of that order.

Bird considers there to be three options for the metaphysics of laws: a Humean approach that denies necessary connections in nature, an anti-Humean approach that affirms necessary connections in nature, and a semi-Humean approach that aims to strike a middle ground between Humeanism and anti-Humeanism.[51] The semi-Humean approach invokes nomic necessitation and so is not 'a vanilla kind of Humeanism.'[52] Nevertheless this type of necessity is entirely contingent, only holding in this particular world and not across all possible worlds like with anti-Humeanism.

In outlining these three possible approaches, Bird wonders whether he is ignoring other important theories of the laws.[53] To respond, he emphasises that he is looking at the metaphysical foundations of the laws. Other more detailed accounts are concerned with a metaphysical superstructure that either builds upon one particular metaphysical foundation of the laws or can be built upon any of the three.[54]

Take, as an example, Tim Maudlin's conception of the laws in *The Metaphysics within Physics* (2007). Maudlin proposes that the laws of nature are ontologically primitive 'patterns that nature respects; to say what is physically possible is to say what the constraint of those patterns allows'.[55] Such a proposal falls within the camp of being semi-Humean. It is not Humean because the laws are more than just regularities in the universe; the laws govern our world.[56] It is not anti-Humean because the necessity of the laws is not full metaphysical necessity. Different possible worlds may have

[51] Bird, *Nature's Metaphysics*, p. 4.
[52] Bird, *Nature's Metaphysics*, p. 2.
[53] Bird, *Nature's Metaphysics*, p. 4.
[54] Bird, *Nature's Metaphysics*, p. 4.
[55] T. Maudlin, *The Metaphysics within Physics*, Oxford, Oxford University Press, 2007, p. 15.
[56] Maudlin, *The Metaphysics within Physics*, p. 16.

different laws.[57] Thus, Maudlin offers a 'superstructure' conception of the laws that is semi-Humean, drawing on a conception of contingent necessitation where the laws constrain the patterns of nature.

In this section, I sketch out the three different approaches to the metaphysical underpinnings of the laws. For each approach, I focus on a prominent philosophical account of the laws, outlining its central ideas, broader metaphysical commitments, and key virtues. For the time being, I will not consider the key weaknesses of these accounts. This is because I examine such issues for the Humean and anti-Humean approaches later in this chapter and the next. In Section One, I already raised the central concern with the semi-Humean approach of whether its relation of contingent necessitation can sufficiently ground nomic regularities.

2.1. A Humean Approach: David Lewis' Best System Analysis Account

A Humean approach to the laws denies any necessary connections in nature. They reject that the instantiation of any property ever necessitates the instantiation of another distinct property.[58] In light of this, a Humean approach typically understands the laws to be some set of regularities. A naïve Humean understanding of the laws conceives them as simply the entire set of exceptionless regularities. Nonetheless, this approach is widely rejected because there are numerous exceptionless regularities that are obviously not laws of nature.[59] For example, 'no human has run a marathon in under one hour and fifty minutes' is exceptionlessly true but it is absurd to say that this is a law.

[57] Maudlin, *The Metaphysics within Physics*, p. 17.
[58] In Chapter Six, I examine the extent to which David Hume actually rejected the existence of necessary connections in nature.
[59] Hildebrand, *Laws of Nature*, p. 7.

A more sophisticated form of Humeanism is that the laws of nature are the axioms in the system that best accommodates all facts of the universe. Frank Ramsey (1903-1930) advocated such a view, writing that 'the fundamental laws of nature' are 'the general axioms [of the deductive system of all human knowledge]'.[60] Similarly, John Stuart Mill (1806-1873) states: 'Laws of Nature, means nothing but the uniformities which exist among natural phenomena…when reduced to their simplest expression.'[61] The most prominent contemporary advocate of this view is David Lewis (1941-2001), who, in his Best System Analysis (BSA) account, defines a law of nature as 'any regularity that earns inclusion in the ideal system.'[62]

2.1.1. Nature of the BSA Account

Lewis' BSA account fits into his wider project of Humean supervenience. Humean supervenience is the thesis that 'the whole truth about a world like ours supervenes on the spatiotemporal distribution of local qualities.'[63] On this view, our world wholly consists of the spatiotemporal distribution of various points. These points may be points of spacetime itself, point-sized bits of matter, aether, or fields, or a combination of these things. What they actually are is determined by the fundamental ontology provided by physics.[64] Along with these points, the world consists of perfectly natural, local properties that can be instantiated by a particular point. Again, what these properties are is established by physics. This is the fundamental ontology of the Humean world: a vast mosaic of local properties instantiated by various spatiotemporal points.

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[60] F. P. Ramsey, 'Universals of Law and Fact', Routledge and Kegan Paul, 1978, p. 5.
[61] Mill, *Collected Works of John Stuart Mill, Volume 7*, p. 316.
[62] Lewis, 'New Work for a Theory of Universals', p. 367.
[63] D. Lewis, 'Humean Supervenience Debugged', *Mind*, vol. 103, no. 412, 1994, p. 473.
[64] D. Lewis, *Philosophical Papers. Vol. 2*, Oxford, Oxford University Press, 1986, x.
Here, Lewis is committed to a form of physical reductionism; all truths about the world supervene on physical truths. In Chapter Five, I consider whether this is problematic and, if it is, whether Lewis' BSA account can be divorced from this physical reductionism.

Within this world, there are no necessary connections. There is nothing that necessitates that a particular point has a particular spatiotemporal location. There is nothing that necessitates that a particular point instantiates a particular local property. Humean supervenience holds that all truth in worlds like ours supervenes upon the spatiotemporal distribution of local qualities.[65] A change in the truth of the world only results from a change in the spatiotemporal distribution of local properties, a change in the 'Humean Mosaic'.[66] Consequently, Lewis provides an account of the laws of nature where they supervene upon the Humean Mosaic. In particular, the BSA account holds that a law is any regularity that earns inclusion in the ideal system of all facts.

Of course, this tagline does not tell us much if we do not know what is meant by 'the ideal system.' Lewis asks us to imagine that God has provided humans with a *Concise Encyclopedia of Unified Science* that contains every fact about the history of the universe.[67] These facts concern the spatiotemporal distribution of local properties.[68] There are various ways that one could systematise this set of facts. One could simply have a long list of all the facts. Or, one could have a list of various regularities and particular facts. From this list, one could derive other facts. For example, if one knows that the force of an object is that object's mass multiplied by its acceleration, and one knows the mass and acceleration of an object, then one can derive the object's force.

By 'ideal system', Lewis is referring to the system that accommodates all facts about the universe in the best way, striking the best balance between strength and simplicity.[69] This system must contain only true regularities and facts.[70] It must be closed under strict implication in that other

[65] Lewis holds Humean supervenience to be contingently true. There are worlds where the truth does not supervene upon the spatiotemporal distribution of local properties. Lewis supposes that the actual world is not one of these.
Lewis, 'Humean Supervenience Debugged', p. 474.
[66] Lewis, *Philosophical Papers. Vol. 2*, x.
[67] D. Lewis, *Counterfactuals*, Malden, Blackwell Publishers, 2001, p. 74.
[68] Lewis refrains from committing to the idea that physics uncovers all natural properties. There may be idle natural properties that play no active role in nature and, therefore, are undiscoverable.
Lewis, 'New Work for a Theory of Universals', p. 357.
[69] Lewis, 'Humean Supervenience Debugged', p. 478.
[70] I reassess this claim in Chapter Five when considering whether there may be violations to the BSA laws.

facts can be deductively derived from the contents of the system.[71] The strength of a system refers to the number of facts that can be derived from it. The simplicity of a system refers to the number of regularities posited.[72] The virtues of strength and simplicity typically compete against each other. To maximise strength in a system, the system will typically become more complex, and vice versa. For example, the system containing every particular matter of fact will be maximally strong but very complex. In contrast, a system that just contains a few regularities would be far simpler, but fewer facts could be derived. The ideal system strikes the best balance between strength and simplicity. It is the regularities in this system that, according to the BSA account, are the laws of nature.

2.1.2. Virtues of the BSA Account

The first advantage of this account is its ability to distinguish between accidental regularities and the laws, which John Roberts holds to be the fundamental problem of the laws of nature.[73] Why is it that 'no massive particle travels faster than the speed of light' is a law of nature – or at least immediately derivable from the laws – whereas 'no dodo can travel faster than speed *d*, where *d* is a speed slightly faster than the fastest a dodo has travelled' is not a law? The BSA account offers a distinction between nomic and non-nomic regularities. A nomic regularity is a regularity that features in the ideal system whereas a non-nomic regularity does not.

Secondly, the BSA account is committed to a sparse metaphysics, with Van Fraassen saying that it 'involves very little that could be associated specifically with (pre-Kantian) metaphysics.'[74] On the BSA account, the laws of nature are not things in and of themselves. They do not prescribe the

[71] In Chapter Five, I consider how the BSA account may accommodate probabilistic laws.
[72] Van Fraassen, *Laws and Symmetry*, p. 41.
[73] J. Roberts, 'Laws of Nature', in Paul Humphreys (ed.), *The Oxford Handbook of Philosophy of Science*, New York, Oxford University Press, 2014, p. 338.
[74] Van Fraassen, *Laws and Symmetry*, p. 62.

behaviour of nature, but simply describe and systematise certain natural regularities. While proponents of more robust accounts of the laws hold that the greater ontological commitments lead to greater explanatory power and are therefore a fair trade-off, new difficulties do arise with such commitments. Thus, the BSA account's limited metaphysics may be viewed as a key benefit.

A third strength is that it seeks to develop a strong link between the laws of nature and the actual practice of science. Lewis focussed on the virtues of strength and simplicity because, for him, scientific theorising is 'an attempt to approximate, as best we can, the true deductive systems with the best combination of simplicity and strength.'[75] With this understanding of science and the BSA laws, we have good reason to think that the best scientific theories are provisionally laws of nature.[76] The laws of nature are the axioms of the ideal system and our current scientific theories are our best attempt at developing this system.[77]

A fourth strength is that this account explains why the laws of nature are contingent. It seems that the laws could have been different: the speed of light could have been slightly faster, electrons could have been attracted to other electrons, it could have been that the greater an object's mass the weaker its gravitational force. On the BSA account, the laws supervene on the totality of facts about the universe. Thus, if the facts about the universe had been different, then the laws of nature would have been different. Consequently, this approach upholds the intuition that the laws are contingent.

[75] Lewis, *Counterfactuals*, p. 74.
[76] Van Fraassen, however, does raise the concern as to whether scientists consider other values in theory development and, if this is the case, whether science is able to uncover the ideal system.
Van Fraassen, *Laws and Symmetry*, pp. 55-59.
[77] Richard Swinburne also supports this relation between the laws of nature and scientific practice.
R. Swinburne, *The Concept of Miracle*, London, Macmillan, 1970, p. 26.

2.2. A Semi-Humean Approach: David Armstrong's Universals Account

A semi-Humean approach to the laws aims to strike a middle ground between Humeanism and anti-Humeanism. It does not completely deny necessary connections in nature but it nevertheless does water them down. This approach relies on the concept of contingent necessitation, where, in this world, the instantiation of one property necessitates the instantiation of another, but this relation does not hold in other possible worlds.

The most prominent semi-Humean account is the universals approach which was formulated by David Armstrong, Michael Tooley, and Fred Dretske all in the late seventies.[78] Underpinning this account is the belief that the laws confer some sort of necessity upon the world. If it is a law that an F is a G, then it is in some sense necessary that an F is a G. To ground this supposed necessity, this account relies upon a theory of universals. Universals are properties or relations that are genuinely identical in different particulars. The predominant aim of a theory of universals is to solve the One over Many problem: how do many different things have the same property?[79] For the universals advocate, the answer is that all these different things instantiate the same universal. Assuming that redness is a universal, all things that are red instantiate the *exact same* universal of redness.

There are various ways that a theory of universals can be formulated. Some hold that universals are immanent, that is, they exist within space and time, whereas others hold that they are transcendent, that is, they exist outside space and time. Some hold that universals are abundant,

[78] Armstrong, *Universals and Scientific Realism*;
F. Dretske, 'Laws of Nature', *Philosophy of Science*, vol. 44, no. 2, 1977, pp. 248-268;
M. Tooley, 'The Nature of Laws', *Canadian Journal of Philosophy*, vol. 7, no. 4, 1977, pp. 667-698.
[79] D. M. Armstrong, *Universals: An Opinionated Introduction*, Boulder, Westview, 1989, p. 2.

that is, all meaningful predicates have a corresponding universal. For example, on the abundant view, there is a universal of playfulness or red-or-greenness. Others consider universals to be sparse; only a portion of meaningful predicates have a corresponding universal.[80]

2.2.1. Nature of the Universals Account

I will focus on the account of universals proposed by its greatest contemporary defender, David Malet Armstrong. Armstrong advocates the principle of instantiation, where a universal must be instantiated by a particular at least one time in the past, present, or future to exist.[81] Therefore, there is no universal of 'perfect roundness' because nothing in the history of the universe is perfectly round. Furthermore, Armstrong holds universals to be immanent and sparse. The only universals that exist are those that are instantiated at least once and it is the job of the natural sciences to develop an inventory of all existing universals.[82] He adopts this view to minimise the ontological baggage of his position and to uphold his doctrine of naturalism, where 'nothing else exists except the single, spatio-temporal, world, the world studied by physics, chemistry, cosmology and so on.'[83]

From this theory of universals, Armstrong develops his account of the laws of nature, where a law is a necessary connection between universals. For example, if it is a law of nature that an F is a G, then, on this account, there is a necessary relation between universal F and universal G, N(F,G).[84] Armstrong expresses the meaning of N(F,G) as follows: 'Something's being F necessitates that same something's being G, in virtue of the universals F and G.'[85] Since there is a necessary

[80] For more on the various debates regarding universals, see:
S. Allen, *A Critical Introduction to Properties*, London, Bloomsbury, 2016, pp. 7-38.
[81] Armstrong, *What is a Law of Nature?*, p. 82.
[82] Armstrong, *What is a Law of Nature?*, p. 3.
[83] Armstrong, *What is a Law of Nature?*, p. 82.
[84] The nature of this necessary relation is that it is itself a complex universal and also the obtaining of a relation between universals.
Armstrong, *What is a Law of Nature?*, p. 97.
[85] Armstrong, *What is a Law of Nature?*, p. 96.

connection between F and G, whenever a particular instantiates universal F, by necessity, it instantiates universal G. Thus, from this relation, the nomic regularity 'all Fs are Gs' is grounded.[86]

2.2.2. Virtues of the Universals Account

This account shares certain advantages with the BSA account. It can distinguish between laws of nature and accidental regularities; laws of nature occur in virtue of the necessary relation between universals whereas accidental regularities do not. The universals account also supports the intuition that the laws are contingent. Although the relation N(F,G) holds in this world, it does not hold in other possible worlds, making it a contingent truth that 'all Fs are Gs' is a law. Nevertheless, the universals account is more metaphysically robust than the BSA account. Rather than the laws merely systematising particular matters of fact, they actually exist as metaphysical relations between universals.

Armstrong argues that this added metaphysical armoury confers certain advantages on the universals account that the BSA account lacks. The universals account can make sense of the intuition that the laws of nature govern, playing a role in making the world the way that it is. Certain events occur through the necessary nomic relations between universals.[87] Furthermore, this account can explain why the laws of nature sustain counterfactuals. If it is a law of nature that an F is a G, it seems that if an F were to come into existence, then it would also be a G. Armstrong's account grounds this claim in virtue of the necessary connection between F and G.[88] Finally, the universals account allows the laws of nature to explain how particular matters of fact come about. Take a particular that instantiates both universals F and G, the universals account can explain the

[86] As alluded to earlier, Armstrong's claim that the necessary connection between universals grounds nomic regularities has been extensively criticised. See: Van Fraassen, *Laws and Symmetry*, p. 96;
S. Psillos, *Causation and Explanation*, Durham, Acumen Publishing, 2002, p. 165.
[87] Armstrong, *What is a Law of Nature?*, p. 106.
[88] Armstrong, *What is a Law of Nature?*, p. 95.

instantiation of G in virtue of the instantiation of F and the necessary connection between F and G.[89]

2.3. An Anti-Humean Approach: Alexander Bird's Dispositionalism

An anti-Humean approach affirms the existence of necessary connections in nature, tying the laws to such connections. A prominent anti-Humean approach to the laws of nature is dispositionalism, which has seen a revival from the mid-1990s.[90] The underlying motivation for this account lies not in the nature of the laws but in the nature of properties. Both the BSA account and the universals account rely upon a categorical conception of properties; the nature of a given property is not determined by any causal role essential to that property but by a primitive *this-ness*.[91] Therefore, a given property can take on distinct causal roles in different possible worlds.[92] Dispositionalists object to this conception of properties. They see the nature of properties as determined by their particular causal role.

Those who advocate the dispositionalist conception of properties include Alexander Bird, Brian Ellis, Stephen Mumford, and Sydney Shoemaker.[93] I will focus on Bird's account of dispositionalism because, in *Nature's Metaphysics: Laws and Properties* (2007), he offers, for Peter Menzies, 'the most sustained and the most powerful elaboration and defence of dispositional essentialism to date."[94] Bird argues that a commitment to categorical properties entails a rejection

[89] Armstrong, *What is a Law of Nature?*, p. 95.
[90] T. Dumsday, *Dispositionalism and the Metaphysics of Science*, Cambridge, Cambridge University Press, 2019, p. 4.
[91] Bird, *Nature's Metaphysics*, p. 66.
[92] I examine this claim more deeply in Chapter Five.
[93] See: Mumford, *Dispositions*;
B. Ellis, *The Philosophy of Nature: A Guide to the New Essentialism*, Durham, Acumen Press, 2002;
S. Shoemaker, 'Causality and Properties', in S. Shoemaker, *Identity, Cause, and Mind: Philosophical Essays*, Oxford, Oxford University Press, 2003, pp. 206-233.
[94] P. Menzies, 'Nature's Metaphysics', *Analysis*, vol. 69, no. 4, 2009, p. 770.

of the identity of indiscernibles and it poses difficulties for the ability of scientific terms to refer.[95] Moreover, dispositionalists view a commitment to a primitive *this-ness* to ground the identity of properties as too mysterious to stomach.[96]

2.3.1. Nature of the Dispositionalist Account

Dispositionalism holds that the identity of a property is determined by that property's dispositional character. For a property to have a particular dispositional character, that property must produce a particular manifestation given a particular stimulus. For example, inertial mass may be characterised as the disposition to respond to a force (the stimulus) by accelerating in proportion to that mass (the manifestation).[97] Bird expresses the relationship between stimulus and manifestation in a counterfactual fashion: $Dx \leftrightarrow Sx \rightarrow Mx$, where *D* is the dispositional property, *S* is the stimulus property, and *M* is the manifestation property.[98] The dispositional character of a property corresponds to the manifestation that the property produces given a particular stimulus.

The dispositional character of properties enables them to ground certain regularities in nature. Take the property of elasticity, whose essence is to stretch without deformation (the manifestation) when put under tension (the stimulus). In any possible world, any particular that has the property of elasticity will stretch without deformation when put under tension. Given this, the following regularity is grounded: $\forall x(Ex \wedge Tx \rightarrow Sx)$, which translates as, for every x, if x is elastic and put under tension, then x will stretch without deformation. On the dispositionalist account, a law of

[95] Bird, *Nature's Metaphysics*, pp. 66-98.
I examine this argument in Chapter Five.
[96] Bird, *Nature's Metaphysics*, p. 97.
[97] Bird, *Nature's Metaphysics*, p. 20
[98] A. Bird, 'The Dispositionalist Conception of Laws', *Foundations of Science*, vol. 10, no. 4, 2015, p. 354.
It is generally supposed that there are instances where the stimulus condition is met, yet the particular disposition does not produce its manifestation. Such cases are typically accommodated by *ceteris paribus* clauses in the conditional analysis of those dispositions. I consider these cases in the next section when examining miracles and dispositionalist laws.

nature is a particular dispositional relationship between a stimulus and a manifestation.[99] The dispositionalist laws arise from the causal powers intrinsic to natural properties and substances.

2.3.2. Virtues of the Dispositionalist Account

Bird supposes that the dispositionalist account can distinguish between the laws of nature and accidental regularities.[100] Laws are grounded by particular dispositional relationships whereas accidental regularities are not. Furthermore, this account can support the intuition that the laws of nature govern. Nomic events occur in virtue of the dispositional character of properties. The elastic band snaps back into its original shape in virtue of its elastic disposition. Additionally, the dispositional laws can ground counterfactuals. It is true that if a new electron came into existence, it would be repelled by other electrons, because it is essential to an electron's essence that it does this.

These benefits related to the governing character of the dispositionalist laws also apply to the universals account. However, for Bird, what sets dispositionalism ahead of the universals account is its understanding of necessity. The central critique of the universals account, and semi-Humeanism more generally, is that its contingent relation of necessitation cannot ground nomic regularities. Bird argues that dispositionalism avoids this issue because the relationship between stimulus and manifestation is one of metaphysical necessity. This relationship does not hold contingently but in every possible world. Thus, the dispositional conception of necessity avoids the question: 'why does the nomic relation hold in this world but not in other possible worlds?'

[99] Bird recognises that another dispositionalist account of the laws may hold a law of nature to be the regularity grounded by the dispositional relationship between stimulus and manifestation, rather than the relationship itself. Bird, *Nature's Metaphysics*, p. 64

[100] Bird, 'The Dispositionalist Conception of Laws', p. 355.

Bird finds this conception of necessity far more familiar and less mysterious than the contingent necessitation of semi-Humeanism.[101]

Here, we have three prominent philosophical accounts of the laws of nature that cover the three basic approaches to the laws: the BSA account and Humeanism, the universals account and semi-Humeanism, dispositionalism and anti-Humeanism. The BSA account sees the laws purely as regularities in the best systematisation of all facts about the universe. The laws, on the universals account, are relations of contingent necessitation between universals. Dispositionalist laws are the causal powers intrinsic to natural properties. I have not sought to defend the superiority of any single approach, but rather to map the range of positions concerning the nature of laws in contemporary metaphysics.

This mapping carries direct theological implications. Each account offers a fundamentally different metaphysical vision of the natural order. Each, therefore, constrains how one might conceive of miracles, as events that diverge from, or transcend, that order. Thus, the plausibility of any theological account of miracles depends, in part, on the underlying metaphysics of the laws it assumes. It is to this theological-philosophical integration that I now turn, examining this philosophical mapping in conjunction with the theological investigation of miracles and divine action conducted in Part One.

Section Three: Dispositionalism and Miracles

An interesting development in the last fifteen years is the realisation that there is a strong convergence between dispositionalism and Thomism. Both adopt a neo-Aristotelian approach to metaphysics in that they assign 'a central role to primitive causal powers' in natural substances,

[101] Bird, 'The Dispositionalist Conception of Laws', p. 357.

thereby grounding the usual course of nature.[102] In *Neo-Aristotelian Metaphysics and the Theology of Nature* (2022), William M. R. Simpson, Robert C. Koons, and James Orr argue that there is 'every reason for theologians to welcome the return of rigorous neo-Aristotelian approaches to causation, teleology, essence, and powers' and that:

> Increasingly extensive circles of metaphysicians have emerged who take up Aristotelian and Thomistic insights to develop theoretical frameworks that are not only highly congenial to theological assumptions, but also capable of yielding more promising solutions to longstanding metaphysical puzzles.[103]

Consequently, there appears a viable means to integrate a dispositionalist metaphysics of the laws of nature into a Thomist framework. This is an exciting possibility because it would enable a robust theological approach to miracles and divine action to adopt a philosophically plausible conception of the laws.

3.1. Dispositionalism and Thomism

In Chapter Three, I raised the concern about the relevance of Aquinas' account of miracles and divine action in modern thought, given his lack of reliance on the concept of laws of nature. The recent rise of dispositionalism offers a solution to this. Compare Gloria Frost's description of Aquinas' conception of causal powers with Orr's description of dispositionalism. Frost writes: 'Each natural efficient cause and its patient is plugged into a network of other efficient causes.'[104] Orr writes that contemporary dispositionalists conceive of 'an intricate network of active and

[102] J. Jacobs and T. O'Connor, 'Agent Causation in a Neo-Aristotelian Metaphysics', in S. C. Gibb, E. J. Lowe, and R. D. Ingthorsson (eds), *Mental Causation and Ontology*, Oxford, Oxford University Press, 2013, p. 177.
[103] W. Simpson, R. Koons, and J. Orr, 'Introduction: Reflections on Science, Theology and the New Aristotelianism', in W. Simpson, R. Koons, and J. Orr (eds), *Neo-Aristotelian Metaphysics and the Theology of Nature*, New York, Routledge, 2022, p. 6.
[104] Frost, *Aquinas on Efficient Causation and Causal Powers*, p. 192.

passive powers that are reciprocally connected'.[105] Both Aquinas and dispositionalists understand the course of nature to be grounded in the interplay between the powers of natural substances.

3.1.1. The Modality of Dispositions

One area of debate in comparisons between Thomism and dispositionalism regards the modality of dispositional causal powers. Taking Bird's position as paradigmatic, he views the modality of dispositions as one of conditional necessity, where the instantiation of a disposition's stimulus condition necessitates the instantiation of the manifestation.[106] For example, Bird writes: 'necessarily if the potency is instantiated and receives its stimulus, then the manifestation will occur.'[107] Such an image is complicated when it comes to some dispositions having *ceteris paribus* clauses, which specify the conditions that would prevent the manifestation even if the stimulus condition is met.[108] Nonetheless, even with these dispositions, if the stimulus condition is met and in the absence of the specified *ceteris paribus* clauses, the manifestation necessarily occurs.

Thomists contest whether Aquinas attributes this same modality to causal powers. Ignacio Silva argues that he does not. On this interpretation, natural causes might not produce their effects without any determining factor. A cause may fail to produce its effect because of 'an intrinsic defectiveness in the cause itself.'[109] The metaphysical basis for this interpretation is Aquinas' hylomorphism.[110] Since all natural substances are a compound of matter and form, all substances

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[105] J. Orr, 'Divine Lawmaking: Powers and Kinds', in W. Simpson, R. Koons, and J. Orr (eds), *Neo-Aristotelian Metaphysics and the Theology of Nature*, New York, Routledge, 2022, p. 409.

[106] It should be recognised that not all contemporary dispositionalists support this view. Stephen Mumford and Rani Lill Anjum support a conception of dispositional modality that aims to strike a middle ground between metaphysical necessity and contingency. On this view, dispositions, even if all required conditions are met, may sometimes not manifest their effects.
S. Mumford and R. L. Anjum, *Getting Causes from Powers*, Oxford, Oxford University Press, 2011, p. 85.

[107] Bird, *Nature's Metaphysics*, p. 64.

[108] I will explore the nature of these dispositions later in the chapter.

[109] Silva, *Providence and Science*, p. 59.
It may also result from a defectiveness in the substance being acted upon.

[110] There are contemporary advocates of hylomorphism, integrating this view within a dispositionalist framework. For example, see: P. Corkum, *Neo-Aristotelian Metaphysics*, Cambridge, Cambridge University Press, 2025, pp. 50-63.

are a mix of act and potency. They are imperfect acts.[111] This imperfection means some causes may not produce their effects even in the ideal conditions, when there are no external factors inhibiting the causal process.[112] In light of this, Silva denies that, for Aquinas, causes *necessarily* produce their effects even when all external factors are met.

