DIVINE PROVIDENCE AND NATURAL CONTINGENCY:

NEW PERSPECTIVES FROM AQUINAS ON THE DIVINE ACTION DEBATE

Simon Maria Kopf

Thesis for Doctor of Philosophy in Theology

Science and Religion

Blackfriars Hall

University of Oxford

Hilary Term 2019

Candidate number: 845604

Word count: 99,638

TABLE OF CONTENTS

SHORT ABSTRACT III

LONG ABSTRACT V

DETAILED TABLE OF CONTENTS X

LIST OF ABBREVIATED WORKS XIII

LIST OF ABBREVIATIONS XV

ACKNOWLEDGMENTS XVI

INTRODUCTION 1

PART I: BACKGROUND – ACTIONISTIC PROVIDENCE 13

PART II: A NEW PROPOSAL – SAPIENTIAL-ORDINATIVE PROVIDENCE 120

PART III: AN APPLICATION – REFRAMING AN EVOLUTION DEBATE 266

CONCLUSION 320

BIBLIOGRAPHY 329

SHORT ABSTRACT

Divine Providence and Natural Contingency:
New Perspectives from Aquinas on the Divine Action Debate
Simon Maria Kopf, Blackfriars Hall
Doctor of Philosophy in Theology, Hilary Term 2019

This theological thesis is about conceptualising providence and its relation to contingency. What approach shall we take to arrive at an appropriate concept of the providence of God? Is there a creaturely analogue that can facilitate understanding of a genuinely divine providence?

Within the context of the contemporary divine action debate, the presupposition has been that providence is best understood in terms of divine action modelled on human action. There is a view, however, associated with this presupposition although not properly dependent on it. On this view, either natural contingency *limits* divine providence, or natural contingency is a *locus* of divine providence, but in either case, there is a fundamental incompatibility between natural and divine causation.

The present thesis seeks to offer a new perspective on the conception of divine providence associated with Thomas Aquinas. This alternative models providence in terms of prudence, incorporating not only the intentionality of God but also the immanent teleology of created beings. By re-framing providence in terms of divine transcendence and natural teleology, this thesis argues that this alternative prevents the incompatibility of natural and divine causation. This revised approach not only presents an alternative vision conceiving natural contingency as an *effect* and *means* of providence, but also provides a far richer understanding of providence compatible with contemporary science.

PART ONE illuminates the current standard model by showing the historical positions and driving forces behind the (theo-physical) incompatibilist and action-istic argumentation that has led to the limited positions on the relation of contingency and providence.

PART TWO returns to the source texts of a (theo-physical) compatibilist and teleological alternative, Thomas Aquinas, to reveal a richer account of providence, and undertakes a careful examination of its relation to natural causation, contingency and teleology.

PART THREE shows the advantage of this recovered theological view. By way of illustration, the study shows how the revised account harmonises naturally with the scientific perspective that contingency plays a key role in biological evolution.

LONG ABSTRACT

Divine Providence and Natural Contingency:
New Perspectives from Aquinas on the Divine Action Debate
Simon Maria Kopf, Blackfriars Hall
Doctor of Philosophy in Theology, Hilary Term 2019

This is a theological study about and contribution to the Anglophone divine action debate paying particular attention to the dialogue of science and religion.

The divine action debate is an influential attempt to revitalise the doctrine of providence in light of the modern scientific worldview. The current conversation about divine action has lost momentum, however, due to the conceptual constraints of what has become the standard model: God's non-miraculous providence reduces to non-interventionist objective (special) divine action (NIODA).

In PART ONE of this thesis I enquire into the theological and philosophical background of NIODA. First, I identify theo-physical incompatibilism, or the view that causal determinism precludes particular providence, as the reason for the current deadlock of divine action theories. Second, I argue that the implicit univocal and competitive understanding of divine and natural causation is problematic. Third, I challenge the presupposition of practically the entire divine action debate that providence is best understood in terms of divine action modelled on human action.

In metaphorical terms, the issues I address in PART ONE can be described as follows. Some have imagined God to exert providence by *acting* like a tour guide. God guides people by initially planning the hike, but also by particular actions on a day-to-day basis. Since in the everyday events the unexpected might happen, the guide needs to *intervene* here and there, and redirect the course of the tour so that the hiking group will safely arrive at its destination. Others have objected that the difficulty with such interventions is that the world does *not*

provide any room for such divine manoeuvres, because the world of created things is like a block of Gouda, a cheese without holes. Given that all the space is taken up by the cheese, that is, created things, it does not seem that there is room for anything else. Some have then reasoned that *special* actions, the day-to-day actions of God the tour guide, might be acknowledged as such, but are really merely subjective. On this account, all God really does is to make the cheese. Even if a particular happening turns out to have special meaning for us or prove particularly significant for the success of the hike, in actual fact God does not and cannot act in the cheese-world.

The advocates of NIODA solutions insist, by contrast, that God's special actions must be *objective*, but reason that all that is required to meet the objection of a lack of room for divine manoeuvre is a change of cheese, say, from Gouda to a Swiss cheese with lots of holes. In this alternative cheese-world, it is claimed, God could easily act specially and redirect people on a day-to-day basis like a tour guide, namely by inserting into the holes of the cheese something like liquid milk. The milk could run, as it were, through them and fill up the empty space. Since there is plenty of room in the cheese itself, no removing of any bits is required. On this model, then, providence has basically two dimensions: God acts generally by processing milk into cheese, but also reacts at times specially by pouring additional milk into the holes of the Swiss cheese. Hence the conclusion is reached that if the world is like a Swiss cheese rather than a Gouda, then God can on a day-to-day basis redirect his people on its hiking tour through the cheese-world.

Despite the apparent resolution of the initial problem, the approach faces various difficulties. For one, it is disputable whether the holes provide the right kind of room for divine manoeuvre – not only because the cheese analogy is inaccurate in this regard. More importantly, however, the assertion that holes in the cheese are like spaces necessary for God causally to enter the world in a special manner implies that creaturely and divine action operate

in the same category; that divine and creaturely causation can compete for space like milk and cheese. The very fact that the tour guide analogy lends itself to such a competitive picture gives theological reason to reconsider whether human action is the best available analogy for providence.

Against this background, I then provide a new perspective on the doctrine of providence. In PART TWO of this thesis I examine the teleological account of Thomas Aquinas as an alternative. First, I draw attention to his concept of providence modelled on the virtue of prudence rather than human action. The different conceptual starting point renders providence an essentially teleological notion and naturally leads away from the contested issue of divine intervention. Second, I argue that an analogical and transcendent understanding of divine and natural causation is a promising theological alternative to the current competitive picture.

In metaphorical terms, the ideas addressed in PART TWO are as follows. Suppose divine providence is more like prudence, the virtue of wisely *ordering* means to ends. If humans act with foresight, they choose appropriate means to achieve a future end, like the tour guide planning the hike. The end-directed order will exist in the guide's mind, and will consequently be executed. The execution of the plan can be mediated through others. Imagine a prudent and benevolent queen reigning over her kingdom. If she decides to promulgate a royal order directing her subjects to their flourishing, the reason for and plan of this ordering will be immediate to her, while its execution will usually be *mediated* through her ministers: they put into practice, realise and exercise the queen's providential order. If the queen wills so, she can bestow the power to execute her royal providential order on her ministers. Her ministers then enact the providential order *in virtue of* her royal power. Thus, although it is her order that directs her subjects, and the ministers can enforce it only in virtue of her power and not simply by themselves, the queen does in no way push or pull and hence act upon her ministers. Moreover, the ministers contribute to the realisation of the royal order by their own doing.

Apart from miracles, I will argue, God *acts* in the world in and through created beings, like the queen executing her order through ministers. He acts *through* created agents because he knows and wills secondary causes to have their own causality, and decides to work *in* them so intimately that God does not need a gap in secondary causes because his causation is the constant and active causal precondition of everything happening in nature. What is more, in applying and instrumentally using these creaturely powers God directs creatures in a particular and special manner, not entirely unlike the actions of a tour guide on a day-to-day basis. Furthermore, God also directs creatures executing his providential order by internal means, namely that the ministers have innate *appetites* for the appointed end, due ends suitable for their nature.

Some object that such a mediated government puts at risk God's providence by entrusting its execution to at times unreliable ministers; that God is in charge of all but future contingents. Despite the affirmed similarity of teleologically ordering means to ends, divine providence is decisively different from human providence. Since God is not subject to creaturely limitations, his particular guidance on a day-to-day basis does not require external interference. He can guide his creatures immanently by ordering their actions end-directedly precisely because God does not know, will, and act like a creature.

Imagine an alpinist standing at the top of a mountain overlooking an entire valley all at once. If we employ the spatial analogy temporally, no part of the hike will surprise because the person sees as present the whole trip at once. God's *knowing* events to happen in this manner does not necessitate them, like someone's knowing you to read these lines at present does not necessitate your reading. Moreover, if a geometer draws a triangle, she will have to decide the form of the triangle for the triangle to exist. In like manner, as the cause of all beings, God in *willing* beings has to decide the mode of their coming to be, including contingency or necessity in one or more senses. The efficacy of the divine will extends to the

causal mode of every event. As the cause of all things, God affects everything. His providence is all-encompassing. The ministers executing providence therefore cannot upset the divine order in the way the queen's order can be thwarted, because everything relates back to God causally, including the natures of these ministers, the subjects being directed, and their particular relation. Contingent happenings could go directly against God's order of all things to their end only if they were outside his causal influence. Along these lines, PART TWO draws out the understanding of divine transcendence as key to a compatibility between divine and natural causation.

PART THREE illustrates some major implications of the two approaches discussed in PART ONE and TWO when applied to the controversially discussed question of the directionality of biological evolution.

Metaphorically speaking, what would happen if one were to run the story of evolution again, like replaying the evolutionary tape of life? While some have argued that the course of such a replay would be radically different, others have replied that humanity would nonetheless be an inevitable outcome. In exploiting the holes of the Swiss cheese, the NIODA model arrives at a directionality of the replay that is *imposed* from the outside. Although the holes might be a natural part of Swiss cheese, the liquid milk God pours into the holes and hence the divine action that guarantees the destination of the evolutionary replay, is arguably not. By contrast, if God directs the course of evolution, like the human queen, through ministers executing the order, and if God guides all creatures, unlike the human queen, by directing their natures, also through all natural contingencies, then although the replay might happen contingently, it will be *immanently* directed by God. On this view, we can imagine an intimate divine guidance of creation without the need to interfere externally. Along these lines, I explore and opt for an immanent rather than externally imposed divine guidance of creation and its dynamic unfolding.

DETAILED TABLE OF CONTENTS

SHORT ABSTRACT III

LONG ABSTRACT V

DETAILED TABLE OF CONTENTS X

LIST OF ABBREVIATED WORKS XIII

LIST OF ABBREVIATIONS XV

ACKNOWLEDGMENTS XVI

INTRODUCTION 1

PART I: BACKGROUND – ACTIONISTIC PROVIDENCE 13

Chapter 1: The Divine Action Debate **18**
1.1. The Historical Roots of the Divine Action Debate 22
1.1.a. The Biblical Theology Movement 23
1.1.b. The Critique of Biblical Theology 27
1.2. The Theological Push-Back on Divine Action in Nature 33
1.2.a. The 'Liberal Modern Worldview' 33
1.2.b. Uniform and Universal Divine Action 35
1.3. The Concept of Special Divine Action 41

Chapter 2: The Divine Action Project (1988-2003) **51**
2.1. A New Framework as Alleged Breakthrough: NIODA 53
2.1.a. The Theological Divide between Liberalism and Conservatism 55
2.1.b. Breaking the Presumed Link 58
2.2. Noninterventionism and the Laws of Nature 61
2.2.a. What is Intervention? 61
2.2.b. Non-Intervention as Non-Violation of the Laws of Nature 64
2.3. The NIODA Models 68
2.3.a. Whole-Part Influence 69
2.3.b. Chaos Divine Action 71
2.3.c. Quantum Divine Action 76

Chapter 3: The Reason for the Deadlock **85**
3.1. Theo-Physical Incompatibilism 85
3.2. The Incompatibilist Premise 89
3.2.a. The Full Argument 94
3.2.b. A New God of the Gaps Strategy 98
3.3. Scientific, Philosophical, and Theological Objections 102
3.3.a. Indeterminism, Gaps, and the Notion of Causation 102
3.3.b. Two Ways of Avoiding Competition between God and Creature 110

Summary of Part I **118**

PART II: A NEW PROPOSAL – SAPIENTIAL-ORDINATIVE PROVIDENCE 120

Chapter 4: Towards a Sapiential-Ordinative Understanding of Providence **121**
4.1. The Nature of Sapiential-Ordinative Providence 123
4.1.a. Prudence as Analogy for Divine Providence 124
4.1.b. A Twofold Account of Providence: Distinguishing Government from Providence 126
4.1.c. Divine Government through Secondary Causation 134
4.2. Against a Common Misconception: On Double Agency and its Critics 138
4.2.a. Austin Farrer's Theory of Double Agency 139
4.2.b. The Opposition against Double Agency 144
4.3. The Concept of Secondary Causation 148
4.3.a. The Doctrine of Divine Application 152
4.3.b. Reply to Critics of Double Agency 159

Chapter 5: The Status of Contingency in Sapiential-Ordinative Providence **168**
5.1. Revisiting the Role of Contingency in Providence 168
5.1.a. Providence and Aristotle's Refutation of Determinism 169
5.1.b. The Operative Notion of Contingency 171
5.1.c. The Ultimate Reason for Contingency 174
5.2. The Doctrine of Divine Transcendence 178
5.2.a. Divine Intellect: God's Knowledge and the Problem of Temporal Fatalism 179
5.2.b. Divine Will: God's Willing and the Problem of Causal Determinism 183
5.2.c. Divine Operation: God's Transcendent and Universal Causation 187
5.3. Divine Government through Natural Contingencies 193
5.3.a. Contingency as Effect and Means of Providence 194
5.3.b. Government and the Sources of Contingency 201
5.3.c. Beyond Theo-Physical Compatibilism 207

Chapter 6: The Directionality of Nature as Consequence of Sapiential-Ordinative Providence **214**
6.1. Teleology Revisited 215
6.1.a. Why Final Causality Matters 216
6.1.b. An Overview of the Modern Transformation of Teleology 219
6.1.c. Aquinas' Concept of Teleology and the Inconsistency Objection 222
6.2. The Theory of Appetency: A Fresh Assessment 227
6.2.a. Appetite: A 'Dangerous' Notion 229
6.2.b. Formal Natural Inclinations 232
6.2.b.i. Natural Appetite 234
6.2.b.ii. Sensitive Appetite 235
6.2.b.iii. Rational Appetite (Will) 236
6.2.c. Material Natural Inclinations 238
6.2.c.i. Matter's Appetite for Form 239
6.2.c.ii. How Potency is Ordered to Actuality 240
6.3. Immanent Natural Teleology: Government through Appetency 246
6.3.a. Why Natural Inclinations are Natural: On Directing and Being Directed to an End 246
6.3.b. Reply to the Inconsistency Objection 250
6.3.c. God as Final Cause of all Creaturely Operation: The End and the Good in Creatures 255

Summary of Part II **261**

PART III: AN APPLICATION – REFRAMING AN EVOLUTION DEBATE 266

Chapter 7: Replaying the Tape of Life: The Directionality of Biological Evolution **267**
7.1. A Drunkard's Walk: The Evolutionary 'Gospel of Contingency' 268
7.2. Inevitable Humans: The Evolutionary 'Gospel of Inevitability' 273
7.3. Locking Providence: 'The Secularisation of Providence' 279

Chapter 8: Evaluating the Theological Responses **285**
8.1. The Limitations of NIODA as a Response to Evolutionary Contingency 285
8.2. The Fruitfulness of the New Perspectives from Aquinas 291
8.3. The Operative Notions of Teleology 297
8.3.a. Unlocking Actionistic Providence: The Limits of Externally Imposed Teleology 297
8.3.b. Unlocking Sapiential-Ordinative Providence: The Advantage of Divinely-Guided Immanent Teleology 301
8.3.b.i. Formal Natural Inclinations: The Directionality of Natures 303
8.3.b.ii. Material Natural Inclinations: The Directionality of Nature 305
8.3.b.iii. Self-Transcendence: A Potential Link 308
8.3.c. The Difference it Makes 313

Summary of Part III **317**

CONCLUSION 320

BIBLIOGRAPHY 329

List of Abbreviated Works

Aristotle:

Metaphysics – *Meta.*

Physics – *Phys.*

Boethius:

De Consolatione Philosophiae – *De Cons. Phil.*

Thomas Aquinas:

Ad Bernardum – *Resp. Be.*

Compendium Theologiae – *CT*

Contra Errores Graecorum – *Err. Graec.*

De Motu Cordis – *De Motu Cordis*

De Rationibus Fidei – *Ratio. Fid.*

De Substantiis Separatis – *De Subst. Sep.*

Expositio libri Peryermeneias – *ELPH*

In libros Physicorum – *In Phys.*

Quaestiones de Quodlibet – *Quodl.*

Quaestiones Disputatae De Malo – *De Malo*

Quaestiones Disputatae De Potentia – *QDP*

Quaestiones Disputatae De Veritate – *QDV*

Quaestiones Disputatae De Virtutibus – *De Virt.*

Scriptum super Sententiis – *In Sent.*

Sententia libri De Anima – *In De Anima*

Sententia libri Ethicorum – *In Ethic.*

Sententia libri Metaphysicae – *In Meta.*

Summa contra Gentiles – *SCG*

Summa Theologiae – *ST*

Super ad Corinthios - *Super Cor.*

Super ad Galatas - *Super Gal.*

Super De Divinis Nominibus – *In Div. Nom.*

Super Ioannem – *Super Io.*

Super librum De Causis – *LDC*

Super Psalmos – *In Psalm.*

List of Abbreviations

CDA – Chaos Divine Action

DAD – Divine Action Debate

DAP – Divine Action Project

GDA – General Divine Action

NIODA – Noninterventionist Objective (Special) Divine Action

OSDA – Objective Special Divine Action

QDA – Quantum Divine Action

SDA – Special Divine Action

TPC – Theo-Physical Compatibilism

TPI – Theo-Physical Incompatibilism

ACKNOWLEDGMENTS

Writing a doctorate is a curious thing. So many hours of work and thought are put into it, but in the end it is still far less than one would have hoped. What completes a thesis is not so much the content – the thoughts that come to rest – but rather time (or funding, for that matter). In picking up this topic, it has at times been challenging not merely to write about providence as an academic exercise, but actually to put my trust in God's providence, that all this work has and serves a purpose, even though I might not see it now: *Tu autem, pater, gubernas omnia providentia* (Wisdom 14:3).[1]

What I am certain about is how grateful I am to every person that made this journey possible. I can only begin to express my gratitude to my supervisors, Dr Ignacio Silva and Dr Andrew Pinsent, who have guided me in their distinct way in writing this thesis. Both have considerably shaped and sharpened my thesis in their respective ways. The combination of their supervision made the mapping out a thought-provoking but joyful endeavour. I am proud to have been their student.

I also want to thank the Faculty of Theology and Religion for its most generous Studentship linked to the Idreos Professorship of Science and Religion, the additional funding from the Denyer and Johnson Fund, and the travel grants enabling me to pursue my doctoral studies here at Oxford and to attend conferences across the world. I thank my college, Blackfriars Hall, for taking me in as a graduate student, for their financial support, the community, but most of all for forming me. Great teachers are rare, but only the ones who live what they preach are authentic role models. Finally, I would like to thank the Ian Ramsey Centre for Science and Religion and the Harris Manchester College Library for their support.

Thank you, Mama and Papa, from all my heart for your constant support all these years. In so many wonderful ways I can truly say that I would not be here and at this point without you; this also applies to my sister. Ein herzliches *Vergelt's Gott* dafür!

Most grateful I am to my wife-to-be, Cornelia, who showed and constantly reminded me, during all the ups and downs of this journey, that life is more than academic work and has so much to offer if you share it with loved ones. Without her constant support I would not have endured. To her I dedicate this thesis.

---

[1] *In* I *Sent.* 39, 2, 1 arg.2; *QDV* 5, 1 s.c.7; *QDV* 5, 3 s.c.1; *ST* I, 22, 1 s.c.; *ST* I, 103, 1 s.c.

INTRODUCTION

Two prominent positions have hitherto been taken in contemporary debates in the field of science and religion on the relation of the providence of God to contingencies in nature. On one theologically contested view, natural contingency *limits* divine providence. On another view, that I shall contest in this thesis, natural contingency provides a *locus* for divine providence.

As an example of the first position, consider *Chance and Necessity* (1970). In this international best seller, the French biologist and Nobel laureate Jacques Monod sets out to argue that humanity cannot be "ordained from all eternity"[2] because scientific evidence shows that chance is a driving force in the natural process by which humanity came about. Monod justifies his conclusion about biological evolution by the role contingency plays in modern biology: chance is the only source of biological innovation and, together with necessity, determines the course of evolution. "Pure chance, absolutely free but blind,"[3] Monod asserts, makes humanity merely "the product of a vast lottery."[4] The biologist concludes his prominent case from contingency against the notion of providence by stating that

> [t]he ancient covenant is in pieces; man at last knows that he is alone in […] the universe, out of which he emerged only by chance. Neither his destiny nor his duty have been written down.[5]

In this or similar ways advocates of the first position claim that contingency severely challenges the traditional doctrine of providence: "experimental results which point to the pervasiveness of chance in the evolutionary process" purportedly show that "from within

[2] Monod (1972): 50.
[3] Monod (1972): 110.
[4] Monod (1972): 131.
[5] Monod (1972): 167.

a worldview that takes science seriously, divine providence, the notion that God causes and preordains all things from all eternity, is unintelligible."[6] The underlying idea is that to the extent to which contingency accounts for natural processes, the providence of God cannot.

As an example of the second position, consider *Chance and Providence* (1958), by the physicist and Episcopalian minister William Pollard. This work in many respects sets the paradigm for later theological responses and is a forerunner to the current debate.[7] Pollard replies to those who "have argued against the reality of divine providence on the basis of explaining the course of events as the result of chance"[8] that the reality of chance in no way amounts to a denial of providence; rather, it is the prerequisite of providence. On Pollard's account, chance and accident, as two sources of indeterminism, provide a 'loophole' for God's providential activity in the world.[9] In these indeterminacies of nature God finds "room to operate in specific and concrete situations."[10] By the same token, Pollard turns causal determinism into the hard problem and real challenge for providence.[11] Hence the objection against providence from contingency was supposedly met in replying that God acts in the indeterminacies of this world.

Both positions, that natural contingency *limits* providence and that natural contingency provides a *locus* for providence, I argue in this present thesis, agree at least on this, that natural causation is incompatible with certain forms of divine causation. Divine and natural causation are mutually exclusive, either because contingencies resulting from accidental natural causes fall outside the scope of God's directing action, or because contingencies

---

[6] Austriaco (2003): 948.
[7] Saunders (2002): 105.
[8] Pollard (1958): 92.
[9] Pollard (1958): 73-4. The term 'loophole' is taken from Pollard (1958): 12. Indeterminism here means that several physically possible alternative futures are given at a point in time (Pollard (1958): 67).
[10] Pollard (1958): 30.
[11] Pollard (1958): 24-9.

stemming from a purported lack of natural causation constitute the space for God's special action.

The present thesis challenges this presupposition, and advocates instead a third alternative according to which natural contingency is an *effect* and *means* of divine providence. The objective is to reason that revisiting the theological doctrine of providence holds the potential to overcome the current impasse in divine action theories. By examining the basic tenets of the prevalent divine action model drawing an understanding of providence from human action, this study will advocate a change of framework and proposes a teleological concept of providence as follows. First, that on a transcendent account of God's causal involvement in the world divine and natural causation cannot compete; the latter rather depends in an intricate way on the former. Second, that contingency as a causal mode of created causes is best understood as part of God's providential plan. In the realisation of this plan, however, God as transcendent agent can direct contingent causes to bring about particular ends. Thus contingency would neither provide a limit to nor room for God's providential activity in the world, and yet God would be intimately active in every particular event.

The Terms of Engagement: Providence and Contingency

From the two examples, *Chance and Necessity* (1970) and *Chance and Providence* (1958), we can already see that there are different notions of chance operative in the debate. For Monod, chance means the denial of any causal connection between the cause of mutation and the functional consequences of the mutation, that is, the adaptiveness of the resulting trait.[12] For Pollard, by contrast, the notion of accident refers to the causal

[12] Monod (1972): 111-2.

influence stemming from the crossing of unrelated causal chains, while chance is taken in the ontological sense of providing "alternative responses to a given set of causative influences for which the laws of nature specify only the relative probabilities."[13]

For the purpose of discussing the various positions taken in the divine action debate, it will prove helpful to start with the broader category of contingency under which the different notions of chance and related concepts such as ontological indeterminism can be subsumed.[14] As a first approximation I introduce the concept of contingency in a broad sense as referring to something that is possible but not necessary: something (p) is contingent (C) if and only if it is possible (P) to be and possible not to be: $C(p)=P(p)\wedge P(\neg p)$; that is to say, if and only if it is not necessary (N) not to be and not necessary to be: $C(p)=\neg N(\neg p)\wedge\neg N(p)$.[15] To put it crudely, contingency refers to events that may or may not happen.

This concept of contingency must be distinguished from contingency upon. The cosmos, for instance, is contingent upon the creative act of God: without creation, there is no creature. Contingency in this second sense expresses a relation of dependence. It is worth noting that if we introduce contingency and contingent causes in the first sense, that is, in contrast to necessity and necessary causes, then at least on the common understanding free will or choice will also fall under contingent events.[16] A particularly important form of contingency in this context is that which is in its nature not determined to one effect.

Turning to the notion of providence, there is another distinction I will make extensive use of in this thesis that merits an introduction. The English term 'providence' comes from

---

[13] Pollard (1958): 73-4; citation on p.73.
[14] For an exposition of a common understanding of chance and determinism in the science and religion debates, see Southgate (2005): 263-4.
[15] Jacobi (1977): 10-1.
[16] For further illustration of this claim, see Dodds (2012): 205-10.

the Latin *providentia*, literally meaning foresight (*pro-videns+ia*), but also having connotations of provision, care and direction.[17] In theology, the doctrine of providence refers, broadly speaking, to God's care for creatures, his guidance of, rule over, and active involvement in the unfolding of the created world and all natural processes.[18] As such, the doctrine of providence is usually distinguished from the doctrine of creation, the bringing about of this creation and giving being to creatures.

In a detailed historical study, the German theologian Reinhold Bernhardt has convincingly argued that in the history of Christian theology we find two rather different approaches to the doctrine of providence.[19]

On the one hand there is the *sapiential-ordinative* model (*sapiential-ordinatives Modell der Vorsehung*) according to which providence is primarily a reality in God: providence is the divine teleological ordering of the entire cosmos and all creaturely processes within it to their appointed ends. As such, God's providence is first and foremost his wise and eternal plan for his creation. This view Bernhardt describes as *sapiential* to capture the primacy of providence as a God-internal intellective act which only secondarily manifests itself in the structure and order of creation, and as *ordinative* because teleological ordering is the core of providence thus conceived.[20]

On the other hand we find an *actionistic* model (*aktualistisches Modell der Vorsehung*) taking providence to be primarily an activity in the world: providence here refers to the mighty acts God performs in history. Providence consists most of all in divine action in the world; God is at work in particular events as an exercise of God's almighty and sovereign

[17] Oxford Latin Dictionary (1982): 1505. The Greek tradition spoke of *pronoia*.
[18] For a general introduction to the doctrine of providence in Protestant theology, see Fergusson (2018); Bernhardt (2008); Langford (1981); for the Catholic counterpart, see Kocher (1999) and Scheffczyk (1970).
[19] For a succinct introduction of the two types of providence, see Bernhardt (2008): 29-39.
[20] Bernhardt (2008): 29-31.

will. Rather than grounding God's providential care in an intricate relation between God and creation (*analogia entis*), providence is viewed as the ever-new exercise of God's intentional and mighty acts in creation (*analogia operationis*). The categories to express the providence of God accordingly shift from causation and teleology to action and intentionality.[21]

While Bernhardt focused in his study on the question of whether or not providence is "primarily an 'intellectual' instance of a God-internal logicality and, proceeding therefrom, the manifestation of this logicality in the structure or order of created being,"[22] I wish to emphasise more the models leading to these positions conceiving of providence as an order *of* the world in God and God's activity *in* the world, respectively. I will therefore slightly modify the distinction. First, to indicate that the latter model is essentially action-based I translate from the German by coining the word '*action*-istic', deliberately refraining from the literal translation 'actualistic'. This first modification makes explicit why the categories expressing this type of providence are action and intentionality. Second, on my account the term 'sapiential' refers to God's wisdom as the source of his providential order, in accordance with the Aristotelian *dictum* that it is the task of the wise to order (*sapientis est ordinare*); and 'ordinative' to the corresponding ordering function of providence.[23]

The State of Research: Divine Action Debate and New Perspectives from Aquinas

The distinction between these two ideal-typical forms of providence has significance

[21] Bernhardt (2008): 32-9.
[22] Bernhardt (2008): 29. Unless otherwise indicated, all translations from the German and Latin are mine.
[23] *SCG* I, 1; *SCG* II, 24; *ST* I, 65, 3 arg.1 and ad1. By contrast, Bernhardt borrows the label 'sapiential' from Otto Hermann Pesch who takes up the description of Aquinas' theology as sapiential from Yves Congar, to contrast Aquinas' 'sapiential' theology with Luther's 'existential' theology (Bernhardt (2008): 30, n.74; Pesch (1967): 935-48, 938, n.6; for an English presentation, see Pesch (1970)).

for the contemporary controversy about divine action, for Bernhardt has indicated that the Anglophone divine action debate is essentially premised upon an actionistic account of providence.[24] The present thesis submits that the wider debate has in fact suffered from a neglect of the sapiential-ordinative model that has received surprisingly little attention in recent years. Unfortunately, Bernhardt's penetrating study is no exception in this respect.

As a thesis on the divine action debate, it is fitting to include in the introduction a few words about the current state of research and the nature of its contribution. The divine action debate is an influential and, at least initially, predominantly Protestant attempt to come to terms with the doctrine of providence in light of modern scientific thought.[25] The controversy about the nature of God's activity in the world has taken, due to historical reasons that will become apparent in the course of this study, a specific shape in the Anglophone context not necessarily representative of other theological traditions.[26]

In his classic collection of texts, *God's Activity in the World: The Contemporary Problem* (1983), Owen Thomas provides the key writings of the early debate.[27] This first phase up to about the time of the Divine Action Project (1988-2003) is covered and extensively analysed by Paul Gwynne in his study *Special Divine Action: Key Issues in the Contemporary Debate (1965-1995)* (1996).[28] These works if combined provide a more or less exhaustive overview of the main proposals until the 'scientific turn' of the debate in

[24] Bernhardt (2008): 274-335.
[25] Gilkey (1963) provides a pertinent overview of the devastating nature of theological discussion at the time.
[26] For instance, the German debate has been shaped by Béla Weissmahr's Rahnerian theory of secondary causation which seemed, at least for some time, to be the default position (Weissmahr (1973)). For an overview of the debate in German-speaking theology, see Kocher (1999) and Böttigheimer (2013); von Stosch (2005) provides a literature review. For more recent contributions exploring alternative avenues, see Siebenrock and Amor (2014); Göcke and Schneider (2017).
[27] Thomas (1983). Thomas (1983b) provides an excellent classification of the various positions taken in the debate. In Thomas (1990), Thomas supplements and updates his analysis by taking into account the developments between 1983 and 1990. The Divine Action Project effectively takes his analysis as a starting point (Russell (1993): 7-10; Russell (2000): 6-9).
[28] Gwynne (1996).

the wake of the Divine Action Project. Notwithstanding, William Abraham recently published the first three volumes of his tetralogy on the divine action debate covering, in volume one, the same ground showing that it is crucial to understand the foundations of the debate before entering into constructive work.[29]

The Divine Action Project, a massive international research project taking place from 1988 until 2003, was a turning point in the debate. In five comprehensive volumes scholars set out to establish a new framework and terminology promising a long-awaited breakthrough in conceptualising providence and understanding God's particular action in the world. The basic proposal was to see God as active in the indeterminacies of nature. Contingency became the *locus* of divine action. Up to this day, the project continues to attract scholarly attention.[30]

In the third and present phase of the debate, this established view has been criticised on two grounds in particular. On the one hand, the scientific validity of the proposals has been questioned. In his widely discussed response to the project, *Divine Action and Modern Science* (2002), Nicholas Saunders critiqued the major proposals and reached the conclusion that none of them survives scientific scrutiny and that theology is therefore in a real crisis.[31] Saunders stresses that

> much of the traditional account of God's activity cannot hold up against our modern understanding of science. The fact is that any intellectually honest theologian must appreciate that the wide-ranging demands of faith are simply not satisfied by the current state of the art of theological scholarship.[32]

[29] Abraham (2017a); Abraham (2017b); Abraham (2018).
[30] Three recent PhD theses give evidence of the continuing influence of the project: Cross (2017); Lane Ritchie (2017b); Silva (2009).
[31] Saunders (2002): xvii and 215. The scientism some of these proposals seem to imply was critiqued by Smedes (2004).
[32] Saunders (2002): 216.

This dismissive verdict has since been hotly debated, in particular among science and religion scholars.[33] More importantly, these discussions have raised the deeper question of what this 'traditional' theological account of providence that Saunders refers to actually is; what is it that we mean with divine providence?

In the so-called 'theological turn' of the debate, then, various scholars started questioning the core assumptions of the prevalent framework on primarily theological grounds.[34] Among the potential alternatives moving beyond the initial framework itself rather than merely to re-calibrate some of its features, a particularly promising avenue of research stands in the tradition of the medieval theologian and Dominican friar Thomas Aquinas (1225-1274). For in addition to being the most prominent driving force behind the theological turn, this approach, as I shall argue, is informed by a different model of providence. Indeed, Aquinas' doctrine of providence might be considered the prime exemplification of a sapiential-ordinative notion of providence.

A certain revival of what is commonly labelled the 'Thomistic approach' to divine action is, at least to a limited degree, underway. Recent contributions actually engage with the thought of Aquinas at a depth that earlier contributions lacked.[35] Two works are particularly noteworthy. In the watershed monograph, *Unlocking Divine Action* (2012), Michael Dodds shows the need to employ a broader notion of causation to unlock divine action in the modern context, and suggests a more Aristotelian understanding as a potential remedy, which he exemplarily brings into conversation with contemporary science.[36] His

[33] A vivid example is the 'capstone' volume of the Divine Action Project (Russell, Murphy, Stoeger (2008)).
[34] The label 'theological turn' comes from Lane Ritchie (2017a). For a presentation of three alternative frameworks presently being discussed, see Lane Ritchie (2017b): 143-242. Sarah Lane Ritchie identifies them as Panentheistic, Pneumatological-pentecostal and Thomistic.
[35] Johnson (1996); Austriaco (2003); Carroll (2008); Silva (2009); Dodds (2012). These contributions are significantly different from, say, the 'Thomistic approach' William Stoeger presented in the Divine Action Project.
[36] Dodds (2012).

penetrating critique of current divine action models operating on a univocal understanding of causation, as well as his presentation of how Aquinas' theory of primary and secondary causation avoids this pitfall, set the benchmark for further engagement with and research of the topic.

The second significant contribution is Ignacio Silva's doctoral thesis, *Divine Action in Nature* (2009), arguing that divine action in Aquinas is particular.[37] Silva shows that the main objection that God's primary causation 'in, with and through' secondary causes is a uniform action reducible to creation and conservation is based on an incomplete account of the theory. The further dynamic moments of Aquinas' account which Silva brings to light have previously gone unnoticed in the divine action debate. Divine primary causation will, consequently, if one grants the distinction, qualify as special rather than merely general providence. Although I will argue for a similar conclusion, my exposition is informed not so much by a discussion of efficient and instrumental causation in Aquinas, as in the case of Silva, but rather final causation and teleology.

In the present thesis, I will argue that this insight into the interlocking of divine and natural causation makes it possible to challenge another common dismissal, namely that providence viewed as God's planning, ordering and directing the unfolding *of* the world means that he is not working or acting *in* the world. The 'new perspectives from Aquinas' in this context are as follows. First, I shall show that a teleological notion of providence has the advantage of providing not only a new and alternative perspective on the divine action debate and the current preoccupation with divine action models, but also a more intimate relation between God and creature, according to which creatures are internally drawn to the fulfilment of God's plan rather than pushed and pulled by God's external

[37] Silva (2009). This is a point most recently again contested by Fergusson (2018): 73 and 226-8.

action upon them. Second, based on an exposition of the transcendent and teleological providential framework of Aquinas, I shall make a case for a theologically more nuanced relation of divine providence to natural contingency.

Overview of the Thesis

This thesis consists of three parts. PART ONE provides the necessary background and deals with the divine action debate. I will argue that the current standard model of divine action is premised upon an actionistic understanding of providence locked up in competition with natural causation. Chapter 1 traces the relevant history of the debate up to the emergence of the category of special divine action. Chapter 2 presents the Divine Action Project and an assessment of both its framework and particular models. Chapter 3 identifies what I take to be the main reason for the current deadlock in divine action theories, and indicates a way to overcome this deadlock.

PART TWO presents the actual contribution and explores an alternative model of providence. I will argue that the sapiential-ordinative model of providence of Aquinas, if combined with his doctrine of divine transcendence, makes possible rendering contingency an effect and means of providence. Chapter 4 introduces the alternative notion of providence and establishes the distinction between primary and secondary causation. Chapter 5 modifies the relation of providence to contingency by expounding the doctrine of divine transcendence. Chapter 6 explains the teleological structure of providence thus conceived, and defends a form of natural teleology by exploring the theory of natural appetency.

PART THREE rounds off the thesis by providing a pertinent test case for the two competing theories. I will argue that an immanent but transcendent causal involvement of God in biological evolution is theologically preferable over an external divine pushing and

pulling of the underlying natural processes. Chapter 7 introduces the objection from contingency with reference to a controversy between Stephen Jay Gould and Simon Conway Morris. Chapter 8 explains why the standard divine action model, exemplified by a quantum-based theory of theistic evolution, implies externally imposed teleology and is insufficient as a reply to the objection from contingency. It also shows that my alternative proposal implies immanent teleology, and why a transcendent account of God's activity allows integrating contingency into the doctrine of providence.

PART I: BACKGROUND – ACTIONISTIC PROVIDENCE

There is a prominent view among scholars in the divine action debate that God needs room to act in nature. This call to make room for divine action is particularly influential in the science and religion field.[38] To borrow the words of David Fergusson, "describing the mode of divine action in the world […] has become a central preoccupation in the science-religion dialogue."[39] Many scholars within the field typically assume that theology is in need of some kind of gaps in the natural causal nexus to affirm God's activity in the world. For this reason, representatives of this view appeal to the purported causal indeterminism of natural processes and exploit various scientific theories that interpret nature as at least partially indeterministic.

As a representative example of this school of thought, consider American philosopher Thomas Tracy, who stresses that any reasonable approach that affirms particular divine action in nature acknowledges that "this requires gaps in the natural order, but it contends that the structures of the world are 'open' in ways that accommodate divine action without disruption."[40] God, according to this text, essentially requires gaps in the order of natural causes to act. Similarly, British scientist and theologian John Polkinghorne claims that for

[38] For a short but excellent introduction to the science and religion field, see Smedes (2007); Smedes (2008).
[39] Fergusson (2018): 218.
[40] Tracy (2000): 310. For this reason Tracy asserts that "contemporary theologians ought not summarily to dismiss appeal to gaps in scientific accounts of the world: theology may not be able to get along altogether without gaps." (Tracy (2000): 292) Tracy later *temporarily* altered his position: "I argued in an earlier paper that *if* theologians want to say that God acts to alter the course of events once the world's history is underway, then there must be gaps (of the right sort) in the causal structure of nature. That conclusion still seems to me to be correct. But in light of the theological options explored in this paper, it is less clear that there is a need to make claims of this sort about direct divine action in the world" (Tracy (2001): 250). In this sense Russell is right in pointing out that Tracy's "thought on this issue is not settled. He is instead exploring a particular option to test its strengths and weaknesses" (Russell (2001a): 315, n.79). More recently, however, Tracy commented on the altered position: "I have argued elsewhere that this approach can go a considerable distance toward giving an account of particular providence; the debate, of course, is over whether it can go far enough." (Tracy (2008): 256) He then concludes that "it appears that we cannot altogether avoid contrasting divine and created agencies in certain limited cases." (Tracy (2008): 260)

intentional agents such as God it is legitimate, even necessary, to appeal to the 'ontological openness' of nature and intrinsic gaps which make 'room for manoeuvre':[41]

> Yet if the physical world is really open, and top-down intentional causality operates within it, there must be intrinsic 'gaps' […] in the bottom-up account of nature to make room for intentional causality […]. We are unashamedly 'people of the gaps' in this intrinsic sense and there is nothing unfitting in a God of the gaps in this sense either.[42]

Keith Ward, Emeritus Regius Professor of Divinity at Oxford, shares Polkinghorne's contention that there must be intrinsic gaps for intentional causality:

> [I]f God acts (brings changes about intentionally) there are states of the physical universe which are not sufficiently explained by the operation of physical causes alone. To put it in the words of the crude formulation, there must be gaps in physical causality, if God is ever to do anything.[43]

The mathematician George Ellis also supports this view by highlighting "the need for some kind of 'gap' in the strictly causal chain from physical cause to effect if specific divine action in the world is to be possible in a meaningful sense."[44] Similarly, philosopher of physics Michael Redhead stresses: "Indeterminism […] allows 'room' for divine action on particular occasions, while allowing overall statistical laws to remain inviolate."[45]

Other influential thinkers express similar views. Philosopher Nancey Murphy concurs in demanding "to leave some room for God to maneuver"[46] and claiming that "an account must not lead to the conclusion that God has no room within created processes intentionally to influence the course of events."[47] Australian theologian Denis Edwards supports this

---

[41] Polkinghorne (1993): 441-3. Elsewhere he states: "If a general concept of divine action of this kind is to prove feasible, it must surely be the case that the grain of nature is sufficiently open to afford causal space for the operation of that divine agency." (Polkinghorne (2001): 188)
[42] Polkinghorne (1993): 446.
[43] Ward (1990): 77.
[44] Ellis (2000): 361. Elsewhere Ellis explicates: "The possibility of divine action within the confines of physics as we know it requires an openness in physical process, allowing a break in the chain of strictly deterministic bottom-up causation, and so enabling God's action to have real causal effect in the physical world." (Ellis (2001): 288)
[45] Redhead (2001): 158.
[46] Murphy (2000): 355.
[47] Murphy (2000): 355-6.

view and speaks of the "need to struggle to understand where natural process is open to divine action."[48] He writes:

> The unpredictability, openness, and flexibility discovered by contemporary science is significant for talk of particular divine actions because it provides the basis for a worldview in which divine action and scientific explanation are understood as mutually compatible […].[49]

The physicist and theologian Robert Russell endorses a similar vision, by reiterating that gaps as part of nature are a necessity for divine action. On his view, ontological indeterminism becomes the condition of possibility of divine action:

> This approach is only possible theologically if nature, at least on some level, can be interpreted philosophically as ontologically indeterministic in light of contemporary science.[50]

The endorsements of this 'divine-action-of-the-gaps' approach have themselves attracted comment:

> [I]t is striking how many recent theologians have wanted to pursue [the following] path – they have regarded the system of causation that physics offers us as *open*, containing inherent gaps which allow God to act 'through' the system, to effect particular actions within the system of natural causes without being subject to the risk that science will close the gaps.[51]

Indeed, the popularity of this approach, noted in this excerpt from a leading science and religion textbook, warrants it being termed the *standard model of divine action* today in the Anglophone divine action conversation. The approach of this model is 'standard' insofar as it has become "prevalent over the last several decades in the science-and-religion field," and was also the "approach articulated by the DAP [Divine Action Project],"[52] which ran from 1998 to 2003. In practice, this approach is still central, even though the perception of

---

[48] Edwards (2000): 173. Although Edwards takes his theological project into a different direction than the other authors mentioned, he nevertheless concurs with them on this point.
[49] Edwards (2000): 172. Italics removed from the original.
[50] Russell (1998b): 193.
[51] Southgate (2005): 262.
[52] Lane Ritchie (2017b): 23.

its success has waxed and waned at various times. Nevertheless, the influence of this approach today means that it warrants careful consideration. For the remainder of this thesis, I refer to this approach as the *standard model*.