Frost offers an alternative interpretation. She proposes that whenever a cause does not produce its effect, there is always an external determining factor as to why.[113] Such a view is akin to contemporary dispositionalism. Frost justifies her interpretation through several key quotations from Aquinas. In *Contra Gentiles*, Aquinas writes:

> For the power of every agent which acts by natural necessity is determined to one effect; that is why all natural things invariably happen in the same way, unless there be an obstacle.[114]

This quote suggests that there always needs to be an external impediment to prevent a cause producing its effect. Furthermore, Aquinas writes, 'a natural agent acts consistently in the same manner as long as it is in the same condition', again indicating that a natural agent does not simply fail to produce its cause due to an internal deficiency. There must be a change in external conditions to prevent the cause manifesting.[115]

For our purposes, it is not crucial to favour a particular interpretation. If Frost is correct, then we see a strong congruence between Thomism and contemporary dispositionalism in terms of dispositional modality. If Silva is correct, then there is a divergence between Thomism and dispositionalism on this subject. But, this difference is not so stark as to undermine a constructive

[111] Silva, *Providence and Science*, p. 59.
[112] Silva, *Providence and Science*, p. 59.
[113] Frost, *Aquinas on Efficient Causation and Causal Powers*, p. 60.
[114] T. Aquinas and J. Anderson (trans.), *Contra Gentiles, Book Two*, New York, Hanover House, 1955-57, 23.2.
[115] T. Aquinas and C. Vollert (trans.), *Compendium Theologiae*, St. Louis, Herder Book Co., 1947, 97.

dialogue between dispositionalism and Thomism. Both still ground the regularity of nature in the intrinsic powers of natural agents. Even if Silva's interpretation is correct, either Thomism or dispositionalism could be further developed to narrow this difference in dispositional modality.[116]

3.1.2. Dispositionalism through a Thomist Lens

In light of this, there are strong prospects for understanding contemporary dispositionalism through a theistic, Thomist lens.[117] As discussed in Chapter Three, Aquinas' metaphysics of nature is underpinned by a robust conception of God as pure being, an analogical understanding of causation, and an instrumental explanation for how God acts through natural substances. In integrating this approach with contemporary dispositionalism, God would act through natural substances in four ways:

1. God gives natural substances and their dispositions being;
2. God upholds natural substances and their dispositions in being;
3. God acts through natural dispositions for their own end;
4. God acts through natural dispositions for an end that exceeds their nature.

This approach is appealing because it draws on a philosophically plausible conception of the laws of nature while being situated in a theologically robust framework. God's immanence is preserved because God acts intimately in all aspects of the natural order. God's transcendence is preserved because God's being and causal action are on a different plane to natural agents. God exists as pure being and acts in virtue of His complete power, not being constrained or limited in any way. The relation between God's existence and action, and natural substances' existence and action is analogical rather than univocal.

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[116] For example, Silva's interpretation aligns Aquinas' thought closely with Mumford and Anjum's account of tendencies and dispositional modality.

[117] Indeed, Orr argues that the dispositionalist has strong motivation for advocating a theistic approach to solve various philosophical challenges.
Orr, 'Divine Lawmaking: Powers and Kinds', p. 409.

As argued in Chapter Three, Aquinas should be commended for seeking to offer a well-grounded, metaphysical explanation for how God acts through nature. Nevertheless, his instrumental explanation does not decisively secure nature's causal integrity. This is due to the intimate role Aquinas assigns to God's action in nature and relevant discrepancies between God's relation to natural substances and an agent's relation to an instrument. Thus, the concern that the integrity of natural causes is not adequately respected remains when integrating dispositionalism within a Thomist framework.

3.2. Thomist-Dispositionalist Accounts of Miracles

With the renewal of dispositionalism and its consonance with Thomism, in the last ten years, there has been a rise in Thomist-dispositionalist accounts of miracles.

3.2.1. Joel Archer's Account

In 'Against Miracles as Law-Violations: A Neo-Aristotelian Approach' (2015), Joel Archer defends understanding miracles from a neo-Aristotelian metaphysics, offering a conception of miracles in relation to Bird's dispositionalist account of the laws.[118]

3.2.1.1. Finks and Antidotes

Sometimes dispositions are not manifested even if the stimulus condition is met. Bird explains this through finks and antidotes. To understand finks, one must appreciate two things. First, for some dispositions, the process whereby a disposition manifests itself takes time.[119] For example, poison ingested must interact with the subject's metabolism before it manifests and causes illness.

[118] J. Archer, 'Against Miracles as Law-Violations: A Neo-Aristotelian Approach', *European Journal for Philosophy of Religion*, vol. 7, no. 4, 2015, p. 84.
[119] Bird, *Nature's Metaphysics*, p. 62.

Secondly, some dispositions may be gained or lost. Some foods lose the disposition of being poisonous when cooked.[120]

A fink occurs when 'the object loses the disposition after the occurrence of the stimulus but before the manifestation can occur and in such a way that consequently that manifestation does not occur.'[121] Lewis gives the example of a sorcerer who takes a liking to a fragile glass. The sorcerer does not change the dispositional character of the glass but rather waits to see if the glass is ever struck and, if so, he casts a spell to render the glass no longer fragile.[122] Subsequently, the glass never breaks. In this case, the glass does not break because even though it is struck while it possesses the disposition of fragility (meaning the stimulus condition is met), it loses this disposition before the causal process is complete and the manifestation is produced. The sorcerer's spell serves as a fink.

An antidote occurs when even though the disposition's stimulus condition is met and the disposition remains, something 'has the effect of breaking the causal chain'.[123] For example, let us understand 'fatally poisonous' to mean 'disposed to kill if ingested'. One may ingest a dose of fatal poison yet survive if an antidote is taken that changes the body's physiology in the required way. This antidote is not a fink because the poison's disposition to kill if ingested remains, it is just that the causal chain leading to the manifestation is broken. In Thomist language, we may say that with antidotes, it is the passive power – such as the person's ability to be poisoned – that is modified to prevent the manifestation.

[120] Bird, *Nature's Metaphysics*, p. 62.
[121] Bird, *Nature's Metaphysics*, p. 25.
[122] D. Lewis, 'Finkish Dispositions', *The Philosophical Quarterly*, vol. 47, no. 187, 1997, p. 147.
[123] Bird, *Nature's Metaphysics*, p. 27.

3.2.1.2. Divine Finks and Antidotes

Archer offers a conception of miracles as occurring through divine finks and antidotes.[124] God causes miracles by directly acting in the world to cause an object to lose its disposition before the given manifestation occurs or by breaking the causal chain to prevent the given manifestation. He gives two examples of how God may achieve this.[125]

Archer simplifies the entire event of the Red Sea's parting in Exodus 14 to a couple of water molecules that have a natural disposition to attract each other through the process of cohesion.[126] In this case, God causes the proximate molecules to separate, meaning the molecules' disposition to attract is not manifested. Such an action from God serves as an antidote because their disposition to attract remains. God's action breaks the causal process, leading to the molecules' separation and the non-occurrence of the manifestation. This, on a larger scale, then leads to the sea parting.[127]

Another example Archer gives is with resurrections. It is true that in the absence of finks and antidotes, the laws of nature preclude a dead man's body coming back to life.[128] But with resurrections, God acts as a divine fink, changing 'the biochemical structure of [the] body such that it does not manifest the usual dead-body dispositions.'[129] In the same way that Lewis' sorcerer changes the structure of the vase after it was struck so that it does not break, God changes the structure of the body so that it does not remain dead after dying.

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[124] Archer refers to antidotes as 'masks'. 'Masks' and 'antidotes' are synonymous and to stay in line with Bird's account, I refer to them as 'antidotes'.
Archer, 'Against Miracles as Law-Violations', p. 84.
[125] Archer, 'Against Miracles as Law-Violations', p. 94.
[126] Archer, 'Against Miracles as Law-Violations', p. 94.
[127] Archer, 'Against Miracles as Law-Violations', p. 94.
[128] Archer, 'Against Miracles as Law-Violations', p. 94.
[129] Archer, 'Against Miracles as Law-Violations', p. 94.

Archer argues that God acting as divine fink and antidote would not violate the laws of nature. Drawing on Bird's thought, he supposes that a law of nature reflects a dispositional relation between a stimulus condition and manifestation *in the absence* of finks and antidotes.[130] When God causes miracles through divine finks and antidotes, no laws are being violated because the laws do not apply in these cases.[131]

It is important to recognise that Archer is not supposing that God causes miracles *exclusively* through divine finks and antidotes.[132] The issue with supposing this would be that some dispositions do not seem susceptible to finks and antidotes. Bird argues that fundamental dispositions – that is, dispositions with no deeper causal basis – cannot have finks because they rely on a temporal gap between the stimulus condition being met and the manifestation occurring. With fundamental dispositions, since there is, by definition, no causal basis, it becomes 'mysterious' why there would be a time gap between stimulus and manifestation.[133] Consequently, Bird concludes there are no finks at the fundamental level.

The case is more complicated with antidotes at the fundamental level because they do not require a temporal gap between stimulus and manifestation. An antidote to poison can be drunk before the consumption of the poison and still be effective. Nevertheless, Bird thinks that:

> the direction of the development of physics with ever fewer fundamental properties and corresponding forces indicates that the prospects for antidote-free fundamental properties and thus strict laws only at the fundamental level are promising.[134]

[130] Archer, 'Against Miracles as Law-Violations', p. 93.
[131] This is similar to C. S. Lewis' and Alvin Plantinga's invocation of *ceteris paribus* clauses in claiming that miracles do not violate the laws of nature.
[132] Archer 'Against Miracles as Law-Violations', p. 93.
[133] Bird, *Nature's Metaphysics*, p. 61.
[134] Bird, *Nature's Metaphysics*, p. 63.

It would be theologically problematic to suppose that God only causes miracles through divine finks and antidotes and that there are no finks or antidotes at the fundamental level. It would prevent God from acting and causing miracles at this level. This would fall foul of the critique faced by the NIODA approach of having to find gaps in nature for God to act.[135] Subsequently, the notion that all of creation, at every ontological level, is ultimately dependent upon and directed by the Will of God would be neglected. Therefore, it must be recognised that Archer's account is not an exhaustive conception of miracles.

3.2.1.3. Is God a Natural Cause?

A concern with Archer's approach is whether it diminishes God to acting as a natural cause. He offers a conception of a law of nature as a particular dispositional relation between a stimulus condition and manifestation, in the absence of finks and antidotes. To flesh this out using one of Archer's examples, a law of nature regarding a particular poison may look something like this:

> It is a law that given the ingestion of poison A (stimulus condition), the subject will fall fatally ill (manifestation condition), in the absence of fink B, antidote C, and God's divine action (finks and antidotes).[136]

Such a law would be peculiar from a theological perspective because it seems to render God's action on the same level as fink B and antidote C. They all serve the function of preventing the manifestation occurring even if the stimulus condition is satisfied. This means God acts as a natural cause, thereby undermining divine transcendence.

This concern is not fatal to Archer's account. Archer could draw on Aquinas' conception of obediential potentiality. Since all natural substances derive their being from God, they all have 'a

[135] The gaps for the non-interventionist are pockets of ontological indeterminism and the gaps for the proposed account would be finks and antidotes.
[136] I am not making a claim that there are necessarily laws of nature about the effects of particular poisons. I am simply using Archer's example to illustrate a potential issue with his approach.

metaphysical inclination to receive from, and respond to, God whatever God wants to offer, or to request from, the creature.'[137] In virtue of each natural substance's obediential potentiality, God is able to act to cause an object to lose its disposition before the given manifestation occurs or break the causal chain to prevent the given manifestation.

Thus, while natural finks and antidotes serve the same function as divine finks and antidotes, the metaphysical basis of this function is different. For divine finks and antidotes, it is grounded by God's sovereign rule over all natural substances and unlimited causal power. For natural finks and antidotes, it is grounded by the dispositional power being particularly suited to cause an object to lose its disposition or break the causal chain. This avoids the concern that God's action is reduced to a cause among causes. The Thomist reticence to make God a natural cause is not a denial that God can produce effects like those standardly produced by natural agents, it is that God's causal activity is never limited or constrained in the way that natural causes are.[138] Framing divine finks and antidotes in terms of God's complete sovereign rule circumvents such a constraining.

The notion of God immediately acting in nature in virtue of a natural substance's obediential potentiality can be broadened beyond serving as divine finks and antidotes. God may act directly to cause miracles without being a fink or antidote. For example, with the immaculate conception, God may have acted directly, not in a way that removes a substance's disposition or breaks the causal chain, to impregnate Mary. Robert Adams advocates this view, supporting a dispositionalist understanding of the laws and stating: 'An event would be supernaturally caused, and a miracle, if it is directly caused by God.'[139]

[137] Silva, 'The Possibility of Miracles and the Laws of Nature', p. 2.
[138] E. M. Lazzari, 'The Divine Nature is Not a Cause among Causes: A Response to Kittle and Sollereder', *Theology and Science*, vol. 23, no. 3, 2025, p. 551.
[139] R. M. Adams, 'Miracles, Laws of Nature and Causation II', *Aristotelian Society*, vol. 66, no. 1, 1992, p. 217.

3.2.2. Benedikt Göcke's Account

Benedikt Göcke offers a different dispositionalist account of miracles. He defines the laws of nature as the 'universal generalizations that we derive from the observed dispositional behaviour of natural kinds'.[140] Miracles occur by God changing temporarily 'the dispositions of the natural kind(s) that will constitute the state of affairs that God's special act of intervention intends to bring about'.[141] Göcke also uses the example of Moses parting the Red Sea, considering that God could have temporarily changed the disposition of the water-molecules involved in such a way that they resist gravitation and repulse each other to allow the Israelites to pass through.[142]

3.2.2.1. An Interpretive Dilemma

There is an ambiguity in Göcke's dispositionalist account of miracles. By temporarily changing the dispositions of a natural kind, does he mean:

(1) The given manifestation and stimulus conditions for particular dispositions change. Or:

(2) The given natural kind loses certain dispositional properties and gains others.

On the first option, a disposition's identity would stay the same while its causal basis changes. This means that the disposition's identity cannot be determined by its causal basis but rather a primitive *this-ness*, entailing categoricalism. As a central motivation for dispositionalism is to avoid this view of properties, this option is untenable.[143]

In light of this, we should interpret Göcke as advocating the second option. Such an option is in line with Aquinas who, as we saw in Chapter Three, conceived of miracles by cooperation as

[140] B. P. Göcke, 'Did God Do It? Metaphysical Models and Theological Hermeneutics', *International Journal for Philosophy of Religion*, vol. 78, no. 2, 2015, p. 221.
[141] Göcke, 'Did God Do It?', p. 223.
[142] Göcke, 'Did God Do It?', p. 223.
[143] God's inability to change the dispositional character of a disposition does not reflect any limitation on the power of God because, on a dispositionalist metaphysics, it is impossible to alter the nature of a disposition.
Page, 'The Dispositionalist Deity', p. 130.

occurring through God endowing humans with temporary powers to cause miracles.[144] In a similar fashion, Göcke suggests that miracles occur through natural things being endowed with temporary 'miraculous' dispositions. For example, the feeding of the five thousand in Matthew 14 may have occurred through the bread and fish being endowed with a temporary 'super-nutritive' power that allows them to nourish the crowd. Miracles, in this sense, would be beyond the laws of nature because they occur through anomic dispositions God inputs into the world.

These miracles would still be intrinsically wondrous. As argued in Chapter Three, knowledge of a cause requires its repeatability, so that the stimulus condition, given manifestation, and preventing factors (i.e. finks and antidotes) can be discerned. Because these 'miraculous' dispositions are temporary, anomic, only instantiated to cause that specific miracle, they remain unexaminable. This means that they are, in principle, unknowable. Therefore, the intrinsic wonder of these miracles, and their unique theological function, are upheld.

3.2.2.2. Constraining God's Power

A key issue with Göcke's account is that it limits miracles to occurring *exclusively* through God temporarily changing the dispositions of natural kinds. Göcke rejects God acting directly in nature, independent of dispositions, to cause miracles. His motivation is that the laws of nature entail the principle of causal closure which holds that 'every physical event has a purely physical causal history that is responsible for the event's obtaining.'[145] Consequently, God directly acting in the world is ruled out.

[144] Stephen Horst similarly proposes that miracles 'involve the introduction, by special Divine action, of causal powers that are not grounded in natural laws.'
S. Horst, 'Miracles and Two Accounts of Scientific Laws', *Zygon: Journal of Religion and Science*, vol. 49, no. 2, 2014, p. 342.
[145] Göcke, 'Did God Do It?', p. 216.

However, from philosophical and theological perspectives, it is difficult to see how the laws of nature entail the complete causal closure of the universe. A dispositionalist understanding of the laws views them as relations between certain stimulus conditions and manifestations. The fact that the uniformity of nature is underpinned by the dispositional character of natural properties does not exclude the possibility of divine, anomic causation. Such a cause would simply lie outside the nexus of natural dispositions.

From a theological perspective, the natural order is ultimately dependent upon and directed by God. The laws of nature are upheld as required by divine providence. In particularly theologically heightened contexts, divine providence may call for exceptional, anomic events. Therefore, God is not bound to always act through nature. In appropriate situations, God can act directly in the universe without encroaching upon the integrity of the laws. Furthermore, the practice of science is not threatened by there being anomic events in unique, theologically significant circumstances. Theists have principled reasons to think that miracles are incredibly rare. This thereby allows science to examine the vast majority of events, upholding the regularity and intelligibility of the natural order.[146]

3.2.3. Ben Page's Account

Ben Page considers another way that God may cause miracles on a dispositionalist conception of the laws. On this Thomist-dispositionalist approach, dispositionalist properties exist and exercise their powers in virtue of God. Therefore, God may cause miracles by removing 'his concurrence on particular occasions'.[147] For example, Shadrach, Meshach, and Abednego may have

[146] Robert Larmer argues that science does not establish the metaphysical thesis that energy can be neither created nor destroyed, but rather the weaker claim that in an isolated system, the total amount of energy remains constant. This weaker claim allows God to intervene in nature to alter the amount of energy in the universe.
R. Larmer, 'Divine Agency and the Principle of Conservation of Energy', *Zygon: Journal of Religion and Science*, vol. 44, no. 3, 2009, pp. 543-557.
[147] Page, 'The Dispositionalist Deity', p. 129.

miraculously survived being thrown in the furnace in Daniel 1-3 because God temporarily removed his concurrence for the fire's dispositional power to burn. In such a case, the fire would still exist but its power to burn would be removed.

One concern Page raises with this is that Aquinas 'seems to think God cannot remove his concurrence without causing the object to cease existing.'[148] The basis of this interpretation is that, for Aquinas, a substance's form delineates certain active and passive powers it must have. To remove the substance's powers is to remove the substance's form.[149] Thus, God could not remove the fire's power to burn without removing the fire altogether.

Nevertheless, there is a similar way God may cause miracles on a dispositionalist approach. There are four ways that God acts in the world: (1) giving natural powers their being, (2) upholding them in being, (3) exercising the powers for their own end, and (4) exercising the powers for an end that transcends their nature. God may cause the miracle in Daniel 1-3 by upholding the fire's power to burn but not exercising the power in that particular instance. In this case, the fire would still possess its power to burn, meaning there is not the issue of removing the power leading to the removal of the fire. It is just that God chooses not to act in ways (3) or (4).

Does this lead to a categorical understanding of properties, undermining the motivation for dispositionalism? Does the fire possessing the power to burn but not burning in Daniel 1-3 lead to a disconnect between the property's essence and its dispositional character? I contend not. There is a distinction between a substance possessing a particular dispositional property and manifesting that disposition. A substance may possess a disposition but not manifest it.[150] This is the case with the fire in the miracle. It retains the dispositional property to burn, it is just not

[148] Page, 'The Dispositionalist Deity', p. 124.
[149] Aquinas, *Summa Theologiae*, 3.13.1.
[150] For example, salt retains the disposition of solubility even if it is never put in water.

manifested in that particular instance. While the stimulus is met and there are no antidotes or finks, God chooses not to concur in exercising the power. The basis for God's ability to achieve this lies in being the source of all existence and action in nature. So, as the fire retains its disposition, without being exercised, categoricalism is avoided.

From this survey, I have elucidated an array of ways that God may cause miracles in relation to dispositionalism. Such ways can be combined to form a single Thomist-dispositionalist account of miracles. On this account, God may:

(1) Act directly in the natural world, independent of any nomic or anomic dispositions;

(2) Act directly in the world to prevent the manifestation of nomic dispositions, serving as a divine fink or antidote;

(3) Temporarily create anomic dispositions;

(4) Prevent the exertion of nomic dispositions.

All these types of miracles may be categorised as events beyond or contrary to the laws of nature. Ways (1), (2), and (3) are events beyond the laws because they all involve anomic causal factors, whether it be God's direct action or creating temporary anomic dispositions. Since the causal factors lie outside, but do not compete with, the nexus of nomic dispositions, these miracles are beyond the laws. The fourth way does not involve any anomic causal factors but rather the prevention of nomic dispositions being exercised. This way is best described as violating or being contrary to the laws of nature because a disposition is not exercised when the stimulus conditions are met and there are no finks and antidotes. By describing this as a violation of the laws, it does not imply any tension or violence on the part of God. God's ability to prevent the exercitation of a disposition in this way is grounded in the absolute dependence of all dispositions upon God.

On this Thomist-dispositionalist account, miracles are events beyond or contrary to the dispositionalist laws of nature, caused by God directly or through anomic dispositions.[151] This account upholds the intrinsic wonder of miracles. The causes of miracles are absolutely unknowable in virtue of the hiddenness of God's direct action and the impermanence of anomic dispositions. To be clear, I am not claiming that this Thomist-dispositionalist account provides a comprehensive understanding of miracles. It is rather one in as much as they relate to the dispositionalist laws. In Chapter Two, I highlighted the importance of wider theological context in contributing to the nature of miracles. As the focus of this thesis is the relation between miracles and the laws, I have focussed on the Thomist-dispositionalist account as miracles relate to dispositionalism.

3.3. Issues with the Thomist-Dispositionalist Account

The Thomist-dispositionalist account of miracles is highly appealing. It draws upon a Thomist framework that (1) preserves divine immanence and transcendence, (2) upholds the intrinsic wonder of miracles, and (3) makes a credible effort at respecting the causal integrity of the natural order. In doing so, it convincingly fulfils two of the three theological criteria established in Part One, while offering a promising, if contested, approach to the third. Furthermore, it aligns these theological strengths with a philosophically reasonable metaphysical model – in dispositionalism – thereby reinforcing the account's overall coherence and credibility.

Nonetheless, there remain issues with this account. First, there is still the question of whether Thomism, and, in turn, this account, fully respects the causal integrity of nature. If God gives dispositions their being, preserves them in existence, and exercises these dispositions, what space

[151] In Chapter Three, I outlined how Aquinas understands miracles as events above (*supra*), contrary (*contra*), or beyond (*praeter*) nature. The categorisation of miracles in this way is based upon nature's ability to perform such events. My categorisation of miracles as beyond or contrary to the laws of nature is intended as a contemporary analogue to Aquinas' categorisation.

is left for natural dispositions to exert their own causality? I suppose that Aquinas' instrumental explanation does not decisively answer this question. This is due to relevant dissimilarities between the God-natural substance relation and the agent-instrument relation. Secondly, a theist may take issue with this account on philosophical grounds. While dispositionalism is a prevalent metaphysical conception of the laws, it still faces various objections.

3.3.1. The Contingency of Laws

The central challenge with dispositionalism is that it denies the contingency of the laws of nature. A strong intuition about the laws is that they could have been different. Electrons could have been attracted to each other, salt could not dissolve in water, the speed of light could have been slightly different. It is easy to imagine the laws of one possible world being false in another.[152] Nevertheless, dispositionalists must reject this intuition. A property's dispositional character, in grounding its nature, remains the same in all possible worlds. In any world where there are electrons, they, by necessity, repel other electrons. Thus, the laws regarding electrons are the same in every possible world.[153] Dispositional laws cannot be different from what they are. So, one reason for rejecting dispositionalism is its failure to accommodate the vital intuition of the contingency of laws.[154]

3.3.2. Vicious Regress

Another concern with dispositionalism is the risk of a vicious regress. Bird thinks that the most convincing formulation of this argument relates to the identity of dispositions.[155] The identity of a

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[152] J. Carroll, *Laws of Nature*, Cambridge, Cambridge University Press, 1994, p. 24.

[153] Dispositionalists diverge in whether a given law regarding a dispositional property holds in all possible worlds or in all worlds where that property is instantiated. For the sake of metaphysical parsimony, Bird posits that a given law holds in all possible worlds where the grounding disposition exists.
Bird, *Nature's Metaphysics*, p. 169.

[154] Bird defends dispositionalism by arguing that we do not have good reason to think our intuitions regarding the contingency of laws are reliable. Other dispositionalists make similar arguments, often drawing on Saul Kripke's claim that there are *a posteriori* necessary truths.
Bird, *Nature's Metaphysics*, pp. 169-188;
S. Kripke, *Naming and Necessity*, Cambridge, Harvard University Press, 1980.

[155] Bird, *Nature's Metaphysics*, p. 136.

property is determined by its dispositional character. The dispositional character of a property is determined by its relation to other properties, that is, its stimulus property and manifestation property. However, the identities of these properties must also be determined by their relation to other properties, that is, their respective stimulus and manifestation properties, and so on and so forth.

This regress will either continue *ad infinitum* or be circular. Neither horn seems appealing. If the regress continues *ad infinitum*, with an infinite chain of properties determining the identity of lower-order properties, then dispositionalism will be committed to an over-inflated ontology. Furthermore, if higher-order properties always determine a property's identity and this chain goes on forever, then the identity of a property is never determined. Its identity is 'kicked down the road' *ad infinitum*. There is no original source that grounds the infinite chain. [156]

If the regress is circular, then the identity of a property is determined by its relations to other properties. The identities of these properties are also determined by their relations to other properties, with this chain eventually circling back on itself to the property that we started with. However, it is this very property whose identity we first sought to determine. Since this property's identity is undetermined, then the other properties' identities are left undetermined. Therefore, no property's identity is determined.[157] So, either way, dispositionalism struggles to ground the identity of dispositions.

[156] Bird, *Nature's Metaphysics*, p. 137.
[157] Bird offers a reply that draws on the asymmetry of property structures. Ralf Busse argues that Bird's response fails. See:
Bird, *Nature's Metaphysics*, pp. 132-146.
R. Busse, 'Asymmetry cannot solve the circularity/regress problem of property structuralism', *Synthese*, vol. 199, no. 3-4, 2021, pp. 10685-10720.

3.3.3. Meinongianism

A third concern with dispositionalism relates to the intentionality of dispositions. A given disposition is directed towards its manifestation; if the stimulus condition is met and in the absence of finks and antidotes, a disposition will necessarily produce its manifestation. Although a disposition is directed towards its manifestation, it may never actually produce it. For example, a salt crystal possesses the dispositional property of being soluble even if it is never put in water.[158] This would occur if the stimulus condition is never met in the absence of finks and antidotes. Or, on the theological understanding of dispositionalism, if God never concurs to exercise the power of a disposition.[159]

Armstrong takes issue with unmanifested dispositions because they have within themselves 'essentially, a reference to the manifestation that did not occur.'[160] Dispositions have an intrinsic intentionality that points toward the manifestation, regardless of whether this manifestation occurs or not. In the case of unmanifested dispositions, Armstrong accuses dispositionalism of a Meinongian metaphysics, that is, to there being non-existent properties. Unmanifested dispositions are intrinsically directed towards non-existent things, that is, the manifestations that do not occur. For Armstrong, this leads to an untenably bloated metaphysics.

Orr agrees that 'a perplexing feature of lawmaking powers is that determining their identity involves reference to unrealised or unmanifested states of affairs'.[161] He contends that all prominent naturalistic responses to this issue seem to be 'the kind of extreme Meinongian solutions [which posit] objects that 'subsist' in an ontological twilight zone between existence and

[158] It still possesses this disposition because if it were put in water, it would dissolve.
[159] It seems God would only not concur to exercise the power in the rare cases where a miracle is needed. To do otherwise would undermine the integrity of the natural order.
[160] D. M. Armstrong, *A World of States of Affairs*, Cambridge, Cambridge University Press, 1997, p. 79.
[161] Orr, 'Divine Lawmaking: Powers and Kinds', p. 412.

non-existence.'[162] Instead, Orr proposes a theistic solution. On a theistic approach, it may be God's concepts of dispositional properties that ground their nature. In the words of Orr, 'God's conceiving and willing supply the necessary and sufficient conditions for electrons to bear every characteristic that belongs essentially to them.'[163]

Here, the theist can avoid reference to unmanifested states of affairs and resort to God as the source of each thing's existence and nature. Nonetheless, this response opens up further metaphysical puzzles about how God's concepts ground the essence of dispositional properties. Are there divine ideas that strike an ontological middle ground between God and dispositions? In virtue of divine simplicity, are the divine ideas identical to God? So, while theism may offer a way for dispositionalism to avoid Meinongianism, as per Orr, the theistic avenue 'is vulnerable to objections and as yet there is no clear consensus about how [these objections] can be resolved.'[164]

The purpose of raising these issues is not to bury dispositionalism dead in the water. Rather, it is to maintain that dispositionalism can plausibly be rejected on philosophical grounds. Take Brian Ellis' approach to decision-making in metaphysics. He writes:

> You show your wares and invite people to buy them. If your system strikes your readers as being simpler, more coherent, or more promising than any alternative for dealing with the recalcitrant difficulties to other systems, then this may be a good enough reason to buy it.[165]

Similarly, Lewis writes:

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[162] Orr, 'Divine Lawmaking: Powers and Kinds', p. 415.
[163] Orr, *The Mind of God and the Works of Nature*, p. 164.
Page also supposes this solution, writing 'the theist has a simple response, namely to argue that the ends of each object do exist formally within the intellect of God, who directs all objects toward their ends'.
Page, 'The Dispositionalist Deity', p. 129.
[164] Orr, 'Divine Lawmaking: Powers and Kinds', p. 422.
[165] B. Ellis, *Scientific Essentialism*, Cambridge, Cambridge University Press, 2001, p. 262.

> when all is said and done, and all the tricky arguments and distinctions and counterexamples have been discovered, presumably we will still face the question which prices are worth paying, which theories are on balance credible, which are the unacceptably counterintuitive consequences and which are the acceptably counterintuitive ones. On this question we may still differ. And if all is indeed said and done, there will be no hope of discovering still further arguments to settle our differences.[166]

One may reflect upon dispositionalism, adequately understand this position, and simply not be enamoured with it, considering another conception of the laws of nature to be more metaphysically compelling. The basis for this decision may justifiably lie in dispositionalism rejecting the contingency of the laws, potentially entailing a vicious regress, or adopting a bloated ontology.

I have highlighted two problems with the Thomist-dispositionalist account of miracles. First, it imports the worry of whether Thomism sufficiently respects the causal integrity of natural substances. Secondly, dispositionalism can plausibly be rejected on philosophical grounds. In light of this, it is overly restrictive to understand miracles *solely* in relation to dispositionalist laws. Here, I am not denying this account's plausibility but rather recognising its challenges. Therefore, it ought to be examined whether a plausible account of miracles can be offered in conjunction with another conception of the laws.[167] Can such an account be offered which:

1. Preserves the immanence and transcendence of God;
2. Respects the causal integrity of the natural order;
3. Upholds the intrinsic wonder of miracles?

Examining this question is the aim of the remaining two chapters of this thesis.

[166] Lewis, *Philosophical Papers. Vol. 2*, X.

[167] In Chapter Six, I also consider whether the theist has other theological reasons, aside from the Thomist-dispositionalist account of miracles, for adopting dispositionalism over other conceptions of the laws.

Conclusion

This chapter sought to integrate the theologically focussed examination of miracles and divine action in Part One with a more philosophically nuanced conception of the laws of nature. First, I argued that there is, *prima facie*, good reason, both theologically and philosophically, to posit the existence of the laws of nature to ground the regularities observed in the universe. Then, I contended that Nancy Cartwright and Stephen Mumford fail to establish the implausibility of nomic fundamentalism and nomic realism.

Secondly, I examined the metaphysics of the laws of nature, outlining the three different approaches to the laws in Humeanism, semi-Humeanism, and anti-Humeanism. I gave a representative example of each of these approaches – the BSA account for Humeanism, the universals account for semi-Humeanism, and dispositionalism for anti-Humeanism – outlining their key motivations, metaphysical commitments, and virtues.

Thirdly, I highlighted the consonance between dispositionalism and Thomism. I offered a Thomist-dispositionalist account of miracles as events caused by God directly or through anomic dispositions that are beyond or contrary to the dispositionalist laws of nature. This account is highly appealing because it integrates a robust theological framework with a philosophically respectable conception of the laws. Nonetheless, it still faces both philosophical and theological challenges. Therefore, it is unduly limiting to only understand miracles in conjunction with dispositionalism. Consequently, for the remainder of this thesis, I seek to offer a plausible account of miracles in relation to an alternative philosophical conception of the laws of nature.

Chapter Five: The Possibility of Lewisian Miracles

Having established the importance of developing a plausible account of miracles in relation to a different conception of the laws compared to dispositionalism, the question arises: which alternative conception should we adopt? For the remainder of this thesis, I develop a plausible account of miracles in conjunction with the BSA conception of the laws of nature.

Section One: Why the BSA Account?

I am adopting the BSA account because it is the most prominent Humean approach to laws in contemporary philosophy and the Humean approach has received the most limited engagement with respect to miracles. As outlined in Chapter Four, there has been an exciting recent rise in Thomist-dispositionalist accounts.[1] Furthermore, there have been more isolated attempts to offer an account of miracles in relation to semi-Humeanism.

1.1. Miracles and Semi-Humean Approaches to the Laws

1.1.1. John Foster's Approach

Take the thought of John Foster in *The Divine Lawmaker: Lectures on Induction, the Laws of Nature, and God* (2004). For Foster, the central problem regarding the laws of nature is the type of necessity involved.[2] He advocates a semi-Humean approach, where the laws invoke contingent

[1] In the previous chapter, I amalgamated various contemporary Thomist-dispositionalist accounts to offer a single Thomist-dispositionalist account of miracles as events caused by God directly or through anomic dispositions that are beyond or contrary to the laws of nature.
[2] J. Foster, *The Divine Lawmaker: Lectures on Induction, the Laws of Nature, and God*, Oxford, Clarendon Press, 2004, p. 155.

necessitation, but argues that no existing naturalist account adequately explains this necessitation.[3] Consequently, for Foster, the Judeo-Christian God is the best means to ground the governing power of the laws. On this account, God 'imposes certain regularities on the universe as regularities, and thus endows it with laws'.[4] The motivating idea is that by underpinning the laws of nature with God, who is 'causally primitive, who is the creator of the physical universe…who is perfect in his rationality and goodness, and who possesses unlimited power and knowledge', the laws can externally govern their instances.[5] Moreover, in virtue of God's perfect freedom, God could have willed different laws into existence, thereby establishing the laws' contingency.

He then makes conceptual space for miracles by supposing that the laws hold 'except in cases where God decides otherwise.'[6] So, each law contains a *ceteris paribus* clause, where the law does not apply in cases of direct action by God. Miracles occur when God acts directly in a way 'contrary to the normal ways of working of the universe'.[7] For example, with Jesus walking on water, the law of gravitation does not hold because God acts directly to cause Jesus not to fall in the water. In such cases, no law is broken because the given law simply does not apply. Therefore, on Foster's view, miracles occur by God acting directly beyond the laws of nature.

[3] Foster, *The Divine* Lawmaker, p. 155.
[4] Foster, *The Divine Lawmaker*, p. 163.
[5] Foster, *The Divine Lawmaker*, p. 149.
Helen Beebee questions whether Foster's account is sufficiently fleshed-out metaphysically to explain how a theistic account of the laws overcomes the supposed difficulties of non-theistic accounts. Similarly, James Orr writes, 'once we probe more deeply into the mechanics of Foster's solution, it is extremely unclear how we should envisage God's causal imposition of regularities resulting in the creation of laws.' Indeed, if God prescribes the regularity of the natural order directly, it is difficult to see how Foster avoids occasionalism.
See: H. Beebee, 'The Divine Lawmaker: Review', *The British Journal for the Philosophy of Science*, vol. 60, no. 2, 2009, pp. 453-457;
Orr, *The Mind of God and the Works of Nature*, p. 144.
[6] Foster, *The Divine Lawmaker*, p. 177.
[7] Foster, *The Divine Lawmaker*, p. 179.

1.1.2. Jeffrey Koperski's Approach

Another example of a semi-Humean account of miracles is offered by Jeffrey Koperski in *Divine Action, Determinism, and the Laws of Nature* (2019). Koperski adopts decretalism where the laws 'are ultimately the decrees of God."[8] These decrees are matters of constraint, fixing a range of possibilities that may occur given the prior conditions.[9] The laws of nature do not 'make things go'.[10] Rather, it is forces and energy that are responsible for moving systems from state to state. The laws of nature constrain how forces and energy behave.[11] Such a conception of laws is semi-Humean because the laws make a difference to the usual course of nature but they could have been different if God had decreed different constraints.

In accommodating miracles, Koperski differentiates between the laws, non-nomic conditions, and the resulting behaviour from these two.[12] The role that the laws play in governing the usual course of nature is constraining a set of possibilities given particular non-nomic conditions. If the non-nomic conditions change, then the set of possibilities that the laws constrain may change. For example, with two balls colliding on a pool table, assuming a perfectly elastic collision, the motion of the balls is simple to predict. If we tilt the table just before the collision, the decomposition of

[8] J. Koperski, *Divine Action, Determinism, and the Laws of Nature*, New York, Routledge, 2019, p. 134.
[9] Koperski does not explain how God's decrees constrain nature He gives the metaphor of balls rolling down a carved channel. In this case, the channel constrains the motion of the ball and Koperski seems to think the laws work in a similar way. Nevertheless, he does not offer a metaphysical explanation for how this occurs. It may be that forces and energy have some form of intrinsic metaphysical causal 'oomph' that the laws mould. Robert Larmer argues that, contrary to Koperski's intentions, his decretalism entails occasionalism.
See: R. Larmer, 'Decretalism and the Laws of Nature: A Response to Jeffrey Koperski', *Philosophia Christi*, vol. 19, no. 2, 2017, pp. 439-447.
For Koperski's response, see: Koperski, *Divine Action, Determinism, and the Laws of Nature*, pp. 153-156.
[10] Koperski, *Divine Action, Determinism, and the Laws of Nature*, p. 134.
[11] Koperski writes: 'Physics has solved the question of why particles, fields, and the systems composed of them are active. There is no need for causal powers, Aristotelian natures, or laws to answer that question.' Here, Koperski seems to confuse the scientific question of 'how change occurs?' with the philosophical question, 'what is the metaphysical basis for change?'. The philosophers who advocate for causal powers, Aristotelian natures, or laws can accept that forces and energy are the instruments for change in nature. Nevertheless, they invoke causal powers, Aristotelian natures or laws to explain the underlying metaphysical basis for how forces and energy may be instruments for change.
Koperski, *Divine Action, Determinism, and the Laws of Nature*, p. 103.
[12] Strictly speaking, Koperski is concerned with accommodating the broader theological category of special divine action.

forces, the force of friction, and a couple of other factors will change but the laws will not. Koperski writes: 'The laws never break; they flow. The laws adapt to change.'[13] Miracles are events that go against the usual course of nature and occur by God changing the non-nomic conditions. In such cases, the laws are not violated but rather they seamlessly adapt to the change in conditions.[14]

In the thought of Foster and Koperski, we have two examples of approaches to miracles based on semi-Humean understandings of the laws of nature. While such accounts are more isolated than the Thomist-dispositionalist approach considered in the previous chapter, they remain an important contribution to the literature on the relationship between miracles and the laws.[15]

1.2. Limited Engagement with Humeanism

In contrast, there has been limited engagement with miracles from a Humean approach to the laws. Indeed, the prospect of understanding miracles in this way has received widespread rejection. Such a rejection is typically offered on three grounds. First, it is argued that a Humean conception of the laws renders miracles logically impossible. Joel Archer contends that when this conception is paired with an understanding of miracles as violations of the laws of nature, 'miracles are impossible'.[16] Similarly, Nicholas Saunders writes that 'the traditional understanding of miracles as violations of the laws of nature is methodologically impossible in the regularity [read: Humean] account.'[17] Saunders also raises the concern that, even if one can offer a conception of miracles that is logically possible on the Humean approach, it denies any distinction between miracles and

[13] Koperski, *Divine Action, Determinism, and the Laws of Nature*, p. 135.
C. S. Lewis adopts a similar conception of miracles in: Lewis, *Miracles*.
[14] Koperski extensively argues that God changing the non-nomic conditions does not violate conservation laws.
See: Koperski, *Divine Action, Determinism, and the Laws of Nature*, pp. 136-143.
[15] Such accounts soften the concern that contemporary approaches to miracles are overly reliant on a dispositionalist understanding of the laws. But there is the further issue of what if a theist rejects, on philosophical grounds, semi-Humean and anti-Humean conceptions of the laws.
[16] Archer, 'Against Miracles as Law-Violations, p. 86.
[17] Saunders, *Divine Action and Modern Science*, p. 64.

natural events. This, thereby, threatens their unique intrinsic wonder. He states: 'there appears to be no objective sense on this account in which we are able to distinguish between [miracles] and natural events.'[18] A third ground for rejection is that the Humean approach is committed to a wider metaphysics that is theologically unpalatable. Both Richard Adams and James Orr maintain that the Humean rejection of necessary connections in nature leads to the denial of genuine natural causation. Consequently, through a theistic lens, this metaphysics is accused of entailing the unappealing position of occasionalism.[19]

So, of the three approaches to the laws – Humean, semi-Humean, and anti-Humean – Humeanism seems to have the darkest prospects with formulating a plausible account of miracles. In light of this, a significant development would be made in the scholarship of miracles and the laws if such an account is offered. This is the aim of the remainder of the thesis. The virtues of this are that it will open up a new avenue regarding the relationship between miracles and the laws of nature. Furthermore, there may be unappreciated advantages with understanding miracles in relation to a Humean conception of the laws. Since Lewis' BSA account serves as the most prominent Humean conception of the laws in contemporary philosophy, this is the account that I will utilise.

1.3. Overcoming the Naturalism of the BSA Account

One initial roadblock to understanding miracles in relation to the BSA account is that this account, as developed by Lewis, is naturalistic. Lewis is committed to Humean supervenience, the thesis that all truth supervenes upon the spatiotemporal distribution of local properties. From a theistic perspective, this is untenable. Truths about the nature of God do not supervene upon this

[18] Saunders, *Divine Action and Modern Science*, p. 62.
[19] Adams, 'Miracles, Laws of Nature and Causation II', p. 212;
Orr, 'Divine Lawmaking: Powers and Kinds', p. 424.

'Humean Mosaic.' There is no relation of dependency of God's nature upon the spatiotemporal distribution of local properties.[20]

To respond, the theist who adopts a Humean metaphysics has principled reasons for excluding truths about God from the Humean Mosaic. God's existence is of a different nature to the existence of natural entities. God does not exist as *this* or *that* thing but rather as pure, complete existence. The existence of natural entities is derived from an imperfect participatory relation with God's perfect existence. Truths about God do not supervene upon the Humean Mosaic because God's existence is on a different ontological plane compared to natural entities. Thereby, the theistic Humean can justifiably restrict the doctrine of Humean supervenience to truths about the natural order. Such a move upholds the spirit of Humean supervenience in denying necessary connections in nature while making space for God within this metaphysical framework. Furthermore, Orr notes that a 'striking dialectical feature' of the BSA account is that it is often articulated through thought experiments that invariably rely on God.[21] I explore these thought experiments in the next section but this feature provides good reason to think that the prospects for a theistic variation of the BSA account are not as dark as they may seem.

The strategy for developing an account of miracles in relation to the BSA conception of the laws is three-fold. First, I further justify the philosophical plausibility of the BSA laws. Secondly, I establish the possibility of miracles as events that lie beyond or violate the BSA laws of nature. Thirdly, I defend the theological plausibility of understanding miracles as events that lie beyond or violate the BSA laws, caused by God directly or through anomic causes. I refer to this approach as a Lewisian account of miracles or, in short, Lewisian miracles, in recognition of David Lewis,

[20] E. Fales, *Divine Intervention: Metaphysical and Epistemological Puzzles*, London, Routledge, 2010, p. 29.
[21] Orr, *The Mind of God and the Works of Nature*, p. 27.

the key proponent of the BSA conception of the laws. I contend that this Lewisian account meets the three theological criteria established in Part One, in that it:

1. Preserves the immanence and transcendence of God;
2. Respects the integrity of the natural order;
3. Upholds the intrinsic wonder of miracles.

For the remainder of this chapter, I justify the philosophical plausibility of the BSA account and establish the possibility of miracles as events that lie beyond or violate the BSA laws of nature. In the final chapter, I defend the theological plausibility of this Lewisian account of miracles.

Section Two: The Philosophical Plausibility of the BSA Account

In the previous chapter, I outlined the central aspects of the BSA account and its virtues. The BSA account holds the laws of nature to be the regularities in the systematisation of facts that strikes the best balance between strength and simplicity. The virtues of this approach are that it can distinguish laws from accidental regularities, is metaphysically sparse, upholds the contingency of laws, and seems to reflect the practices of modern science.

In this section, I respond to key objections to the BSA account in order to establish its philosophical plausibility, further legitimising the significance of understanding miracles in conjunction with this view of laws. I do not aim to argue that the BSA account is superior to other conceptions but merely to establish its philosophical plausibility. To achieve this, I evaluate the common objections to the BSA account and show how a theistic approach helps develop effective responses.

2.1. What is the Humean Mosaic?

Lewis asks us to imagine that God has provided humans with a *Concise Encyclopaedia of Unified Science* that contains every fact about the history of the universe. The BSA laws are the regularities that feature in the best systematisation of these facts.[22] The question arises: what is the nature of the facts in the *Concise Encyclopaedia of Unified Science*? For example, 'all emeralds are green' and 'all emeralds are grue until t and bleen after t' describe the same truth but in different ways.[23] Which of these facts would be included in the all-encompassing encyclopaedia? What facts are included will affect what the laws of nature are. For these facts form the 'Humean Mosaic' that the laws supervene upon.

Lewis proposes that the primitive vocabulary of any proposed system should only refer to perfectly natural properties.[24] Natural properties carve nature at its joints and 'comprise a minimal basis for characterising the world completely.'[25] For Lewis, it is the job of physics to provide a complete inventory of natural properties to adequately describe the universe.[26] By committing to a vocabulary of natural properties, systems that involve contrived predicates such as 'grue' are eliminated from consideration. More specifically, Lewis proposes that the Humean Mosaic consists of 'a system of external relations of spatiotemporal distance between points.'[27] These points may be spacetime points themselves, point-sized bits of matter or aether or fields, maybe both.

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[22] Lewis, *Counterfactuals*, p. 74.
When I speak of 'BSA laws', I am using this as shorthand for the BSA account of the laws of nature.
[23] I am adopting the standard definitions of 'grue' and 'bleen'. An object is grue iff it is green until time t or blue after t. An object is bleen iff it is blue until time t or green after t.
[24] D. Lewis, 'New Work for a Theory of Universals', *Australasian Journal of Philosophy*, vol. 61, no. 4, 1983, p. 368.
[25] Lewis, 'New Work for a Theory of Universals', p. 346.
[26] Bas Van Fraassen raises concerns with science's ability to uncover natural properties.
See Van Fraassen, *Laws and Symmetry*, pp. 51-55.
[27] Lewis, *Philosophical Papers, Vol II*, X.

John Earman and John Roberts argue that quantum mechanics is 'flatly inconsistent' with Lewis' conception of the Humean Mosaic.[28] According to quantum mechanics, there exist entangled states of composite physical systems in which multiple sub-systems have a joint state, though none have their own state characterisable 'in terms of its own spatiotemporal location.'[29] In turn, 'the quantum state of a composite system does not, in general, supervene on' anything like Lewis' Humean Mosaic.'[30]

In light of this, I adopt a thinner understanding of the Humean Mosaic compared to Lewis, where the Mosaic consists of the basic set of facts about the instantiation of natural properties.[31] They do not need to be facts about the instantiation of properties at separate, 'point-like' parts. For the Humean, such facts will just not include any that entail there are any necessary connections in nature. Furthermore, there will not be any facts that involve irreducibly general facts that are candidates for the laws of nature. For the laws are systematisations of these basic facts rather than the facts themselves. Moreover, it is the role of science to uncover the nature of natural properties.[32] I leave it open as to what domains of science are able to achieve this, allowing the possibility of there being laws of nature beyond the domain of physics. This thesis' Lewisian account of miracles will be compatible with there being purely physical laws, as well as there being other non-physical, scientific laws.

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[28] J. Earman and J. Roberts, 'Contact with the Nomic: A Challenge for Deniers of Humean Supervenience About Laws of Nature Part 1', *Philosophy and Phenomenological Research*, vol. 71, no. 1, 2005, p. 8.
[29] Earman and Roberts, 'Contact with the Nomic', p. 8.
[30] Earman and Roberts, 'Contact with the Nomic', p. 8.
In Lewis' view, the findings of quantum physics offer little metaphysical insight. He writes:
'I am not ready to take lessons in ontology from quantum physics as it now is. First I must see how it looks when it is purified of instrumentalist frivolity, and dares to say something not just about pointer readings but about the constitution of the world; and when it is purified of doublethinking deviant logic; and—most of all— when it is purified of supernatural tales about the power of the observant mind to make things jump.'
Lewis, *Philosophical Papers*, xi.
[31] Earman and Roberts, 'Contact with the Nomic', p. 2.
[32] For a defence of natural properties, see: Bird, *Nature's Metaphysics*, pp. 9-15.

2.2. Subjectivity about Laws

The worst problem that Lewis envisages for the BSA account is that 'when we ask where the standards of simplicity and strength and balance come from, the answer may seem to be that they come from us.'[33] The issue if the standards of simplicity, strength, and balance are purely psychological is that there is nothing that fixes them. A person may have a particular conception of these standards while another has a different one and there is no way to settle this disagreement. Consequently, there would be no single, objective set of laws of nature, which, for Lewis, is 'lunacy.'[34]

To overcome this issue, Lewis makes two points. First, our standards of simplicity, strength, and balance are only partly a matter of psychology. It is not just a matter of how we think that makes a linear function simpler than a quartic or a step function.[35] Objective factors constrain what constitutes legitimate standards of strength, simplicity, and balance. Secondly, even if there is a psychological element to these standards, this does not rule out there being a single, objective set of laws. He offers the concept of a robustly ideal system. A robustly ideal system is a system that is best on any legitimate interpretation of strength, simplicity, and the combination between the two.[36]

Consider a cricketing analogy. There is the question of who the best batsman in the history of cricket is. There are various standards that are generally agreed upon when considering candidates: the average of the batter, their strike rate, their performance away from home, their performance

[33] Lewis, 'Humean Supervenience Debugged', p. 479.
[34] Lewis, 'Humean Supervenience Debugged', p. 479.
In recent years, there has been a growing tendency to recognise the role humans as limited agents play in reflections on the laws of nature. This has led to some advocating a pragmatic turn in Humeanism where there is no single, objective set of laws of nature. For more on this, see:
M. Hicks, S. Jaag, and C. Loew (eds.), *Humean Laws for Human Agents*, Oxford, Oxford University Press, 2023.
[35] Lewis, 'Humean Supervenience Debugged', p. 479.
[36] Lewis, 'Humean Supervenience Debugged', p. 479.

in big games, the longevity of their career, and the aesthetic quality of their batting. Various people may favour different standards to different degrees. One may think batting average is most important, another the longevity of the batter's career. Each of these approaches is perfectly legitimate. Thus, a problem seems to arise: What standard one favours will determine which cricketer is the best, meaning various cricketers may have equal legitimacy to the crown of best batsman.

However, this problem does not actually arise. No matter what legitimate standards one favours, the answer for the best batsman is the same: Don Bradman. Bradman is so far ahead of all other batsmen in terms of average, strike rate, performance in big games and so on that no matter what standard one favours, 'the Don' comes out on top. Bradman is robustly the best batsman of all time. Similarly, Lewis hopes that there is a Don Bradman-esque system that is ideal no matter the standards of strength, simplicity, and balance. This would circumvent the issue, as although there are different standards of strength, simplicity, and balance, there is still only one objectively best system and, therefore, only one set of laws of nature.

Why think that there is a robustly best system in this world? Lewis' response is that he hopes nature is kind to us and there is no evidence against this hope.[37] Such a response is rather thin, basing our commitment to an objective set of laws on 'blind faith.' Here is where a theological underpinning bolsters the BSA account. Orr argues that theists 'have principled and independent reasons for expecting nature to be kind.'[38] Such reasons, as outlined by Alexander Pruss, are:

1. Lawlikeness of BSA laws in a world containing agents like us is instrumentally good because it makes it possible for us to predict and understand the natural world;

[37] Lewis, 'Humean Supervenience Debugged', p. 479.
[38] Orr, 'Divine Lawmaking: Powers and Kinds', p. 423.

2. A world that is best described by a robustly best system seems to exhibit the goods of order and rationality to a high degree;
3. A world's being describable with a high degree of strength, simplicity, and balance is aesthetically valuable.[39]

Theism offers an explanation for why we should think that the world is described by a robustly best system: God has good reasons to create such a world. So, while Lewis' response to the objection that the BSA laws are implausibly psychologistic raises the further unanswered question as to why we should think that nature is kind to us, theism offers a principled response to this issue.

2.3. Categoricalism

Alexander Bird objects to the conception of properties adopted in the BSA account. This account is Humean in that it denies any necessary connections in nature. In light of this denial, the question arises: what determines the identity of a property? The causal or dispositional character of a property cannot determine its identity because then the Humean mantra of 'no necessary connections in nature' would be negated. The property would necessarily be connected to its stimulus condition and manifestation.