Within the actionistic framework, the standard model has attracted widespread support but has also faced strong objections. Following a detailed study, Nicholas Saunders pronounced a rather damning verdict, albeit expressed in somewhat more diplomatic language:

> [T]he current state of coherent attempts to relate divine action and modern science is far less developed than is widely realised. […] [N]either of the two major approaches to the issue in contemporary theology and science, namely the quantum- and chaos-based approaches, survives detailed scientific and theological scrutiny. In this light the conclusion reached is that the 'current state of the art' in this field constitutes little more than a number of bold metaphysical assertions […].[53]

In other words, according to Saunders, the standard model is vulnerable to detailed scientific and theological scrutiny and has, in reality, achieved very little. Although his view is open to challenge, it is unclear how to make progress from the deadlock of the positions.

The first part of this thesis, which comprises three chapters, assesses the standard model of divine action. I draw in particular on the publications of the influential Divine Action Project, which most prominently expounds and defends the view that God needs room to act in nature. By identifying and critiquing the premises of this model, it may be possible to uncover the reasons for the widely divergent assessments of the model today. By adjusting or radically changing these premises, alternative approaches may also be more clearly apparent, helping to break the deadlock and make progress.

---

[53] Saunders (2002): xvii.

Chapter 1 serves as an introduction to the divine action debate and establishes the category of special divine action. Chapter 2 shows how, within the Divine Action Project, this category was turned into the noninterventionist objective (special) divine action research programme. Chapter 3 identifies theo-physical incompatibilism as the core assumption of this programme, and indicates that dropping this presupposition may open up new venues of research.

Chapter 1:
The Divine Action Debate

The purpose of the following three chapters is to identify the reason for the current deadlock in the divine action debate. In order to be able to scrutinise the plausibility of the core theoretical commitment of the standard model of divine action, it will prove fruitful first to expound in some detail the development of the standard model. I will do so by carving out the theological concerns and historical driving forces behind the prominent view.

Over the course of the next two chapters, I will present a detailed theological reconstruction of the theoretical ground of the standard model. Given the importance of the category of special divine action and its noninterventionist character in the context of the Divine Action Project, I dedicate the first chapter to the category of special divine action and the second one to the call for noninterventionism. By so doing I will identify what I take to be the main problem with this position and significant reason for the deadlock of the current discussion.

In more detail, the purpose of the first chapter is to display the theological connection of the systematic category of special divine action with the biblical affirmation of God's mighty acts. I argue that the Biblical Theology Movement and the critique thereof marks the historical origin of what I call the *Divine Action Debate* (DAD), which I presented in the introduction as an attempt, developed largely from a Protestant context, to steer theology out of various difficulties including a demise of the doctrine of providence in the first half of the twentieth century.[54]

[54] Gilkey (1963) provides an excellent elucidation of the situation at the time.

When speaking of a 'DAD' it is important to stress that this is not a homogenous conversation, but rather a somewhat heterogenous mix of views and contributions. These views can differ quite drastically, and it is by no means an easy task to discern the precise relations between these various positions, in particular in the early period prior to the establishment of a certain standardisation of terminology. But this also means, I suggest, that the standard terminology should be read against the theological and historical motives that led to the establishment of this terminology. In providing this context, Chapter 1 serves the twofold purpose of highlighting (1) why divine action became the favoured category for describing the providence of God and (2) why the concept of special divine action emerged.

Before entering the detailed discussion, let me start by providing an illustration that exemplifies the prevalent understanding of providence. In his influential exposition of the doctrine of providence, *Providence* (1981), Michael Langford introduces a six-fold model of providence by way of analogy with a human tour guide. God's providential guidance of the world is modelled according to three basic kinds of human action involved in guiding a tour, namely, the act of (i) the initial planning, (ii) the day-by-day leading and (iii) unpredictable acts like occasional *ad hoc* decision. In analogy to the human situation, Langford introduces divine providence as consisting of six kinds of divine action, to wit, (1) creation and (2) conservation in comparison to the initial planning; (3) final causality and (4) general providence in comparison to the day-by-day leading; and (5) special providence and (6) miracles in comparison to the occasional *ad hoc* decisions. Since Langford advocates integrating conservation and final causality into an extended notion of creation, the heart of the doctrine of providence is God's activity termed general and special providence. God's general activity in governing the universe through the laws of nature shows an intelligent plan, but not specific features of God as personal agent, which is bound

up with the notion of special providence. The upshot of Langford's taxonomy is that what is essential for divine action based on a personal God are the unpredictable specific *ad hoc* decisions of special providence.[55]

On the use of human action as an analogue for divine providence, Langford explicitly states:

> [T]here is a significant distinction in human providence between the normal and predictable guidance of an enterprise, and the unpredictable and *ad hoc* decisions that may have to be made, as in the climbing party analogy. It seems reasonable to make the same distinction between two kinds of providence, because the biblical account of God's involvement with the world displays the same difference. […] Special providence is analogous to human decision making, and it is for this reason that it is bound up with the idea of God as personal.[56]

As this citation shows, Langford interprets the personal character of God in direct analogy to human action and decision-making. On this ground, special providence is presented as a divine *ad hoc* decision. In a similar manner to human beings, God encounters unforeseen circumstances and might wish to react responsively to these unpredictable happenings. Special providence in this sense, Langford explains, is the core of a specifically Christian account of providence.

At the heart of this exposition of providence lies an actionistic notion of providence, for the understanding of providence is drawn from a discussion of human action. Human action serves as a model for divine action. In volume one of his tetralogy on the DAD, *Divine Agency and Divine Action* (2017), William Abraham argues that the fundamental problems in recent treatments of divine action stem from a "failure to come to terms with the concept of action."[57] He identifies the consensus of the debate as follows:

---

[55] Langford (1981): 5-14.
[56] Langford (1981): 13-4.
[57] Abraham (2017a): 1.

> There is a strong sense that divine agency and divine action are absolutely central concepts […]; that there are a nest of crucial problems related to these concepts […]; and that the extensive work done on the concept of human agency and action is vital in making progress with these problems.[58]

Along these lines Abraham makes a persuasive case that the initial conviction of the debate was that the concept of action could remedy the theological problems with divine action. In respect of this presupposition, he warns that starting our theological investigation with "'models' of divine action" might "warp our thinking from the outset."[59]

I shall argue that it is not only the concept of action, but more generally the assumption that a concept of action modelled on human action is key to understanding divine providence, that needs careful consideration. For another common and generally unchallenged presupposition is that divine action is the essential feature of the doctrine of providence. Robert Russell explains: "The problem of divine action lies at the heart of the doctrine of providence."[60] God as agent, to borrow a phrase of Gordon Kaufman, is the "root metaphor"[61] of a personal and providential God. On this account, providence is modelled in direct analogy to human action; divine action then becomes the decisive characteristic of this type of providence.

I will characterise this prevalent understanding of providence as *action-istic* to draw attention to the fact that, in the context of the DAD, divine providence is largely explicated in terms of *divine action*. Making divine action, individual acts of God carried out within the created world in response to particular happenings, the key concept of God's providence is, I shall argue, a choice rather than an inevitable consequence of the doctrine of providence itself. The actionistic model is instead the consequence and offspring of the

[58] Abraham (2017a): 2.
[59] Abraham (2017b): 2.
[60] Russell (1997): 48.
[61] Kaufman (1968): 179.

conceptual framework in which many authors operate today.

A difficulty with this conceptualisation of God's providence primarily or even exclusively in terms of divine action is that, despite its advantage of being a powerful metaphor and a biblical motive, it involves the risk of paying too little attention to the utter difference between human and divine action. This is particularly the case if the concept of action is predicated to God and creature in the same sense. Drawing such a close and direct link between providence and human action tends to run into considerable theological problems. The alleged need to make room for God to act in nature is one of them. Such a demand, I argue, signals a problematic conceptualisation of the relationship between God and creature, and it is worth pondering in detail the exact reasons for holding such a view.

The structure of Chapter 1 is as follows. Section 1.1 outlines the origin and initial challenge that sparked off the DAD. Section 1.2 delineates the two extreme positions in-between which the debate has unfolded. Section 1.3 carves out the concept of special divine action as a reaction to these two positions.

1.1. The Historical Roots of the Divine Action Debate

First some historical stage-setting is in order. The origin of the Anglophone DAD can be found in the controversies, especially in the Protestant world, over the theological relevance of biblical statements, in particular how to interpret reports of God's mighty words and deeds.[62] In the pre-modern context, it was assumed, such claims did not seem controversial. But the changes in worldview associated with the rise of modern science raised questions and prompted re-evaluations of their meaning.

[62] Gwynne (1996): 14-5; Saunders (2002): 4-16; Bernhardt (2008): 39-47; Thomas (1983a): 4-7.

These re-evaluations, together with the collapse of the doctrine of providence into the scope of divine action, constitute the background of the DAD. Since the origin of the DAD is a critique of Biblical Theology, it will prove helpful first to provide the context of the controversy.

1.1.a. The Biblical Theology Movement

The backdrop and main point of reference for the following debate is Rudolf Bultmann's article *New Testament and Mythology* (1941), where Bultmann introduces his programme of demythologisation as "the task of stripping the Kerygma from its mythical framework."[63] Bultmann points out that the biblical message, insofar as it is mythical, must sound incredible to modern man for whom such a worldview is obsolete.[64] Thus Bultmann polemically states:

> It is impossible to use electric light and the wireless and to avail ourselves of modern medical and surgical discoveries, and at the same time to believe in the New Testament world of daemons and spirits.[65]

In this well-known citation Bultmann expresses a modern unease with the mythological elements of Scripture, setting, as it were, the context of the later debate.

The point of contention in this debate is Bultmann's controversial rejection of any form of divine interference. Bultmann contends that divine action can only take place *within* the chain of natural causes, but can never be inserted as a causal link *between* these causes. Divine action, he says, would in fact be mythological if the causal nexus were broken by placing supernatural agents into it.[66] Ian Henderson points out that this claim is owed to his

---

[63] Bultmann (1960c): 3. For an overview of the Bultmann controversy, see Henderson (1956) and Bartsch (1962), in particular his section on the Bultmann reception in English-speaking theology (Bartsch (1962): 40-5, 77).
[64] Bultmann (1960c): 3.
[65] Bultmann (1960c): 5.
[66] Bultmann (1958): 61.

understanding of the world as a causally closed system.[67] As Bultmann puts it: "When worldly happenings are viewed as a closed series, as not only scientific understanding but even workaday life requires, there is certainly no room for any act of God."[68] Bultmann makes similar claims elsewhere to the effect that, according to the modern and scientific view, not only man, who is "refusing to allow any room for alien powers to interfere in his subjective life,"[69] but also the natural world is "a self-subsistent unity immune from the interference of supernatural powers."[70] On this view, "there remains no room for God's working"[71] in worldly events.

I highlight these passages because the phrase 'no room for divine action' has since become a common expression of the challenge divine action faces in light of modern science. Bultmann himself advocates an *interpretation* of the biblical mythology rather than an elimination; for the latter would, he insists, affect the biblical *kerygma*. Nor does Bultmann consent to a return to an uncritical acceptance of the biblical mythology sidestepping the issue. Rather, in his existentialist interpretation Bultmann argues that the truth which the mythical framework of the New Testament enshrines is an understanding of existence.[72]

This background illuminates the central claim of the Biblical Theology Movement, which has become the essential presupposition of the DAD. Biblical Theology was a theological movement in the middle of the twentieth century attempting, generally speaking, to bring back biblical thought and language into modern theology. The aim was

[67] Henderson (1956): 46.
[68] Bultmann (1960b): 199.
[69] Bultmann (1960a): 120.
[70] Bultmann (1960c): 7.
[71] Bultmann (1958): 65.
[72] Bultmann (1960c): 9-16.

to regain the biblical faith by counteracting the temptation to impose the systematic structure of dogmatic theology on the dynamic unity of the Bible.[73]

In 1952 George Ernest Wright published the monograph *God Who Acts: Biblical Theology as Recital* to defend the concept of Biblical Theology. This publication might be considered as the indirect origin of the DAD.[74] Wright states:

> The contention of the pages which follow is that Biblical theology, while it is not propositional and systematic dogmatics, is nevertheless a defensible entity of its own kind, one that should influence the work of contemporary theologians more profoundly than it thus far has done. It is a theology of recital or proclamation of the acts of God, together with the inferences drawn therefrom.[75]

The telling book title expresses one of two central features of the movement. Biblical Theology is first a recital, a confessional recital of the acts of God. By this Wright means a confession of faith by recital of the acts of God. Second, history is regarded as 'the arena of God's activity'.[76] History is the place where God acts and reveals himself. God is thereby not so much known through his words as through his acts. For this reason, Wright contrasts 'God Who Acts' with 'God Who Speaks'. The Biblical Theology Movement consequently views the Bible not so much as 'the Word of God', but rather as 'the Acts of God':[77] the Bible, Wright claims, is 'the record of the Acts of God'.[78]

The contention of the Biblical Theology Movement and paradigm of the subsequent debate is Wright's claim that "the central message of the Bible is a proclamation of the

---

[73] For an overview and short introduction to the Biblical Theology Movement, see Barr (1988). For an extensive critical assessment, see Childs (1970) and Barr (1999).
[74] In addition to Wright (1960), the work that is most often exemplarily cited, see also Wright and Fuller (1965), Anderson (1957) and Kee and Young (1957), to which Gilkey (1961) and Dilley (1965) react in their critique.
[75] Wright (1960): 11.
[76] Wright (1960): 38.
[77] Wright (1960): 12-3.
[78] Wright (1960): 107.

Divine action."[79] Since this statement is so important to understand the DAD, it is worth citing it at length:

> It is now recognized that the central message of the Bible is a proclamation of the Divine action; and, if we discard that, we shall have nothing left which makes the Bible what it is. It is impossible to reduce the *kerygma* to a kernel consisting of a series of ethical teachings. The *kerygma* is itself the kernel to which the ethics are attached and from which they receive their meaning. The real question is to face quite frankly that which constitutes Biblical faith. It is not a social feeling primarily nor a sympathy for all life; it is first and foremost a confessional recital of the gracious and redemptive acts of God.[80]

In the quotation above, Wright protests against the view associated with Bultmann that one can simply put aside the mythological shell, leaving the biblical kernel of ethical and spiritual truth. Wright's exposition that what constitutes biblical faith is the belief in divine action is part of the lively controversy about what to do with the mythological elements in Scripture in the then-present scholarship. The two main approaches taken were to demythologise Scripture, treating myth as an outdated view to be overcome, or to acknowledge the ongoing value of myth as an indispensable means of communicating ultimate truth.[81]

In contrast to these two positions, Wright wants the chief claim of Biblical Theology, namely the statement that the central message of the Bible is a proclamation of divine action, to be read, *pace* Bultmann, as implying an objective character of divine action.[82] In actual fact, Bultmann himself addresses this concern by explaining that the status of divine action is a main objection to his demythologising:

> Perhaps we may say that behind all the objections raised against demythologizing there lurks a fear that if it were carried to its logical conclusion it would make it impossible for us to speak of an act of God, or if we did it would only be the

[79] Wright (1960): 120.
[80] Wright (1960): 120.
[81] Wright (1960): 118-9.
[82] Wright (1960): 121 and 124-8. For Wright's discussion of Bultmann, see Wright (1960): 118-28. For Bultmann's defence against this objection, see Bultmann (1958): 70-3.

> symbolical description of a subjective experience. For is it not mythology to speak of an act of God as though it were an objective event […]?[83]

Bultmann here addresses the fear that the belief in divine action in an objective sense might fall prey to a modern reading of Scripture. In this manner, the interpretation of reports of God's mighty deeds has raised questions about the status of divine action within a modern scientific worldview.

I began the discussion of the historical roots of the DAD by underlining the significance of the Biblical Theology Movement for the controversy to show why in the contemporary debate the doctrine of providence is primarily discussed in terms of *divine action*. The claim that the central message of Scripture is the proclamation of divine action, taken up later and defended in one way or another by various authors, goes a long way towards explaining why up to this day the focus of the debate about God's providential guidance of the world is on divine action. The biblical motive of God's mighty acts and deeds has deeply shaped the current understanding of divine providence, to the effect that divine action is regarded as the most appropriate way of conceptualising providence.

1.1.b. The Critique of Biblical Theology

The immediate origin and starting point of the DAD is a critique of the Biblical Theology Movement and its claim that the biblical expression of divine action is the most appropriate language to explain God's providence. Two watershed articles by Langdon Gilkey and Frank Dilley mark the historical beginning of the DAD.[84] Both authors criticise the inconsistency of the Biblical Theology Movement and its alleged neo-orthodox middle

---

[83] Bultmann (1960b): 196. See also Bultmann (1958): 60. For Bultmann's answer, see Bultmann (1960c): 43-4; Bultmann (1960b): 196-211; Bultmann (1958).

[84] Gwynne (1996): 14-5; Saunders (2002): 9-12; Bernhardt (2008): 42; Thomas (1983a): 5-6. A clear indication of the influence of this discussion on the Divine Action Project are the prominent references to Gilkey in the introductions to the VO/CTNS volumes (Russell (1993): 7; Russell (2000): 6).

ground between liberal and conservative theology calling for a "reexamination of the concept of the action of God."[85]

In his article *Cosmology, Ontology, and the Travail of Biblical Language* (1961), Gilkey argues that, at bottom, Biblical Theology suffers from an unfortunate dichotomy between the assumption of a liberal modern worldview on the one hand, and on the other the use of orthodox biblical language.[86] Gilkey contends that the acceptance of the modern worldview has called into question the meaning of biblical language. On this view, the biblical record of God's mighty words and deeds lost its original meaning with the rejection of miraculous interventions, and is in want of an ontological foundation giving it new meaning.[87]

Gilkey expresses the fundamental inconsistency of Biblical Theology as follows:

> What has happened is that, as modern men perusing the Scriptures, we have rejected as invalid all the innumerable cases of God's acting and speaking; but as neo-orthodox man looking for a word from the Bible, we have induced from all these cases the theological generalization that God is he who acts and speaks.[88]

Let me unpack this claim. Gilkey notes an advance in the worldview of Biblical Theology, a shift from a pre-scientific to a modern scientific worldview. According to Gilkey, the latter prominently features an affirmation of a continual 'reign of causal law.'[89] The point is that this so-called 'liberal modern worldview' precludes objective divine activity. Gilkey claims that the Bible was, consequently, stripped bare of God's activity.[90]

---

[85] Dilley (1965): 67, n.1.
[86] Gilkey (1961): 194.
[87] Gilkey (1961): 199-200.
[88] Gilkey (1961): 203.
[89] Gilkey alternatively speaks of the 'causal continuum', 'causal order', 'causal nexus' and 'world order'.
[90] Gilkey (1961): 194-6.

With regard to the central claim of the Biblical Theology Movement, namely that God is the one who acts, the acceptance of the liberal modern worldview resulted in a peculiar situation: while the object of biblical recital is God's action, the object of Biblical Theology is not God's action but rather biblical faith, that is, Hebrew religion. In other words, there emerged a gulf between the Hebrew religion and our modern recital. Hence Biblical Theology is no more a confessional recital of the God who acts, but a recital of the Hebrew belief in the God who acts.[91] Gilkey puts the matter as follows:

> Thus the Bible is a book descriptive not of the acts of God but of Hebrew religion. […] For us, then, the Bible is a book of the acts Hebrews believed God might have done and the words he might have said had he done and said them – but of course we recognize he did not.[92]

The crux of this worldview-related shift is its detrimental effect on the orthodox use of biblical language. Gilkey argues that despite the continual use of Scriptural language its meaning has changed. Biblical language lost its original univocal meaning insofar as a univocal understanding of biblical language is incompatible with the now accepted liberal modern worldview: in denying God's activity on the basis of the reign of causal law, Biblical theologians cannot anymore predicate 'to act' in the same sense of God and men. Hence the assertion of God's mighty acts turns at best into an analogical predication. This raises a second problem. For, unless the analogical use of biblical language is grounded in a corresponding worldview, such statements are in danger of entirely losing their meaning; they might turn out to be equivocal rather than analogical language. Theology therefore faces the challenge to explicate the difference between God's mighty act and any other event thus specifying the content and meaning of the analogical predication of God's acts.

---

[91] Gilkey (1961): 197-8.
[92] Gilkey (1961): 197.

Thus Gilkey reaches the verdict that until one can specify its content, the analogical use of the term 'divine action' remains empty and meaningless.[93]

On Gilkey's view, Biblical Theology fails without an adequate cosmology and ontology, that is to say, a corresponding worldview and an account of what God's activity objectively amounts to.[94] He describes the precarious situation in present-day theology as follows:

> What has happened is clear: because of our modern cosmology, we have stripped what we regard as 'the biblical point of view' of all its wonders and voices. This in turn has emptied the Bible's theological categories of divine deeds and divine revelations of all their univocal meaning, and we have made no effort to understand what these categories might mean as analogies. […] What we desperately need is a theological ontology that will put intelligible and credible meanings into our analogical categories […].[95]

This statement is a direct attack on Biblical Theology's actionistic claim that biblical language is the most appropriate concept to express providence, namely, in terms of God's mighty acts. Gilkey poses the fundamental challenge that the mere use of orthodox biblical language without an ontological grounding renders theological statements about God's activity meaningless. His call for a theological ontology providing content and meaning to an analogical use of God's mighty words and deeds sets the objective for the later debate.