Lewis himself recognises this and places the identity of each fundamental property in its quiddity. Robert Black coined the term quidditism and defines it as 'the acceptance of primitive identity between fundamental qualities across possible worlds.'[40] Each fundamental property has an intrinsic *this*-ness that distinguishes it from all other properties. A given property may have a

[39] Pruss, 'God, Chance, and Evolution', p. 378.
[40] R. Black, 'Against Quidditism', *Australasian Journal of Philosophy*, vol. 78, no. 1, 2000, p. 92.

particular set of relations in this world, but it could have had a completely different set of relations and remain the exact same property.[41]

Bird argues that quidditism poses problems for the ability of scientific terms to refer to fundamental properties. If there is nothing that ties a fundamental property to a particular causal role, then two distinct fundamental properties may have the exact same causal role in this world.[42] Since science identifies fundamental properties through their causal roles, science would not be able to distinguish between them.[43] Consequently, if quidditism is true, there is no way that we can know whether a scientific term refers to a single fundamental property.[44]

How may an advocate of the BSA account respond? One could invoke Lewis' response of 'let's hope nature is kind to us' and cross our fingers that we do not live in a world where two fundamental properties occupy the exact same causal roles. Or, again, theism provides additional armoury to respond. There is good reason to think that God would create an intelligible world that humans can investigate. A world in which each fundamental property has a distinct causal role is simpler and more intelligible than a world where two distinct fundamental properties have the exact same causal role. Therefore, there is good reason to think that God would create a world like the former rather than the latter. Subsequently, a theist who is committed to the BSA account is justified in thinking that science can identify and accurately refer to fundamental properties.

[41] D. Lewis, 'Ramseyan Humility', in D. Braddon-Mitchell and R. Nola (eds.), *Conceptual Analysis and Philosophical Naturalism*, Cambridge, MIT Press, 2009, pp. 203-221.
[42] Another term for this approach to properties is categoricalism.
[43] Bird, *Nature's Metaphysics*, p. 78.
[44] Bird, *Nature's Metaphysics*, p. 78.

2.4. The BSA Laws do not Govern

A central issue raised with the BSA account, and Humeanism more generally, is that it denies the governing role of the laws. For the laws to govern, they must prescribe how nature behaves, making future facts be the way that they will be.[45] For example, if the law of gravity governs, then this law plays some active role in making objects accelerate towards the Earth. Roberts states that the notion of governing laws 'has played a central, structuring role in much scientific thought since the seventeenth century.'[46] The BSA account cannot uphold this intuition because the laws supervene upon facts about nature rather than prescribing them. The laws do not make the way that nature is but systematically describe it.

This has led to various criticisms of the BSA account.[47] Either critics contend that the governing intuition is so fundamental to the nature of laws that the BSA account is untenable. Or, thought experiments are offered aiming to elucidate the implausibility of the laws supervening on facts about nature.[48] For example, John Carroll develops various thought experiments that seek to show that two worlds can be exactly alike with respect to their non-nomic facts and differ on their nomic facts.[49] If this is the case, the BSA account's commitment to Humean supervenience fails. This commitment holds that if two worlds are alike with respect to their non-nomic facts, they must have the exact same set of laws.

[45] H. Beebee, 'The Non-Governing Conception of Laws of Nature', *Philosophy and Phenomenological Research*, vol. 61, no. 3, 2000, p. 578.
[46] Roberts, 'Laws of Nature', p. 337.
[47] The non-governing objection is sometimes formulated in terms of the BSA laws not being able to ground counterfactuals.
See: Armstrong, *What is a Law of Nature?*, pp. 46-52.
[48] Beebee, 'The Non-Governing Conception of Laws of Nature', p. 573.
[49] J. Carroll, *Laws of Nature*, Cambridge, Cambridge University Press, 1994, pp. 60-68.

Here, the advocate of the BSA account simply has to bite-the-bullet and accept that the account's inability to accommodate the governing intuition is a mark against it.[50] Nonetheless, this does not render the account implausible. One can accept that an account has flaws yet still defend its legitimacy. Helen Beebee adopts this approach. She accepts that to be a real Humean, you have to purge a lot of intuitions about the laws. Nevertheless, for Beebee, the BSA account does 'justice to enough of our intuitions about the role of laws of nature to be a viable alternative.'[51] These are the account's metaphysical simplicity, consonance with the practice of science, ability to accommodate the contingency of the laws, and distinguish laws from accidental regularities. In the same way that dispositionalists reject the contingency of the laws in virtue of this account's other advantages, Humeans reject the governing of the laws in virtue of its own benefits. So, while the governing intuition counts against the BSA account, it does not render it implausible.

2.5. The BSA Laws do not Explain

An objection linked to the non-governing objection is that the BSA laws do not explain. When my nephew asks why the apple falls from the tree and I discuss the law of gravity, by invoking this law, I am, in some sense, explaining the apple falling from the tree. Tim Maudlin questions whether the BSA laws can fulfil this explanatory role.[52] On the BSA account, the facts determine the laws as the laws supervene on the facts. Therefore, there seems something wrong about appealing to those very same laws to explain the facts.

Barry Loewer attempts to overcome this issue by distinguishing between two forms of explanation: metaphysical explanation and scientific explanation. Metaphysical explanation shows how one type

[50] Similarly, they would have to reject the possibility of the thought experiments offered by Carroll, recognising that this is an unintuitive move.
[51] Beebee, 'The Non-Governing Conception of the Laws of Nature', p. 593.
[52] T. Maudlin, *The Metaphysics within Physics*, Oxford, Oxford University Press, 2007, p. 172

of fact is grounded in or constituted by some other kind of fact.[53] Scientific explanation shows why the fact is true in terms of prior events and laws.[54] He proposes that the BSA laws are able to scientifically explain but cannot metaphysically explain. The BSA laws cannot metaphysically explain fundamental, non-nomic facts because, at its most basic ontological level, the universe is constituted by these facts. It just is the case that the distribution of fundamental natural properties is the way that it is. It didn't have to be this way, it could have been different, but it just is. Since the distribution of natural properties is the ontological bedrock of Humeanism, there is nothing that can explain facts about this distribution, not the BSA laws of nature, nor anything else.

Nevertheless, for Loewer, the BSA laws can scientifically explain. The BSA laws, when joined with certain facts, entail other facts, thereby showing how certain events occur in terms of prior events and laws.[55] Is this enough for the BSA laws to explain sufficiently? Maudlin thinks not. He argues that the laws should explain how particular facts came about.[56] Since it is simply not within the metaphysical arsenal of the BSA laws to achieve this, Maudlin rejects this account.

A theistic understanding of the BSA laws may ease this concern. Pruss offers such a view. Say that God created the universe, serving as the ontological basis for the Humean Mosaic of the BSA account.[57] Not only did God create the universe but God intended to create the universe in a way that ensures that the given BSA laws are true. These laws' being true is 'part of God's reason for creating this world or acting in the world as he has.'[58] This approach provides a deeper

[53] B. Loewer, 'Two Accounts of Laws and Time', *Philosophical Studies,* vol. 160, no. 1, 2012, p. 131.
[54] Loewer, 'Two Accounts of Laws and Time', p. 131.
Scientific explanations are often involved in metaphysical explanations. For example, the metaphysical explanation that water is constituted by H_2O molecules involves showing that H_2O molecules, in certain contexts, lawfully behave as water does. Nevertheless, Loewer emphasises that these two forms of explanation remain distinct.
[55] Loewer, 'Two Accounts of Laws and Time', p. 116.
[56] Maudlin, *The Metaphysics within Physics*, p. 173.
[57] What this may look like, metaphysically speaking, will be explored in the next chapter.
[58] Pruss, 'God, Chance, and Evolution', p. 376.

metaphysical grounding to the Humean Mosaic. While the Humean Mosaic remains the ontological bedrock of the natural world, it depends upon God as its creator and preserver.

Such a development opens the door for the BSA laws to explain metaphysically. On this view, the BSA laws are not simply the regularities in the best systematisation of all facts, they are part of the underlying order that God intended the world to have. Therefore, when one invokes a BSA law to explain a particular fact, one is identifying the fundamental structure that God intended the world to have, which is the metaphysical basis for why that particular fact came about. A theistic underpinning of the BSA laws, in virtue of providing deeper metaphysical grounding for the existence and structure of the Humean Mosaic, allows these laws to metaphysically explain. Pruss affirms this, writing: 'When the Lewisian [read: BSA] laws are intended by God, theism thus offers a solution to the explanatory weakness of Lewisian laws.'[59]

2.6. The Problem of Induction

Another common objection against the BSA account is that it cannot solve the problem of induction. Broadly speaking, the problem of induction is whether we have any good reason to think that the future will resemble the past. Can one offer sufficient justification – that does not beg the question against the inductive sceptic – that inductive inferences are rational?[60]

Advocates of semi-Humean and anti-Humean approaches to the laws argue that the laws of nature can help solve this problem. For example, David Armstrong maintains that the best explanation for the past uniformity of the natural order is to postulate laws.[61] Having postulated the laws, one

[59] Pruss, 'God, Chance, and Evolution', p. 377.
[60] H. Beebee, 'Necessary Connections and the Problem of Induction', *Noûs*, vol. 45, no. 3, 2011, p. 504.
Here, I am referring to the 'old problem' of induction as opposed to the 'new riddle' of induction proposed by Nelson Goodman.
N. Goodman, *Fact, Fiction, and Forecast*, Harvard, Harvard University Press, 1955, pp. 63-86.
[61] Armstrong, *What is a Law of Nature?*, p. 52.

is then justified in thinking that the future will resemble the past because the laws denote necessary connections between universals. More specifically, Armstrong's reasoning goes as follows: The best explanation for it being the case that all observed Fs have been Gs is that it is a law that all Fs are Gs. Now its being a law that all Fs are Gs entails that whenever there is an F, it will also be a G. Therefore, we can rationally infer that whenever there is an F, it will be a G.[62]

On a Humean, BSA understanding of the laws, Armstrong contends that the above reasoning does not work. For the laws are nothing more than regularities that systematise the facts. They play no role in determining the natural order and subsequently no role in ensuring that the future resembles the past. In the words of Beebee: Humeans 'offer no metaphysical glue to stop things falling apart.'[63] Just because a particular regularity is involved in the best systematisation of facts up to a particular point in time, there is no guarantee that this regularity will hold in the future. In turn, the objection goes, on the BSA account, 'inductive scepticism is inevitable.'[64]

Beebee's response to this objection is that semi-Humean and anti-Humean approaches to the laws cannot solve the problem of induction either. Take Armstrong's argument. Beebee contends that the claim 'F and G are timelessly (eternally) necessarily connected' is no better an explanation for the fact that all observed Fs are Gs than the claim 'F and G have been necessarily connected so far.'[65] If that is the case, then Armstrong is not justified in concluding that laws of nature are the best explanation for the regularities in the universe. This means that his proposed solution to the problem of induction fails. Therefore, Armstrong can hardly critique the BSA account for not solving this problem either.

[62] Armstrong, *What is a Law of Nature?*, p. 52.
[63] Beebee, 'Necessary Connections and the Problem of Induction', p. 505.
[64] Armstrong, *What is a Law of Nature?*, p. 52.
[65] Beebee, 'Necessary Connections and the Problem of Induction', p. 510.

Nonetheless, let's say that Armstrong is justified in supposing that the best explanation for the uniformity of the natural order is to postulate laws. Perhaps the notion of time-limited necessity is incoherent or, even if it isn't, it may be a worse explanation than the laws of nature. If this is the case, Armstrong's argument holds strong.

A theistic understanding of the BSA account, where God intended to create the world such that the given BSA laws are true, can offer a similar solution to the problem of induction. On this theistic BSA understanding, the laws may be invoked as the best explanation for the observed uniformities of nature. The uniformities of nature hold up to the present because God created the world in a way such that the BSA laws are true. Then, given that we are justified in postulating the BSA laws as the best explanation for the past uniformities of nature, we are justified in thinking that these uniformities will hold in the future. For God intended the BSA laws to hold true throughout the history of the universe.[66] So, the theistic understanding of the BSA laws can solve the problem of induction in the same ways that Armstrong's account supposedly does.

2.7. Probabilistic Laws

The BSA account, as described so far, cannot accommodate probabilistic laws. For the account holds the laws to be the regularities in the best deductive systematisation of all facts. Given the laws of nature and a particular set of facts, other facts will deductively follow. However, such deduction is not possible on probabilistic laws. A law of the structure 'If A occurs, there is a 50% chance that B occurs' cannot entail any other matters of fact. Given the occurrence of A and the

[66] One may object: How do we know that in the divine blueprint God intended the laws to hold throughout all of time? However, if one raises this concern, then one can similarly ask why, on Armstrong's view of laws, the necessity relation must hold throughout all of time? To object to the theistic understanding of the BSA account's ability to solve the problem in this way is also to object to the ability of semi-Humean and anti-Humean accounts to solve this problem.

truth of this law, it does not deductively follow either that B occurs or that B does not occur. This is problematic because the advent of modern physics suggests at least some laws are probabilistic.[67]

Lewis saw chance as the greatest threat to his commitment to Humean supervenience. He writes: 'It is here, and here alone, that I fear defeat. But if I'm beaten here, then the entire campaign goes kaput. For chances enter at the very beginning.'[68] Subsequently, he developed his BSA account to accommodate probabilistic laws. In this development, not all laws entail particular facts given other facts.

Lewis supposes that probabilistic laws may be the best way to systematise particular facts. Say, in the history of the universe, *A*-events occur 100,000 times. 50,000 times after an *A*-event occurs, a *B*-event immediately occurs and in the 50,000 other cases, a *B*-event does not occur. All things equal, Lewis supposes that the best way to systematise these facts is to postulate the law 'Given an *A*-event, there is a 50% likelihood that a *B*-event immediately occurs.'[69] Here, Lewis draws on the frequency interpretation of probability in which probabilities align with the actual frequencies of observations. A coin has probability 1/2 of landing heads provided that in repeated independent experiments the frequency of heads is 1/2.[70]

A common issue with the classical frequency interpretation of probability is that within a finite number of experiments, we do not expect the probability to match the frequency *exactly*. If we toss a coin a million times, we do not expect heads to appear exactly 500,000 times, but the probability

[67] B. Van Fraassen, 'Armstrong on Laws and Probabilities', *Australasian Journal of Philosophy*, vol. 65, no. 3, 1987, p. 250.
[68] Lewis, *Philosophical Papers, Vol II*, xiv.
[69] Lewis, 'Humean Supervenience: Debugged', p. 481.
[70] Pruss, 'God, Chance, and Evolution', p. 372.

of heads remains 1/2. Nonetheless, the frequency interpretation is committed to the highly unintuitive claim that the probability of an event corresponds *exactly* with the event's frequency.[71]

Lewis' probabilistic laws avoid this issue because not only do the actual frequencies of events enter into determining the laws, but also the extent to which the purported law features in the best system. Lewis supposes that a given probabilistic law need not correspond exactly to the actual frequencies of events if forgoing this correspondence sufficiently enhances the simplicity of the law.[72] For example, if some physical process *A* occurs a million times in the history of the universe, and 500,002 times outcome *B* occurs, the BSA account will sacrifice a slight bit of fit for the sake of greater simplicity and assign the law 'if process *A* occurs, there is a 50% chance that outcome *B* will occur.' So, the BSA account can accommodate probabilistic laws and marks an improvement on the classical frequency interpretation of probability.

In this section, I have outlined and responded to the central objections to the BSA account of the laws, looking to affirm its philosophical plausibility. Additionally, I specified how a theistic underpinning of the BSA laws bolsters this account's ability to overcome these objections. The value of this theistic approach is that it provides well-grounded theological reasons for why there is one set of objective BSA laws. Additionally, it offers deeper metaphysical grounding for the Humean Mosaic – in God creating, preserving, and structuring the Mosaic – which expands the explanatory power of the laws.

[71] Pruss, 'God, Chance, and Evolution', p. 375.
[72] Lewis, 'Humean Supervenience: Debugged', p. 481.

Section Three: Events Beyond or Contrary to the BSA Laws

Now, I turn to the task of offering a plausible conception of miracles in relation to the BSA laws of nature. In the last chapter, I outlined how a Thomist-dispositionalist account of miracles understands them as beyond or contrary to the laws of nature. This, along with miracles being caused by God directly or through anomic dispositions, secures their intrinsic wonder.[73] Then, in §1.2, I highlighted a common reticence with understanding miracles in relation to the BSA laws is the perceived impossibility of events beyond or contrary to these laws. In light of this, I will now examine whether an account of miracles as events beyond or contrary to the BSA laws of nature is even possible.

3.1. Events Beyond the BSA Laws

First, let us consider the possibility of miracles as events beyond the BSA laws of nature. Saunders suggests that an event beyond the laws is impossible on any Humean approach. The argument is that given the occurrence of a miracle, such as Jesus walking on water in Mark 6:49 or feeding the five thousand in Matthew 14:20, on the BSA account, the laws will simply reform, finding a way to subsume these events within the nomic system. Saunders writes:

> if we make the theological assertion that SDA [i.e. special divine action] is a fundamental feature of the world, a broadly applied regularity [i.e. Humean] approach will simply attempt to describe the world on the basis of the different singular events within it, and consequently include all instances of SDA.[74]

[73] In Chapter Six, I examine the causal basis of miracles on the Lewisian account in order to secure their intrinsic wonder.
[74] Saunders, *Divine Action and Modern Science*, p. 62.

Saunders' claim is that it is impossible for miracles to be beyond the BSA laws because any miracle would end up being subsumed and systematised in the laws. Thereby, occurring in accordance with them.

This claim is mistaken because it relies on the false assumption that all events must be subsumed under the BSA laws of nature. There is nothing intrinsic to the BSA account that requires this to be the case. It may be that the best systematisation of all facts cannot accommodate every fact, leaving some outside the system. To highlight this, consider the following possible worlds.

Take a very simple world, U_1, that consists only of five types of particles, *A*, *B*, *C*, *D*, *E* and five fundamental properties, *V*, *W*, *X*, *Y*, *Z*. There are 1000 *A*-particles that all instantiate property *V*, 1000 *B*-particles that instantiate property *W*, 1000 *C*-particles that instantiate property *X*, 1000 *D*-particles that instantiate property *Y*, and only one *E*-particle that instantiates property *Z*. This is all that exists in the history of U_1. In this possible world, it is intuitive to think that the following laws hold:

L_1: All *A*-particles instantiate property *V*

L_2: All *B*-particles instantiate property *W*

L_3: All *C*-particles instantiate property *X*

L_4: All *D*-particles instantiate property *Y*

These laws hold because they are very simple axioms that accommodate many facts about U_1. Does the law L_5 'All *E*-particles instantiate property *Z*' hold? I think not. By including L_5 as a law, only one extra event out of 4001 events is systematised, while an extra law is added. It seems the strength gained in holding L_5 to be a law does not offset the simplicity lost by adding another law.

Of course, one may disagree and think L_5 is a law. If this is the case, take another possible world where there are 1,000,000 *A*-particles that all instantiate property *V*, 1,000,000 *B*-particles that

instantiate property *W*, 1,000,000 *C*-particles that instantiate property *X*, 1,000,000 *D*-particles that instantiate property *Y*, and yet still only one *E*-particle that instantiates property *Z*. The strength gained by holding L_5 to be a law is further diminished – it leads to only one extra event out of 4,000,001 being systematised – further bolstering the case that this strength gained does not offset the simplicity lost. Or, take another possible world where even more *A*-, *B*-, *C*-, *D*-particles instantiate their respective property, while there is still only one *E*-particle. Eventually the scale will tip and it will not be worth adding another law to accommodate a single matter of fact. Therefore, there is a possible world, like the ones I have offered, where at least one event lies outside the BSA laws. In turn, Saunders' assumption that all events must be subsumed under the BSA laws is false.

3.2. Miracles as Events Beyond the BSA Laws

Given the possibility of events beyond the BSA laws, how may miracles constitute such events? For a miracle to be beyond the laws of nature, it must not conflict with any of the laws and be sufficiently unique such that any development in the laws to accommodate the miracle is not worth the simplicity lost in trying to achieve this.

Take the case of Moses parting the Red Sea in Exodus 14. It may be that in this instance, Moses gained a new, temporary property that allowed him to part the Red Sea by stretching out his hands. Now, this 'miraculous' property only existed in the history of the universe at this particular instance for this particular purpose. Due to the uniqueness of this property temporarily possessed by Moses, any attempt to systematise the event of parting the Red Sea caused by Moses possessing this property would lead to the overall system of laws being weakened due to the lost simplicity. Furthermore, the event of parting the Red Sea does not conflict with any pre-existing laws of nature because it occurred through this additional, temporary property. The event of Moses

parting the Red Sea would be beyond the BSA laws of nature because it cannot be systematised within the laws and it does not conflict with them.

A similar case can be made with Jesus turning water into wine in John 2. It may be that this water gained a new, temporary property that enabled it to immediately turn into wine. This property is so unique that the event of the water turning into wine cannot be accommodated within the system of laws without the simplicity of the system being dramatically reduced. Thus, the event of Jesus turning water into wine would lie outside the BSA laws of nature.[75]

3.3. Events Contrary to the BSA Laws

Let us move on to whether it is possible for there to be events contrary to or in violation of the BSA laws. In the theological discussion of miracles and the laws of nature, it is standardly thought that the BSA account, and Humean approaches more generally, are flatly inconsistent with a conception of miracles as violations of the laws.[76] Since it is a requirement on the BSA account that the laws of nature are true, it is impossible for an event to violate them.

Richard Swinburne argues for the possibility of miracles as violations of the BSA laws. In *The Concept of Miracle* (1970), he follows Ninian Smart in defining miracles as 'non-repeatable counter-instances' to the laws of nature.[77] For Swinburne, scientists uncover the laws by examining all available data and seeking 'the most natural generalisation or extrapolation of those results, or, as I shall put it, the simplest formula from which the past results can be deduced.'[78] While such a conception of the laws seems in line with the BSA account, strictly speaking, Swinburne is speaking

[75] Again, I am making the assumption that this event does not violate any laws of nature either.
[76] Archer, 'Against Miracles as Law-Violations', p. 86;
Saunders, *Divine Action and Modern Science*, p. 64.
[77] Swinburne, *The Concept of Miracle*, p. 26.
N. Smart, *Philosophers and Religious Truth*, London, SCM Press, 1969, p. 37.
[78] Swinburne, *The Concept of Miracle*, p. 23.

of the means by which scientists uncover the laws rather than the nature of the laws themselves.[79] It does not seem that Swinburne is actually committed to the BSA account of the laws. In *The Christian God* (1994), he adopts a dispositionalist approach where the laws of nature are regularities that are underpinned by particular causal powers.[80] Nevertheless, for the sake of our current purpose, let us suppose that Swinburne holds that not only do scientists seek to uncover the laws by developing the best systematisation of all facts but that the laws really just are the axioms in the best systematisation of all facts.

Standardly, when a scientist uncovers a counter-instance to a purported law of nature, they seek to establish whether similar events occur in similar circumstances. If this is established, then there is good reason to think that the purported law is not actually a law at all. Instead, scientists seek to develop a new system of laws that can accommodate the repeatable counter-instances to the purported law of nature. From this reasoning, Swinburne holds that there cannot be repeatable counter-instances to genuine laws of nature.[81]

What about a non-repeatable counter-instance, that is, a counter-instance to a purported law that is not repeated in similar circumstances? Swinburne gives three options for dealing with such a counter-instance. First, we could change the set of laws to either accommodate the 'counter-instance' or have the instance lie outside the laws without violating them. However, since the counter-instance is genuinely non-repeatable, as in it never occurs in the same circumstances, any

[79] This may be described as the distinction offered by Friedel Weinert between laws of nature and laws of science. Laws of nature are the basic regularities in the universe or those which ground these regularities regardless of whether any scientist uncovers them. Laws of science are the regularities that scientists suppose are the basic regularities in the universe.
F. Weinert, 'Laws of Nature – Laws of Science', in F. Weinert (ed.), *Laws of Nature: Essays on the Philosophical, Scientific and Historical Dimensions*, Germany, Walter de Gruyter, 1995, p. 4.
[80] R. Swinburne, *The Christian God*, Oxford, Clarendon Press, 1994, p. 65.
Furthermore, Archer reveals that from a personal conversation, Swinburne is not a Humean about laws.
Archer, 'Against Miracles as Law-Violations', p. 89n.
[81] Swinburne, *The Concept of Miracle*, p. 26.

accommodation may be incredibly challenging, leading to the system as a whole being significantly weakened.[82] If this is the case, this option is unappealing.

A second option is that we could simply strike the purported law from the system. We could hold that a law of nature must be exceptionlessly true and since there is an exception to the regularity, it is not a law of nature. However, a concern that Swinburne has with this approach is that it may not 'do justice to the (in general) enormous success' of the purported law.[83] Say the purported law accommodates a great number of facts. To simply strike the law without an adequate replacement would leave many facts outside the laws of nature, significantly undermining the strength of the system.

A third option would be to uphold the purported law and that the single event is a genuine non-repeatable counter-instance to the law. In such a case, the counter-instance would be a violation of the law of nature. While the law would no longer be universally true, its strength in accommodating numerous matters of fact would be retained. Given the difficulties with the other two options, Swinburne favours this route. He maintains that the benefit accrued from retaining such power offsets the law no longer being universally true.[84] Subsequently, Swinburne posits that it is logically compatible for a law to hold and have a violation of that law.[85] For this to be the case, the violating event must be non-repeatable and any loss or reformulation of the given law must significantly undermine the strength or simplicity of the system as a whole.[86]

To reinforce the plausibility of Swinburne's argument for the possibility of a violation of a BSA law, consider another possible world, U_2. As with the other possible world offered in §3.1, there

[82] Swinburne, *The Concept of Miracle*, p. 27.
[83] Swinburne, *The Concept of Miracle*, p. 27.
[84] Swinburne, *The Concept of Miracle*, p. 27.
[85] Swinburne, *The Concept of Miracle*, p. 27.
[86] Swinburne, *The Concept of Miracle*, p. 27.

are only five types of particles and five fundamental properties. In U_2, there are 1,000,000 *A*-particles that all instantiate property *V*, 1,000,000 *B*-particles that all instantiate property *W*, 1,000,000 *C*-particles that all instantiate property *X*, 1,000,000 *D*-particles that all instantiate property *Y*, and 1,000,000 *E*-particles of which 999,999 instantiate property *Z* and one *E*-particle which does not instantiate any property. In this world, it is plausible that the following laws hold:

L_1: All *A*-particles instantiate property *V*

L_2: All *B*-particles instantiate property *W*

L_3: All *C*-particles instantiate property *X*

L_4: All *D*-particles instantiate property *Y*

The key question is: Is 'L_5: All *E*-particles instantiate property *Z*' a law? The central argument against this law holding is that there is a counter-instance to it, meaning that L_5 is not universally true. There do not seem any prospects with developing L_5 such that it accommodates the 999,999 cases where *E*-particles instantiate property *Z* but not the case where the *E*-particle does not instantiate property *Z*. Since the possible world is so simple, there is no principled way for L_5 to exclude the counter-instance. So, the options are either that L_5 is not actually a law or it is a law with a non-repeatable counter-instance.

I side with Swinburne that the latter option is preferable. By excluding L_5 as a law, the strength of the system of laws as a whole is drastically reduced, as 999,999 further cases then lie outside the laws of nature. Nevertheless, by including L_5 as a law, these cases fall under the laws and can be scientifically explained and predicted, with there just being a single violation. If one is not convinced by this example, consider another possible world where there are a billion *E*-particles and still only one counter-instance to L_5. I suppose that in such cases, it is preferable to uphold the law and allow there to be a non-repeatable counter-instance to the law rather than vanquishing the law altogether. Therefore, it is possible for there to be a violation of the laws of nature on the BSA account.