A final comment is in order about the historical roots of the current debate. With Gilkey's assessment the demand for new ontologically grounded models of divine action arises. But Gilkey leaves the option of a genuine middle position between liberal and conservative theology open. This is where Frank Dilley enters the debate. In his article *Does the 'God Who Acts' Really Act* (1965), Dilley contends that there is in principle no

---

[93] Gilkey (1961): 196 and 199-200.
[94] Gilkey (1961): 203-5.
[95] Gilkey (1961): 203.

middle ground between the conservative and liberal view on God's activity in history. Taking the resurrection as example, Dilley explains:

> The Biblical theologian […] is silent, affirming that a resurrection took place but not what it is that took place, using the words while denying all the concrete meaning of those words. That he can say nothing specific ought to be taken as evidence that there is nothing specific to be said, that Biblical Theology is a purely verbal position. Once content is supplied, either conservatism or liberalism enters in.[96]

In line with Gilkey's argument, Dilley asserts that there is no conceptual, but merely a verbal, difference between Biblical and liberal theology:[97] Biblical theologians are "using Biblical language to assert liberal content."[98] Dilley goes beyond Gilkey, however, in attempting to shut down decisively any hope for an intermediate position.

On the basis of this dichotomy, Dilley contends that a universal divine action model is in fact the only option. Reviewing the alternatives to the liberal denial of God's special activity, Dilley reaches the conclusion that either one accepts miracles in line with conservative theology – what will later be termed 'intervention' – or one is alternatively left with the liberal view that God's only action is universal. The argumentation of Dilley is thereby, as I will explain in more detail at the end of PART ONE, premised upon the inconceivability of the traditional alternative and third option: the theory of joint causes, that divine and creaturely causes act conjointly.[99]

At this point it suffices to note that for Dilley divine interventionism is the only real, albeit scientifically unacceptable, theory that would properly ground the claim of Biblical Theology that God acts specially in history. To make this claim commonly associated with conservatism work, however, a theory of the 'mechanics' of divine action would be

---

[96] Dilley (1965): 73.
[97] Dilley (1965): 66.
[98] Dilley (1965): 66.
[99] Dilley (1965): 77-80.

needed.[100] By this expression Dilley means an explanation of the biblical acts of God in terms of a scientific, possibly physical, explanation "showing in science itself how it is that God acts."[101] He summarises his argument as follows:

> If [the Biblical theologian] means to use the Biblical language to communicate a non-Biblical world view, if he is masking a liberal metaphysic, then this ought to be admitted openly. If he is not, then there is an obligation to provide some clear statements as to what he does mean. If one is to speak of a God who acts he must be prepared to offer some description of the mechanics of Divine action, particularly if he rejects both the conventional liberal and the conventional conservative views.[102]

In light of this assessment Dilley concludes that since firstly there is no middle ground between conservatism and liberalism, and secondly conservatism lacks a scientifically tenable account of divine action, liberalism is the only defensible option. The problem with the liberal view is, however, that it cannot ground the central claim of the Biblical Theology Movement, namely that God is the one who acts, at least not the way authors such as Wright wanted their statement to be understood. Hence Dilley's critique is essentially the assertion that a God "who works universally rather than specially, is the only hope."[103]

In this section I have shown that the historical context of the DAD is a biblical controversy about the status of God's mighty deeds. In anticipating two central features of the DAD, the discussion about Biblical Theology and the role of mythology helps to understand the later debate. On the one hand, God's providence is discussed in terms of divine action. I signposted the central claim of Biblical Theology that the message of the Bible is that God *acts* in history, as a historically significant reason for the approach to providence in terms of action. The notion of divine action is thus biblically motivated. On the other hand, the point of contention concerning divine action in nature is whether or not

[100] Dilley (1965): 70.
[101] Dilley (1965): 76.
[102] Dilley (1965): 70.
[103] Dilley (1965): 80.

there is ‘room’ for such divine acts. What leads theologians like Bultmann to deny specific divine acts in an objective sense is the alleged causal closure of the world. In other words, the systematic challenge in the modern context results from the worldview associated with liberal theology implying that the world is a causally closed system. Hence the ‘liberal modern worldview’ is the conceptual ground and historical reason for the systematic challenge to find room for divine action in the world.

1.2. The Theological Push-Back on Divine Action in Nature

The critique of the Biblical Theology Movement challenged the legitimacy and called into question the meaning of biblical talk of divine action. In consequence, subsequent theological contributions pushed back on God’s action *in* the world. This theological push-back is arguably the reason why the possibility of particular divine acts in the world became the centre of theological discussion by the mid-1980’s.

1.2.a. The ‘Liberal Modern Worldview’

The view that God cannot act specially in the world due to the closed and unbroken causal nexus of the world has come to be known as the *liberal modern worldview* – a view common “from Bultmann to Kaufman.”[104]

The liberal modern worldview finds indeed exemplar expression in the writings of Gordon Kaufman. In *On the Meaning of ‘Act of God’* (1968) Kaufman argues that the modern scientific worldview renders the very concept of events directly caused by God ‘literally inconceivable’. According to this view, the causal closure of the world speaks against directly caused divine events, for any particular event is part of an unbroken causal

[104] Kirkpatrick (1983): 174. For further evidence, see Kirkpatrick (1983): 174-6. See also Saunders (2002): 11, “Undoubtedly the status according to scientific explanation lies at the core of any rejections leading to a ‘liberal’ view of Biblical SDA [special divine action]”.

web, conditioned, although not necessarily determined, by antecedent causes. No event within the interrelation and interconnection between events can be viewed as independent.[105]

Giving as example the virgin birth, Kaufman states:

> [W]e cannot clearly think […] what an event without prior finite causes and conditions would be […], we inevitably and necessarily inquire about the antecedent conditions. *The very definition or concept of event implies for us such connection with indispensable antecedent (finite) conditions*, and it is no longer possible for us to think of 'event' as simply supernaturally caused.[106]

Kaufman describes the causal web as 'self-contained whole', as closed off to any absolute beginning points within the causal nexus. Since divine action in the world would amount to such an absolute beginning point, the modern liberal worldview precludes these acts of God. There is no room for such intervention. Any talk of divine action in the world would be meaningless.[107]

To illuminate further the liberal modern worldview, we need to turn to the underlying understanding of the autonomy of nature and creaturely independence. In *God's Action in the World* (1986), Maurice Wiles, another prominent advocate of the liberal view, also gives some helpful indications. In this book, Wiles promotes the view that creatures have a "genuine independence of agency,"[108] by which he means that creatures, while being dependent on God in their being, are independent from God in their acting. The specific power of their action is not dependent on God's activity:[109] God bestows on creatures "the power to move themselves to action independently of specific divine agency in each

[105] Kaufman (1968): 184-6; quoted expression on p.189.
[106] Kaufman (1968): 185, n.10.
[107] Kaufman (1968): 187-9; quoted expression on p.187.
[108] Wiles (1986): 21.
[109] Wiles (1986): 20.

case."[110] In promoting that the power of creaturely action is independent of God's activity, Wiles deliberately seeks to overturn the traditional theological view that creatures are dependent on God not only in being, but also in their agency.[111] The supposition that for creatures to have genuine agency means for them to perform their actions independent of God's activity, with the exception of God's initial creative and conserving action, muddles the waters in the subsequent debate. For this supposition locks, as it were, God out of the world, re-directing the focus of debate to the possibility of a window to re-enter causally into the world.

The assertion of a genuine independence of agency reverses the traditional logic of the relation between divine and creaturely action. Natural causes are autonomous to the extent that they operate independently of God's activity, rather than due to God's concurring action. It is presumably for this reason that according to the liberal modern worldview the operation of creatures precludes divine operation. Nature's activity puts a limit to divine activity because creatures are independent of God in their agency; God's being, on the contrary, does not conflict with that of creatures because creatures are dependent on God in their being.

1.2.b. Uniform and Universal Divine Action

Turning to the theological push-back on divine action in nature as a consequence of the liberal modern worldview, Kaufman proposes to view God's action primarily as an act encompassing the whole course of nature and history. Kaufman terms this one single divine act as the 'master act'. The concept of master acts, taken from the philosophy of action, refers to overarching complex acts, such as producing a bench, and is to be distinguished

[110] Wiles (1986): 20.
[111] Wiles (1986): 20.

from their constitutive elements, such as sawing and hammering, so-called sub-acts. On Kaufman's view, the term 'divine action' denotes sub-acts only in a secondary and derivative sense.[112] Particular events within the causal web can only be viewed as divine sub-acts, that is, particular divine action, if these events serve to advance and realise the ultimate goal or intention of God's master act. What Kaufman conceptually precludes, however, are divine *ad hoc* decisions, or divine action based on a different causal mode. Divine sub-acts are derived from, and must therefore be an integral part and function of, God's one single overall act.[113] The question of the relation of creaturely and divine action is left somewhat unresolved.

Maurice Wiles and Vernon White subsequently take up the distinction between God's master and sub-acts, but develop it in opposite directions. In so doing they negatively demarcate what will later come to be known as special divine action. Brian Hebblethwaite and Edward Henderson have identified uniform and universal divine action as opposed extremes in the debate, both collapsing in one way or another, as later commentators have pointed out, the distinction between special and general divine action. Uniform divine action subsumes special into general divine action by making the particularity a responsive or functional feature of uniform divine action; universal divine action subsumes general into special divine action by stating that everything is a special divine act.[114]

In line with Kaufman, Wiles argues that the primary use of divine action concerns "the world as a whole rather than [..] particular occurrences within it."[115] Thus, Wiles holds the continual creation of the world as a whole to be the one single intentional divine act.

---

[112] Kaufman (1968): 190-2. The example is taken from Kaufman (1968): 182.
[113] Kaufman (1968): 196-200.
[114] Hebblethwaite and Henderson (1990a): 3-4; Gwynne (1996): 24-32; Saunders (2002): 23-32.
[115] Wiles (1986): 28.

Contrary to Kaufman, however, he maintains that all sub-acts of the divine master act are natural rather than divine. God does not perform any sub-acts.[116] Although Wiles allows for particular parts to be specially significant aspects of the divine master act, the specialness attributed to particular events in the world purely concerns, and this is most important, the human responsiveness to the one divine initiative of creation, but in no way includes further divine initiatives.[117] Wiles explains:

> [T]he whole continuing creation of the world [is] God's act, an act in which he allows radical freedom to his human creation. The nature of such a creation […] is incompatible with the assertion of further particular divinely initiated acts within the developing history of the world.[118]

Owen Thomas terms this view as *uniform* divine action.[119] On Wiles's – and to some extent also on Kaufman's – view God's action is uniform because there is only one act God performs: the single continual creation of the world – the difference being that Kaufman accepts certain particular events as divine sub-acts. Both authors are in agreement, however, that these sub-acts cannot be the primary sense of divine action. Within the context of God's uniform action, some events may be viewed as special, either as divine action furthering the overall divine intention not essentially different from, because a part of, God's all-encompassing act (Kaufman), or simply in terms of the human reaction which perceives the act as special (Wiles). As Wiles explicitly states:

> In calling them special acts of God we would not be implying that there was any fundamental difference in the relation of the divine action to the particular worldly occurrences of their situation; we would be referring to the depth of response and the creative potential for eliciting further response from others embodied in those particular lives or those particular events.[120]

---

[116] Wiles (1986): 96-8.
[117] Wiles (1986): 93 and 107-8.
[118] Wiles (1986): 93.
[119] Thomas (1983b): 232.
[120] Wiles (1971): 7.

On the liberal view divine action is uniform because there is no difference in kind in God's activity, but it is rather the human responsiveness – or the functional role of the act, for that matter – which makes God's activity special. Thus the uniform action view denies particular divine action in the world.

Turning to the opposite view, the *universal* action view holds that all happenings are parts or expressions of God's particular divine action. White takes up the distinction between God's master and sub-acts to argue that *all* events are special divine acts. The scope of divine action is universal but the nature of this universal divine action is special rather than uniform.[121] It is worth mentioning in this connection that the concept of special divine action seems to appear for the first time in an English book title in White's *The Fall of a Sparrow: A Concept of Special Divine Action* (1985).[122]

Contrary to Wiles, White proposes that every divine action is special in the sense of being specifically, rather than uniformly, related to particular events. White challenges Wiles's assumption that due to the general structure and regularities in nature divine action cannot be specific. In his action God *intends* specific ends relating to particular events in and through these regularities.[123] Contrary to Kaufman, White contends that all events, and not, as Kaufman puts it, "only those events which move the creation forward a further step toward the realization of God's purpose,"[124] can be regarded as divinely intended sub-

[121] White (1980): 2; White (1985): 161.
[122] White (1985). The substantial part of the book was submitted as a master thesis in 1980 under the title 'The Concept of Special Divine Action' (White (1980)).
[123] White (1985): 106-7. It might be worth mentioning that Wiles elsewhere concedes that he might have overstated his case: "I now think that in the past I have overreacted to those difficulties [concerning the notion of God's particular action] and written too exclusively on a divine purpose for the world and for mankind in purely general terms. I think that what I have said before can and should be extended to speak of particular divine purposes for individuals in their specific situations." (Wiles (1981): 245) Nevertheless, there still remains a significant difference between Wiles and White in that White advocates a view where God's intentions extend to all, and not merely some, particular events.
[124] Kaufman (1968): 198.

acts.[125] This is because White, in maintaining the universal character of divine action, contests Kaufman's restraint that "there is a limit below which acts may not be further analyzed into constituent acts."[126] Universal divine action means for White all-encompassing action, including and intending all constituent acts of every composite act. Every single event in the world, therefore, even the fall of a sparrow, as the book title indicates, is a divinely intended act of God.[127] The central thesis is that "whatever happens is caught up to serve God's intention."[128]

The present point of interest is in what sense White characterises this universal divine action as special. To that end, it is necessary to further unpack White's two essential characteristics of divine action. Divine action is both special and universal: "universal in scope and specific in relation to particular events."[129] Universal in scope here means that God's action encompasses and gives meaning to all reality. Each event constitutes, while developing according to its own nature, some form of sub-act to God's master act. Each event also carries a divine intention. God is always able to give additional meaning to each particular event provided by his ever-preceding arrangement of the wider context.[130] In this sense every single event in the world is a divinely intended end in itself and to this extent a sub-act of God's master act.[131] The point is that the specialness in White's concept of special divine action refers to the specific relation of the divine intention to particular events. Divine action is special firstly in that God intends different ends in relation to different particular events and secondly in that the very relation between the events and ends, the wider context giving specific meaning to each event, is different in relation to

[125] White (1985): 109.
[126] Kaufman (1968): 182.
[127] White (1985): 123-5.
[128] White (1985): 133.
[129] White (1985): 161.
[130] White (1985): 115-8.
[131] White (1985): 128.

different particular events. Special divine action for White is not and does not imply, however, a different type or mechanism of divine action. The specialness simply refers to the specificity of the divine *intention* in relation to particular events: God realises various ends in the world, and these are specific to each event.[132] In short, universal divine action is differentiated by means of a unique divine relationship to each event. God's intention has various ends with respect to various particular events.[133]

The purpose of this section has been to show how theology in the mid-twentieth century shifted away from God's action *in* the world towards God's enactment *of* the world. With reference to three prominent authors, I have described a particular tendency following the initial critique of the Biblical Theology Movement to constrain severely or give up altogether particular divine acts in nature. Although this tendency has not gone unchallenged, the specialness of the divine act has been specified and become a statement about (i) the scope and nature of the divine intention, (ii) a function of or (iii) the human responsiveness to a single divine master-act.

These descriptions of the specialness of God's action in the world match, as I shall show next, the demarcation of the nowadays conventional categories of special and general divine action. I therefore suggest viewing the emergence of the category of special divine action as an effect of the perceived scientific pressure, based on the liberal modern worldview of an unbroken causal web, eventually leading to a denial of a certain type of divine action. Theologians such as Wiles, Kaufman and White explicitly restrain from making claims about divine action concerning the causality of natural events and a

[132] White (1985): 139-40.
[133] White (1985): 125.

difference in kind of divine action. In short, divine action is conceived as causally, although in the case of White not intentionally, uniform.

1.3. The Concept of Special Divine Action

It has become a commonplace in the DAD to distinguish between General Divine Action (GDA) and Special Divine Action (SDA). GDA is commonly taken to be the basic but theologically insufficient category to be complemented by the additional but controversial category of SDA. The category of SDA broadly speaking denotes a divine activity that goes beyond creation and conservation and has same form of particularity. The difficulty with this statement is that there is considerable disagreement on what exactly it means. Andrew Pinsent and Timothy McGrew have recently suggested understanding SDA as a kind of 'trouser-word' (John Austin): a word whose function is "to exclude possible ways in which divine action is not special."[134]

This suggestion seems to be a particularly helpful way of approaching the topic sensitive to the historical backdrop of the convention to distinguish between SDA and GDA. Since the time of the Divine Action Project, it is possible to read the DAD as an ongoing debate along a spectrum of positions between the two extremes of uniform and universal divine action. Uniform and universal divine action theories have in common their denial of a specific causal history of special divine action. On these accounts, God's action refers to a single universal divinely intended act. They differ, however, over whether God can also be said to act particularly, here and now. The point of contention is to what extent God's intentionality extends to and encompasses every single event happening in the world. The biblically motivated application of the category of action was thus to some

[134] Pinsent and McGrew (2015): 1.

extent put into question, namely insofar as the particularity that is usually associated with action – and in particular with God's mighty deeds – was at least causally denied.

Against this background we can now identify and make sense of the central category of SDA. SDA is the kind of divine action that is not uniform. The trend towards uniform divine action is the first key to understanding the notion of SDA. Its primary function is to exclude uniformitarianism. To borrow the words of Niels Henrik Gregersen,

> [a] central motivation for developing a robust notion of SDA lies in the attempt to overcome a uniformitarianism, which presupposes a causally closed world and thus makes Christian practices […] meaningless.[135]

Thus Gregersen suggests viewing the notion of SDA as a conceptual 'shorthand' characterising divine action that is not reducible to a uniformitarian divine action view:[136] "the conviction that God always and everywhere does the same job of creating-and-upholding an already established universe."[137]

In his detailed study, *Special Divine Action: Key Issues in the Contemporary Debate (1965-1995)*, Paul Gwynne has identified two types of language operative in the debate expressing the concept of SDA: (i) the language of intention and (ii) the language of causality. Each language, Gwynne argues, has an advantage over the other, but also faces a specific challenge. The language of causality concerned with God's causal contribution has the advantage of providing an ontological description of SDA, but faces the difficulty of finding room for SDA, insofar as each effect seems already exhaustively explained by natural causes. The language of intentionality, on the other hand, which is concerned with God's intention, has the advantage of emphasising God's personal character, and seems

[135] Gregersen (2008): 184.
[136] Gregersen (2008): 192.
[137] Gregersen (2008): 184.

prima facie to avoid the causal problem, but only at the expense of leaning towards making SDA a subjective category.[138]

These two general types of language have resulted in two main lines of thought as to how to explicate the *particularity* of God's activity, thereby giving alternative ways to distinguish SDA from GDA:[139] (i) the *intentional distinction*, which expresses the particularity of God's action in terms of his particular intentions; (ii) the *efficient distinction*, which interprets the particularity as particular causal effects of God's action.

The intentional distinction distinguishes SDA from GDA in terms of God's intentionality, namely in terms of the divine intention and not the scope of the effect of the divine act. On this account, GDA is divine action generally intended by God. SDA is divine action specifically intended by God. This is the definition Wesley Wildman gives in his influential summary of the terminological and conceptual achievements of the Divine Action Project:

> General divine action (GDA) is the creation and sustaining of all reality insofar as this does not necessarily presume any specific providential divine intentions or purposes.
>
> Special divine action (SDA) is specific providential acts, envisaged, intended, and somehow brought about in this world by God, possibly at particular times and places but possibly also at all times and places.[140]

One advantage of the intentional distinction is that one can affirm universal SDA.[141] White's universal divine action, for instance, would clearly qualify as SDA on this account. A second advantage is the implicit emphasis on the personal character of God's action, namely by stressing the intentional dimension of his action.

---

[138] Gwynne (1996): 57-87 and 89-111, respectively, especially pp.57-8, 91-2, 101-2, 105-6.
[139] Saunders (2002): 18-23; Wildman (2008): 139-40. See also Gwynne (1996): 23-115.
[140] Wildman (2008): 140.
[141] Wildman (2008): 139-40.

The difficulty with the intentional distinction is in what sense one can maintain GDA as distinct from SDA, at least in this formulation, given that God presumably has intentions in creating and conserving the world. Indeed some, like White, seem willing to subsume GDA into SDA. Others need to find a way of specifying the distinct divine intentions involved in GDA and SDA.

To avoid these difficulties, Nicholas Saunders suggests an alternative account, which has since become the standard reference for SDA. The efficient distinction distinguishes GDA and SDA in terms of the scope of divine action. It is the universality or particularity of the *effects* of the divine acts that demarcates GDA and SDA. GDA concerns God's efficient causal relation to nature as a whole, while SDA concerns God's efficient causal relation to particular parts, that is, times and places, in contrast to others.[142] As Saunders puts it in his reputable assessment of the Divine Action Project,

> GDA is divine action that "pertain[s] to the whole of creation universally and simultaneously."
>
> SDA is divine action that "pertain[s] to a *particular* time and place in creation as distinct from another."[143]

On the efficient distinction, God's activity *in* the world most importantly implies that "God by acting initiates novel causal interactions in nature."[144] What the conception of SDA presupposes is, consequently, that God's action has causal implications; however, the efficient distinction does not imply that divine action, and in particular SDA, does not involve divine intentionality. Saunders stresses that this second mode of distinguishing SDA from GDA does explicitly not provide a definition of SDA and GDA, but merely

[142] Saunders (2002): 20-1; Gwynne (1996): 23-4.
[143] Saunders (2002): 21. It might appear that the way Saunders states the efficient distinction leaves it open to an intentional interpretation, namely if 'pertain' is read in terms of intentions. But from Saunders's exposition it is clear that this is not his suggested reading.
[144] Saunders (2002): xiii.

demarcates the two concepts. If the fact that the efficient distinction provides solely a criterion of demarcation, but not a definition of SDA and GDA is not taken into consideration, a disadvantage of the efficient distinction will be that the resulting notion of SDA does not express the full meaning of divine action, including God's intentionality.[145]

In recent years, the efficient distinction has become the dominant mode of distinguishing SDA from GDA. Hence a second key to understanding the prevalent notion of SDA is the rejection of universal divine action and the conviction that SDA must not simply refer to God's intentionality in a universal but special way. While Gwynne discerned a certain shift towards intentional language prior to the Divine Action Project the emphasis has since reverted.[146] Indicative of this shift is the corollary distinction between subjective and objective SDA that is part of the rationale of the Divine Action Project and concerns the way the effect of God's action is brought about rather than the nature of the divine intention.[147]

Subjective and objective SDA further qualify the sense in which SDA is 'special'. The initial aim was to develop a conceptual tool to characterise the difference between liberal and conservative divine action theories.[148] I will present here a refined version developed by Thomas Tracy. The following threefold taxonomy is also included in the standardised terminology of the Divine Action Project.[149] Divine action can be *special* in at least three respects: it can be (1) epistemically, (2) functionally, or (3) causally special.