3.4. Miracles as Events Contrary to the BSA Laws

Swinburne considers how certain Christian miracles may constitute violations of the laws. He gives the example of levitation, where a holy person rises and remains in the air, in circumstances where no forces other than gravity are active.[87] Such an event would be a counter-instance to otherwise well-substituted laws of nature, such as the laws of mechanics, electro-magnetism, etc.[88] These laws cannot be developed so that the levitation event is either accommodated within the laws or lies outside the laws without the system being vastly weakened. In such circumstances, Swinburne concludes that we have 'good reason to believe that the levitation of the holy person violated the laws of nature'.[89] Another example may be Shadrach, Meshach, and Abednego not burning in the furnace in Daniel 3. In this case, the non-burning of these three would, intuitively, violate the laws of nature because there are no natural impediments to prevent them from burning. Again, it may be that the laws cannot be developed to accommodate this event without drastically weakening the system in terms of strength or simplicity, meaning that it is best that this event remains contrary to the laws of nature.

So far in this section, I have argued that it is possible for there to be events beyond or in violation of the BSA laws of nature. An event is beyond the laws of nature if it does not conflict with any of the laws but cannot be accommodated within them. This would be the case if any attempt to accommodate the event vastly weakened the system as a whole. An event violates the laws of nature if it is a non-repeatable counter-instance to a particular law. This would be the case if any attempt to accommodate the event within the laws or make the event lie outside the laws vastly weakens the system. Furthermore, I have outlined how various Christian miracles may be seen as events that lie beyond or violate the BSA laws of nature.

[87] Swinburne, *The Concept of Miracle*, p. 30.
[88] Swinburne, *The Concept of Miracle*, p. 30.
[89] Swinburne, *The Concept of Miracle*, p. 30.

3.5. Two Further Difficulties

Now, I consider two further difficulties with understanding miracles as beyond or contrary to the BSA laws of nature.

3.5.1. Miracles and Probabilistic Laws

The first concerns probabilistic laws. Assuming at least some of the laws of nature are probabilistic, how may miracles violate these laws?[90] It is unclear what constitutes a violation of a law if that law prescribes the likelihood of various events given the occurrence of a particular event rather than prescribing that one event necessarily follows another.

Swinburne considers what it means for an event to violate a probabilistic law. His suggestion is that 'if something occurs which, given the truth of the law, is highly unlikely, that counts against the law, is counter-evidence to it, even if not formally ruled out by it.'[91] If an event is counter-evidence to a law, it may be described as a violation of that law. Swinburne gives the example of the water in a kettle freezing when the kettle is put on a burning stove. Strictly speaking, this event is compatible with the currently accepted statistical version of the second law of thermodynamics. However, given the law, this event is so improbable that it ought to be considered a violation of this law.[92]

The issue with Swinburne's approach is that it is highly unintuitive for an event that is prescribed as possible by a given law to constitute a violation of that law. On a non-probabilistic law of the

[90] The inclusion of probabilistic laws within the set of laws does not impinge upon the possibility of miracles being beyond the laws. Such events would still need to be unique events that cannot be accommodated within the system of laws.
[91] Swinburne, *The Concept of Miracle*, p. 31.
[92] Swinburne, *The Concept of Miracle*, p. 31.

form 'All As are Bs', a violation would be an A not being a B. This is a violation because it is an event that is not prescribed as possible according to the law. Extending this notion to a probabilistic law, a violation would occur when an event that is not prescribed as possible according to the law takes place. However, on Swinburne's account, this is not the case. A violation is an event that is highly improbable according to the probabilistic law. Consequently, Swinburne's formulation of a violation of a probabilistic law does not do justice to the notion of a law-violation.

So, can a formulation of a violation of a probabilistic law be offered that does justice to the notion of law-violation? It will help to delineate two forms that a probabilistic law may take. First, a probabilistic law L_1 may take the form 'if event A, then there is an X % chance that event B follows, a Y % chance that event C follows, a Z % chance that event D follows.' In this form, the probabilistic law delineates the likelihood of a finite set of events that may follow a particular event. A probabilistic law of this type may be violated. It would be violated if the succeeding event is not delineated as a possibility by the law. For example, L_1 would be violated if event E follows event A. This constitutes a violation because the occurrence of E following A is not prescribed as a possibility according to L_1.

However, if this happened, wouldn't L_1 simply be developed to accommodate the possibility of event E following event A? In turn, L_1 may take the form 'if event A, then there is an X % chance that event B follows, a Y % chance that event C follows, a Z % chance that event D follows, a V % chance that event E follows'. In such a development, L_1 becomes more complex because another possibility is added. So, it may be that the simplicity lost in developing the law may not offset the strength gained in accommodating the case of event E following event A. Therefore, it would be preferable to not develop L_1 and simply accept that the occurrence of E following A constitutes a violation.

What if a probabilistic law does not denote the likelihood of a finite set of events that may follow a particular type of event, but denotes the likelihood of all possible events that may follow a particular type of event? Such a law could take the simple form of 'Given event *A*, there is a 60% chance of event *B* and a 40% chance of not event *B*' or a more specific form where the law delineates the likelihood of every possible specific event given a particular kind of event. There cannot be any counter-instances or violations for this kind of probabilistic law. Laws of this kind permit the occurrence of all possible events given the preceding type of event. Therefore, there is no possible event that can be contrary to such probabilistic laws.

Is this an issue? It does not pose a threat to the possibility of miracles as violations of the BSA laws of nature so long as not every law is of this type. Provided that there are some non-probabilistic laws or probabilistic laws that do not delineate the probability of every possible event, there can be events that violate the BSA laws of nature. There may be the theological concern that God not being able to cause a miracle that violates this type of probabilistic law harms God's omnipotence. In response, it must be recognised that it is logically impossible for there to be a violation of this type of law. An event violates a law if that event is not prescribed as possible according to the given law but all events are prescribed as possible according to this type of law. As long as God not being able to do the logically impossible does not impeach upon divine omnipotence, God's power is not limited.[93]

3.5.2. Recurrent Miracles

Recurrent miracles raise another challenge for miracles as beyond or contrary to the BSA laws of nature. Archer supposes that this account's inability to accommodate such miracles is a 'major defect.'[94] He defines recurrent miracles as:

[93] Page, 'The Dispositionalist Deity', p. 130.
[94] Archer, 'Against Miracles as Law-Violations', p. 89.

> a species of divine action in the world that occur in a regular, predictable manner and that satisfy the conditions necessary to be included in the best system of natural laws.[95]

By definition, such 'recurrent miracles' would have to be accommodated within the laws of nature. However, if one is committed to the position that miracles are events outside or contrary to the laws of nature, these 'recurrent miracles' are impossible.[96]

Is this a problem for the BSA account? I think not. Archer simply defines recurrent miracles out of existence. He defines them in such a way that when combined with an understanding of miracles as events beyond or contrary to the laws of nature, they are impossible. In turn, the advocate of understanding miracles in relation to the BSA account can simply reject the logical possibility of recurrent miracles. Indeed, Archer's definition is merely a description of God acting through the natural order. Throughout this thesis, I have supported a compatibilist approach where God can act through nature. God acting in the world in 'a regular, predictable manner and that satisfy the conditions necessary to be included in the best system of natural laws' would be an example of such action.[97] Therefore, Archer's description of recurrent miracles is not actually a description of miracles, but a description of God's nomic action.[98] Thus, his formulation of recurrent miracles poses no threat to the Lewisian account.

Nonetheless, Archer's argument may be reformulated to pose a different challenge with accommodating recurrent miracles on the BSA account. What if we changed Archer's definition from recurrent miracles occurring in a regular, predictable manner *that satisfies the conditions necessary*

[95] Archer, 'Against Miracles as Law-Violations', p. 89.
[96] Archer, 'Against Miracles as Law-Violations', p. 90.
[97] Archer, 'Against Miracles as Law-Violations', p. 89.
[98] As argued in Chapter Two, if the purpose of miracles is to be intrinsically wondrous events that are particularly suited to vitalise faith in Christ, then God would not cause a miracle that is wholly regular, predictable, and can be explained by science.

to be included in the best system of natural laws to simply miracles *that occur multiple times*? In the New Testament, there are multiple cases of miraculous resurrections, including the resurrection of Jairus' daughter (Mark 5:41), of the young man at Nain (Luke 7:14), of Lazarus (John 11:38-44), of saints during the crucifixion (Matt 27:52-53), of Christ (Matt 28:1-6), of Tabitha/Dorcas (Acts 9:36-42), of Eutychus (Acts 20:7-12).[99] In defending the possibility of miracles as events beyond or contrary to the BSA laws of nature, I stressed that these events must be sufficiently unique such that they cannot be accommodated within the nexus of laws. This raises the question: are we able to understand miracles that occur multiple times, such as resurrections, as beyond or contrary to the laws of nature on the BSA account?

There is a distinction between an event being repeatable such that it satisfies the conditions necessary to be included in the best system of laws and an event occurring multiple times. An event may occur multiple times yet still not be included in the best system of laws. Let us begin with the notion of an event occurring multiple times and being beyond the laws of nature. In establishing the possibility of events beyond the laws of nature in §3.1, I offered a possible world that consists of five types of particles and five fundamental properties. There are 1000 *A*-particles that all instantiate property *V*, 1000 *B*-particles that instantiate property *W*, 1000 *C*-particles that instantiate property *X*, 1000 *D*-particles that instantiate property *Y*, and yet still only one *E*-particle that instantiates property *Z*. I argued that it would not be a law that 'all *E*-particles instantiate property *Z*' because the strength gained in adding this law would not offset the simplicity the system loses.

Let's develop this example such that, while everything else remains the same, there are now 5 *E*-particles that all instantiate property *Z*. Would it now become a law that 'all *E*-particles instantiate

[99] I am not reducing Christ's resurrection to simply one resurrection among many. Recognising that Christ's resurrection is of a similar kind to other biblical resurrections is not to neglect the absolute uniqueness of Christ's resurrection in its Christological, revelatory, soteriological, and eschatological context.

property *Z*'? Certainly a better case can be made for it being a law because greater strength is gained by including this law. But I take it that there is still an open question as to whether this strength gained offsets the simplicity lost in adding a law. It is plausible that even with the added strength of this purported law, it is still not worth the loss of simplicity, meaning that it is still not a law that 'all *E*-particles instantiate property *Z*.'[100]

Relating this point to the multiple resurrections in the New Testament, each resurrection may occur by the same process, with this process only occurring in these cases. It may be that even though this process occurs multiple times for the resurrections in the New Testament, any attempt to develop a law that covers this process overcomplicates the system, meaning that the strength gained in the purported law does not offset the simplicity lost. So, the purported law covering the resurrection process would not be included in the system of laws, meaning that the multiple resurrections would all be events beyond the laws of nature.

A similar case can be made for accommodating recurrent miracles as violations of the laws of nature. While Swinburne's argument that there may be a violation of a law of nature rests on the violation being a non-repeatable counter-instance, by 'non-repeatable', Swinburne means that the instance cannot be replicated in the same conditions as determined by science, not that multiple events of the same type cannot occur.[101] It may be that there are multiple counter-instances of the same type to a given law of nature and any development of the laws to accommodate these counter-instances or leave them outside the laws drastically complicates the system. Furthermore, to strike the violated law of the system may lead to the strength of the system being significantly diminished. Therefore, even with multiple counter-instances to a law, the preferable option may

[100] If one is still not convinced, the numbers can become more extreme. Eventually there will be a case where these multiple events are not systematised within the laws. I am less concerned with where the scale actually tips but simply with defending the claim that there is a world where multiple events of the same type are not accommodated within the laws of nature.
[101] Swinburne, *The Concept of Miracle*, p. 27.

still be to uphold the law and accept that it has a few violations. So, recurrent miracles may also violate the laws of nature on the BSA account.

Let me briefly address recurrent miracles and their intrinsic wonder. I return to this theme in Chapter Six when examining the causal basis for miracles on the Lewisian account. For now, I have demonstrated that recurrent miracles may be beyond or contrary to the BSA laws. While these events are repeatable, they are not repeated in a way that is amenable to scientific systematisation or explanation. On the BSA account, scientific explanation depends on integrating events into lawlike regularities. Recurrent miracles, by contrast, remain anomalous and unassimilable. As such, they are, in principle, inexplicable by science.[102] Accordingly, despite their multiplicity, recurrent miracles retain their absolute unknowability and thus preserve their intrinsic wonder.

3.5.3. The Eucharist

One case of a recurrent miracle that may further challenge the Lewisian account is the Eucharist. In Roman Catholic theology as well as in the Eastern Orthodox and some other Christian Churches, the Eucharist is a process by which Christ becomes really present.[103] Within the Catholic doctrine, the bread and wine consecrated by the priest during Mass literally become the body and blood of Christ.

Such a process is typically considered miraculous. Take the approach of Thomas Aquinas, who suggests that two miracles occur in the Eucharist.[104] The first is God transforming the consecrated bread and wine into the body and blood of Christ. Aquinas describes this change, not as a natural

[102] I further justify this claim in Chapter Six when I elucidate the nature of causes on the Lewisian account and then show that such causes are absolutely unknowable.
[103] M. Pickup, 'Real Presence of the Eucharist and Time-Travel', *Religious Studies*, vol. 51, no. 3, 2015, p. 380.
[104] H. E. Baber, 'The Real Presence', *Religious Studies*, vol. 49, no. 1, 2013, p. 21.

one, but as a supernatural one 'effected by God's power alone.'[105] The second miracle is that after this transformation, the accidents of the bread and wine – that is, their observable qualities – remain in place, even though the bread and wine are no longer present and the substances are the body and blood of Christ.[106] Such accidents are 'bestowed miraculously' upon the substances.[107] This conjunction of the real presence of Christ's body and blood and the non-existence of bread and wine is at the centre of Aquinas' doctrine of transubstantiation.[108]

If we follow Aquinas and take the Eucharist to be a miracle, the number of Eucharistic miracles far exceeds other types of miracles. A miracle takes place every time a priest consecrates bread and wine. This raises the question: can Eucharistic miracles be beyond or contrary to the laws of nature on the BSA account? There are two avenues to explore here. First, we could seek to accommodate Eucharistic miracles in the same way that other recurrent miracles are accommodated. That is, by holding that even though these miracles are repeatable, they cannot be accommodated within the laws without the strength or simplicity of the system being drastically diminished. This means that it is preferable for these repeatable miracles to be outside or in violation of the laws.

The difficulty with this approach is the sheer number of Eucharistic miracles. It is not like resurrections in the New Testament where there are multiple, but still a limited number of cases. Eucharistic miracles happen on a vastly greater scale, occurring numerous times every single day, often at the exact same time. It seems implausible that such a regular event cannot be accommodated within the laws of nature. By not including this type of event within the laws, the

[105] Aquinas, *Summa Theologiae*, 3.75.4.
[106] Strictly speaking, accidents, or accidental forms, are forms that make substances have qualities that do not pertain to their own nature. For example, a house may have the accident of 'whiteness', in that it is white but this is not essential to its nature as a house.
Silva, *Providence and Science*, p. 15.
[107] Aquinas, *Summa Theologiae*, 3.75.6.
[108] A. Pruss, 'The Eucharist: Real Presence and Real Absence', in T. Flint and M. Rea (eds.), *The Oxford Handbook of Philosophical Theology*, Oxford, Oxford University Press, 2009, p. 514.

strength of the system would be significantly undermined, meaning that it seems preferable to develop the system to accommodate Eucharistic miracles within the laws of nature.

What this would look like is a challenge because it is unclear how the repeatability of the Eucharist may be codified in scientific terms. It would seem rather peculiar for there to be a law of nature that describes how a priest saying, 'This is my body' in offering the bread and 'This is my blood' in offering the wine, leads to a transformation of these substances into the body and blood of Christ. So, it may be that the complexity added in formulating a law and the law being so distinct from all other laws means that it is not worth accommodating Eucharistic miracles within the nomic system. Consequently, this avenue should not be wholly dismissed.

Another option is to reject that the Eucharist is a miracle. While Aquinas affirms the miraculous status of the Eucharist, it is significantly different from more conventional miracles. With other miracles, the unusual nature of the event is quite clearly observable. In the case of resurrections, observers can see that the person was dead and then came back to life. Thomas saw the crucifixion of Jesus and then saw the wounds of the resurrected Jesus (John 20:24-29). However, with the Eucharist, there is no observable change. After the consecration, the substances still look like bread and wine, feel like bread and wine, and taste like bread and wine. Aquinas affirms that the 'presence of Christ's true body and blood in this sacrament cannot be detected by sense, nor understanding, but by faith alone.'[109]

Since the Eucharist bears no empirical change, it is rather peculiar to consider it a miracle. Indeed, the theological significance of the Eucharist may be retained without supposing that the event is a miracle. A central Catholic commitment regarding the Eucharist is that the body and blood of

[109] Aquinas, *Summa Theologiae*, 3.75.1.

Christ are really present and how this occurs is typically cashed out, as Aquinas does, through the occurrence of miracles. So, if an account of the real presence of Christ can be offered which outlines how the Eucharistic process occurs in a non-miraculous fashion, the commitment to the Eucharist as a miracle can be allayed.[110] It is beyond the scope of this thesis to offer such an account. It should be noted that H. E. Baber offers a portrayal of the Eucharist 'according to which Christ is indeed really and objectively present in the religiously required sense' without recourse to miracles but through Christ's presence being an institutional fact.[111] In turn, this avenue of response is also not without merit.

If one is not convinced by either of these responses to the problem that the Eucharist poses, it is important to recognise that such challenges are not limited to the BSA account of the laws. Accommodating the Eucharist as a miracle is also difficult on the Thomist-dispositionalist account. On a dispositionalist conception of properties, the notion that a substance displays all the causal characteristics of bread or wine, such as looking, tasting, and feeling like bread or wine, but not being bread or wine is highly problematic. The nature of a property is determined by its dispositional character. It is impossible for a substance to manifest all the dispositional characteristics of bread or wine and not be bread or wine.[112] So, a dispositionalist approach to miracles faces the deeper issue of whether the doctrine of transubstantiation is even coherent.[113] In light of this, even if one is not persuaded by the two ways that advocates of miracles on a BSA

[110] This problem does not arise for Christian denominations who do not affirm that Christ is really present during the Eucharist. Those who support this view understand Christ's presence in a non-literal, metaphorical way and therefore have no need to affirm the Eucharist as a miracle.

[111] H. E. Baber, 'Eucharist: Metaphysical Miracle or Institutional Fact?', *International Journal of the Philosophy of Religion*, vol. 74, no. 3, 2013, p. 333.

[112] Aquinas attempts to circumvent this issue by holding that, after the consecration, the accidents continue in the sacrament without a subject. He argues that these accidents are no longer the accidents *of the bread*, nor are they accidents of Christ's body and blood. Rather, they exist by themselves and are directly caused by God. The difficulty with Aquinas' response and applying it to contemporary dispositionalism is that it is hard to conceive of accidents or properties existing by themselves independent of any substance to which they belong.
For Aquinas' argument, see: Aquinas, *Summa Theologiae*, 3.77.1.
For an analysis of Aquinas' argument, see: Pruss, 'The Eucharist: Real Presence and Real Absence', pp. 533-535.

[113] For on the BSA approach, the issue is not whether the notion of transubstantiation is coherent, but whether the Eucharist may be considered a miracle in spite of its regularity.

account may take, this is not wholly detrimental to the account since other approaches face similar, or deeper, issues.

Conclusion

In this chapter, I established the possibility of miracles as events beyond or contrary to the BSA laws of nature. First, I outlined the importance of understanding miracles in conjunction with the BSA laws. Then, I defended the philosophical plausibility of the BSA account. To achieve this, I replied to the central criticisms of this account, showing how a theistic underpinning bolsters these responses. Secondly, I argued that it is logically possible for there to be miracles beyond or contrary to the BSA laws, countering both Nicholas Saunders' and Joel Archer's objections. Finally, I tackled two further challenges with understanding miracles as beyond or contrary to the BSA laws. I offered an alternative conception of violating probabilistic laws compared to Richard Swinburne. I argued that this conception does greater justice to our standard notion of law-violation. Furthermore, I specified how recurrent miracles, to a degree, may be accommodated within the Lewisian account and considered the particularly problematic case of the Eucharist.

Establishing the possibility of miracles as events beyond or contrary to the BSA laws of nature marks an important advancement to the literature on miracles and the laws. Humean conceptions of the laws have largely been neglected in contemporary examinations of miracles, commonly thought of falling at the first hurdle by rendering miracles impossible. In this chapter, I have shown that this view is erroneous, laying the groundwork for a deeper theological examination of miracles as beyond or contrary to the BSA laws in the next chapter.

Chapter Six: The Plausibility of Lewisian Miracles

While a virtue of any account of miracles is establishing their possibility, the job is not done here. This is not the sole criterion for a theologically plausible account of miracles. In Part One, I examined three theological frameworks – interventionism, theistic naturalism, and Thomism – for miracles and divine action. I outlined three criteria for any theologically plausible account of miracles. Such an account should:

1. Preserve the immanence and transcendence of God;
2. Respect the causal integrity of the natural order;
3. Uphold the intrinsic wonder of miracles.

Offering a Lewisian account of miracles that meets these criteria would be a significant contribution to the scholarship, especially in the context of the widespread rejection of understanding miracles in relation to Humean laws.

To achieve this aim, I first respond to the objection that any theistic Humean metaphysics entails occasionalism. Secondly, I offer a concurrentist model of divine and natural causality for the Lewisian account that respects the causal integrity of nature, while upholding divine immanence and transcendence. Thirdly, I outline how this account preserves the intrinsic wonder of miracles by viewing them as beyond or contrary to the BSA laws, caused by God directly or through anomic causes. Fourthly, I compare this thesis' Lewisian account of miracles with the three theological approaches considered in Part One and, in particular, the Thomist-dispositionalist account elucidated in Chapter Four. I contend that the Lewisian account provides a plausible alternative to this account, offering certain advantages with respect to its different metaphysics, model of concurrentism, and emphasis on the contingency of nature.

Section One: Occasionalism

While the central hesitancy with understanding miracles in relation to Humean BSA laws is defining miracles out of existence, another accusation levelled at any theistic Humean metaphysics is the denial of genuine natural causality, leading to occasionalism. For example, James Orr writes that a theistic understanding of the BSA account 'would be indistinguishable from occasionalism.'[1] Similarly, R. M. Adams sees a close consonance between Humeanism and occasionalism. He writes: 'for what occasionalism denies about natural causes is also denied, substantively if not verbally, by Humeanism.'[2] Here, Adams suggests that a Humean metaphysics denies genuine natural causation and, therefore, a theistic Humean metaphysics would hold God to be the only genuine cause in nature.

One clarificatory point is that when I speak of occasionalism, I am referring to body-body occasionalism. This position denies genuine natural causal relations between bodies in nature and advances that God is the one true cause of such effects. I am setting to one side the issue of whether minds can be genuine causes in nature because my central concern is preserving the causal integrity of non-mental, natural objects in the Lewisian account of miracles.[3] Much of the contemporary debate on occasionalism is centred on body-body occasionalism.[4]

The source of this association between Humeanism and occasionalism lies in the Humean denial of necessary connections.[5] The BSA account of the laws is committed to Humean supervenience,

[1] Orr, *The Mind of God and the Works of Nature*, p. 33.
[2] Adams, 'Miracles, Laws of Nature and Causation II', p. 216.
[3] The question of the relationship between divine action and free will is an important one: Does God's intimate action in the nature impinge upon the freedom of humans? In this thesis, I have rather focussed on the question of divine action and the causal integrity of non-mental natural objects. For more on the former question, see:
Alston, 'Divine Action, Human Freedom, and the Laws of Nature', pp. 185-206.
[4] For more on different forms of occasionalism, see: A. Platt, *One True Cause: Causal Powers, Divine Concurrence, and the Seventeenth-Century Revival of Occasionalism*, New York, Oxford University Press, 2020, pp. 23-38.
[5] In §1.4, I argue that Hume does not explicitly deny the existence of necessary connections. When I use the term 'Humean', I am referring to Bird's categorisation of this position as the denial of necessary connections.
Bird, *Nature's Metaphysics*, p. 4.

the thesis that 'all there is to the world is a vast mosaic of local matters of particular fact, just one little thing and then another'.[6] Such a thesis denies any necessary connections in nature. The instantiation of a particular property never necessitates the instantiation of another property. The occurrence of one event never necessitates the occurrence of another event. David Lewis writes: 'anything can coexist with anything, and anything can fail to coexist with anything.'[7] The world simply consists of a Humean Mosaic of disconnected properties arranged in a particular structure.

A link is often drawn between the denial of necessary connections in nature and the denial of genuine natural causality. This link supposes that genuine natural causality requires a necessary connection between cause and effect. For fire to be the genuine cause of the candle burning, there must be a necessary connection between the fire and the burning of the candle. This necessitarian view of causation has strong historical precedence. For example, Karl Popper speaks of 'the long-searched-for necessary link between cause and effect.'[8] Stephen Mumford and Rani Lill Anjum attribute this view of causation to Baruch Spinoza (1632-1677) and Immanuel Kant (1724-1804).[9] For instance, Spinoza writes: 'From a given definite cause an effect necessarily follows.'[10] Kant speaks of 'the concept of the relation of cause and effect, the former of which determines the latter in time, as its consequence.'[11] On this necessitarian view, to deny the existence of necessary connections in nature amounts to denying genuine natural causation.

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[6] Lewis, *Philosophical Papers. Vol. 2*, IX.

[7] D. Lewis, 'Armstrong, D.M., *A Combinatorial Theory of Possibility*: Review', *Australian Journal of Philosophy*, vol. 70, no. 2, 1990, p. 211.
The reason for Lewis' denial of necessary connections is that he does not think there is any intelligible explanation for how such a necessary connection could obtain. He fails to see how the instantiation of one property could ever necessitate another property. This serves as the basis for his rejection of semi-Humean and anti-Humean metaphysics. D. Lewis, 'Against Structural Universals', *Australasian Journal of Philosophy*, vol. 64, no. 1, 1986, p. 41.

[8] K. Popper, *Objective Knowledge: An Evolutionary Approach*, Oxford, Clarendon Press, 1972, p. 91.

[9] Mumford and Anjum, *Getting Causes from Powers*, p. 52.
Recent philosophers who hold that causal relations require necessary connections are Alexander Bird (2007, p. 38) and David Armstrong (1997, p. 207).

[10] B. Spinoza and R. H. M. Elwes (trans.), *Ethics*, New York, Prometheus Books, 1989, p. 40.

[11] Kant, *Critique of Pure Reason*, p. 304.
Here, I am taking 'determine' to be equivalent to 'necessitate'. Norman Kemp Smith (1923, p. 364) supports this interpretation.

In light of this, does a theistic understanding of the BSA account entail occasionalism? Subsequently, does any Lewisian account of miracles fail to respect the causal integrity of nature? To further examine this issue, I will now engage with three historical thinkers who are standardly considered to deny necessary connections in nature: al-Ghazâlî (*c.*1056-1111), Nicholas Malebranche (1638-1715), and David Hume (1711-1776). I consider whether these thinkers denied genuine natural causality and, if they are theists, whether they upheld occasionalism.