First, divine action can be specified in terms of its *epistemic role*. This is an assertion about the human insight of the divine purpose. Particular events may distinctively reveal

[145] Saunders (2002): 20-1.
[146] Gwynne (1996): 87, 114-5.
[147] Russell (2000): 10; Russell (2001b): iii.
[148] Russell (1997): 45.
[149] Wildman (2008): 142.

God's purpose for us. If a particular event caused by God is the occasion through which the divine purpose becomes apparent *for us*, the divine act can be termed 'epistemically special'. Note that this specification does not entail any assertion about how God caused this event or whether or not it has any special relevance in God's plan. Divine action that is distinguished in virtue of its epistemic role is called (1) 'subjectively special divine action', in short subjective SDA.[150] For example, Wiles, with his uniform divine action, clearly advocates a view where the specialness of the divine activity refers to the human response, an instance of subjective SDA.

Second, divine action can also be specified in terms of its *role in advancing God's purpose in the world*. This is an assertion about an event in its relation to the divine purpose. Particular events may have a distinctive place in bringing about the divine purpose. If a particular event caused by God has particular importance for the fulfilment of God's purpose in history, such as a turning point in history, the divine act can be termed 'functionally special'. Note that this specification does not entail any assertion about how God caused this event or whether or not it has any special relevance for the human understanding of God's plan. Divine action that is distinguished by virtue of its role of advancing God's purpose in nature is called (2) 'functionally special divine action', in short functional SDA.[151] For instance, Kaufman maintains a specialness in God's action in the

---

[150] Tracy (2006): 603; Tracy (2008): 250; Tracy (2012): 58; Tracy (2015): 135-136.

[151] Tracy (2006): 603; Tracy (2008): 250; Tracy (2012): 58-59; Tracy (2015): 136. Tracy (2001) tentatively explores the notion of functional SDA as middle position attempting to maintain some objectivity within uniformitarianism: "I have suggested that an event may *both* be an expression of God's uniform action throughout creation *and* be objectively special by virtue of the role this event plays in realizing God's purposes in the world. What marks out the event is not that *God* plays a special causal role in producing it, but rather that the *event* plays a special causal role in the unfolding course of events." (Tracy (2001): 243, n.14.) I disagree with Wegter-McNelly (2008): 308-313, that functional SDA is a form of objective SDA. Tracy experiments in his 2001 paper with the possibility of finding some 'objectivity' in SDA that goes beyond subjective SDA but – and this is the crucial point – does not amount to objective SDA. Tracy misleadingly terms this 'objectively' SDA but nevertheless acknowledges that this is a uniformitarian position (Tracy (2001): 242, n.14). For a clarifying note on the issue, see Tracy (2008): 250, n.1.

sense that particular sub-acts may serve a special role in the bringing about of God's overall purpose; this is an example of functional SDA.

Finally, divine action can be specified in terms of its *causal history*. This is an assertion about the causation of an event. God might distinctively bring about particular events. If God causes a particular event in a different way than other events, the divine act can be termed 'causally special'. Note that this specification does not entail any assertion about whether or not this has any special relevance for either God's plan or the human understanding thereof. Divine action that is distinguished by virtue of its causal history is termed (3) 'objectively special divine action', in short objective SDA:[152] "Divine action of this sort produces an effect in the world not, as it were, by writing it into the program of history at the outset, but rather by acting within the world's history as it develops."[153] Hence both the uniform action view of Kaufman and Wiles and the universal action view of White do not amount to objective SDA, or SDA on the efficient distinction, because they restrain from making claims about the causal reality of particular divine activity.

The category of SDA, in particular objective SDA, has not gone unchallenged. Niels Henrik Gregersen, for example, contends that "a too principled distinction between GDA and SDA may be part of the problem, and not of the solution."[154] The concern he raises is that an over-precise distinction between GDA and SDA parcels out and separates God's action. It seemingly promotes a view where God first creates beings and then, in a second act, modifies their actions. The question that arises in this context is whether the distinction between GDA and SDA is merely conceptual or real.[155]

---

[152] Tracy (2006): 603-4; Tracy (2008): 250-1; Tracy (2012): 59; Tracy (2015): 136.
[153] Tracy (2012): 59.
[154] Gregersen (2008): 179.
[155] Gregersen (2008): 191-3.

Others have posed challenges to the definition of objective SDA. Scholars continue to point out that objective SDA has a counterfactual logical structure.[156] To give a few examples, "if God had not acted then nothing significant would have occurred."[157] Or alternatively, "*had God not acted* in helping to produce some effect, or in directly bringing it about, the effect *would not have been identical* to the state of affairs we in fact observe."[158] The basic intuition is that objective SDA must make a difference, or bring about something novel: "it would seem that the event in question must be in some way different than it would have been had divine action *not* been involved."[159]

Alvin Plantinga argues that the problem with these counterfactual definitions is that they also apply to GDA, at least in the form of divine conservation.[160] Had God not acted to conserve his creatures in their existence, the current state of affairs would have been different. Although this argument in turn raises questions about whether creation and conservation imply change, it is not clear that, at least within the common framework, counterfactual statements of this sort can actually be used as a criterion of demarcation.

In any case, on both the efficient and intentional distinction, SDA and GDA are an exhaustive description not only of God's providence, but of all divine activity, including creation and conservation. This is notably different from drawing the distinction between God's special and general providence the way Langford did in his six-fold account discussed at the beginning of this chapter, in which creation and conservation were not subsumed under general providence.

---

[156] Wildman (2008): 142; Clayton (2008): 104-105; Gregersen (2008): 191.
[157] Wildman (2008): 142.
[158] Clayton (2008): 104.
[159] Clayton (2008): 104.
[160] Plantinga (2008): 390.

Moreover, on both accounts, miracles are but a non-coextensive subset of SDA.[161] In fact, the Divine Action Project focused exclusively on non-miraculous SDA. The question that emerged is this: is there a class of divine action that goes beyond creation and conservation, that brings about novelty, but is not a miracle? To borrow the words of Langford,

> [i]s not to steer nature ultimately to interfere with it, so that events that are not only psychologically significant, but also significant because of some divine initiative that brought them about, must be miracles? What room is there for a further class of providential events?[162]

From our discussion we can tentatively conclude that the term 'objective SDA' (hereafter OSDA) refers to a divine act that (i) goes beyond creation and conservation; (ii) does not only involve final causation (intentionality) but also efficient causation (causality); (iii) is neither merely a human response to an event (subjective) nor does simply serve a special function in furthering God's purpose (functional); and where furthermore (iv) the effects are particular, here and now, rather than uniform.

In the course of this chapter I have made a case, through a long historical tour, for viewing the concept of SDA as designating a kind of divine action that is not uniform: God's mighty and responsive acts as portrayed in Scripture. I showed that the critique of the Biblical Theology Movement that marks the beginning of the DAD called into question the belief that the biblical language of divine action is the most appropriate form of expressing the providence of God. Without an ontological account of divine action, critics claimed, the biblical concept of divine action is devoid of meaning and objective content and cannot, therefore, serve to conceptualise divine providence.

---

[161] Saunders (2002): 21; Wildman (2008): 140.
[162] Langford (1981): 77.

Thus the beginning of the DAD is marked by a demand to ground ontologically biblical claims about God's action in the world. The challenge posed by the critics was to explicate how divine action is possible within and in accordance with the current worldview: to specify the mechanism of divine action. The background of this discussion, I suggested further, is the 'modern liberal worldview' stating that since the world is a causally closed system there is no room for God's action.

In a second step, I illustrated that as a result of, and response to, the modern challenge of divine action theologians started to become reluctant to speak of OSDA, and instead promoted either subjective or functional SDA. Hence the concept of SDA, and in particular OSDA, is a way of expressing the initial intuition of the biblical claim that God acts – that he *really* acts. The denial of OSDA due to the modern liberal worldview will play a major role in the next chapter. With this historical exposition and systematic reconstruction of the concept of SDA in view, we are now ready to analyse the Divine Action Project.

Chapter 2:
The Divine Action Project (1988-2003)

In the last chapter I introduced in detail the category of SDA. In this second chapter I will discuss the second essential feature of the standard model of divine action: *noninterventionist* SDA. So far I have treated the DAD in general. I shall now focus more specifically on the debate as pertaining to the field of science and religion. One reason why scholars within this field readily picked up the topic of divine action was that the main obstacle against divine action in nature, at least from the liberal perspective, came from the sciences: the causal closure and determinism purportedly implied by the modern scientific worldview. This assumption became subject to scientific scrutiny in what has come to be known as the *Divine Action Project* (1988-2003, hereafter DAP).[163]

As a way of introducing the DAP, it will prove helpful briefly to recapitulate the context and challenge of the project. The beginning of the DAD is marked by the claim that the language of divine action employed in the Bible is devoid of objective content and cannot, therefore, serve to conceptualise the providence of God, unless one can provide a systematic account of divine action that grounds biblical language ontologically. Moreover, the critical assessment of Gilkey and Dilley brought to light that an implicitly assumed 'liberal modern worldview' practically precluding OSDA will not do the job. An alternative account is needed.

The central issue this criticism puts into focus is *how* God can act in the world. The apparent challenge raised for orthodoxy is to come up with and provide a scientifically sophisticated worldview that gives back meaning to the biblical language of God's activity. Hence, the way to re-establish the biblical claim that God is one who acts is, it would seem,

[163] This is the standard designation and timeframe of the project suggested by Wildman (2008).

to develop an account of divine action that first specifies the mechanism of God's action, and then provides an ontological theory informed by the best scientific knowledge available about the world, in which God is said to act.

Establishing such an account is what the DAP sets out to achieve. By referring to its *Sitz im Leben* Niels Henrik Gregersen emphasises the importance of the historical context for the project:[164]

> The [divine action] project should be seen in the context of 20th century theological developments. More than once has Robert John Russell cited the poignant thesis of Langdon Gilkey's 1961 essay, 'Cosmology, Ontology, and the Travail of Biblical Language,' where Gilkey put the finger on the crisis of God-talk in the neo-orthodox era […]. Seen from a theological-contextual point of view the series can thus be seen as a constructive attempt to overcome the crisis of both liberal and neo-orthodox Protestant theology.[165]

This chapter is not so much a critique of the DAP itself, but is rather an attempt to situate and discuss the idea of noninterventionist SDA in its proper context. The concept of noninterventionist SDA originated and was most prominently expounded in the DAP, a massive 15-year interdisciplinary research programme enquiring into the *possibility* of divine action in light of modern science.[166] The goal was to develop new models of divine action, the target of many to defend a robust account of SDA, or special providence – the terminology was widely used interchangeably in the project. As a general rule, scholars tended first to speak of general and special *providence* and only later on switched terminology speaking of general and special *divine action*.

---

[164] For further evidence of the context in which the DAP situates itself, see the introductions to the project by Russell (1993): 4-7; Russell (2000): 3-6; Murphy (1999): i-ii.
[165] Gregersen (2008): 185. I replaced VO/CTNS with divine action.
[166] For a synopsis and introductive analysis of the project, see Russell (2008a) and Wildman (2008).

I will conduct the following examination in three steps. Section 2.1 introduces the agenda of noninterventionist OSDA. Section 2.2 addresses some challenges to the concept of noninterventionism. Section 2.3 discusses particular noninterventionist models.

2.1. A New Framework as Alleged Breakthrough: NIODA

The birthplace of the DAP was a study week commemorating the 300th anniversary of Isaac Newton's *Philosophia Naturalis Principia Mathematica* (1687), organised by the Vatican Observatory and held in Castel Gandolfo in 1987. The conference proceedings were published as *Physics, Philosophy, and Theology: A Common Quest of Understanding* (1988). As an outgrowth of this initial meeting, the Vatican Observatory (VO) in Rome and the Center for Theology and the Natural Sciences (CTNS) in Berkeley decided to co-sponsor a decade-long project aiming to foster a dialogue and mutual interaction between theology, philosophy, and the natural sciences.[167]

To establish a 'two-way interaction', to wit, to contribute to theological work dealing with scientific perspectives and to investigate the theological and philosophical relevance of contemporary scientific work, divine action was chosen as overarching theological topic and guiding theme of the entire project (material object), whereas selected scientific perspectives determined the particular focus of each of the five major research conference (formal object).[168]

In keeping with this research methodology, five interdisciplinary conferences were conducted between 1991 and 2000, and a 'capstone conference' reflecting on the

[167] The introductions to the VO/CTNS volumes give an excellent overview of the history, scope, and methodology of the DAP (Russell (1993); Russell (2000); Russell (1998a); Russell (2008a); Russell (2008c)). For a short overview of the initial study week, see Coyne (1988) and Coyne (2008).
[168] Russell (1993): 1-3; Russell (2000): 1-3; Russell (1998a): iv-v; Russell (2001b): ii; Russell (2008a): 5-6; Russell (2008c): xiii.

achievements was held in 2003. The results were published in the VO/CTNS volumes subtitled *Scientific Perspectives on Divine Action*. Each volume displays in its title the scientific perspective of the conference: *Quantum Cosmology and the Laws of Nature* (1993), *Chaos and Complexity* (1995), *Evolutionary and Molecular Biology* (1998), *Neuroscience and the Person* (1999), and *Quantum Mechanics* (2001). The final reflections at the 'capstone conference' marking the end of the project were published as *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress* (2008). These volumes have become the standard reference for the view that God needs room to act in nature and represent, to borrow the words of Wesley Wildman, "the state of the art in contemporary theories of special divine action."[169]

When looking back on its accomplishments, the general editor of the VO/CTNS series, Robert Russell, praises the DAP for having achieved a major breakthrough in modelling divine action that has the potential to reframe and radically change the history of the DAD by overcoming the major theological deadlock since the rise of modern science:

> [S]cholars over the last two decades have achieved new and promising breakthroughs in the problem of divine action. The breakthroughs have come through arguing that various key discoveries in the natural sciences can be interpreted through a philosophy of nature in which [i] emergence replaces the reduction of all events to purely physical processes and [ii] indeterminism replaces causal closure. These insights make it possible to envision God acting in the world *without intervening* in (i.e., breaking or suspending) the regularities of nature.[170]

The approach leading to the described breakthrough is called NIODA. NIODA combines OSDA and noninterventionism. Russell was among the leading figures launching this research programme, and it was him who coined the approach 'NIODA'. The acronym stands for *Non-Interventionist Objective Divine Action*.[171]

---

[169] Wildman (2008): 133.
[170] Russell (2011b): 142. My emphasis.
[171] Russell (2008a): 20-1. For the development of Russell's NIODA project, see Wegter-McNelly (2006).

The evaluations in the 'capstone' volume reveal that the NIODA approach is arguably the single most influential strand within the DAP. Although various topics were discussed and approaches taken to address the modern problem of divine action, at least in hindsight there is relative agreement that the major achievement of the DAP was the development of the NIODA framework. Without suggesting that all participants subscribed to this programme, Mark Worthing speaks of a "dual consensus that (1) God does act in the world, and (2) this action is best understood in noninterventionist terms."[172]

2.1.a. The Theological Divide between Liberalism and Conservatism

To see why the DAP engaged in a "re-evaluation of the modern understanding of divine action in light of more recent science"[173] we need to understand better the perceived chasm in twentieth-century Protestant theology. NIODA is a 'critique of the critique' of the Biblical Theology Movement voiced by Gilkey and Dilley. NIODA proponents question the denial of OSDA by critically assessing the *scientific* accuracy of the liberal modern worldview restricting God's activity to GDA and viewing SDA a merely subjective or functional category.

The central scientific claim of NIODA and counter-thesis to the outlined earlier debate is that nature is *not* a causally determined system. This claim goes hand in hand with a fear of interventionism and the rejection of the conservative stance that God acts by intervening in the laws of nature. NIODA theorists are in search for a *tertium quid* between these liberal and conservative views.

More than once Russell indicated that the NIODA framework seeks to overcome the dichotomy Nancey Murphy expounded in *Beyond Liberalism and Fundamentalism* (1996):

---

[172] Worthing (2008): 316.
[173] Murphy (2000): 325.

the theological divide between liberals and conservatives in American Protestantism.[174] Murphy's thesis is that

> modern philosophy limited the options for theologians, resulting in the bifurcation of theology into two types. While many theologians sought middle ground between the liberal and conservative tracks, in fact there was never any consistent third way. However, the modern positions creating these limited options have all been overturned.[175]

Murphy here argues that modern philosophy and science set the theological agenda for various Protestant disputes between conservatives and liberals. In particular, she identifies the corresponding modern worldview as consisting of a combination of determinism and reductionism: if (i) every system is reducible to its parts, that is to say, parts determine the whole but not *vice versa* (reductionism), and if (ii) the parts are in turn determined by the laws of nature (determinism), then this leaves no room either for human free will or for divine action.[176] Murphy reaches the conclusion that, granted this reductionist-determinist worldview, there are only two options available to theology: (1) liberal 'immanentism' – the view previously labelled uniform divine action – and (2) conservative 'interventionism'.[177]

Thus Murphy seemingly reiterates the claim made by Gilkey and Dilley, that "there really is no self-consistent middle ground"[178] between conservatism and liberalism, but only to identify the outdated modern worldview underlying the division between conservatism and liberalism as the stumbling block of the controversy. Murphy stresses, as all NIODA theorists do, that this worldview has itself become contentious with the demise of the reductionist-deterministic worldview in the twentieth century. Hence there has

---

[174] Russell (2008a): 20-21; Russell (2001b): ii-iv; Russell (2000): 9-13. For explicit references to Murphy's work, see Russell (1997): 47-8, nn.11 and 15; Russell (1998b): 199-200, n.19; Russell (2008b): 116, n.25.
[175] Murphy (1996): 154.
[176] Murphy (1996): 62-5.
[177] Murphy (1996): 68-74.
[178] Murphy (1996): 80.

finally arisen the possibility of overcoming the unfortunate theological chasm between liberalism and conservatism.[179]

The divide between Protestant liberalism and conservatism is also reflected in the DAP's working typology of divine action, which will prove helpful for discussing both the NIODA framework and models.[180] In cooperation with other members, Russell developed and advanced this working typology "as a framework to guide the reader in interpreting the varieties of positions taken"[181] in the DAP, which also served from the very beginning as a guiding scheme for the individual research of project members.[182]

The two default positions of the DAP-typology are liberalism and conservatism.[183]

(1) 'Liberal view' is the view that God creates and sustains the existence of the universe, and acts specially in it in a merely subjective (or functional) sense (*Creation* and *Uniform Divine Action*: *Sustenance* and *Subjective SDA*).

(2) 'Conservative view' is the view that God creates and sustains the existence of the universe, and acts specially in it also in an objective sense, namely, by intervening in or suspending the laws of nature (*Creation*, *Uniform Divine Action* and *Objective SDA: Interventionist*).

What differentiates the liberal from the conservative view is that while the former merely asserts subjective or functional SDA, the latter also includes OSDA. I argued above that the notion of OSDA serves the purpose to overcome a uniform divine action view; uniformitarianism was in fact arguably the undesirable default position of the DAP.[184]

Yet, the conservative alternative was also unappealing to most DAP scholars because of their commitment to noninterventionism demanding that any reasonable proposal of

---

[179] Murphy (1996): 147-9. See more generally Murphy (1996): 135-53.
[180] The DAP-typology can be found in Russell (2000): 9-13 and Russell (2001b): ii-iv. On pages 83-4 of the present thesis I provide a chart depicting the DAP-typology.
[181] Russell (2000): 9.
[182] Gregersen (2008): 180; Russell (2000): 9, n.27; Russell (2001b): iii, n.6.
[183] Russell (2000): 10-2; Russell (2001b): iii-iv. Russell calls the latter view 'traditional' instead of 'conservative'.
[184] Clayton (2008): 88-9; Gregersen (2008): 184.

OSDA must be in accordance with the laws of nature, moving beyond what nature can achieve in and of itself without thereby violating any scientific law.

2.1.b. Breaking the Presumed Link

The NIODA programme essentially consists in a search for a middle position affirming, *pace* liberalism and with conservatism, OSDA, but avoiding, *pace* conservatism and with liberalism, interventionist SDA.[185] Russell explains:

> NIODA combines the virtues of the liberal approach (non-interventionism) and the conservative approach (objective divine action) without their corresponding disadvantages.[186]

The way this *tertium quid* is achieved, as the acronym NIODA indicates, is by decoupling OSDA and intervention: *non*-interventionist OSDA is the kind of OSDA that does *not* amount to intervention. I will call the thesis that OSDA entails intervention the 'intervention entailment thesis': "the idea of objective special providence seemed to entail divine intervention."[187]

The NIODA agenda can therefore be succinctly defined as the attempt to re-establish OSDA by way of rejecting the intervention entailment thesis, and as such, the heart of the NIODA approach consists in breaking the alleged link between OSDA and divine intervention.[188] The argumentation in line with Murphy's thesis is as follows. The intervention entailment thesis rests on a combination of (i) causal reductionism and (ii) causal determinism creating the dichotomy between liberal subjective or functional SDA on the one hand and conservative objective but interventionist SDA on the other hand. Murphy and other NIODA theorists assert that the reductionist-determinist worldview has

[185] Russell (2008a): 20-21.
[186] Russell (2008a): 21.
[187] Russell (1998b): 199.
[188] Russell (1997): 49-50; Russell (1998b): 199-200; Russell (2008b): 116-7.

been deeply challenged by science, in particular by the phenomenon of complexity, chaos theory, and quantum mechanics. As we shall see shortly, NIODA models based on quantum and chaos theory challenge causal determinism, whereas another model based on whole-part influence questions causal reductionism.