1.1. Three Deniers of Necessary Connections

1.1.1. al-Ghazâlî

I begin with al-Ghazâlî, who belonged to the Ash'arite school of *kalām* and is one of the most prominent contributors to Sunni Islam theology.[12] In the seventeenth discussion of his famed work, *The Incoherence of the Philosophers*, al-Ghazâlî denies the existence of necessary connections in nature. He writes:

> with any two things, where "this" is not "that" and "that" is not "this" and where neither the affirmation of the one entails the affirmation of the other nor the negation of the one entails the negation of the other, it is not a necessity of the existence of the one that the other should exist, and it is not a necessity of the nonexistence of the one that the other should not exist.[13]

The reason for denying necessary connections in nature lies in al-Ghazâlî's emphasis on the power of God. God can do anything that is possible and anything that we can conceive is possible. Since we can conceive of satiety without eating, death without decapitation, and continuing life after decapitation, then such states of affairs are possible.[14] Consequently, for al-Ghazâlî, 'it is within

[12] S. A. Malik, *Islam and Evolution: Al Ghazâlî and the Modern Evolutionary Paradigm*, London, Routledge, 2021, p. 179.
[13] al-Ghazâlî and M. Marmura (trans.), *The Incoherence of the Philosophers*, Utah, Brigham Young University Press, 2000, p. 166.
[14] B. Dutton, 'Al-Ghazâlî on Possibility and the Critique of Causality', *Medieval Philosophy & Theology*, vol. 10, no. 1, 2001, p. 24.
The claim that conceivability entails possibility enjoys a rich discussion in contemporary philosophy. For more on this, see:

divine power to create satiety without eating, to create death without decapitation, to continue life after decapitation, and so on to all connected things.'[15]

The standard interpretation of al-Ghazâlî's denial of necessary connections in nature is that it leads him to occasionalism.[16] For example, Michael Marmura goes as far as saying that 'the Aristotelian theory of natural efficient causation is false' for al- Ghazâlî and Alfred Freddoso takes him to be the representative occasionalist.[17] This interpretation is not without textual merit. Soon after denying any necessary connections in nature, al-Ghazâlî writes: 'The one who enacts the burning by creating blackness in the cotton, causing separation in its parts, and making it cinder or ashes is God.'[18] He emphasises that fire is 'inanimate' and 'has no action', with our observations only showing 'the occurrence of burning at the time of the contact with the fire but does not show the occurrence of burning by the fire.'[19]

Frank Griffel, however, disputes an occasionalist interpretation of al-Ghazâlî. He stresses that: '[a] close reading of the seventeenth discussion shows, however, that on its two dozen or so pages, al-Ghazâlî does not deny the existence of causal connections.'[20] To support this position, Griffel highlights that al-Ghazâlî opens the seventeenth discussion by stating: 'The connection between what is habitually believed to be a cause and what is habitually believed to be an effect is not

D. Chalmers, *The Conscious Mind: In Search of a Fundamental Theory*, New York, Oxford University Press, 1996, pp. 131-139;
T. Gendler and J. O'Leary-Hawthorne (eds.), *Conceivability and Possibility*, Oxford, Clarendon Press, 2002.

[15] al-Ghazâlî, *The Incoherence of the Philosophers*, p. 166.

[16] Griffel, *Al-Ghazali's Philosophical Theology*, p. 157.

[17] M. Marmura, 'Ghazali's Attitude to the Secular Sciences,' p. 109, cited in Griffel, *Al-Ghazali's Philosophical Theology*, p. 147.
A. Freddoso, 'Medieval Aristotelianism and the Case against Secondary Causation in Nature', in T. Morris (ed.), *Divine and Human Action: Essays in the Metaphysics of Theism*, Ithaca, Cornell University Press, 1988, p. 76.

[18] al-Ghazâlî, *The Incoherence of the Philosophers*, p. 167.

[19] al-Ghazâlî, *The Incoherence of the Philosophers*, p. 167.

[20] Griffel, *Al-Ghazali's Philosophical Theology*, p. 147.

necessary, according to us.'[21] In affirming that causal relations do not require a necessary connection, the denial of necessary connections does not entail occasionalism.

The tendency to attribute occasionalism to al-Ghazâlî arises from a misunderstanding of the structure of the seventeenth discussion in *The Incoherence of the Philosophers*. After beginning the discussion by denying necessary connections in nature, al-Ghazâlî then explores various ways causality may be understood in light of this. The first of these positions is an occasionalist one where God is the sole cause in nature. It is in the exposition of this position where we find al-Ghazâlî asserting that it is God, not fire, who burns cotton. Nevertheless, al-Ghazâlî also considers non-occasionalist explanations where there is genuine natural causation, but the connection between cause and effect is contingent (*mumkin*) rather than necessary.[22]

Griffel argues that al-Ghazâlî remains 'uncommitted whether those things in this world that we regard as causes truly have efficacy on their assumed effects.'[23] The ultimate aim of the seventeenth discussion is to dispute the causal necessitarianism that was central to Avicenna's cosmology.[24] This is why al-Ghazâlî begins the discussion with his argument against there being necessary connections in nature. After denying this view, he is less concerned with committing to a single positive position, but outlining various possible non-necessitarian conceptions of causation. The apparent occasionalist language in the seventeenth discussion arises when al-Ghazâlî considers occasionalism as a possible response.

[21] al-Ghazâlî, *The Incoherence of the Philosophers*, p. 166.
[22] al-Ghazâlî, *The Incoherence of the Philosophers*, p. 166.
[23] Griffel, *Al-Ghazali's Philosophical Theology*, p. 147.
[24] Griffel, *Al-Ghazali's Philosophical Theology*, p. 173.

So, in al-Ghazâlî, we have a figure whose denial of necessary connections does not entail occasionalism because natural causal relations may not rely on necessary connections.[25]

1.1.2. Nicholas Malebranche

I now move onto the French Cartesian philosopher Nicholas Malebranche. In the third chapter of the second part of Book VI of *The Search after Truth (De la Recherche de la Vérité*) (1674-5), Malebranche makes a rigorous case for occasionalism. He writes:

> A true cause as I understand it is one such that the mind perceives a necessary connection between it and its effect. Now the mind perceives a necessary connection only between the will of an infinitely perfect being and its effect. Therefore, it is only God who is the true cause and who truly has the power to move bodies.[26]

In this first sentence, Malebranche draws a link between 'true' causality and a necessary connection between cause and effect. A peculiarity is Malebranche's claim that the mind must perceive a necessary connection between cause and effect for true causality, rather than a necessary connection simply being there. His emphasis on perception may suggest that this argument is epistemological, denying the intelligibility of natural causal relations.[27] However, such an interpretation is not aligned with the argumentative thrust of this chapter in *The Search After Truth*. Throughout this chapter, Malebranche seeks to establish that God is the only cause in nature. For example, he writes:

[25] This raises the question: what may non-necessitarian conceptions of causality look like? I consider these conceptions in §2.1.
[26] N. Malebranche, T. Lennon and P. Olscamp (trans. and eds.), *The Search After Truth*, Cambridge, Cambridge University Press, 1997, p. 450.
[27] Such an interpretation allows for there to be natural causes, it is just that they are not intelligible.

> it is necessary…to prove in few words that there is only one true cause because there is only one true God; that the nature or power of each thing is nothing but the will of God.[28]

Later in the chapter he writes: 'For if religion teaches us that there is only one true God, this philosophy shows us that there is only one true cause.'[29] The epistemological reading of Malebranche's no necessary connection argument is insufficient to establish his commitment to occasionalism.[30] Therefore, modern scholars of Malebranche have favoured a metaphysical reading.[31]

On this reading, Malebranche states that there is a necessary connection between God's willing some event and that event occurring. The source of this necessary connection lies in God being 'an infinitely perfect and consequently all-powerful being' such that if God wills an effect, it must occur.[32] Since God's willing an effect necessitates that effect, then God is a true cause of that effect.[33] In contrast, there is no necessary connection between a purported natural cause and a natural effect. It is possible that fire does not burn cotton or dropping a glass does not shatter it. Since there is no necessary connection between a natural cause and a natural effect and genuine causality requires this connection, Malebranche concludes that there is no genuine natural causation. Instead, natural causes serve as occasional causes, where they are the occasion for 'the Author of nature to act in such and such a manner in such and such a situation.'[34]

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[28] Malebranche, *The Search After Truth*, p. 448.
[29] Malebranche, *The Search After Truth*, p. 452.
[30] Stephen Nadler dubs the various denials of necessary connections throughout history as different forms of the 'no necessary connection' argument. He attributes this argument to figures such as al-Ghazâlî, Nicholas of Autrecourt, Malebranche, and Hume.
S. Nadler, '"No Necessary Connection": The Medieval Roots of the Occasionalist Roots of Hume', in S. Nadler, *Occasionalism: Causation Among the Cartesians*, Oxford, Oxford University Press, 2010, pp. 48-65.
[31] Platt, *One True* Cause, p. 322;
S. Lee, 'Necessary Connections and Continuous Creation: Malebranche's Two Arguments for Occasionalism,' *Journal of the History of Philosophy*, vol. 46, no. 4, 2008, p. 542.
[32] Malebranche, *The Search After Truth*, p. 448.
[33] Malebranche is keen to emphasise that just because we cannot conceive God willing an effect and that effect not occurring, it does not mean that we have any insight into the nature of God's power.
Lee, 'Necessary Connections and Continuous Creation: Malebranche's Two Arguments for Occasionalism,' p. 543.
[34] Malebranche, *The Search After Truth*, p. 448.

Here, we see that Malebranche denies necessary connections in nature in a similar way to al-Ghazâlî. However, unlike al-Ghazâlî, Malebranche is emphatically committed to occasionalism. The reason for this is that Malebranche is committed to a necessitarian view of causation.

1.1.3. David Hume

Our third figure to consider is David Hume. Hume was familiar with the works of Malebranche and even wrote to a friend in 1737 suggesting that the best way to prepare for reading the manuscript of *A Treatise of Human Nature* (1739-40) is to study Malebranche's *The Search After Truth*.[35] In Chapter Seven of *An Enquiry Concerning Human Understanding* (1748), Hume intends to fix, if possible, the precise meaning of *necessary connexion*, which he describes as the most obscure and uncertain idea in metaphysics.[36] Since our ideas are nothing but 'copies of our impressions', that is, we cannot think of anything we have not felt externally or internally, he looks for the idea of necessary connection in these two sources.[37]

Hume argues that through experience:

> we are never able, in a single instance, to discover any power or necessary connexion; any quality, which binds the effect to the cause, and renders the one an infallible consequence of the other.[38]

Whenever we observe the relation between a cause and effect, all we observe is their frequent conjunction, rather than any necessary connection. For example, with a billiard ball hitting another

[35] Nadler, "'No Necessary Connection'", p. 170.
[36] Hume, *An Enquiry Concerning Human Understanding*, p. 58.
Hume also offers a similar examination of necessary connections in his earlier work *A Treatise of Human Nature* (1739-40).
D. Hume and E. Mossner (ed.), *A Treatise of Human Nature*, Harmondsworth, Penguin Books, 1969, pp. 205-223.
[37] Hume, *An Enquiry Concerning Human Understanding*, p. 58.
[38] Hume, *An Enquiry Concerning Human Understanding*, p. 59.

ball, all we observe is one ball moving until it comes into contact with another ball and then that ball moving. No experience demonstrates that the one ball hitting another necessitates the second ball moving. In turn, Hume argues that our experience can only show that two events are conjoined, not connected, with all events seeming 'entirely loose and separate.'[39]

The same goes for reflection upon the operations of our own mind. Hume contends that an examination of our will does not shed light on the notion of necessary connection. He offers various arguments as to why we have no notion of our will necessitating our actions, based on the 'mystery' of the relation between the mind and the body, the fact that our will cannot control all aspects of our body, and that we do not have an awareness of all the processes by which our actions occur.[40] Since no notion of necessary connection can be formulated from experience or inward sentiment, Hume concludes: 'we have no idea of connexion or power at all, and that these words are absolutely without any meaning, when employed either in philosophical reasonings or common life.'[41]

Hume's denial of necessary connections is of a different kind to al-Ghazâlî's and Malebranche's. al-Ghazâlî and Malebranche defend the metaphysical position that there are no necessary connections in nature. Alternatively, Hume defends the epistemological position that we have no intelligible concept of necessary connections. Helen Beebee writes that Hume's moral in the *Enquiry* is that 'the connection between causes and effects lies beyond our cognitive grip.'[42]

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[39] Hume, *An Enquiry Concerning Human Understanding*, p. 68.
[40] Hume, *An Enquiry Concerning Human Understanding*, p. 62.
Hume offers similar arguments for why we have no notion of a necessary connection between our will and other mental states.
[41] Hume, *An Enquiry Concerning Human Understanding*, p. 62.
Hume does make a positive case for the source of our notion of necessary connections. He suggests that this notion arises from habit. When we often see one type of event follow another, our imagination forms a feeling that the two events are connected.
[42] H. Beebee, *Hume on Causation*, London, Routledge, 2006, p. 93.

Similarly, Walter Ott describes Hume's conclusion as that 'we cannot form an idea of such a [necessary] connection.'[43]

What are the metaphysical implications of Hume's denial of the intelligibility of necessary connections? Humean scholars have drawn varied conclusions. Some hold that Hume denies the existence of genuine necessary connections, reducing causation to constant conjunction or viewing necessary connections as a mere human projection. Hume interpreted in this way is often referred to as the 'Old Hume.'[44] Advocates of the 'New Hume' instead suggest that Hume was a sceptical realist, affirming the existence of necessary connections in spite of our inability to formulate an intelligible notion of this concept.[45] However, one should be reticent to draw too strong metaphysical conclusions from Hume's discussion on necessary connections in the *Enquiry*. His central aim is the denial of the intelligibility of necessary connections rather than offering a positive thesis about the metaphysics of causation.[46]

Our historical examination shows that a theistic understanding of the BSA conception of the laws of nature does not necessarily have to deny natural causation and adopt occasionalism. A denial of necessary connections in nature only entails occasionalism if natural causal relations require a necessary connection between cause and effect. Malebranche held this view and so his denial of necessary connections leads to occasionalism. On the other hand, al-Ghazâlî affirms that the relation between cause and effect may not be necessary, avoiding a commitment to occasionalism.

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[43] W. Ott, *Causation and the Laws of Nature in Early Modern Philosophy*, Oxford, Oxford University Press, 2009, p. 219.
[44] H. Beebee, 'Hume and the Problem of Causation', in H. Beebee and P. Russell (eds.), *The Oxford Handbook of Hume*, Oxford, Oxford University Press, 2016, p. 229.
Advocates of the 'Old Hume' include J. L. Mackie (1974), Don Garrett (2009), and Helen Beebee (2006).
[45] Advocates of the 'New Hume' include Norman Kemp Smith (1941), Galen Strawson (1989), and Peter Kail (2007).
[46] Beebee, *Hume on Causation*, p. 107.
In light of this, David Lewis seems mistaken in referring to Hume as the 'the great denier of necessary connections.' Lewis, *Philosophical Papers, Vol 2*, IX.

So, there appear two possible routes for the metaphysics of natural causation in the Lewisian account of miracles:

Route One:

1. Deny necessary connections in nature;
2. Maintain that natural causal relations require necessary connections;
3. Deny natural causation;
4. Support occasionalism.

Route Two:

1. Deny necessary connections in nature;
2. Maintain that natural causal relations do not require necessary connections;
3. Uphold natural causation;
4. Reject occasionalism.

I will now examine each of these routes to see which is the preferable path for this thesis' Lewisian account of miracles to take.

1.2. Route One

Off the bat, Route One appears rather unappealing. It denies one of the three criteria that has been central to this thesis' examination of approaches to miracles and divine action. In denying natural causation, it does not respect the causal integrity of the natural order. Nevertheless, perhaps I have been too swift in prioritising this criterion. There may be overriding reasons for denying genuine natural causation. So, let us revisit this question and consider whether occasionalism is as problematic as first thought.

1.2.1. Lewisian Miracles and Occasionalism

As outlined in Chapter Five, on a theistic understanding of the BSA laws, God created the universe in a way that ensures the given BSA laws are true. God serves as the ontological bedrock of the Humean Mosaic. Developing this position per Route One, God would be the one true cause of every natural event, necessitating each event in virtue of God's power and will. There would be no genuine natural causation. The BSA laws do not describe natural causes but are simply the best systematisation of all facts. All natural causes only serve as occasional causes, providing reasons for God to cause another natural event in virtue of God wanting to sustain certain regularities in nature. On this approach, there is no causal distinction between miracles and natural events. Both types of events are solely caused by God. The only distinction is that natural events are systematised within the BSA laws whereas miracles lie outside or violate these laws.

1.2.2. Central Argument for Occasionalism

Malebranche's central argument for occasionalism is that attributing genuine causation to natural entities is idolatrous. He writes: 'If we consider attentively our idea of cause or of power to act, we cannot doubt that this idea represents something divine.'[47] Those who consider that natural entities have genuine causal powers 'therefore admit something divine in all the bodies.'[48] For Malebranche, to preserve the full divinity of God, one must be committed to occasionalism.

This argument seems peculiar. What about causality represents something divine and how would a natural entity having causal powers encroach on the divinity of God? Malebranche views causal power as a zero-sum game. To affirm genuine causal powers in natural entities is to take away

[47] Malebranche, *The Search After Truth*, p. 446.
[48] Malebranche, *The Search After Truth*, p. 446.

genuine causal power in God, thereby divinizing nature and undermining the divinity of God. In modern terms, he is an incompatibilist, seeing divine and natural causation as dualistically opposed. The reason that Malebranche takes this approach is that he considers concurrentism – the position that any natural effect is produced immediately by both God and natural substances – to be unintelligible.[49]

Speaking of the concurrentist approaches of the late Scholastics, he writes:

> Whatever effort I make in order to understand it, I cannot find any idea representing to me what might be the force or the power they attribute to creatures. And I do not even think it a temerarious judgement to assert that those who maintain that creatures have force and power in themselves advance what they do not clearly conceive.[50]

Malebranche frequently likes to point out the diversity of views among concurrentists, taking it as evidence that 'the power of creatures is a fiction of the mind of which we naturally have no idea.'[51] So, for Malebranche, the appeal of occasionalism is derived from the unintelligibility of concurrentism. If it is impossible to affirm both divine and natural causality, then we have to make a choice between the two. Since any theologically-minded person would always preserve the power of God, then the only option is to deny natural causality and suppose that God is the one true cause.[52]

[49] Freddoso, 'God's General Concurrence with Secondary Causes: Pitfalls and Prospects', p. 134.
[50] Malebranche, *The Search After Truth*, p. 658.
[51] Malebranche, *The Search After Truth*, p. 658.
[52] Alvin Plantinga makes a similar case for occasionalism, stating that a very powerful advantage for the position is that: 'We do not have a clear conception of creaturely causality, but that problem does not arise with divine causality.' A. Plantinga, 'Law, Cause, and Occasionalism', in M. Bergmann and J. Brower (eds.), *Reason and Faith: Themes from Richard Swinburne*, Oxford, Oxford University Press, 2016, p. 137.

1.2.3. Arguments Against Occasionalism

1.2.3.1. Aquinas' Arguments

In *Quaestiones Disputatae De Potentia Dei* ('On the Power of God'), Thomas Aquinas offers three arguments against occasionalism.[53] First, he argues that occasionalism is opposed to the senses. Aquinas holds that 'the senses do not err about their proper object' and our senses tell us that we experience the effects of natural causes.[54] Secondly, occasionalism is contrary to reason because reason 'convinces us that nothing in nature is void of purpose' and natural entities only have purpose if they have genuine causal powers.[55] Thirdly, occasionalism is contrary to God's goodness, which is self-communicative, meaning that God would create natural entities like God, not only in being, but also in acting.[56]

These arguments of Aquinas lack dialectical force against those who have fully adopted the occasionalist position. For instance, Malebranche disputes the sensory argument, describing it as 'pitiful'.'[57] The occasionalist can respond that in much the same way that a pencil *appears* bent in water when actually it is straight, natural effects *appear* to be caused by natural agents when actually they are caused by God alone. Malebranche supposes that our senses err regarding the true cause of natural effects, with this illusion brought to light through the proper use of reason. Consequently, the occasionalist would hold that their position is not irrational, but rather reason leads to it.[58] Indeed, they may reimagine the purpose of natural substances, not to be genuine causes, but to serve as occasional causes for God's genuine causal action. And finally, an occasionalist can contend that their position is the only way to preserve the goodness of God. If

[53] Platt notes that Malebranche and the other Cartesian occasionalists writing in the 1660s and 1670s saw occasionalism in terms of a debate framed by Thomas Aquinas, rather than in terms of the relationship between mind and body, as it is commonly understood today.
Platt, *One True Cause*, p. 27.
[54] Aquinas, *On the Power of God*, 3.7.
[55] Aquinas, *On the Power of God*, 3.7.
[56] Aquinas, *On the Power of God*, 3.7.
[57] Malebranche, *The Search After Truth*, p. 660.
[58] Malebranche, *The Search After Truth*, p. 660.

natural causality and divine causality are dualistically opposed, only by eliminating natural causality can God's goodness and full causality be preserved.

1.2.3.2. Causal Anarchism

Freddoso notes another common Aristotelian objection is that occasionalism engenders a 'sort of causal anarchism.'[59] If there is no genuine natural causality, then anything can follow anything. How can we have any faith that nature will behave in a uniform manner and that we can make accurate predictions about the future?

This objection is lacklustre because occasionalism only entails that causal anarchism is metaphysically possible, not necessary.[60] While occasionalism cannot ground the uniformity of nature in the genuine power of natural entities, it can ground it through God. For example, Malebranche holds that God 'always acts through the simplest ways' and 'does not multiply his volitions without reason'.[61] God has established certain general laws (i.e. laws of nature) 'according to which He almost always acts' apart from the rare occasions where God causes a miracle.[62] A lit match always lights a candle (provided all other conditions are met and in the absence of a miracle) because the occurrence of a lit match near cotton serves as an occasion for God to cause the burning of the cotton. God desires to uphold this uniformity. So, occasionalism does not necessitate causal anarchism.

[59] Freddoso, 'Medieval Aristotelianism and the Case against Secondary Causation in Nature', p. 102.
[60] Indeed, causal anarchism is also metaphysically possible given the existence of natural causation. The mere existence of natural causes does not necessitate that they behave in a regular, uniform manner.
[61] Malebranche, *The Search After Truth*, p. 663.
Similarly, al-Ghazâlî underpins the uniformity of nature, on his occasionalist model, by supposing that God decrees certain connections between disparate events.
al-Ghazâlî, *The Incoherence of the Philosophers*, p. 166.
[62] Malebranche, *The Search After Truth*, p. 663.

1.2.3.3. The Practice of Science

A similar concern is whether occasionalism undermines the practice of science. If it is the aim of science, at least partially, to uncover the causes of natural effects, then, on occasionalism, science becomes redundant. The answer is the same for every natural effect: God is the sole true cause. Malebranche, however, recognised the absurdity of this. He writes:

> I grant that recourse to God or the universal cause should not be had when the explanation of particular effects is sought. For we would be ridiculous were we to say, for example, that it is God who dries the roads or who freezes the water of rivers.[63]

Instead, we must give 'the natural and particular cause of the effects in question' and it is the role of science to uncover the occasional causes of natural effects.[64] In effect, Malebranche reforms the role of science to uncover the occasional causes in nature rather than the one true cause.

Occasionalists, then, are not without systematic resources when responding to objections. They can articulate a *prima facie* coherent metaphysical framework from within which they offer fair responses to the objections considered.[65] So, it does not seem that a single knock-down argument will strike the killer blow against occasionalism. Rather, occasionalism's appeal rests on whether the denial of natural causality is an unacceptably counterintuitive consequence of trying to preserve the power of God. For the occasionalists, it is acceptable because, in their view, only by foregoing natural causality can divine causality be preserved. So, the plausibility of occasionalism hinges on whether there is an adequate conception of concurrentism that respects both divine and natural

[63] Malebranche, *The Search After Truth*, p. 662.
[64] Malebranche, *The Search After Truth*, p. 662.
Similarly, Shoaib Ahmed Malik writes that on an Islamic occasionalist metaphysics, 'the causal connections between physical things that science aims to understand are contingent upon the will of God.' Malik, *Islam and Evolution*, p. 184.
[65] Freddoso and Orr both share this assessment of occasionalism.
Freddoso, 'Medieval Aristotelianism and the Case against Secondary Causation in Nature', p. 102;
Orr, *The Mind of God and the Works of Nature*, p. 33.

causality. If there is not, then the cost of losing natural causality seems worth it. If there is, then occasionalism falls foul of unnecessarily vanquishing natural causes.

In our assessment of whether Route One or Route Two is preferable in fleshing out the metaphysics of divine and natural causality on the Lewisian account of miracles, the former ought to be a 'last resort.' If there is no satisfactory way, via Route Two, that we can preserve natural causality without impinging on divine causality, then we should accept that the Lewisian account entails occasionalism.[66] So, let us turn to this issue, examining the plausibility of Route Two and whether a satisfactory account of concurrentism can be offered in the context of Lewisian miracles.

Section Two: Concurrentism

On Route Two, the Lewisian account rejects necessary connections in nature – as per the BSA commitment to Humean supervenience – but denies that this leads to the loss of natural causality. The question then arises: what constitutes natural causality if not necessary connections between cause and effect?

There is strong historical support for a necessitarian understanding of causation. Furthermore, *prima facie*, there seems good reason to link natural causation and necessary connections. Causes seem to make the effect occur – for example, my kicking of the football makes the window break – and an effective way to 'cash out' how causes make effects occur seems to be through causes necessitating their effects.[67] So, a key challenge for Route Two is offering a plausible conception of natural causation that does not require necessary connections.

[66] If the Lewisian account of miracles is committed to occasionalism, then the plausibility of this account, compared to other accounts, hinges on whether other accounts can offer a satisfactory concurrentist model of divine and natural causality. As highlighted in Part One, many concurrentist models face various challenges.

[67] This is not the only way to cash this out. Stephen Mumford and Rani Lill Anjum, for example, prefer to understand causality in terms of tendencies which are weaker than necessity but stronger than pure contingency, involving a *sui*

2.1. A Counterfactual Analysis of Causation

Fortunately, we can draw on the thought of David Lewis, who, as part of his wider metaphysical project, offers an account of causality that upholds his denial of necessary connections in nature. In the twentieth century, causation was hardly a hot topic in analytic philosophy. The concept was largely ignored, with Bertrand Russell writing that the word 'cause' is 'so inextricably bound up with misleading associations as to make its complete extrusion from the philosophical vocabulary desirable.'[68] When causation was not extruded, it was typically understood as denoting an exceptionless association between two types of events.[69] However, this approach was plagued with the difficulty of adequately distinguishing causal relations from accidental regularities of non-causal succession.[70] The significance of Lewis' thought is that he sought to break this stalemate, offering an alternative conception of causation based on counterfactuals.

The central motivating factor for Lewis' counterfactual analysis of causation is that we think of a cause as something that makes a difference, and 'the difference it makes must be a difference from what would have happened without it.'[71] Why does my kicking of the football cause the window to break? Well, if I had not kicked the football, then the window would not have broken. Building on this idea, Lewis seeks to analyse causal relations in terms of counterfactuals. A counterfactual

generis, irreducible modality. This approach faces a similar challenge to David Armstrong's notion of contingent necessitation, which is, how do you adequately ground a middle ground between necessity and contingency?
Mumford and Anjum, *Getting Causes from Powers*, p. 85.

[68] B. Russell, 'On the Notion of Cause', *Proceedings of the Aristotelian Society*, vol. 13, 1912-1913, p. 1.

[69] This is one of the definitions of causation that Hume gives in Chapter Seven of the *Enquiry*. He writes: 'we may define a cause to be *an object followed by another, and where all the objects, similar to the first, are followed by objects similar to the second*.'
Hume, *An Enquiry Concerning Human Understanding*, p. 70.

[70] H. Beebee, 'The Genesis of Lewis's Counterfactual Analysis of Causation', in H. Beebee and A. R. J. Fisher (eds.), *Perspectives on the Philosophy of David K. Lewis*, Oxford, Oxford University Press, 2022, p. 196.

[71] D. Lewis, 'Causation', *The Journal of Philosophy*, vol. 70, no. 17, 1973, p. 557.

is a subjunctive conditional of the form 'if it were the case that A, then it would be the case that B'.[72]

For Lewis, a counterfactual is true 'iff it takes less of a departure from actuality to make the consequent true along with the antecedent than it does to make the antecedent true without the consequent.[73] In simpler terms, a counterfactual is true iff in possible worlds, most like the actual world, where the antecedent is true, the consequent is also true. For example, the counterfactual, 'if it rained today, I'd have my umbrella on me', is true because in the nearest possible worlds where it rains, I would have brought my umbrella with me.[74] Lewis grounds the truth of counterfactuals through his commitment to modal realism, the thesis that 'our world is but one world among many' and 'that absolutely *every* way that a world could possibly be is a way that some world *is*.'[75] Nonetheless, Lewis' counterfactual analysis of causation can be divorced from his commitment to modal realism. All it requires is a commitment to counterfactual truths.[76]

In Lewis' simplest formulation, an event A causes event B iff B counterfactually depends on A, that is, if A had not occurred (in the nearest possible worlds), then B would not have occurred.[77] For example, me kicking the football causes the window to break because if I had not kicked the football, then the window would not have broken. This counterfactual analysis of causation is in line with Lewis' wider commitment to Humean supervenience and denial of necessary

[72] L. A. Paul, 'Counterfactual Theories', in H. Beebee, C. Hitchcock, and P. Menzies (eds.), *The Oxford Handbook of Causation*, Oxford, Oxford University Press, 2009, p. 158.
[73] Lewis, 'Causation', p. 560.
[74] Lewis accepts that there is a notion of vagueness about what constitutes 'near possible worlds' but thinks we have a robust enough grasp to make it workable.
Lewis, 'Causation', p. 560.
[75] D. Lewis, *On the Plurality of Worlds*, Blackwell Publishers, Malden, 2001, p. 2.
[76] For the sake of simplicity, I speak of counterfactual truths being grounded by possible worlds. For different approaches to counterfactuals, see:
J. Bennett, *A Philosophical Guide to Conditionals*, Oxford, Oxford University Press, 2003.
[77] Lewis, 'Causation', p. 560.

connections. What connects a cause and effect is not a necessary connection but a weaker relation of counterfactual dependence.[78]

The virtues of this counterfactual analysis of causation are that it respects the key intuition that causes make a difference, accommodates standard cases of causation, upholds the significance of counterfactuals in relation to causation, and is relatively simple.[79] Let us now consider two counter-examples that seek to show the implausibility of this analysis.

2.1.1. Cases of Pre-Emption

The first regards cases of pre-emption. Suppose that Billy and Suzy each threw rocks at the window. Suzy's rock strikes the window and breaks it. Billy's rock then flies through the space where the window used to be. It is clear that Suzy's throwing of the rock caused the window to break.[80] However, on the simple counterfactual analysis of causation, this is not the case. The counterfactual, 'if Suzy had not thrown the rock, the window would not have broken,' is not true. If Suzy had not thrown the rock, the window still would have broken because Billy's rock would have hit the window. So, the objection goes, the counterfactual analysis of causation cannot accommodate cases of pre-emption.

In light of such examples, Lewis developed his theory of causation in his 2002 paper 'Causation as Influence.' The development takes into account a more refined notion of the counterfactual dependence between cause and effect. On this refined notion, event A causes event B iff B counterfactually depends on A such that B would not have occurred *in the way that it did* if A had

[78] There is no requirement on the counterfactual analysis that the football hitting the window *necessitates* that the window breaks. It just requires that in near possible worlds where the football is not kicked, the window does not break.
[79] Paul, 'Counterfactual Theories', p. 171.
[80] S. Bernstein, 'Lewis' Theories of Causation and their Influence', in H. Beebee and A. R. J. Fisher (eds.), *Perspectives on the Philosophy of David K. Lewis*, Oxford, Oxford University Press, 2022, p. 162.

not occurred.[81] Here, 'in the way that it did' is doing a lot of heavy lifting and Lewis understands this notion in terms of (1) whether the event occurred, (2) when the event occurred, and (3) how the event occurred.[82] So, while it is true that if Suzy had not thrown the rock, the window would still have broken, it is not true that it would have broken in the way that it did had Suzy thrown the rock. Presumably, Billy's rock would have arrived slightly later, at a different speed, at a different trajectory, leading to the window breaking in a different way. Therefore, with this development, Lewis argues that the window breaking in the way that it did counterfactually depends on Suzy throwing the rock. Consequently, Suzy's throwing of the rock causes the window to break.[83]

2.1.2. Identifying *the Cause*

A second kind of objection is that the counterfactual approach casts the net too wide, being too liberal with what constitutes a cause. Mumford and Anjum give the example of John getting out of bed in the morning and increasing his pace while walking in the afternoon.[84] It is true that there is counterfactual dependence between these two events. If John had not gotten out of bed in the morning, then he would not have increased his pace while walking in the afternoon. However, it is not the case that John getting out of bed in the morning causes his increase in pace in the afternoon. Nonetheless, this is what the simple counterfactual analysis suggests.[85]

Again, Lewis responds to this issue, developing his approach to accommodate degrees of sensitivity in a causal chain. Within any causal chain, there will be varying degrees of sensitivity. What this means is that if the event in the causal chain had occurred but other circumstances had

[81] Lewis, 'Causation as Influence', p. 188.
[82] Bernstein, 'Lewis' Theories of Causation and their Influence', p. 162.
[83] Lewis, 'Causation as Influence', p. 188.
[84] S. Mumford and R. L. Anjum, *Causation: A Very Short Introduction*, Oxford, Oxford University Press, 2013, p. 61.
[85] This issue can be extended to many cases. For example, me taking a shower this morning would not have occurred if the Big Bang did not take place, but the Big Bang is obviously not the cause of me taking a shower this morning.

been different, the effect would not have occurred. To the extent that this is so, the dependence is sensitive.[86] For example, the relation between John's getting out of bed and John increasing his pace in the afternoon is rather sensitive. If John had gotten out of bed in the morning but did not realise he was late for a meeting, he would not have increased his pace.

For Lewis, an event in a particular causal chain is *the cause* of the given effect if the relation of counterfactual dependence between the two events is of 'a comparatively insensitive kind.'[87] So, John's getting out of bed is not *the cause* of John increasing his pace because the relationship between these two events is sensitive. In contrast, John realising he was late for a meeting is *the cause* of John increasing his pace because the relationship of counterfactual dependence is comparatively insensitive. In near possible worlds where John realises he's late for his meeting and other factors are still slightly different, he still increases his pace. Thus, Lewis' invocation of counterfactual sensitivity allows him to identify *the cause* of a particular event, meaning he does not cast the 'causal net' too wide.

Of course, these two types of counter-examples do not exhaust the debate regarding the plausibility of a counterfactual analysis of causation. Another objection is that a relation of counterfactual dependence is not strong enough to constitute a causal relation. One may suppose that it is just not enough that if the purported cause had not occurred the effect would not have occurred; a cause must, in some way, make the effect occur. The challenge with this view is offering a plausible, positive metaphysical account of how causes achieve this. As we saw with necessitarian accounts, they face the challenge of outlining how causes necessitate their effects when it is conceivable that the cause can occur without producing the effect.[88] I am not claiming that this

[86] Lewis, *Philosophical Papers. Vol. 2*, p. 186.
[87] Lewis, *Philosophical Papers. Vol. 2*, p. 186.
[88] The standard response is to dispute the claim that conceivability offers insight into possibility when it comes to causation.

challenge is insuperable but that it is plausible to support a counterfactual analysis of causation to avoid this issue.[89]

Indeed, this analysis of causation remains one of the standard accounts in the philosophical literature.[90] Thus, adopting a counterfactual analysis of natural causation is an appealing option for Route Two. It offers an opportunity to preserve a commitment to genuine natural causation in a philosophically robust manner while still denying necessary connections in nature. To further assess if this route is preferable to Route One, I will now turn to offering a plausible conception of concurrentism that pays due respect to natural and divine causality in the context of the Lewisian account of miracles.

2.2. The Lewisian Account and Concurrentism

If, on Route Two, we adopt a counterfactual approach with respect to natural causality, how should we understand divine causality? It is unappealing to also adopt a counterfactual approach with divine causation. If God's causal activity is also understood counterfactually, then the relation between divine and natural causality is univocal. Both divine and natural causality use the term 'cause' in the same way, referring to a relationship of counterfactual dependence. This is problematic because it equates God's causality with nature's causality, thereby undermining the transcendence of God.[91] It also poses a challenge for a concurrentist model of divine and natural

S. Yablo, 'Is Conceivability a Guide to Possibility', in S. Yablo, *Thoughts: Papers on Mind, Meaning, and Modality*, Oxford, Oxford University Press, 2008, pp. 39-78.

[89] I take it that the choice between different well-developed approaches to causation is an assessment of the virtues and vices of each approach and making a decision based on your wider metaphysical commitments.
Lewis, *Philosophical Papers. Vol. 2*, X.

[90] In *The Oxford Handbook of Causation* (2009), counterfactual theories are considered as one of the five standard approaches to causation. In *Alternative Approaches to Causation: Beyond Difference Making and Mechanism* (2024), Yafeng Shan identifies the counterfactual approach as one of eight common approaches to causation in metaphysics.
H. Beebee, C. Hitchcock, and P. Menzies (eds.), *The Oxford Handbook of Causation*, Oxford, Oxford University Press, 2009;
Y. Shan, 'Some Reflections on Causation', in Y. Shan (ed.), *Alternative Approaches to Causation: Beyond Difference Making and Mechanism*, Oxford, Oxford University Press, 2024, p. 1.

[91] I. Silva, 'A Cause Among Causes? God Acting in the Natural World', *European Journal for Philosophy of Religion*, vol. 7, no. 4, 2015, p. 106.

causality. As outlined in Chapter Three, a common strategy in trying to accommodate divine and natural causality is to suppose that both God and a natural entity are sufficient causes of a given effect, *in different ways*. Such a claim is not possible if divine causality is understood through a counterfactual analysis like natural causality.

Instead, divine causation should be understood analogously to natural causality. As explored in Chapter Three on Thomism, an analogical approach to divine and natural causation affirms God's intimate role in nature while appreciating the complete otherness of God. I propose that, on Route Two, divine causality is understood as God's will necessitating a given natural effect. There is a clear necessary connection between God's will and any effect that God wills.[92] First, God is infinitely perfect and, consequently, all-powerful, such that if God wills an effect, it must occur. [93] Secondly, God is the ground of all being. The existence of all natural entities is derived from and continually depends upon God. With the complete dependence of the natural order upon God, God's willing an effect in nature necessarily leads to that effect occurring.[94]

Here, we have a concurrentist model of divine and natural causality for the Lewisian account. For any given natural effect, the same effect can be wholly attributed to both a natural cause and God. A natural cause serves as a genuine whole cause for the natural effect because the effect counterfactually depends on the natural cause. God serves as a genuine whole cause for the natural effect because God necessitates the occurrence of the effect. Both natural and divine causality

[92] Hume disputes such a connection, writing, 'are we not equally ignorant of the manner or force by which a mind, even the supreme mind, operate either on itself or on body?' To respond to Hume's claim, a distinction can be made between knowing the manner by which God produces effects and knowing that God's will, in virtue of God's omnipotence, necessitates its effects. We can remain ignorant of the former while still upholding the latter.
Hume, *An Enquiry Concerning Human Understanding*, p. 67.
[93] Malebranche, *The Search After Truth*, p. 448.
[94] Such a claim is similar to Aquinas' emphasis on the obediential potentiality of all created substances. I avoid invoking the concept of obediential potentiality here because this concept is grounded in Aquinas' hylomorphic metaphysics which is antithetical to the Humean approach. Rather, I am making a broader claim based on the dependency of nature.

merit the title 'cause' as they both make a difference to the occurrence of the effect, just in different ways.

Now, one may question whether there is any tangible difference between the occasionalism of Route One and the proposed concurrentism of Route Two. Both approaches deny necessary connections in nature and suppose that God necessitates every natural effect. Indeed, within occasionalism, even a counterfactual relation has been posited between occasional causes and natural effects.[95] Where these two approaches disagree is on the nature of a natural cause. The occasionalist approach of Route One holds that natural causation requires necessary connections, whereas the concurrentist model of Route Two denies this. It does this by drawing from a counterfactual analysis of causation prominent in contemporary philosophy.

2.2.1. Challenges with this Concurrentist Model

A key concern with concurrentism is whether such an approach can pay due respect to both divine and natural causality. Does a commitment to genuine natural causality impinge upon divine causality? This does not seem to be a problem for the concurrentist model offered in Route Two. The power of God is not threatened because natural causality does not necessitate the occurrence of natural effects, rather relying on the weaker relation of counterfactual dependence. In turn, natural causality is not competing with divine causality.

[95] For example, Freddoso writes, 'the fire is an occasional cause of the searing of the flesh simply by virtue of the fact that the real or proper cause of the searing of the flesh, viz., God, would not have seared the flesh in the same way had the fire not been present.'
Freddoso, 'Medieval Aristotelianism and the Case against Secondary Causation in Nature', p. 84.

2.2.1.1. Is the counterfactual dependence of natural causality undermined?

Does this concurrentist model pay due respect to natural causality?[96] Or, is it actually a soft form of occasionalism? There may be the objection that God's causal action of necessitating natural effects undermines the counterfactual dependence between natural causes and natural effects. Take the case of Billy throwing a rock and causing a window to shatter. On the counterfactual analysis of natural causation, Billy's throwing of the rock causes the window to shatter because had Billy not thrown the rock, the window would not have shattered. However, if God necessitates every natural effect, why think this counterfactual is true? Whether the window shatters or not wholly depends on God. So, even if Billy had not thrown the rock, the window still would have broken if God had willed it.

Nonetheless, in Chapter Five, I argued that we have good reason to think God would create an ordered, uniform world.[97] An appreciation of this helps to respond to the objection. Since God seeks to uphold uniformity in the natural world, we have good reason to think that in near possible worlds where Billy refrains from throwing the rock, the window would not break. God would be reticent to randomly break the window and unnecessarily undermine the uniformity and intelligibility of the natural order. Consequently, an appreciation of God's desire to uphold the uniformity of nature grounds the counterfactual basis of natural causation. Thus, divine causality does not undermine the counterfactual relation between natural causes and effects, but rather underpins it.

[96] I raised this concern with the Thomist model of concurrentism in Chapter Three. Later in the chapter, I compare this Lewisian model of concurrentism with the Thomist model.
[97] Pruss, 'God, Chance, and Evolution', p. 378.

2.2.1.2. Does this concurrentist model collapse into occasionalism?

Another way that divine causality might impugn upon natural causality relates to Lewis' claim that 'the cause' of a given effect must be of a comparatively insensitive kind. It is through this claim that Lewis is able to establish John realising he was late for a meeting as 'the cause' of John picking up his walking pace rather than, say, John getting out of bed in the morning. The counterfactual dependence between John picking up his pace and realising he's late for a meeting is less sensitive than between John picking up his pace and getting out of bed in the morning.

It seems that the least sensitive counterfactual relation for any natural effect is with God. If God wills a natural effect, the effect necessarily occurs. Such a relationship is insensitive to any other factors. In contrast, the counterfactual relation between a purported natural cause and a natural effect will always be sensitive in that the dependence will be broken if God wills it. So, if, per Lewis, *the cause* of an event is the event that has the least sensitive counterfactual relation, then God is the one true cause of every natural effect, with there being no true natural causes. This proposed account of concurrentism then seems to collapse into occasionalism.

In response to this objection the theist has principled reasons for excluding God from the assessment of the least sensitive relation of counterfactual dependence in the causal chain. God's causal action is on a different ontological plane compared to natural causation. To consider God as one of the candidates for the most insensitive relation of counterfactual dependence would reduce God to acting as a natural cause. It would be to neglect the complete otherness of God and judge God's causal action by the standards of natural causality. Such an approach again problematically relies on a univocal understanding of causation, thereby undermining the transcendence of God. Therefore, God should not be considered as a candidate for the most insensitive relation of counterfactual dependence when looking to establish the natural cause for

a given natural effect. This preserves divine transcendence and the integrity of there being a given natural cause for any given natural effect.

Thus, the model of concurrentism that I have proposed for the Lewisian account of miracles preserves both divine and natural causality. By drawing on a counterfactual theory of natural causation, this account adopts a robust philosophical conception of natural causation, remains committed to no necessary connections in nature, and maintains that there is genuine natural causation. Combining this conception of natural causation with a notion of divine causation as necessitating a given effect serves to preserve both natural and divine causality. Divine causality is not diminished because natural causality relies on the weaker relation of counterfactual dependence rather than necessitation. Natural causality is preserved through the emphasis on God not being 'a cause among causes,' therefore eliminating God from consideration in the chain of counterfactual dependence.

In our assessment of Route One, I contended that occasionalism is a last-resort, only to be adopted if natural and divine causality cannot both be preserved. From the model offered in Route Two, in a theistic Humean metaphysics, this last-resort can be avoided. Therefore, the Lewisian account ought to follow Route Two, offering a concurrentist model where natural causation constitutes counterfactual dependence and divine causation constitutes necessitation.[98] So, I began this chapter by highlighting the common fear that a theistic Humean metaphysics leads to occasionalism and does not respect the causal integrity of nature. In formulating this concurrentist model for the Lewisian account, I have demonstrated that this fear can be avoided and a theistic Humean metaphysics can adopt concurrentism.

[98] Given the approach of Route Two, that is, (1) a denial of necessary connections and (2) the view that natural causation is a relation of counterfactual dependence, it is still possible that God could create a world with no natural causation. In such a world, there would be no relations of counterfactual dependence between natural events. So, occasionalism is still possible on Route Two. However, I am advocating the position that God grounds counterfactual relations between natural events to uphold natural causation.

2.3. Immanence, Transcendence, and Intrinsic Wonder

From this extensive examination of divine and natural causality and advocating this concurrentist model, I have argued that the Lewisian account meets one of the three theological criteria established in Part One. It respects the causal integrity of the natural order. Now, I will argue that this account also preserves the immanence and transcendence of God, as well as upholding the intrinsic wonder of miracles.

2.3.1. Divine Immanence

On the concurrentist model I propose, God is the complete cause of every natural effect. Thus, God is not some distant God who created the natural order and then lets it run of its own accord. Rather, God plays an intimate role in all operations of nature. God also underpins natural causation by grounding the relations of counterfactual dependence between natural cause and effect. Furthermore, in Chapter Five, I outlined how God serves as the ontological bedrock of the Humean Mosaic, which is the foundation of the natural order. God not only gives the Humean Mosaic existence, but preserves it in being, continually depending upon God as the source of existence. In speaking of preserving God's immanence, Kathryn Tanner writes that divine agency must be required 'for any power, operation and efficacy of created beings.'[99] As, on the Lewisian account, God (1) gives existence to the natural order, (2) upholds the natural order in existence, (3) is the cause of every natural effect, and (4) grounds the causality of natural entities, it upholds divine transcendence.

[99] Tanner, *God and Creation in Christian Theology,* p. 91.

2.3.2. Divine Transcendence

God's immanent role in nature does not harm God's transcendence. On the theistic Humean metaphysics of Lewisian miracles, God's causal action is on a different plane to natural causation. Such an analogous approach to divine causation preserves God's transcendence, avoiding the threat of reducing God to a cause among natural causes. Furthermore, God's existence is of a different order to natural entities. While natural entities exist as *this* or *that* on the Humean Mosaic, God is complete, perfect existence, serving as the ontological bedrock of the Humean Mosaic, which constantly depends upon God for its existence.

To uphold divine transcendence, God's action in the world cannot be on the same level as natural entities. Tanner expresses this view, writing:

> God's transcendence prohibits talk of God's working with created causality in any way that implies the parity of divine agency and created causality within a common causal nexus or plane.[100]

By differentiating the nature of God's existence and causation from natural entities in this analogical sense, the Lewisian account of miracles upholds divine transcendence.

In defending the Lewisian account's preservation of divine immanence and transcendence, notable structural parallels emerge with Aquinas' exposition of divine action in nature, as discussed in Chapter Three. Given the theological robustness of this approach, I have drawn upon Aquinas in several respects. I have emphasised how God (1) creates natural entities, (2) preserves them in being, and (3) acts through them. The Lewisian framework also invokes the absolute ontological

[100] Tanner, *God and Creation in Christian Theology*, p. 94.
While, strictly speaking, Tanner's point is about talking of God, it can easily be extended to the metaphysical realm.

dependence of nature upon God and the importance of an analogical understanding of divine existence and causation.

Nonetheless, significant divergences remain. Aquinas' intricate metaphysics grounds the uniformity of nature in the forms and powers of natural substances, and offers an instrumental explanation of God's action in nature. In contrast, the Humean metaphysics of the Lewisian account is more ontologically sparse. Therefore, I have grounded the uniformity of nature in God's creation of the Humean Mosaic, the total distribution of natural properties in the history of the universe. Additionally, I formulated a concurrentist model in terms of a counterfactual analysis of natural causation. Thus, while the Lewisian account has taken much inspiration from Aquinas, it reframes these ideas in a radically different philosophical framework. In the next section, I argue that this reframing inaugurates a plausible account of miracles in an alternative Humean metaphysics.

2.3.3. The Intrinsic Wonder of Miracles

Does this Lewisian account of miracles preserve their intrinsic wonder? In Chapter Two, I argued that miracles are intrinsically wondrous, with an event being so if the cause of the event is absolutely unknowable. The intrinsic wonder of miracles makes them uniquely impressive, meaning they are particularly effective at exemplifying the divine power, vitalising faith in Christ, justifying theological truths, and aiding the faithful. In Chapter Five, I established the possibility of Lewisian miracles as events beyond or contrary to the BSA laws of nature. To further affirm their intrinsic wonder, I will now consider the causal basis of miracles on the Lewisian account.

First, miracles may be directly caused by God. In such cases, God would necessitate the occurrence of these events without them counterfactually depending on anything else.[101] Take the miracle of Jesus turning water into wine in John 2. God is the cause of this event because God willing the water to turn into wine necessitated the event's occurrence. There is no natural cause because the event of the water turning into wine does not counterfactually depend on any natural events. In near possible worlds where they ran out of wine at Cana, Jesus does not turn water into wine. God is the sole cause of this miracle.

This preserves the intrinsic wonder of miracles because God is the most hidden cause. This is due to God's causal action being on a different plane to natural causation. God's causal action is not constrained in any way, restricted to producing a particular effect in particular conditions, meaning that divine action is not susceptible to empirical examination. While we are aware that God willing an event necessitates the occurrence of that event, due to God's radically different nature, we have no deeper insight into how this occurs. Therefore, divine causality is absolutely unknowable and such miracles are intrinsically wondrous.

In Chapter Three, I considered whether miracles may be caused by both God and a created entity. In various miracles, it seems that humans play an active causal role. For example, Moses' lifting of the rod and parting of his hands seems to cause the parting of the Red Sea (Exodus 14:16). Or, Acts 6:8 states that 'Stephen, a man full of God's grace and power, performed great wonders and signs among the people.'[102] I outlined how Aquinas' metaphysics may accommodate created causes of miracles provided that the powers of these entities to cause miracles are temporary and singular. Such causes of miracles remain inscrutable and absolutely unknowable.

[101] While throughout this chapter, I have referred to natural causation as constituting a relation of counterfactual dependence, it would be more accurate to state that created causation – that is, causation by a created entity – is constituted by a relation of counterfactual dependence. This allows there to be anomic, created causation, which I draw upon when it comes to miracles by cooperation.
[102] Acts 6:8 (New International Version).

Similarly, created entities may play a causal role on the Lewisian account of miracles without undermining their intrinsic wonder. This is provided that their causal action is anomic, singular, and temporary. For Moses to cause the parting of the Red Sea, the sea's parting would counterfactually depend upon Moses raising his staff and parting his hands. In near possible worlds where Moses does this, the sea parts. In near possible worlds where Moses does not do this, the sea does not part. His ability to part the Red Sea would be a singular, temporary counterfactual relation that God upholds for the sole purpose of causing this miracle. Due to the rarity and unusualness of this cause, it would lie outside the laws of nature. Any attempt to accommodate it would overly complicate the system, meaning that Moses causing the parting of the Red Sea would be anomic and beyond the laws of nature.

Such a cause would be absolutely unknowable. As I argued in Chapter Three, to know a created cause requires observing the created cause over multiple occasions, being able to examine the nature of the effect produced and the background conditions. On the Lewisian approach, only through such repeated observations can the counterfactual relation between the given cause and effect be discerned. Because miracles by cooperation – that is, miracles that are caused by God through created entities – occur via the created entities acting anomically on a single occasion, the nature of these causes remains unknowable. Thus, on this account, miracles by cooperation are intrinsically wondrous.

In this section, we arrive at the final formulation of miracles on the Lewisian account: miracles are events beyond or contrary to the BSA laws, caused either by God directly or through anomic causes. This upholds the absolute unknowability of the causes of miracles, thereby preserving their intrinsic wonder. To be clear, this is not intended as an exhaustive definition of miracles in all their theological dimensions, but rather as a metaphysical account of miracles as they relate to the BSA

laws of nature. This allows space for further theological interpretation while grounding the account in a rigorous metaphysical framework.

So, in this chapter, I have developed this thesis' Lewisian account of miracles to show that it:

1. Preserves the immanence and transcendence of God;
2. Respects the causal integrity of the natural order;
3. Upholds the intrinsic wonder of miracles.

Thus, this account meets the standards of theological plausibility developed in Part One of this thesis. To further establish this account's plausibility, I will now compare it to the three theological approaches examined in Part One and the Thomist-dispositionalist account, outlined in Chapter Four.

Section Three: A Comparative Analysis

3.1. Interventionism

Interventionism is an approach to miracles and divine action, where nature is a self-sufficient system governed by its laws, such that God must intervene to act and cause miracles. It adopts an incompatibilist view of divine and natural causality. The occurrence of a natural cause rules out the possibility of divine action. In Chapter One, I argued that this approach draws too sharp a distinction between God and nature, undermining divine immanence and transcendence.

The Lewisian account of miracles offered in this thesis avoids the pitfalls of interventionism. It advocates a compatibilist approach to divine and natural causality, where God can act through nature, with the same effect having both God and a natural entity each as a whole cause. It further affirms an intimate connection between God and nature where God creates natural entities, preserves them in being, and underpins natural causation by grounding the counterfactual relations

between natural causes and effects. Moreover, it upholds divine transcendence by placing divine existence and causality on a different ontological plane.

3.2. Theistic Naturalism

Theistic naturalism affirms a compatibilist approach, emphasising that nature is inextricably connected to, dependent upon, and orientated towards the Will of God. Where the Lewisian account diverts from theistic naturalism is theistic naturalism upholds divine action to always be nomic. God always acts through natural causes in accordance with the laws of nature. In Chapter Two, I highlighted several difficulties with this approach. Denis Edwards' invocation of primary and secondary causation resorts too quickly to fideism and his subjective definition of miracles robs them of their intrinsic wonder. Christopher Knight's panentheism undermines divine transcendence and the causal integrity of nature. While his invocation of higher laws for miracles upholds their intrinsic wonder, it overly restricts God's action to nomic divine action.