In breaking the presumed link between OSDA and intervention, the main focus of attention is on causal determinism. For instance, Russell holds that "determinism […] forces the theological split"[189] between uniformitarianism and interventionism. Tracy reiterates the view that it is determinism that causes this dichotomy:

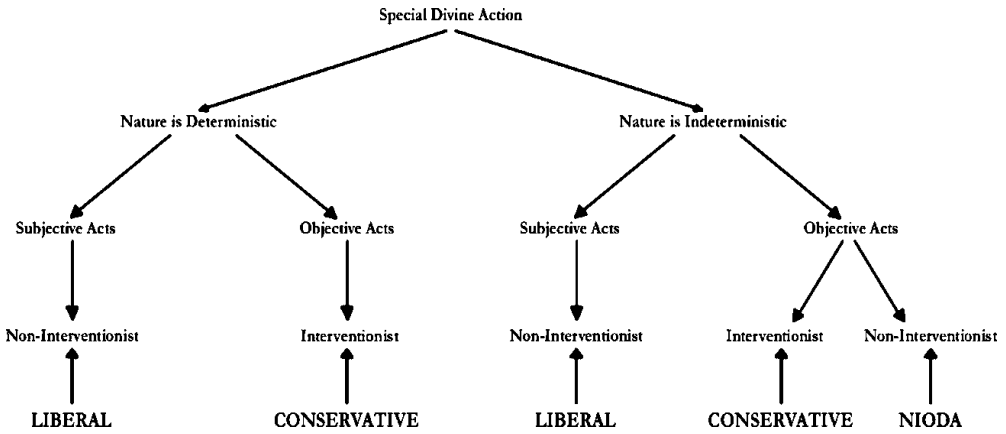
> It appears that God will be able to affect the course of events in a deterministic world only by setting the initial conditions and laws of nature […] and/or by interrupting this deterministic causal series to turn events in a new direction. This presents the theologian with a dilemma. The first option accepts the deliverances of science but does not give us divine action *within* nature and human history, only divine action at the foundation. The second alternative provides for divine action within the world, but does so by countenancing 'violations' of the laws of nature and so requires that we abandon a strictly deterministic worldview.[190]

In other words, *if* nature is causally determined, SDA can be either merely subjective or functional. But *if*, on the contrary, nature is shown to be causally undetermined, a third option will emerge: NIODA, a middle position between the liberal and the conservative view asserting noninterventionist but OSDA. Along these lines NIODA theorists, such as Murphy, Russell, and Tracy, have identified the thesis that nature is deterministic as the essential premise on which the intervention entailment thesis rests, creating the unfortunate dichotomy between liberals and conservatives.

---

[189] Russell (2008a): 21. See also Russell (2001b): vi-viii.
[190] Tracy (2001): 237.

Russell gives the following chart as illustration:[191]



The chart suggests that NIODA is available if and only if causal indeterminism holds. The pressing question therefore becomes *whether* nature is deterministic or indeterministic. As Russell goes on:

> The challenge is to find one or more areas in contemporary science that permit such an indeterministic ontology of nature. VO/CTNS scholars pursued a variety of areas in response to this challenge.[192]

The task of theologians wanting to make room for God to act within the NIODA framework is therefore effectively to examine scientific theories interpreting nature as at least partially indeterministic, or in the case of Peacocke's whole-part approach, non-reductionistic, so as to find the required causal openness in nature. The role of science is key, for it supposedly provides the condition of possibility of NIODA: "The crucial role of science i[s] thus offering the possibility for non-interventionist objective divine action […]."[193] In this manner NIODA makes science the arbiter of divine action in nature.

[191] Russell (2008a): 21.
[192] Russell (2008a): 21.
[193] Russell (2008a): 21.

2.2. Noninterventionism and the Laws of Nature

In breaking the presumed link between OSDA and intervention the NIODA research programme has made noninterventionism, or the commitment to avoid divine intervention, an essential feature of their search for divine action models. While I have indicated so far that the intervention entailment thesis rests, at least according to NIODA proponents, on reductionistic determinism, I will now address the question of what 'intervention' actually means.

2.2.a. What is Intervention?

In a thought-provoking paper entitled *What is 'Intervention'?* (2008), Alvin Plantinga puts the concept of noninterventionism to the test. Plantinga argues that the notion of intervention can be given meaning only if determinism holds. Since on an indeterministic view of nature the very entity to be overcome cannot be reasonably specified, the NIODA approach seems to support implicitly, and contrary to its intention, a deterministic view. Here is Plantinga:

> [M]ost of the members of the DAP object to the thought that God, in acting specially in the world, *intervenes* in the world […]. Therefore they seek an account of special divine action that does not involve divine intervention. But it is difficult or impossible to see what they think intervention *is*. […] 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 condition would be necessary and sufficient for a divine action to constitute an intervention.[194]

As regards causal determinism Plantinga suggests that intervention is tentatively definable as follows. Let *L* be the conjunction of all natural laws, *S(t)* the physical state of the universe at any time *t*, then:

---

[194] Plantinga (2008): 391.

> (INT) An act *A* […] is an intervention just if *A* causes an event *E* to occur at a time *t*, where there is an interval of times bounded above by *t* such that for every time *t** in that interval, *S(t*)&L* doesn't entail that *E* occurs at *t*.[195]

What Plantinga is effectively suggesting here is that divine intervention is an act that fails the Laplacian demon: knowing all laws of nature and the state of the universe at some point in time the famous demon cannot know all effects that will occur.[196] Now according to indeterministic interpretations of nature, the Laplacian demon will inevitably fail because S(*t*)&L does not entail S(*t**). But then (INT) will render every act of conservation an intervention, for the very indeterministic system and hence also its sustainment precludes Laplace's demon, the criterion for causal determinism. The notable premise of the argument is that divine conservation is not intervention, otherwise God would constantly intervene by sustaining his creation in being. Hence (INT) cannot function as definition of intervention for NIODA approaches presupposing causal indeterminism.[197]

Similar problems occur with different suggestions. A second attempt to define intervention is in counterfactual terms. Recall that this is the definition of OSDA used in the DAP: "objective special divine actions have a counterfactual logical structure: if God had not acted then nothing significant would have occurred."[198] Or as Plantinga formulates it:

> (1) God intervenes if and only if he performs an action *A*, thereby causing a state of affairs that would not have occurred if God had not performed *A*.[199]

Attempt (1) again fails because conservation would be intervention. One could consequently modify definition (1) in this manner:

---

[195] Plantinga (2008): 389.
[196] For more about the Laplacian demon, see Plantinga (2008): 376-7 and 381.
[197] Plantinga (2008): 388-90. Commenting on Plantinga, Tracy goes even further in conceding that, given indeterminism, (INT) "yields the unhappy result that every divine action (including the act of determining the outcome of wave function collapse) counts as an intervention." (Tracy (2011): 258)
[198] Wildman (2008): 142.
[199] Plantinga (2008): 390.

> (2) God intervenes if and only if he performs an action *A* thereby causing an event *E* that (a) goes beyond conservation and creation, and (b) is such that if he had not performed *A*, *E* would not have occurred.[200]

This second explication would, however, render all OSDA an intervention and make NIODA impossible. For if intervention is defined in such a manner that all OSDA is contained in the definition of intervention, then the objective of the NIODA agenda to establish a model of *non*-interventionist OSDA will be precluded by definition. Plantinga reaches the conclusion that given causal indeterminism there seems *prima facie* no way to specify intervention, at least not in a sense relevant for NIODA.[201]

If Plantinga's analysis is correct, the concept of NIODA promotes at least implicitly causal determinism. For only if causal determinism holds can one specify what an intervention *is*, and non-intervention as negation of intervention seems to presuppose that, given the basic premises about God and the world, the concept of intervention is at least intelligible. In defence of the NIODA programme, Robert Russell replies with a rather paradoxical claim. He states that

> none of the […] participants in the VO/CTNS series claimed that 'a satisfactory account of God's action in the world would have to be non-interventionist.' […] [They] were merely asking whether a non-interventionist account is *possible* in light of modern science.[202]

This statement is perplexing because if the foregoing analysis is accurate the answer must be no; in light of contemporary science *non*-interventionist accounts of divine action are *not* possible because the underlying and negated concept of intervention does not make sense in an indeterministic context. What Russell should have said instead is that the charge

---

[200] Plantinga (2008): 390.
[201] Plantinga (2008): 390.
[202] Russell (2011a): 267. The following statement, to give just one prominent example, speak in favour of Plantinga's claim and against Russell's denial: "Authors represented in this [VO/CTNS] volume are some of a small number of more recent thinkers who have sought *non-interventionist* accounts of special divine acts." (Murphy (2000): 325, n.1)

of intervention is unintelligible if indeterminism rather than determinism holds, and must therefore be rejected. But this does not *prima facie* make the account of divine action non-interventionist, at least to the extent that the label 'non-interventionism' presupposes the possibility of what is negated: a specific form of divine intervention. In short, given causal indeterminism, the dichotomy between interventionism and noninterventionism appears to be a wrong binary.

Tracy, on the other hand, concedes the difficulty in specifying what NIODA stands for and also in contrast to. He suggests that

> the deeper lesson to be drawn from this definitional conundrum is that the idea of intervention ceases to be useful when we give up deterministic pictures of the world; the two ideas (determinism and intervention) appear to be linked in such a way that they stand or fall together.[203]

Hence, the pressing question becomes, why stress the noninterventionist character of OSDA if the very assumption on which NIODA is based possibly renders the concept of a divine intervention inconceivable?

2.2.b. Non-Intervention as Non-Violation of the Laws of Nature

What members of the DAP supporting the NIODA approach find objectionable about intervention is that it supposedly implies something akin to a 'violation of the laws of nature'. The phrase is a historically laden term associated with David Hume's epistemological critique of miracles. In his *An Enquiry concerning Human Understanding* (1748) Hume defines miracle as a "violation of the laws of nature,"[204] that is to say, "a transgression of a law of nature by a particular volition of the Deity."[205] The following

[203] Tracy (2011): 258.
[204] Hume (2007): 83.
[205] Hume (2007): 127. Emphases removed from the original.

statement by Russell supports the thesis that lingering behind the emphasis on noninterventionism is a fear of supporting Humean miracles:

> In essence, NIODA would offer us, for the first time, an account of objective divine action that is not necessarily 'miraculous' (in the Humean sense of divine acts which violate or suspend natural regularities/laws of nature).[206]

The citation indicates that the charge that intervention goes against the laws of nature is key to understanding the rejection of intervention. Thus NIODA theorists concede to the controversial identification of divine intervention with a transgression of the laws of nature by implementing the charge against intervention into their system. The standardised terminology of the DAP reflects this contentious identification:

> A noninterventionist special divine act is in accord with the created structures of order and regularity within nature.
>
> An interventionist special divine act involves abrogating, suspending, or ignoring created structures of order and regularity within nature.[207]

As the terminological definitions make clear, the NIODA theorists' rejection of the intervention entailment thesis is grounded in an equation of intervention with a transgression of the laws of nature. Owen Thomas early on objected to this pejorative use of the concept of intervention by DAP scholars.[208]

In short, NIODA theorists reject the intervention entailment thesis that any form of OSDA amounts to a divine intervention. The reason why they seek to avoid divine intervention, however, lies in another entailment thesis asserting that divine intervention entails a violation of the laws of nature. Russell's statement of the intervention entailment thesis partially cited above gives ample evidence of this conviction:

---

[206] Russell (2008a): 21.
[207] Wildman (2008): 141. According to Stoeger (2004): 194, all DAP participants agree on this definition.
[208] Thomas (1997): 75. In reply, Russell acknowledged the potential usefulness of the concept of intervention but argued that the category should only be used restrictedly (Russell (2008b): 147, n.28).

> Since the Enlightenment, the idea of objective special providence *seemed to entail divine intervention*: for God to act in particular events, God must intervene in nature, *violating or at least suspending the laws of nature*.[209]

This second entailment thesis linking intervention and law-violation is important, for two main reasons. First, NIODA theorists seem to draw their justification for rejecting divine intervention from their identification of intervention with a law-violation. Alister McGrath explains that the DAP "was haunted by the fear that interventionist approaches to divine action seemed to call into question the validity of the laws of nature."[210] The need to challenge the intervention entailment thesis arises if intervention amounts to a law-violation. But if this identification does not hold, the foil of noninterventionism will disappear, and OSDA and intervention will, at least to some extent, approximate. In this case, the non/intervention dichotomy will break down. Second, the worry resulting from this identification seems to imply that a divine violation of a law of nature is an intelligible notion. Two issues arise in this context.

First, what conception of the laws of nature would make a law-violation conceivable? A violation of natural laws is not possible, to give a few examples, if laws were exceptionless rules, for every 'exception' would disprove the law; if laws applied only to causally closed systems, for whenever an agent intervenes externally the system would not be causally closed;[211] if laws did not imply regularities, for interventions could not be rendered impossible on the basis that all events must be instances of a regularity of succession;[212] nor if powers and dispositions rather than ontological laws account for the causal structure of the world, for then what might have looked like a violation of some natural law will have to be regarded as an interference of another power.[213] Hence while it

---

[209] Russell (1998b): 199. My emphasis.
[210] McGrath (2015): 13.
[211] Plantinga (2008); Alston (1993); Lewis (1947): 67-75.
[212] Von Wachter (2015).
[213] Cartwright (1983); Mumford (2004).

is easily conceivable how one can break moral and legal laws, it is less clear how a law of nature can be broken. The vast critical literature on Hume's account of miracles gives ample evidence of the controversial nature of some of the implications of his objection to miracles.[214]

Second, what concept of divine action would make a *divine* law-violation conceivable? Michael Dodds, an American philosopher and Dominican friar, argues that whatever conclusion one reaches about the possibility of law-violations in general, the fear that *God* could violate a law of nature "bespeaks a univocal understanding of divine causality."[215] He states:

> Implicit in the concern that God's action *not* violate the laws of nature is the conviction that God *could* violate those laws […]. One cause can contradict another, however, only if they are of the same sort – only if they are univocal. If two causes are of different orders – if one transcends the other – their respective causalities cannot be understood univocally but only analogously.[216]

Dodds explains that the noninterventionist concern to avoid a law-violation shows that NIODA proponents operate on a univocal understanding of causation, by which he means that divine and natural agents are causes that may operate in the same causal order. For if God and creature cannot operate on the same level, divine and creaturely causation cannot possibly interfere.[217] Hence a *divine* law-violation is possible only on a univocal understanding of divine agency.

In summary, I have introduced and contextualised the NIODA research programme as an attempt to re-establish the category of OSDA in a noninterventionist manner. NIODA theorists have sought a middle position between liberal uniformitarianism and conservative

[214] For a review of the debate, see McGrew (2016).
[215] Dodds (2012): 157.
[216] Dodds (2012): 155.
[217] Dodds (2012): 155 and 153, n.130.

interventionism by decoupling OSDA from intervention. The NIODA programme apparently takes the concept of intervention to entail a violation of the laws of nature, let alone by God, which appears to presuppose and rest on the assumption that laws of nature could be violated. Such a supposition concerning the status of laws of nature raises interesting and challenging questions about the intelligibility of the NIODA framework. The discussion of noninterventionism appears steeped in a complex but contested set of assumptions about the structure of the world and a historically conditioned preoccupation with the laws of nature that may no longer be relevant.

2.3. The NIODA Models

Having outlined the general framework, I shall now turn to some particular models to illustrate the way in which they establish and defend NIODA. Various scholars within the DAP proposed and expounded basically three versions of NIODA. The fact that the DAP-typology subsumes them under the heading *Science and Theology* indicates that these models are seen as the genuine outcome of the *Scientific Perspectives on Divine Action*. The three NIODA models are approaches to divine action in terms of different forms of causality employed in the sciences. The DAP-taxonomy labels them (3) 'top-down' or 'whole-part', (4) 'lateral', and (5) 'bottom-up' causation.[218]

Unlike (1) the liberal and (2) the conservative position, views (3) to (5) affirm the following:[219]

> God creates and sustains the existence of the universe, and acts specially in it also in an objective sense, but without intervening in or suspending the laws of nature (*Creation*, *Uniform Divine Action* and *Objective SDA: Noninterventionist*).

[218] Russell (2000): 11; Russell (2001b): iv.
[219] Russell (2000): 11-3; Russell (2001b): iv-v.

Views (3) to (5) differ, however, over *where* and *how* NIODA takes place.[220]

2.3.a. Whole-Part Influence

The DAP-taxonomy names as a first NIODA model (3) the top-down or whole-part approach. A 'top-down' or 'whole-part' approach takes God to be a top-down or whole-part cause. As such, God would cause an effect either from a higher level of reality affecting the lower levels, or from the boundary of a system affecting the state of the system. In the former case the directionality of the causal relation is, so to speak, 'downwards', in the latter case 'inwards'.[221]

Arthur Peacocke, British biochemist and theologian, is credited for the most sophisticated account of top-down causation, or, as he later prefers to call it, whole-part constraint or influence.[222] Peacocke presents what might be called a holistic model of divine action: God only but continuously acts on the world-as-a-whole. As such, God can nevertheless intend and bring about particular events by way of whole-part influence. That is to say, God can act on the world-as-a-whole so as to constrain relevant parts of the world in such a manner that particular intended outcomes result. This, Peacocke suggests, might happen via the input of information rather than energy: a purely informational input unique to God.[223]

Peacocke acknowledges that there is no information input without transfer of energy in natural systems, but contends that the two concepts are sufficiently distinguishable to

---

[220] Russell (2000): 12; Russell (2001b): v; Russell (2008a): 35.
[221] Russell (2008a): 35; Russell (2000): 12; Russell (2001b): v.
[222] Peacocke (2000); Peacocke (1999). For the choice of his later terminology, see Peacocke (2000): 272, n.22 and Peacocke (1999): 215, n.1. Peacocke comments: "I have used the term 'whole-part constraint' to avoid any possible Humean implications of 'downward/top-down causation' […]. Perhaps this was unnecessarily cautious […] since I continued to envisage a causative influence of the 'whole' on the parts in complex systems […]." (Peacocke (1999): 215). Peacocke then suggests the notion of 'whole-part *influence*' as an analogy for divine action.
[223] Peacocke (2000): 282-7. For Peacocke's understanding of information, see Peacocke (2000): 225-6.

imagine a divine non-energetic information flow. This would account for the 'ontological gap', that is, the difference between God and nature. Peacocke's model is thereby rooted in his Pan*en*theism (literally, all-in-God): that the world is 'in' God but God is 'more than' the world is the underlying assumption. The whole-part model is regarded as noninterventionist because whole-part influence constrains but does not contravene the laws at lower levels.[224] Hence, although causal indeterminacies in nature are not required, causal reductionism must be false.

Peacocke states his position as follows:

> If God interacts with the 'world' at a supervenient level of totality, then God, by affecting the state of the world-as-a-whole, could, on the model of whole-part constraint relationships in complex systems, be envisaged as able to exercise constraints upon events in the myriad sub-levels of existence that constitute that 'world' without abrogating the laws and regularities that specifically pertain to them – and this without 'intervening' within the unpredictabilities we have noted {I had in mind here the in-principle, inherent kinds, i.e., quantum events, though the remarks would also apply the practical unpredictabilities of chaotic systems}.[225]

In a nutshell, according to top-down causation, OSDA takes place at the boundary of the world-as-a-system by way of whole-part influence.

Peacocke's model occupies a special status within the NIODA models. A common way of reading the controversy about divine action is, as mentioned above, to distinguish two basic claims on which the case against NIODA rests: (i) causal reductionism combined with (ii) causal determinism. Unlike the other NIODA models, Peacocke's model seems to attack not so much the causal determinism at the physical level as the idea that everything is reducible to this physical level. His approach is informed by scientific discussions around complexity, emergence, and top-down causation. According to Bernd-Olaf Küppers "one

[224] Peacocke (2000): 274, n.28, and 286-7.
[225] Peacocke (2000): 283. The addition in brackets is an explanatory note added in Peacocke (1999): 235, n.73.

can express the quintessence of the concepts of emergence and downward causation by two theses: (1) The whole is more than the sum of its parts. (2) The whole determines the behavior of its parts. From the first thesis follows the concept of emergence. From the second thesis follows that of downward causation."[226]

This description of downward causation leads straight into the first point of criticism against Peacocke's model, namely the objection that the world-as-a-whole is not a relevant kind of system for top-down causation. Some grounds for this objection come from scientific considerations that the universe as a whole might indeed be without boundaries, casting into doubt the model of whole-part influence on the world-as-a-whole. There are also theological concerns on a more fundamental level. In particular, Peacocke's whole-part approach seems to presuppose Panentheism in that the world must be part of God so that the whole (all-in-God) can influence its parts (events-in-world). Finally, issues surrounding the question whether whole-part influence, especially if one tries to fill out the details of the proposal, works entirely without causal indeterminacies at the lower levels are yet unresolved. Peacocke's model might after all require causal indeterminism. That is why some have objected that non-reductionism is a necessary but insufficient condition for divine action, since downward causation relies on and presupposes a more fundamental form of causal openness of the cosmos.[227] The next two models imply a rejection of causal determinism.

2.3.b. Chaos Divine Action

The DAP-taxonomy mentions as a second NIODA model (4) the lateral approach. A 'lateral' approach takes God to be a lateral cause. As such, God would cause an effect at

[226] Küppers (2000): 94.
[227] Murphy (2008): 128-31; Russell (2008b): 135-7; Tracy (2008): 262-3.

the same level of reality as the resulting effect by setting the initial conditions of a system thus affecting the end of a long causal chain.[228]

The paradigmatic proponent of this view is John Polkinghorne, British particle physicist and theologian, with his theory of chaos divine action (CDA).[229] Chaotic systems are, at least to a certain extent, intrinsically unpredictable. This is an epistemological statement. That is to say, apparent structured randomness arises from deterministic equations. Polkinghorne argues that the epistemological limitation of chaotic systems justifies – according to his motto 'epistemology models ontology' – the metaphysical conclusion that there is an ontological openness in nature making 'room for manoeuvre'.[230] Polkinghorne calls this approach an "ontological reinterpretation of the unpredictabilities of chaos theory."[231] In this way Polkinghorne contends that 'intrinsic gaps' in nature make room for divine intentional causality by way of information input ('active information'). By contrasting the information input of intentional causes, such as God, *within* the openness of a system with the physical energy input of natural causes *into* the system in question, Polkinghorne seeks to avoid making God 'a cause among other causes': God is a purely informational, not energetic, cause.[232] Polkinghorne thereby openly admits that this is a 'God of the gaps' argument, although not an epistemological one extrinsic to nature but an ontological one intrinsic to nature.[233] According to his view, "there must be intrinsic 'gaps' […] in the bottom-up account of nature to make room for intentional causality."[234]

---

[228] Russell (2008a): 35; Russell (2000): 12-3; Russell (2001b): v.
[229] Polkinghorne (1993); Polkinghorne (2000). Note that Polkinghorne exhibits some changes in his thought. For an account of his three-stage development, see Silva (2012) and Polkinghorne (2012).
[230] Polkinghorne (1993): 440-3.
[231] Polkinghorne (2001): 187.
[232] For his deliberations why this should be possible, see Polkinghorne (2000): 155-6.
[233] Polkinghorne (1993): 445-7.
[234] Polkinghorne (1993): 446.