The Lewisian account differs from theistic naturalism in considering miracles to be events above or beyond the BSA laws of nature that are caused by God directly or through anomic causes. In affirming that God may act independently of natural, nomic causes, this account does not restrict divine action and fully respects the intrinsic wonder and unique theological significance of miracles.

3.3. Thomism

On Thomism, God is the ground of all being, with God creating natural substances, upholding them in being, and acting through natural causes. When it comes to miracles, God may act directly to cause events above, beyond, or contrary to nature. I argued that to keep in line with Aquinas' analysis of instrumental causation, his conception of miracles ought to be developed to allow, in

the case of miracles by cooperation, created agents to be, along with God, causes of miracles. This is provided that the powers by which these agents miraculously act are so rare and temporary that they remain intrinsically unknowable. Of the three theological approaches considered in Part One, I argued that Thomism is the most robust. This is because it upholds divine immanence and transcendence, preserves the intrinsic wonder of miracles, and makes an admirable attempt at respecting the causal integrity of nature.

The Lewisian account has drawn on various themes within Thomism in terms of an analogical understanding of causation, the complete continued dependence of nature upon God, and how God gives natural entities being, preserves them, and acts through them. Nonetheless, due to the distinct metaphysical frameworks of Thomism and Humeanism, the Lewisian account formulates these themes in significantly different ways. This can be evidenced through a comparison between the Lewisian account and the Thomist-dispositionalist account of miracles.

3.4. The Thomist-Dispositionalist Account

The Thomist-dispositionalist account understands miracles as events beyond or contrary to the dispositionalist laws that are caused by God directly or through anomic dispositions. In Chapter Four, I argued that this account represents the gold standard when it comes to accounts of miracles. It admirably combines a theologically robust approach to miracles and divine action with a philosophically respectable conception of the laws of nature. So, how does this thesis' Lewisian account of miracles compare to this Thomist-dispositionalist account?

As contended in Chapter Four, a limitation with the Thomist-dispositionalist account is that dispositionalism can plausibly be rejected on philosophical grounds. One may object to its denial of the contingency of the laws, potentially entailing a vicious regress, or adopting a bloated

ontology. The Lewisian account of miracles provides an alternative to theists who take philosophical umbrage with dispositionalist laws.

In Chapter Five, I defended the philosophical plausibility of the BSA conception of the laws, particularly from a theistic perspective. The BSA conception upholds the contingency of the laws, avoids a vicious regress through adopting a categoricalist view of properties, and has a sparse ontology. Moreover, it can distinguish between laws and accidental regularities, draws a strong link between the laws and the practice of science, and upholds a single, objective set of laws. Thus, the Lewisian account is an appealing option for theists who are philosophically enamoured by the metaphysics of Humeanism.

Moreover, I have contended that one can adopt the Lewisian account without forgoing theological robustness. In Chapter Five, I argued that the BSA account's commitment to Humean supervenience may be restricted to the natural plane to accommodate the existence of God. Secondly, a theistic Humean metaphysics eases many of the concerns with the BSA account by providing a deeper metaphysical basis for the Humean Mosaic. Thirdly, in this chapter, I showed how the Lewisian account:

1. Preserves the immanence and transcendence of God;
2. Respects the causal integrity of the natural order;
3. Upholds the intrinsic wonder of miracles.

3.5. Concurrentism

Are there any theological reasons for preferring the Lewisian account over the Thomist-dispositionalist account? A key theme throughout Part One was whether an adequate metaphysical explanation for how God acts through natural causes can be offered. I commended Aquinas'

detailed explanation, based on his notion of God as pure being, instrumentality, and an analogical understanding of causation. In spite of these merits, I argued that Aquinas does not decisively secure the integrity of natural causes. This is due to God's intimate role in nature and flaws in Aquinas' instrumental explanation, especially with dissimilarities in the comparison between God and natural substances, and a natural principal agent and an instrument.

In light of these challenges, the Lewisian model of concurrentism may motivate theists to adopt this account of miracles. This model effectively eases the quandary of the interplay between divine and natural causality. It conceives of divine causality as necessitating the natural effect and natural causality as having a relation of counterfactual dependence with the natural effect. Divine causality is preserved because natural causation relies on a weaker counterfactual relation. Natural causality is respected because God is excluded from being a candidate for the relation of counterfactual dependence between natural cause and effect. This is due to God's transcendence and complete otherness.

An advocate of the Thomist-dispositionalist approach may object to the view of natural causality that the Lewisian model adopts. In Chapter Four §3.1.1, I highlighted a disagreement among Thomist scholars as to whether, for Aquinas, natural causes necessitate their effects or rely on a weaker relation of some form of metaphysical dependence. Whatever side one takes, Thomists advocate a stronger conception of natural causation than counterfactual dependence. Therefore, they may contend that the concurrentism of the Lewisian account only eases the interplay between divine and natural causation by relying on an implausibly weak notion of natural causation. In turn, it may be that the apparent tension within the Thomist model is preferable to the weaker view of natural causation in the Lewisian model.

So, the decision between whether to prefer the Lewisian model of concurrentism to the Thomist model is this: is it better to adopt an account that offers a clear explanation of the interplay between divine and natural causation through a weaker notion of natural causation as counterfactual dependence or an account that has not convincingly offered a wholly clear explanation of the interplay between divine and natural causation but relies on a stronger notion of natural causation? I propose that it is plausible to favour the former. The Lewisian account draws on a philosophically respectable conception of causation that has the arsenal to defend itself from the charge that it denigrates natural causation. It offers an explanation, which, I suggest, effectively eases the tension between divine and natural causation. I am not claiming that the Lewisian model is decisively superior to the Thomist one but rather that it is plausible to favour the Lewisian explanation and, for this reason, prefer the Lewisian account of miracles over the Thomist-dispositionalist one.

3.6. Teleology and Contingency

There are other theological reasons for favouring either a dispositionalist or Humean metaphysics. One potential reason for a theist to prefer a dispositionalist metaphysics over a Humean one relates to teleology. Ben Page argues that dispositionalism 'revives a teleological conception of nature.'[103] He distinguishes between external and internal teleology. External teleology involves purpose being imposed upon a thing from the outside, such as a watchmaker combining the parts of a watch to tell the time. Whereas internal teleology refers to a thing intrinsically having a purpose in virtue of its very nature. This distinction was largely neglected in the Early Modern Period as it was thought that God externally imposed the laws of nature on natural substances.[104] Nonetheless, dispositionalism 'reintroduces the distinction between external and internal teleology.'[105] A disposition is directed towards its manifestation, having a particular end that it is its purpose or

[103] Page, 'The Dispositionalist Deity', p. 126.
[104] Barbour, *Religion and Science: Historical and Contemporary Issues*, p. 34.
[105] Page, 'The Dispositionalist Deity', p. 127.

telos to achieve. A theological virtue of reintroducing internal teleology is that it may help to reformulate a Thomist teleological argument, the fifth way, that draws on final causality rather than complexity.[106]

On a theistic Humean metaphysics, there is no intrinsic purposefulness. For this approach adopts a categoricalist conception of properties, where the essence of a property is grounded by an intrinsic, primitive *this-ness*, rather than a directedness to any manifestation. This is not to say that there is no space for teleology in the Humean world. Rather, the teleology is imposed extrinsically. It exists in the Humean world through the arranged structure of the natural order rather than the intrinsic nature of properties. For example, in theistic Humeanism, the purpose of salt to dissolve in water occurs through God structuring the universe in such a way that, in given conditions, salt dissolves in water. There is nothing intrinsic to salt that makes this the case but rather through God's ordering of the universe. So, while the theistic Humean metaphysics of the Lewisian account can accommodate teleology, dispositionalism is better suited to highlight the intrinsic purposefulness of the universe.

Nonetheless, there are other theological factors that point towards a theistic Humean metaphysics over dispositionalism. In particular, the metaphysics of Humeanism effectively highlights the radical contingency of the natural order. Dispositionalism affirms necessary connections in nature. It supposes that a property's stimulus condition is necessarily connected to that property's manifestation. Given a property's stimulus condition being met and in the absence of any mitigating factors, the property will necessarily produce its manifestation. In contrast, Humeanism denies any necessary connections in nature. Any property can be connected with any other

[106] Page, 'The Dispositionalist Deity', p. 126.

property and the existence – or non-existence – of one event never entails the existence – or non-existence – of another event.

Such an emphasis on the contingency of nature is closely aligned theologically with an emphasis on the wonder of the natural order and the freedom of God. For example, Wolfhart Pannenberg writes that in the contingency of individual events, we find 'an expression of the freedom of the Creator.'[107] Since no event necessitates another event, the fact that nature is arranged so is an expression of the creative act of God. Indeed, it further highlights the dependence of nature upon God. It is through God not only that nature has a particular structure, but that it has a structure which contains uniformities examinable and codifiable by humans. Expressing this idea, Pannenberg writes: 'With the contingency of occurrence, then, a direct relation of all individual events to the divine origin of all things is posited.'[108] Thomas Torrance draws a similar connection between the contingency of nature and the need for a deeper ground of rationality. He writes:

> the baffling interconnection of contingence and intelligibility in the universe cries out for an originating reason for this state of affairs. Thus the contingence and order…carry us back to their ground in God the Creator.[109]

If no natural event ever necessitates another natural event, the order and intelligibility of nature is wondrous, pointing towards a deeper source of rationality, namely God, to underpin the regular course of nature.[110] The Humean metaphysics of the Lewisian account of miracles is particularly suited at bringing out these ideas. Its denial of necessary connections, from a theistic lens, emphasises nature's dependency upon God for its uniformity and intelligibility.

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[107] Pannenberg, *Systematic Theology, Volume 2*, p. 54.
[108] Pannenberg, *Systematic Theology, Volume 2*, p. 54.
[109] T. Torrance, *Divine and the Contingent Order*, Oxford, Oxford University Press, 1981, p. 29.
[110] Here, I am not offering an argument from design, where the uniformity of nature provides evidence for the existence of God. Rather, I am stating that, from a theistic perspective, the contingency and intelligibility of nature aptly highlight God's underpinning of the order of nature.

Again, this is not to say that a dispositionalist metaphysics cannot accommodate the contingency of nature. Ignacio Silva, in *Providence and Science in a World of Contingency* (2022), goes to great lengths in outlining how a Thomist metaphysics makes space for contingency in nature. Rather, I am asserting that in much the same way that a dispositionalist metaphysics may be better suited to accommodate teleology, a Humean metaphysics may be better suited to accommodate nature's radical contingency.

So, let me bring us back to David Lewis' comment on decision-making in metaphysics. He writes:

> when all is said and done, and all the tricky arguments and distinctions and counterexamples have been discovered, presumably we will still face the question which prices are worth paying, which theories are on balance credible, which are the unacceptably counterintuitive consequences and which are the acceptably counterintuitive ones. On this question we may still differ. And if all is indeed said and done, there will be no hope of discovering still further arguments to settle our differences.[111]

I take it that this point applies to making metaphysical decisions in a theological context as well. There can be genuine metaphysical disagreements in theology that do not arise from misunderstanding each other's positions but from a disagreement on 'which prices are worth paying.' In such cases, one can accept that while both positions are plausible, due to a theist's prior metaphysical commitments, values, and trade-offs, they favour one position over another.

In light of this, one may plausibly adopt the Lewisian account of miracles and its theistic Humean metaphysics. A theist who places great importance on the contingency of the natural order over, say, internal teleology, has good reason to adopt the theistic Humean metaphysics of the Lewisian account over the dispositionalism of the Thomist-dispositionalist one. Furthermore, a theist may favour the Lewisian account in virtue of its effective concurrentist explanation of the interplay

[111] Lewis, *Philosophical Papers. Vol. 2*, X.

between divine and natural causation or because they find the BSA conception of the laws more philosophically compelling. Again, I am not claiming that the Lewisian account is conclusively superior to the Thomist-dispositionalist account but that such reasons establish it as an appealing alternative.

Conclusion

In this chapter, I have defended the plausibility of the Lewisian account of miracles as events beyond or contrary to the BSA laws of nature that are caused by God directly or through anomic causes. First, I considered the objection that the Lewisian account leads to occasionalism. I argued that a denial of necessary connections in nature does not entail a denial of natural causation. By drawing on a counterfactual analysis of natural causation, I offered a concurrentist model of divine and natural causation. On this model, divine causality necessitates the natural effect and natural causality has a relationship of counterfactual dependence with the same effect. This model avoids the position of occasionalism, respecting the causal integrity of nature and preserving the immanence and transcendence of God. As miracles are beyond or contrary to the BSA laws and caused directly by God or through anomic causes, I contended that this account upholds their intrinsic wonder. Therefore, the Lewisian account of miracles meets the three criteria of theological plausibility established in Part One. Finally, I argued that this account is an appealing alternative to the Thomist-dispositionalist account in virtue of its alternative metaphysics, model of concurrentism, and emphasis on the radical contingency of nature.

Conclusion

In the Introduction, I elucidated a simple picture of nature that is pervasive in modern thought: nature runs according to a set of universal, exceptionless laws to which every event adheres. It is a role of science to uncover these laws and explain the occurrence of every single phenomenon. The possibility of miracles – as aberrations of nature's order – is eliminated entirely. Here, the scientific commitment to laws of nature is pitted against the theological commitment to miracles. The adoption of one entails the rejection of the other. Thus, the theist is placed in a seemingly intractable dilemma: either reject their foundational religious belief in miracles or oppose the methods and findings of modern science.

This thesis has sought to challenge that picture at its core. The theist, when it comes to miracles and their relation to the laws of nature, does not have to compromise on theological faithfulness, metaphysical specificity, or scientific legitimacy. Once one adopts a robust God-nature relationship, many of the tensions between miracles and the laws dissipate. Science is not the final arbiter in determining God's miraculous action. Rather, the laws of nature, at their deepest level, are ultimately orientated towards, dependent upon, and directed by the Will of God. They do not hold unequivocally but in as much as required by divine providence. Thus, God causing events beyond or contrary to the laws is possible and does not encroach upon nature. Similarly, conceiving miracles as, in principle, inexplicable by science does not denigrate the status of science. Rather, it emphasises the absolute uniqueness of miracles and their insusceptibility to empirical scrutiny.

Indeed, contextualising miracles and their relation to the laws in a rich theological framework unveils a much deeper interplay between the two concepts. The variety of metaphysical accounts of the laws of nature in contemporary analytic philosophy shows that nature's regularity can be formulated in diverse ways. Thus, the understanding of the laws that one may adopt significantly

influences how one conceptualises divine action and the nature of miracles, as beyond or contrary to nature's order.

It has not been the aim of this thesis to argue that one particular understanding of the laws best accommodates miracles and should therefore be adopted by theists. Rather, I have explored how the theological virtues of (1) preserving divine immanence and transcendence, (2) respecting the causal integrity of nature, and (3) upholding the intrinsic wonder of miracles may be met in radically different metaphysical frameworks of lawhood. In particular, this thesis' focus has been developing a plausible account of miracles in relation to David Lewis' Best System Analysis (BSA) conception of the laws.

Argument Summary

In drawing this study to a close, a brief review of this thesis' structure will highlight how its theological and philosophical strands were developed in tandem. Part One established the theological foundations for this inquiry by examining three frameworks for miracles and divine action: interventionism (Chapter One), theistic naturalism (Chapter Two), and Thomism (Chapter Three). I concluded that, while not without challenges, Thomism offers the most theologically robust approach. From this analysis, I identified three theological criteria that any plausible account of miracles should satisfy:

1. Preserve divine immanence and transcendence;
2. Respect the causal integrity of nature;
3. Uphold the intrinsic wonder of miracles

Part Two shifted to the metaphysics of the laws of nature, setting the philosophical stage for a constructive account of miracles. I defended the plausibility of objective laws of nature and

outlined three major metaphysical approaches to them: Humeanism, semi-Humeanism, and anti-Humeanism. Furthermore, Chapter Four evaluated the appeal and limitations of the Thomist-dispositionalist account, which I characterised as the current 'gold standard'. However, I argued that grounding miracles *solely* in dispositionalism is unnecessarily restrictive. In turn, Chapter Five advanced a philosophical defence of the BSA conception of laws, showing how it can accommodate the possibility of miracles as events outside or against the BSA laws. Chapter Six offered a novel model of concurrentism and finalised the Lewisian account of miracles as beyond or contrary to the BSA laws, caused by God directly or through anomic causes. I argued that this account meets the theological criteria established in Part One and represents a viable alternative to the Thomist-dispositionalist model.

Significance

The central contribution of this thesis lies in its development of the Lewisian account of miracles. I demonstrated in Chapters Five and Six that the BSA conception of lawhood has been largely overlooked and too quickly dismissed in miracle discourse. It is commonly thought to (1) define miracles out of existence and (2) deny natural causation, leading to occasionalism. More broadly, the Humean metaphysics underpinning the BSA laws is often deemed incompatible with theism due to its sparse ontology and perceived metaphysical naturalism. In response, this thesis has developed a theistic Humean metaphysics by situating the BSA laws within a rich theological context. I argued that this Lewisian account not only avoids the standard objections but provides a coherent and faithful understanding of miracles as uniquely exceptional, objective divine acts.

This thesis has also challenged the current tendency, reflected in the Thomist-dispositionalist account, to conceptualise miracles purely in relation to anti-Humean views of the laws. I elucidated two key challenges with this approach. First, dispositionalism is open to reasonable philosophical

rejection. Second, the Thomist model of concurrentism may not fully respect the causal integrity of nature. By advancing a Lewisian alternative that employs a distinct metaphysics and a revised form of concurrentism, this thesis has broadened the scope of theological engagement with contemporary metaphysics on the subjects of miracles and divine action.

More generally, this thesis has provided a much-needed theological and philosophical investigation into miracles within the field of science and religion. By evaluating three major theological approaches to divine action through the lens of their accommodation of miracles, it has established a set of theological criteria that has often been neglected in recent scholarship. Furthermore, by integrating this evaluative framework with a detailed metaphysical analysis of the laws of nature, the thesis has encouraged interdisciplinary dialogue on miracles. Thus, this thesis has advanced the scholarship on both divine action and the metaphysics of laws by offering a theologically grounded and metaphysically innovative formulation of miracles within the field of science and religion.

Further Research

These contributions open various strands of inquiry amenable to further research, particularly at the intersection of theology, metaphysics, and the philosophy of science. The prospects for future work fall into two broad categories. First, it can further legitimise the Lewisian account by considering it in relation to other theological criteria and frameworks beyond those discussed in this thesis. Secondly, it can examine miracles and divine action in relation to other conceptions of the laws and nature beyond the BSA understanding.

The Problem of Suffering

A major concern for any theological reflection upon divine action is the problem of suffering. This thesis did not address this problem directly, as doing so would have diverted attention from its

primary aim: developing a Lewisian account of miracles in light of the three theological criteria set out in Part One. Nonetheless, the implications of this account for the problem of suffering deserve further exploration.

The Lewisian account sustains God's intimate action in nature, serving as a whole cause of every natural effect. This raises two issues:

1. Why does God not act to prevent or alleviate the immense amount of natural and personal suffering in the world?
2. Is God causally responsible for the immense amount of natural and personal suffering in the world?[112]

Thus, there appears a real tension between God's intimate action in nature and the problem of suffering: can one uphold divine immanence and transcendence without God being morally culpable for the immense suffering in the world?[113]

One possible avenue to explore is the means by which the Lewisian account may respond to this quandary. Due to the intractability of the problem of suffering, David Fergusson warns against getting 'side tracked' trying to offer a solution to 'questions surrounding the prevalence of evil.'[114] He rather favours pursuing ethical and pastoral adequacy.[115] A promising response could include a kenotic model where God suffers alongside creation, exploring the value of God upholding the lawful structure of nature, and questioning why God may only cause miracles in exceedingly rare, theologically heightened contexts.[116]

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[112] Ignacio Silva recognises these challenges for the Thomist approach to divine action, too.
Silva, *Providence and Science*, p. 132.
[113] These concerns have led some scholars, such as Philip Clayton and Wesley Wildman, to deny or constrain God's specific and responsive action in the world. Yet, as this thesis has argued, such a denial or constraining undermines God's immanence and transcendence.
Clayton and Knapp, *The Predicament of Belief: Science, Philosophy, and Faith*, p. 49;
W. Wildman, *Effing the Ineffable: Existential Mumblings at the Limits of Language*, Albany, SUNY Press, 2018, pp. 29-62.
[114] Fergusson, *The Providence of God*, p. 216.
[115] Fergusson, *The Providence of God*, p. 216.
[116] Ritchie, *Divine Action and the Human Mind*, p. 64.

Theological Context

This thesis has focussed on the metaphysical relationship between miracles and the laws of nature. I have emphasised that the Lewisian account is not a complete analysis of miracles, but one that concerns their relation to the BSA laws. From drawing on the thought of Augustine and Aquinas, I argued that a central – but not exclusive – aspect of miracles is their absolute unknowability and, therefore, intrinsic wonder. This allows them to be distinctly effective at vitalising faith, exemplifying God's power, helping the faithful, and justifying religious claims.

To develop this account further, future work could explore the broader theological meaning of miracles beyond their metaphysical relation to the laws. While the intrinsic wonder of miracles plays an important theological role, it does not exhaust their religious significance. A deeper engagement with the multifaceted role of biblical miracles and their integration with the doctrines of Christology, revelation, and salvation would contribute to a more holistic account. Thus, this thesis is not the final word on the nature of miracles, but an in-depth metaphysical starting point that invites further theological exploration beyond the laws of nature.

The Epistemology of Miracles

Although this thesis has not primarily focused on the epistemology of miracles – that is, whether one can justifiably believe that a miracle has occurred – it nonetheless contributes to this discussion in several important ways. First, questions of their rationality presuppose a metaphysical account of what a miracle is. Second, the Lewisian account establishes the possibility of miracles, thereby ruling out *a priori* dismissals of their occurrence. Third, as this account understands miracles as beyond or contrary to the BSA laws of nature, an important question for the epistemology of miracles becomes whether it is ever rational to believe that an event beyond or contrary to the

laws has taken place.[117] Forthcoming work could further develop this interdisciplinary perspective, integrating metaphysical, epistemological, and theological insights into the nature of miracles.

A Theistic Humean Metaphysics

A significant contribution of this thesis has been advancing a theistic Humean metaphysics, responding to the major objections with this approach and constructing an account of miracles situated within Humean laws. While this thesis proposed a concurrentist model to explain how God may act within the Humean Mosaic, future work could explore the role of the Holy Spirit and the Word of God in this metaphysics. For instance, does the Humean ontology offer sufficient space for the Spirit's influence? Is the Word of God limited to the ordering of the Humean Mosaic?

Indeed, there appear exciting prospects, both philosophically and theologically, with taking Humeanism in a theistic direction. In Chapter Five, I demonstrated how a theistic underpinning helps bolster the BSA laws and, in Chapter Six, I argued that Humeanism's emphasis on the radical contingency of nature aligns well with key theological commitments. Another theologically significant aspect of this metaphysics may be its commitment to categoricalism, where the nature of an entity is determined by a primitive *this-ness* rather than any particular causal roles. This appears of theological value because it can explain how individuals may undergo radical change, in terms of salvific transformation or God's inauguration of new creation (2 Corinthians 5:17), without losing their identity.

[117] Of course, this is not the only relevant question. Epistemological investigations should also examine the wider context of a purported miracle, reflecting upon whether the event's wider theological significance calls for the occurrence of a miracle.
For such examinations, see: Houston, *Reported Miracles: A Critique of Hume*, pp. 169-207;
Larmer, *The Legitimacy of Miracle*, pp. 79-100.

In this way, a theistic Humean metaphysics not only challenges prevailing assumptions about the incompatibility of Humeanism and theism, but also opens fertile ground for reconceptualising divine action, miracles, and salvation in light of contemporary metaphysical insights.[118]

Alternate Theological Approaches

While this thesis limited its scope to examining three theological approaches to miracles and divine action, a useful area of further research would be to consider how other approaches to divine action make sense of miracles. This would provide a new lens – largely neglected in current scholarship – to evaluate these approaches and conceptualise miracles in different frameworks.

One such approach is pneumatological naturalism, championed by Amos Yong and James Smith, which conceives of divine action as the Holy Spirit *exclusively* working in and through nature.[119] While it faces challenges common to theistic naturalism – particularly concerning the causal integrity of nature and the intrinsic wonder of miracles – its emphasis on the varying intensity of the Spirit's presence raises intriguing questions: if God is immanent to the whole natural order, how may miracles be intensifications of divine action? What is the relationship between the laws of nature and the varying intensities of divine action?

Another approach is process theology, which understands divine action through a process of allurement rather than control.[120] It diverts from various core theological commitments, denying the concept of creation out of nothing in favour of an ontology in which God and the world are

[118] For a recent example of examining salvation in terms of contemporary metaphysics and the philosophy of science, see: E. Qureshi-Hurst, *Salvation in the Block Universe: Time, Tillich, and Transformation*, Cambridge, Cambridge University Press, 2024.

[119] A. Yong, 'Natural Laws and Divine Intervention: What Difference Does Being Pentecostal or Charismatic Make?', *Zygon: Journal of Religion and Science*, vol. 43, no. 4, 2008, p. 979.
For example, see:
J. Smith, *Thinking in Tongues: Pentecostal Contributions to Christian Philosophy*, Grand Rapids, Eerdmans, 2010;
A. Yong, *The Spirit of Creation*.

[120] For more on process theism, see: Griffin, *Reenchantment without Supernaturalism*.

eternally united, thereby also rejecting divine omnipotence.[121] This is interesting when it comes to miracles because, throughout this thesis, I have emphasised that an appreciation of nature's absolute dependence upon God eases the concern that nature rules out the possibility of miracles. In turn, process theology reifies the issue of whether there is some aspect of nature that renders miracles impossible.

Alternate Philosophical Approaches

In Chapter Four, this thesis defended the position that there exists a single, objective set of laws of nature. Nonetheless, I remained sensitive to there being plausible alternate metaphysics of the natural order, such as Nancy Cartwright's 'dappled world,' where the laws form a 'messy patchwork' rather than a single system. This raises intriguing questions for theology, particularly regarding the status and meaning of miracles in a metaphysics lacking a singular law-governed structure. While the volume *Rethinking Order: After the Laws of Nature* (2016), edited by Nancy Cartwright and Keith Ward, explored the theological implications of a 'dappled world', miracles were not considered. Further investigation could reflect upon how the intrinsic wonder of miracles may be upheld if there is no single, objective set of laws that science seeks to uncover.

Final Remarks

This thesis has brought together the concepts of miracles, the laws of nature, and divine action in an original and interdisciplinary manner, offering a substantial contribution to the subject of miracles in the field of science and religion. At its core, it advances a theologically and philosophically plausible account of miracles grounded in David Lewis's BSA conception of the laws of nature – a perspective largely overlooked and too hastily dismissed in existing literature. By demonstrating that Humean laws need not be theologically problematic, this thesis opens new

[121] Fergusson, *The Providence of God*, p. 265.

conceptual ground for reimagining miracles beyond the dominant Thomist-dispositionalist approach.

More broadly, this thesis reasserts the importance of miracles in the field of science and religion, and invites further inquiry at the intersection of theology, metaphysics, and the philosophy of science. In reclaiming the legitimacy of miracles within a law-abiding universe, this thesis bears witness to the possibility that nature, in its nomic elegance, still bears the mark of a God who acts in wonder.

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