Although Polkinghorne assumes some form of divine action through top-down causation,[235] the DAP-typology subsumes CDA under the label 'lateral' causality because Polkinghorne, unlike Peacocke, who also speaks of a divine top-down input of information, insists that intrinsic ontological gaps are necessary to enable top-down causality in nature:

> [I]f there is to be room for the operation of true top-down causality, then there will have to be intrinsic gaps, a degree of underdetermination in the account of the bottom-up description alone, in order to make this possible.[236]

In short, according to CDA, OSDA takes place within the intrinsic gaps provided by an ontological reinterpretation of chaotic systems, by way of God's informational top-down causality.

The main point of criticism raised against CDA concerns the fact that chaos theory ultimately appears to be a deterministic, not an indeterministic theory. Current scientific consensus holds that chaotic systems, which amplify changes in the initial conditions but operate on deterministic equations, are only epistemologically but not ontologically indeterministic. Wildman and Russell, for instance, stress that chaotic randomness is "predictable in principle, and temporarily (though not indefinitely) predictable in practice,"[237] concluding that while "chaos theory offers not one shred of evidence against metaphysical determinism, it does introduce an imposing limit on how well the deterministic hypothesis can be supported."[238] Inserting divine action into chaotic systems would therefore render CDA only, to a certain degree, undetectable but not noninterventionist.[239] In other words, if Polkinghorne's appeal to chaos theory gives no

[235] Polkinghorne (2000): 154; Polkinghorne (1993): 445-7.
[236] Polkinghorne (2000): 151.
[237] Wildman and Russell (2000): 74. Tracy (2000): 292 reaches as similar conclusion.
[238] Wildman and Russell (2000): 82.
[239] Wildman and Russell (2000): 83.

scientific evidence of indeterminism, which is a necessary condition of the approach, then CDA fails on scientific grounds.

Nicholas Saunders, on the contrary, suggests an alternative reading. He convincingly argues that in Polkinghorne's work causal indeterminism is a *metaphysical postulate* rather than a direct inference from the scientific theory of chaos. Saunders contends that, at the root of CDA, there is an implicit distinction that Polkinghorne draws between mathematical chaos and real-world chaos: while the mathematical equations of chaos theory are clearly deterministic, the chaotic-like reality is viewed as indeterministic. The metaphysical postulate of CDA would then assert that the chaotic-like real world is somehow modelled by the deterministic equations of chaos theory, even if it denies an applicability of the determinism of the equations to real-world chaos. The deterministic equations are merely regarded as 'downward-emergent approximations' of an indeterministic reality, a phrase Polkinghorne uses to express the idea that the equations of chaos theory are an approximation to reality – a reality where apparently deterministic systems emerge at lower levels without being characteristic of reality overall.[240] Saunders expresses the idea as follows:

> The basis of Polkinghorne's proposal is that at increasing levels of complexity in nature the essentially indeterministic fundamental processes of the world can be codified into pseudo-deterministic equations.[241]

Two issues arise on this interpretation. First, as a metaphysical postulate the idea of downward-emergent determinism lacks, as it stands, a philosophical defence; a direct appeal to the scientific chaos theory is in this case not a feasible justification for the metaphysical postulate of CDA. Second, the metaphysical postulate seems to undermine

[240] Saunders (2002): 190-1.
[241] Saunders (2002): 207.

Polkinghorne's approach. CDA notably relies on features of chaotic systems that arise precisely because of the deterministic equations of chaos theory. There is then an argument to be made that features of mathematical determinism are not features of reality if reality is in fact indeterministic.[242]

Polkinghorne's concept of active information may serve as an illustrative example. The idea of a causal input that is purely informational, that is, non-energetic (and hence not in danger of violating the principle of conservation of mass/energy), originates from Polkinghorne's interpretation of chaotic attractors. Setting aside the fact that the required equal energy trajectories in a chaotic attractor seem scientifically untenable, as Saunders contends, because most likely infinitely complex fractal attractors do not exist, the point is that the notion of a trajectory selection without input of energy essentially relies on the determinism of mathematical chaos. Only in deterministic systems, in the infinite limit of a fractal structure, can trajectories in a chaotic attractor become arbitrarily close because they cannot cross or merge. This is the only point where the energy difference between different potential trajectories tends towards zero, which is the fundamental requirement for the conceivability of a pure information input. On the contrary, if the system is in fact indeterministic, and the deterministic mathematical chaos is only a downward-emergent approximation to reality, then the various different trajectories can cross and merge. Consequently, the very concept of active information will become meaningless, for the fundamental requirement for the conceivability of the concept is not met.[243]

Saunders therefore concludes that Polkinghorne's theory is "reliant on various features of chaotic systems that arise solely because those systems are *deterministic*."[244] Hence the

[242] Saunders (2002): 191-2.
[243] Saunders (2002): 192-9.
[244] Saunders (2002): 189.

difficulty arising on this second and more amicable reading of Polkinghorne concerns the fact that the metaphysical postulate of causal indeterminism undermines the determinism of the mathematical chaos leading to the features of the scientific theory that Polkinghorne exploits in the first place. CDA seems therefore, at least from a scientific point of view, a rather questionable approach because, at least on these two readings, the model does not appear to be scientifically tenable.

2.3.c. Quantum Divine Action

The third NIODA model in the DAP-taxonomy is (5) the bottom-up approach. A 'bottom-up' approach takes God to be a bottom-up cause. As such, God would cause an effect from a lower level of reality affecting the higher levels. The directionality of the causal relation is, so to speak, 'upwards'.[245]

The chief proponents of this view are Robert Russell, Nancey Murphy, Thomas Tracy, and George Ellis with their respective models of quantum divine action (QDA).[246] QDA has become the flagship of the NIODA programme. It is based on an indeterministic interpretation of quantum mechanics, to wit, in this instance the Copenhagen interpretation. The inbuilt ontological indeterminism of the causal nexus at the most fundamental level of reality, the quantum level, is said to provide room for God to act and thereby affect higher levels of reality. Quantum indeterminacies are philosophically interpreted as natural causes that are necessary but insufficient to bring about their effects. God, then, has causal space to influence these quantum effects as an additional non-natural but also insufficient cause. Thus, God jointly causes quantum effects by determining the outcome of the quantum

[245] Russell (2008a): 35; Russell (2000): 12; Russell (2001b): v.
[246] Murphy (2000); Tracy (2000); Russell (1998b); Russell (2001a); Ellis (2000); Ellis (2001). As indicated above (footnote 40), Tracy temporarily changed his position (Tracy (2001)) but defended in the 'capstone' volume the contribution discussed here (Tracy (2008)). For a brief history of QDA including earlier proposals, see Russell (2008b): 153-9 and 186-9.

measurement. Since quantum measurements as the *locus* of QDA are held to occur not episodically but always and everywhere, God can universally, although partly, determine quantum events which then affect the macro-cosmos in a unique and novel way.[247] To borrow the words of Murphy, who Russell credits for the most sophisticated version of QDA,[248] "God is the hidden variable."[249] What nature leaves undetermined is divinely determined, or as Russell puts it:

> God creates the universe such that quantum events occur without sufficient natural causes and acts within these natural processes and together with natural causes to bring them about.[250]

A basic disagreement between Murphy, Tracy, and Russell concerns the frequency of QDA. Murphy supports the view that God acts in *all* quantum events, whereas Tracy holds that God acts only in *some* quantum events. The difference results from Murphy's assertion that both the natural and divine cause are necessary but insufficient. Since natural causes are only jointly sufficient with God as non-natural cause, QDA is necessary for every quantum effect.[251] Tracy, on the contrary, advocates the view that QDA is not necessary but occurs selectively.[252] Russell sides with Murphy but holds that God acts in all quantum events until the emergence of complex life and human beings and then restricts his agency so to enable top-down causality and free will.[253]

In any case, all models of QDA most explicitly depend on nature being causally indeterministic. Ellis elaborates their common core conviction:

> The point is simple but fundamental: at the foundation of modern physics is quantum indeterminacy. […] There is thus no reason whatever that a Creator […] cannot determine which particular quantum events take place, without in any way

[247] Murphy (2000): 340-4; Russell (2001a): 294-300; Tracy (2000): 314-9.
[248] Russell (2001a): 315.
[249] Murphy (2000): 342. I will comment on Murphy's account in more detail below.
[250] Russell (2001a): 295.
[251] Murphy (2000): 342-3.
[252] Tracy (2000): 320-2.
[253] Russell (2001a): 315-8; Russell (1998b): 215-6.

> violating the laws of physics. […] The whole point of quantum uncertainty is that there is no such thing as a 'natural course' that events would have taken. It is precisely such a deterministic outcome that physics has failed to find at the microscopic level – and quantum theory denies its existence.[254]

In short, according to QDA, NIODA takes place in quantum measurements, and brings about macroscopic effects by stepping in at the quantum level to determine what is left undetermined by natural causes. Hence causal indeterminism is a necessary condition for QDA.

Within the science and religion community a general consensus was reached that quantum mechanics is at present the only scientific theory that can potentially provide theology with gaps relevant for divine action in the world, and second that only quantum events, that is, so-called quantum measurements, exhibit the relevant indeterministic characteristics, for the general evolution of the quantum system is deterministic. Only in measurement situations, at points where the deterministic evolution of quantum systems is punctuated or disrupted, do indeterminacies arise.[255] Such quantum indeterminacies occur only within indeterministic interpretations of quantum physics, such as the Copenhagen interpretation, which is at present considered the standard interpretation, although neither uncontested nor without alternatives.

The scientific challenges to QDA models based on the Copenhagen interpretation include limiting factors regarding the *frequency* of quantum measurements and the restricted *impact* of microscopic quantum events on macroscopic events. First, if NIODA is effectively limited to quantum events then God's activity stands and falls with the frequency of quantum measurements restricted in number. Second, to bring about

---

[254] Ellis (1993): 396-7.
[255] Saunders (2002): 139-40. For an explication of the deterministic basis of quantum mechanics, see Saunders (2002): 130-9.

macroscopic differences through QDA, God would have to determine a large number of quantum events requiring an immense scale of quantum divine interactions and implying a time scale Saunders describes as 'truly phenomenal'.[256] The main concern in this context is the amplification problem: the question to what extent quantum events can be amplified into the macroscopic realm. Taking into consideration so-called protectorates, Jeffrey Koperski argues that cases of amplification seem rather limited: "if God governs the universe by way of quantum randomness alone, then we are left with something very close to deism."[257] In case Koperski has a point about the amplification problem, and Russell partially concedes this problem, then even if God were to act at the quantum level, protectorates would to a large extent prevent these changes from affecting the macroscopic realm.[258]

A potential remedy might be to couple quantum mechanics with chaos theory to counteract these limitations, but no relevant theory has yet been proposed to solve the problems of QDA.[259] What is more, Koperski argues that quantum chaos hardly amounts to a resolution of the fundamental problem, firstly because nature is seemingly not chaotic enough to overcome the inherent limitations of QDA and secondly due to unresolved scientific problems concerning quantum chaos.[260] Thus, scientific challenges to QDA concern both questions of the frequency of quantum measurements and its relevance for macroscopic events: at least the scope, if not the frequency, is a scientifically open question.[261]

---

[256] Saunders (2000): 540-1; Saunders (2002): 171-2.
[257] Koperski (2015a): 379.
[258] Koperski (2015a): 379-80; Russell (2019).
[259] Saunders (2002): 214-5.
[260] Koperski (2000).
[261] Quantum non-locality might put further constraints on QDA in that non-locally correlated measurements potentially preclude NIODA (Saunders (2002): 168-70).

Moreover, at least since Saunders's detailed assessment in *Divine Action and Modern Science* (2002), there is a consensus that out of four possible ways in which God could (on the Copenhagen interpretation) determine quantum events, only one is relevant and potentially noninterventionist; Saunders closed down all the other options: (1) God alters the wave-function between measurements; (2) God makes his own measurements on a given system; (3) God alters the probability of obtaining a particular result; or, and this is the only option still discussed, (4) God determines the result of each measurement. The viability of option (4), however, depends essentially on the status of the laws of nature: if and only if one takes a broadly-speaking necessitarian stance on, or holds a strong-ontological view of, the laws of nature, option (4) is decisively closed. Thus Saunders argues that option (4) is theoretically incompatible with the very presupposition of NIODA concerning the laws of nature.[262]

Saunders's argument has been criticised on the grounds that it presupposes the condition of possibility of intervention, that his interpretation of *non*interventionist OSDA renders *intervention* a conceivable option. Saunders explains:

> The [QDA] accounts considered […] implicitly assert a broadly necessitarian position that permits the possibility of interventions in the laws of nature […], and consequently espouses a *non-interventionist* approach to quantum SDA.[263]

In other words, (4) God's determining the result of measurements will be noninterventionist only if each measurement is not determined by the probabilities predicted by the measurement theory; or as Saunders reasons,

---

[262] Saunders (2002): 144-56; Saunders (2002): 132, n.6. Gregersen concurs with Saunders that "the very concept of non-interventionist SDA […] presupposes a strong ontological concept of the laws of nature […] since [such] a presupposed concept of the laws of nature serves as a foil for shaping the idea of non-interventionist SDA" (Gregersen (2008): 191, emphases removed from the original).
[263] Saunders (2002): 127-8.

> the probabilities must be held to be ontologically *derivative* from [rather than prior to] the measurements themselves and thus not representative of the ontology of a particular quantum system.[264]

That the probabilities described by the quantum measurement theory are not an ontological part of the quantum system prior to the measurement, however, appears to be an expression of a regularitarian rather than a necessitarian understanding of laws of nature, which goes against Saunders's premise that QDA theorists hold a broadly-speaking necessitarian view because this is the only one where intervention is theoretically possible.[265]

Wildman replies on behalf of QDA theorists that none of the NIODA proponents in the DAP accept a necessitarian conception of laws of nature, for it would indeed make QDA impossible.[266] He objects further that the distinction between broadly-speaking necessitarian and regularitarian views operative in Saunders's argument is a false dichotomy. What is lacking in his analysis is a middle position specific to stochastic laws: the 'ontological' view that the laws of nature are, *pace* regularitarian or 'descriptive' view, prescriptive rather than descriptive, but only by governing the large ensemble of events rather than, *pace* necessitarian or 'strong-ontological' view, each individual event.[267] Wildman summarises the three views thus:

> (1) The descriptive view holds that "laws of nature have descriptive status only."
>
> (2) The ontological view holds that laws of nature "statistically govern large ensembles of events but not each individual event within an ensemble of events."
>
> (3) The strong-ontological view holds that laws of nature "statistically govern each individual event within an ensemble of events."[268]

---

[264] Saunders (2002): 154.
[265] Saunders (2002): 154-5.
[266] Current consensus among NIODA theorists holds, according to Wildman (2008): 155-72, especially 162-5, that the strong-ontological view makes impossible QDA. The discussed QDA theorists partly endorse a descriptive, partly an ontological interpretation of the laws of nature. For their respective views, see Russell (2008b): 174-6; Tracy (2004): 198-9; for Murphy's position, see the personal letter cited in Gregersen (2008): 191-2, n.34.
[267] Wildman (2008): 155-156, 160-161, and 163-164.
[268] Wildman (2008): 145.

The idea is that if the laws of nature at most statistically prescribe an ensemble of events, but not individual events within such an ensemble, God cannot interfere with the probabilities, no matter what their ontological status is, because they do not concern individual events.[269]

The reason why most QDA theorists remain unconvinced by Saunders's acclaimed critique is therefore the fact that NIODA theorists use the label 'noninterventionist' rather ambiguously and indeed highly perplexingly, namely to the effect that they apparently do not accept the very condition of the possibility of divine intervention. The dispute again concerns the question whether and on what ground divine intervention must be a conceivable concept to develop a noninterventionist alternative.

In short, even if the theological case for NIODA is by no means decisively closed from a purely scientific perspective, Saunders and others have at least shown that (i) quantum measurements are currently the only viable indeterministic *locus* potentially relevant for theology. What is more, (ii) these underdetermined quantum events at best provide room for noninterventionist SDA on an interpretation of the laws of nature that appears *prima facie* to render impossible the concept of divine intervention in the first place. Finally, (iii) the extent to which divine action operative in these quantum 'gaps' can bring about significant macroscopic events is probably severely limited. NIODA restricted to quantum measurements appears to be limited both by the frequency (problem of measurement) and by the infinitesimal macroscopic effect of these measurements (problem of amplification). There are thus considerable scientific arguments that speak against the NIODA approach.

[269] Wildman (2008): 163-5.

In summary, in this chapter I have introduced the NIODA framework and discussed three distinct NIODA models: (3) 'top-down' or 'part-whole' causation, (4) 'lateral' causation and (5) 'bottom-up' causation. Out of the three NIODA versions, models (4) and (5) are NIODA approaches not so much on the basis of God being a particular kind of cause as due to the causal openness and indeterminacy assumed at the level of reality at which God is said to act. The causality employed in QDA and CDA matters because it apparently generates indeterminacies. Model (3), on the other hand, is constituted by a different form of causality employed to prevent the model from contradicting science. As such, it does not necessarily depend on causal indeterminism, but rather on anti-reductionism.

The DAP-taxonomy depicts all three models under the heading *Theology and Science* breaking the alleged link between OSDA and intervention. The purported conceptual breakthrough achieved by these NIODA models is depicted in the DAP-typology as follows:

DAP-Typology[270]	Creation	Uniform Divine Action		Objective SDA	
		Sustenance (Conservation)	Subjective SDA	Interventionist	Noninterventionist
(1) Liberal view	X	X	X		
(2) Conservative view	X	X	X	X	

[270] This is a slightly altered version the DAP-typology as depicted in Russell (2000): 11 and Russell (2001b): iv. I omit three presently irrelevant views supplementing the backdrop of the project and a subsequent distinction within NIODA between apparent with or without religious presuppositions; a distinction that proved less important in the course of the project than originally thought.

Theology and Science					
(3) Top-Down/ Part-Whole Causation	X	X	X		X
(4) Lateral Causation	X	X	X		X
(5) Bottom-Up Causation	X	X	X		X

The DAP-taxonomy also includes (6) 'primary/secondary' causation as a fourth version of NIODA, although admitting some open questions in this regard.[271] I will not follow this classification because I argue in this thesis that God's providential care through secondary causation, especially in the form employed by Thomas Aquinas, is essentially not at ease with the NIODA framework. While NIODA models might indeed be claimed to result from an engagement with the sciences, or philosophy of science for that matter, particularly from debates about the nature and forms of causality in contemporary science, the traditional theological approach in terms of primary and secondary causation, although also an approach in terms of causation, is in fact not a result of the *Scientific Perspectives on Divine Action*. The notion of causation is much broader than the one operative in NIODA models and different in kind. Rather, the distinction between primary and secondary agents results from a metaphysical and theological consideration of causation and the relationship between God and nature.

[271] Russell (2000): 11-3; Russell (2001b): iv-vi. Russell later adjusts this enumeration partially by calling primary/secondary causation a 'metaphysical' rather than scientific approach, but at the same time claims that such a metaphysical approach presupposes a different form of NIODA (Russell (2008a): 20 and 35-6).

Chapter 3:
The Reason for the Deadlock

The previous chapter discussed the difficulties the NIODA framework and its various models face as purported breakthrough in conceptualising the providence of God. The purpose of this chapter is to identify as a reason for the current deadlock in which the DAD seems to be the theoretical core assumption of the demand to make room for divine action. I argue that the very attempt to establish a model of NIODA shows that the rejection of the so-called 'liberal modern worldview' was not radical enough. In other words, there is still a crucial and, I submit, problematic assertion left unscrutinised from this challenge of divine action, namely, theo-physical incompatibilism, or the view that OSDA is incompatible with causal determinism.

This assumption is theological in nature rather than scientific. The chapter argues that the important exposition of the paradigm shift in the *scientific* worldview within the DAP was implicitly based on and overlooked another essential difference between the modern and the traditional Christian worldview, namely an assertion concerning the *theological* view how to relate God and nature.

Section 3.1 introduces the concept of theo-physical incompatibilism. Section 3.2 carves out the essential incompatibilist premise. Section 3.3 critically assesses the validity of this premise.

3.1. Theo-Physical Incompatibilism

The in/compatibilist divide has gained prominence in philosophy. The dispute concerns the principal relation between human freedom and causal determinism. While on the one side incompatibilists uphold the dichotomy between free will and determinism, a position

implying that human freedom is only conceivable if the world is indeterminate, compatibilists on the other side insist that human freedom is in fact compatible with causal determinism. One can call the distinct sides of this controversy *anthropo-physical in/compatibilism*.

In theology, a distinct but related debate concerns the question of human freedom and divine determinism. While some theologians say that divine determination is compatible with human freedom, others deny this. One can call the distinct sides of this related controversy *anthropo-theological in/compatibilism*.

In the field of science and religion, a third form of incompatibilism has emerged that is today known and discussed as *theo-physical incompatibilism*. This form of incompatibilism is termed 'theo-physical' because it concerns the relation between God (*theos*) and nature (*physis*); it is a form of 'incompatibilism' because it asserts that OSDA and causal determinism are incompatible. Kirk Wegter-McNelly coined the term to designate the view commonly held in the DAP that OSDA and causal determinism mutually exclude each other, wherefore determinism is taken to preclude OSDA.[272]

Wegter-McNelly summarises these three controversies as follows:

A. *Anthropo-physical in/compatibilism*: human freedom is in/compatible with physical determinism;
B. *Anthropo-theological in/compatibilism*: human freedom is in/compatible with divine determinism;
C. *Theo-physical in/compatibilism*: objectively special divine action is in/compatible with physical determinism.[273]

The relation between the three kinds of in/compatibilism consists, broadly speaking, in this, that the relevance of the in/compatibility of human freedom and physical determinism

[272] Wegter-McNelly (2008): 304-5.
[273] Wegter-McNelly (2008): 305.

for the in/compatibility of divine action and physical determinism depends on the in/compatibility of human freedom and divine determination. That is to say, whether or not a particular stance on anthropo-physical in/compatibilism bears on the theo-physical in/compatibilism distinction will depend upon one's position concerning anthropo-theological in/compatibilism. This means, as Wegter-McNelly points out, that one can consistently be an anthropo-physical incompatibilist and theo-physical compatibilist if there is in general a significant difference between God and nature and, more specifically, between divine and natural determination.[274]

The position of Theo-Physical Incompatibilism (TPI), I argue, results from a particular actionistic understanding of providence. If human action is taken as model for divine providence, and the notion of action is furthermore predicated univocally to God, then actionistic providence will in this instance lend itself to the view that determinism excludes divine action, similar to the incompatibilist stance that determinism excludes free human action. In this manner TPI parallels human freedom and OSDA setting both against causal determinism. If this analysis proves to be correct, then TPI is an import of incompatibilism from human action univocally predicated to divine action, that is to say, 'to act' is said of God and creature in the same sense.

TPI is at the heart of the standard model of divine action based on causal gaps or, to put it positively, ontological indeterminism. The contrastive view was expressed within the DAP by what Wildman and Russell called the *see-saw principle*: the principle that "a stronger case for the deterministic hypothesis necessarily implies a weaker case for the possibility of free divine and human acts in history."[275] The issue is, as Owen Thomas

[274] Wegter-McNelly (2008): 306.
[275] Wildman and Russell (2000): 85.

comments, "whether or not divine (and human) action in the world requires a universe that is metaphysically open or nondeterministic."[276] Thomas goes on lamenting that most of the contributions to the DAP are "based on a positive answer to this question and to the validity of the see-saw principle."[277] The see-saw principle makes intelligible, and indeed necessitates, the appeal to indeterminism and gaps common to NIODA proposals. It provides the missing link to the 'gaps strategy' outlined at the beginning of PART ONE in that the see-saw principle generates the theological need for causal gaps.[278]

This dependence in turn means, however, that the appeal to gaps becomes unnecessary as soon as the principle is dropped. Thomas explains:

> But if the see-saw principle is denied or avoided, then it would seem that all discussion of the implications for divine action of quantum, chaos, and complexity theory is irrelevant.[279]

This observation illustrates that the need to make room for God to act in nature is simply a consequence of TPI. Advocates of this view have the burden to show that there is metaphysical space for OSDA precisely because TPI asserts that causally determined systems exclude OSDA. Therefore, if nature is a causally determined system, it will exclude OSDA. The following syllogism represents the challenge to divine action as perceived by theo-physical incompatibilist proponents of NIODA:

(1) Causally determined systems preclude OSDA.
(2) Nature is a causally determined system.
(3) Therefore, nature precludes OSDA.

The DAP responded to this purported scientific challenge, previously discussed under the banner of a 'liberal modern worldview', in the main by tackling premise (2); at least,

[276] Thomas (1997): 74.
[277] Thomas (1997): 74.
[278] Thomas (1997): 74-5.
[279] Thomas (1997): 74.

this is the way the NIODA programme seeks to satisfy the quest to make room for God's activity in nature. Tackling premise (2) is a legitimate and indeed praiseworthy endeavour, especially if one is an anthropo-physical incompatibilist and wants to defend human freedom.

The risk is focusing exclusively on premise (2), for this will at least implicitly support the view that OSDA is possible *only* if premise (2) is denied. I contend that the problem with the prominent strategy of proving determinism wrong consists in the fact that it *eo ipso* grants premise (1), which creates the demand for metaphysical space in the first place.

3.2. The Incompatibilist Premise

Historically speaking, as noted previously, the TPI position can be reconstructed as a view resulting from the modern liberal objection against divine action:

(1) Causally determined systems preclude OSDA.

(2) Nature is a causally determined system.

(3) Therefore, nature precludes OSDA.

This objection is theo-physical incompatibilist because its major, premise (1), is an expression of TPI: causal determinism and OSDA are incompatible. In challenging and negating premise (2), but accepting premise (1), the standard model of divine action adopts the theo-physical incompatibilist stance of the objector:

(1) Causally determined systems preclude OSDA.

(2) Nature is *not* a causally determined system.

(3) It does *not* follow from (1) and (2) that nature precludes OSDA.

Note that from the negation of the initial premise (2) one cannot logically infer that nature does *not* preclude OSDA; the altered argument entails only that the initial conclusion of the modern liberal objection, namely, that nature precludes OSDA, does not logically follow, as stated in conclusion (3). Hence if premise (1) is granted, then one cannot conclude from the negation of premise (2) that OSDA in nature is possible, for it does not logically follow from the fact that OSDA is *im*possible within a causally *determined* system that OSDA is *possible* within a causally *in*determined system. Rather, an additional major premise is needed to make that argument valid, namely premise (3) below, which I shall call the 'incompatibilist premise'.

(1) Causally determined systems preclude OSDA.

(2) Nature is not a causally determined system.

(3) *Causally indetermined systems admit of OSDA.*

(4) If a system is not causally determined, then it is causally indetermined.

(5) Therefore, nature admits of OSDA.

As pointed out, such a theo-physical incompatibilist argumentation for the possibility of OSDA in nature makes causal indeterminism a condition of possibility of OSDA, for in light of premise (1) it is clear that premise (3) has to be read as stating that OSDA is possible *only* within a causally indetermined system, otherwise premise (1) would have to be negated.

The view that natural causal determination precludes OSDA is based on a zero-sum game, where natural and divine causation are viewed as incompatible in the sense that an effect can either be determined by divine causation or by natural causation, but not by both, unless the causation is divided up and partly brought about by divine and partly by natural causation. In any case, the point stands that an effect cannot be wholly attributed to God

and to creatures. This is a form of coordinative cooperation: if and insofar as an effect is caused by natural causation, then it is not, and cannot be, divine causation (OSDA); and conversely, if and insofar as an effect is caused by divine causation (OSDA), then it is not, and cannot be, natural causation. Such an incompatibility between divine and natural causation is the core of TPI. The incompatibility implied by TPI can be identified as follows:

(TPI) Natural and divine causation mutually exclude each other.

It is crucial to qualify this statement in two respects. First, TPI is a claim only about *SDA*, but not about GDA; and it is neither concerned with merely subjective nor functional SDA. Wegter-McNelly explains that, to take the most prominent NIODA proponent, "Russell has always worked from the presumption that while general providence is compatible with physical determinism, special providence is not."[280] The reason is that OSDA is the only kind of divine action that is, according to NIODA theorists, in danger of violating the laws of nature.[281] In fact, if TPI were a statement about GDA, determinism would also preclude the act of creation, for recall that GDA is commonly taken to include both creation and conservation.

Second, TPI is a statement about *noninterventionist* OSDA (NIODA); the DAP set aside the question of miracles. Hence TPI is exclusively a claim about the possibility of non-miraculous OSDA. Wildman therefore qualifies Wegter-McNelly's definition as follows: "Incompatibilism assumes that physical determinism entails the impossibility of non-interventionist [objective] SDA."[282] For the purpose of the present discussion I will state TPI in terms of OSDA rather than NIODA, but stress at this point that if there were

[280] Wegter-McNelly (2006): 102. See also Wegter-McNelly (2008): 305-6 and Tracy (2008): 257-8, n.12.
[281] Wegter-McNelly (2008): 305-6; Tracy (2008): 257-8, n.12.
[282] Wildman (2008): 143.

(law-violating) interventions of the kind NIODA theorists are worried about, then they would be excluded from the statement: read 'causally determined systems preclude OSDA (that is not an 'intervention')'. Put differently, it is not the fact that divine interventions are possible within determined systems that makes TPI wanting.

We can then qualify the statement about the compatibility TPI implies as follows:

(TPI) Natural causation and OSDA mutually exclude each other.

While TPI holds that natural causation and OSDA are mutually exclusive, Theo-Physical Compatibilism (TPC) denies this, perhaps also that natural causation is incompatible with NIODA, depending on whether one takes the notion of noninterventionism a helpful specification of the kind of divine action under discussion. In any case, the notion of TPC does *not* concern, as a common misconception has it, merely subjective or functional SDA; TPC is an assertion about OSDA.[283]

The distinction between TPI and TPC is blurred by the presumption that theo-physical compatibilists affirm only the compatibility of causal determinism and GDA. The notion of TPC, at least as employed in the present thesis, does not imply, *pace* Tracy, that compatibilists simply seek to avoid rejecting causal determinism:

> [T]hinkers who typically are identified as compatibilists often agree that OSDA is incompatible with causal closure […]. In most cases the 'compatibilists' do not want to be committed to denying deterministic causal closure, and therefore they reject OSDA, affirming only those forms of divine action that are compatible with causal closure […], and speak of special divine action only in the subjective or [functional] sense. By contrast, 'incompatibilists' affirm OSDA, and therefore reject determinism. The key point to note is that this disagreement is *not* about the incompatibility of OSDA and determinism, on which they *agree*. It is about whether or not to affirm OSDA, given that this affirmation puts our theology of divine action

[283] It is worth mentioning that Saunders's explication of the distinction between compatibilist and incompatibilist SDA also differs from the one presently discussed because he bases the distinction on the question of causal origination (Saunders (2002): 43-45): "God as agent may or may not be held to make originated causal actions." (Saunders (2002): 45).

> at risk of being refuted if a deterministic interpretation of the sciences were somehow to gain the upper hand.[284]

Contrary to this view, TPC as employed in this study implies that both GDA and SDA, including OSDA or NIODA, are compatible with natural causation and determinism.

TPC rejects premise (1) of the modern liberal objection, which consequently renders premise (2) irrelevant for the question of the possibility of divine action in nature: whether or not nature is causally determined, nature does not – at least *qua* being causally determined, which is the subject of controversy – preclude OSDA. The focus shifts on premise (1), that is to say, on the rejection of TPI:

(1) Causally determined systems do *not* preclude OSDA.

(2) Nature is a causally determined system.

(3) It does *not* follow from (1) and (2) that nature precludes OSDA.

One should read the conclusion as stating that it would be invalid to conclude from premises (1) and (2) that nature precludes OSDA. The modern liberal objection that causal determinism renders OSDA in nature impossible is therefore rebutted, even if nature were a causally determined system. For if nature is not a causally determined system, that is to say, in the more likely case that the thesis of causal indeterminism is true, then the modern liberal objector's argument is also proved invalid:

(1) Causally determined systems do *not* preclude OSDA.

(2) Nature is *not* a causally determined system.

(3) It does *not* follow from (1) and (2) that nature precludes OSDA.

[284] Tracy (2008): 258, n.12. For as similar statement, see also Russell (2006): 583.

Again, the conclusion that nature precludes OSDA does not follow from the premises. Hence, if premise (1) is tenable, then TPC is a more effective way of counteracting the denial of the possibility of OSDA on the basis of the alleged causal determinism of nature. For, on this account, the impossibility of OSDA in nature is *prima facie* not established in each case, to wit, that the thesis of causal determinism and of causal indeterminism holds, respectively.

3.2.a. The Full Argument

I shall now flesh out in more detail the incompatibilist premise that 'causally indetermined systems admit of OSDA'. We have already seen that, given premise (1), it does not logically follow that if nature is *not* causally determined, then OSDA is *eo ipso* possible. What follows via *modus tollens* is only that if OSDA is not precluded, then nature is not a causally determined system. That is to say, that OSDA is possible within a causally indetermined system must be established on other grounds. The NIODA theorist must demonstrate somehow that in the case of causal indeterminism – understood as the negation of causal determinism ('Nature is *not* a causally determined system') – OSDA is in fact possible.

The metaphysical burden of defenders of TPI is therefore twofold. First they have to argue for the thesis of causal indeterminism. Since current scientific consensus holds that nature is at least partially indeterminate, this gives strong warrant that, contrary to the objection, nature is in fact not a causally determined system. Causal indeterminism is a first and necessary condition of TPI (premise (VI) below). Yet indeterminism is an insufficient condition for incompatibilist OSDA. Second, to illustrate the possibility of OSDA, an additional premise is needed establishing the compatibility of OSDA and causal *in*determinism. The second indispensable premise for theo-physical incompatibilist OSDA

that might be overlooked at first sight is what I called the incompatibilist premise, that causally indetermined systems admit of OSDA (premises (III-V) below). The full argument goes something like this:

(I) Causally determined systems preclude OSDA (TPI).[285]

(II) If a system is not causally determined, then it is causally indetermined (definition)

(III) *Causally indetermined systems do not preclude* OSDA (additional premise: (III) does not follow from (I) and (II)).

(IV) If a system does 'not preclude' *x*, then it 'provides room for' *x* (definition).

(V) Therefore, causally indetermined systems provide room for OSDA (from (III) and (IV)).

(VI) Nature is a causally indetermined system.

(VII) Therefore, nature provides room for OSDA (from (V) and (VI)).

Before going into more detail, I need to flag an issue. One might object that it is not so much causal determinism as the principle of causal closure that is the problem at heart, and as such, the first premise should read (I) 'causally *closed* systems preclude OSDA'. Jeffrey Koperski, for instance, poses the objection that in actual fact it is not causal determinism, as NIODA theorists suggest, but causal closure that is the source of the modern problem for divine action in the world.[286]

At least historically, his thesis receives some further although non-conclusive support from our discussion of the DAD. It is the conviction that the world is closed off for God as an agent that prompted theologians 'from Bultmann to Kaufman' to reject God's activity in the world as a scientifically outdated and mythological view. The point of contention was that God could not be a causal agent in the world because the universe appears to be

[285] The alternative formulation that (I) '*only* causally determined systems preclude OSDA', wherefore, if nature is not a causally determined system, nature would not preclude OSDA, is not an expression of TPI as introduced above, but would rather merge TPI with the additional premise NIODA theorists seek to establish.
[286] Koperski (2015b): 182-90.

causally closed. Such claims sound at least phonetically very similar to Koperski's concern, although admittedly neither liberal theologians of that era nor NIODA theorists seem to operate on a clear and distinct notion of causal closure differentiated from causal determinism.

The way NIODA theorists set up their framework in the DAP, however, shows that they consider causal determinism a scientific theory, for the discussed NIODA models establish, with the possible exception of the discredited CDA model, the antithesis of causal indeterminism on scientific rather than metaphysical grounds. The principle of causal closure, however, is, at least in Koperski's argumentation, a metaphysical thesis concerning causation collapsing methodological naturalism into ontological naturalism. In this way causal closure expresses the view that there are only physical and natural causes operating in the world.[287]

While I concede that differentiating the principle of causal closure and causal determinism the way Koperski does means that the former metaphysical claim puts more pressure on talk of divine action, I argue that this situation does not affect my line of reasoning, for the question at present is not so much where the conflict really lies, but rather what NIODA theorists identify as the main challenge. Hence I reply that causal closure is at least not the primary concern the NIODA model addresses, for two reasons.

First, the principle of causal closure is a thesis that can arguably not be inferred from the sciences alone but is rather a 'metaphysical add-on'.[288] As such, it would have to be combatted on specifically philosophical grounds. The objection that the NIODA agenda

[287] Koperski (2015b): 187-8.
[288] I take this notion from Plantinga (2008), who argues that the Laplacian picture (causal closure) is a combination of the Newtonian picture (causal determinism) plus the metaphysical assumption that the world is causally closed.

tackles the causal closure of the physical world would only hold if causal indeterminism were the antithesis of causal closure. But the thesis of causal indeterminism does not *eo ipso* refute the purported causal closure of the world. It is arguably conceivable that nature is indeterminate yet closed to all external or nonphysical causes. Hence, despite the fact that NIODA proponents sometimes speak as if they were concerned with causal closure, the way they go about establishing divine action in nature shows that causal determinism (and reductionism) is their main concern.

Second, a hard form of causal closure of the physical would not only affect forms of SDA, but would actually render any form of divine activity, including GDA, obsolete. For if nature were an entirely self-contained system including no form of ontological dependence on God, the very doctrine of creation and conservation of the universe would be negated, let alone its providential guidance. The fact that GDA was more or less taken for granted is evidence that the principle of causal closure was not the primary concern.

As a next step, I shall discuss that theo-physical incompatibilist NIODA theorists typically argue for the additional premise (III), that causally indetermined systems do not preclude OSDA, on the grounds of so-called ontological or causal gaps. Note carefully in this regard the difference between premises (VI) and (III-V): it is one thing to argue that there are causally indetermined processes in nature (indeterminism), but quite another to claim that this indeterminism provides room for God to act (incompatibilist premise). To clarify further this difference, it will prove helpful to examine how causal indeterminism must be interpreted in order to establish the incompatibilist premise.

3.2.b. A New God of the Gaps Strategy

A close reading of the VO/CTNS volumes reveals that by the 1990's, it had become a widely accepted view, at least among key participants of the DAP, that God needs room to act in nature, and that this room is to be found to the extent to which nature is causally indetermined. Authors appealing to indeterminism in this manner reintroduce a sort of 'the God of the gaps', although in a new and different manner. Tracy sheds a good deal of light on the debate with his re-interpretation of the God of the gaps strategy, which I argue is key to understanding the incompatibilist premise.

The historically laden and pejorative term 'God of the gaps' is commonly associated with Charles Alfred Coulson. He wrote in 1955:

> There is no 'God of the gaps' to take over at those strategic places where science fails; and the reason is that gaps of this sort have the unpreventable habit of shrinking.[289]

The basic idea of discrediting attempts to use God as explanatory tool to account for scientific gaps predates Coulson, though. Henry Drummond, for instance, wrote in *The Ascent of Man* (1894):

> There are reverent minds who ceaselessly scan the fields of Nature and the books of Science in search of gaps – gaps which they will fill up with God. As if God lived in gaps! What view of Nature or of Truth is theirs whose interest in Science is not in what it can explain, but in what it cannot […]? What needs altering in such finely jealous souls is at once their view of Nature and of God.[290]

Similarly, Dietrich Bonhoeffer emphasised in a famous prison letter dated May 25th, 1944,

> how wrong it is to use God as a stop-gap [*Lückenbüßer*] for the incompleteness of our knowledge. If in fact the frontiers of knowledge are being pushed further and

[289] Coulson (1955): 20.
[290] Drummond (1894): 333.

> further back (and that is bound to be the case), then God is being pushed back with them, and is therefore continually in retreat.[291]

To be sure, nobody in the DAP wants to reintroduce this form of the God of the gaps argument into theology, for the simple reason that the science and religion conversation is neither supposed to lead to a constant retreat of theology nor to acknowledge only the gaps, as it were, but not the knowledge the scientific endeavour produces.[292]

Authors appealing to indeterminism propose, according to Tracy's analysis, a new and different God of the gaps argument.[293] The problem with the old God of the gaps strategy, so the argument goes, is not the approach in and of itself, but the *sort* of gaps to which theology appealed. The move of the new God of the gaps argument, then, is to distinguish between epistemological and ontological gaps: the former, sometimes also called explanatory gaps, are lacks of explanation. Assertions about epistemological gaps are claims about what we can or cannot know. They refer to our temporal or principal inability to explain natural phenomena sufficiently, and can therefore be specified as being not fully explicable either in practice or in principle. Ontological gaps, by contrast, sometimes also labelled causal gaps, are 'breaks in the natural order of causation'. Assertions about ontological gaps are claims about the causal nexus. They refer to natural phenomena that are not uniquely determined by their prior causes. This latter sort of gap, ontological or causal gaps, is the subject of the new God of the gaps strategy and the incompatibilist means to explain divine action in nature.[294]

---

[291] Bonhoeffer (1967): 174. For further references, see Bonhoeffer (2010): 405-6, n.5.
[292] See, for instance, Barbour (1998): 430, 441; Russell (1998b): 216-8; Russell (2001a): 295; Tracy (2000): 290-2; Peacocke (2008): 206; Ward (2008): 290-2; Worthing (2008): 321.
[293] Tracy (2000). For further evidence that Tracy's analysis is (explicitly or implicitly) shared by other authors, see, in addition to the quotations at the beginning of PART ONE, Russell (1998b): 216-7; Russell (2001a): 295-6.
[294] Tracy (2000): 290.

The idea is that the new theological appeal to gaps is not concerned with what is *not* known, ¬K(*p*), but what *is* known, K(¬*p*). That is to say, the gaps to which theology appeals are known gaps in nature, and not gaps in our knowledge of nature. Or, to put it succinctly, the new theory appeals to gaps in nature, not in knowledge. Hence theology must, on the one hand, avoid inserting divine action into gaps of what is not known, but needs, on the other hand, to place God's action into gaps of what is known. The fundamental distinction at heart is the difference between '*x* does not know that *p*' (in the sense of '*x* does not have knowledge of *p*', that is to say, '*x* does not know whether or not *p* is the case') and '*x* knows that not *p*'. In short:

> *Epistemic gaps* are gaps in our knowledge of the causal nexus of nature. They are of the form ¬K(*p*).
>
> *Ontological gaps* are gaps in the causal nexus of nature. They are of the form K(¬*p*).

Wildman calls these ontological gaps 'uncloseable gaps.'[295] Since ontological gaps of this kind cannot be closed in principle, the argument goes, there is nothing wrong with inserting divine action into these gaps. This ontological version of the God of the gaps elucidates the incompatibilist premise as basis and prerequisite of the search for room for divine action.

The new God of the gaps strategy illuminates why the theo-physical incompatibilist search for causal gaps turned into a quest for causal indeterminism. Since the incompatibilist premise that causally indetermined systems admit of OSDA is argued for on the grounds of ontological gaps, and based on an identification of causal indeterminism with ontological or causal gaps, the methodological procedure to establish TPI must be an appeal to science. According to this view, science might provide theology with the relevant causal gaps for divine action in nature, provided that it indicates that nature is indetermined. Hence causal indeterminism in science becomes theologically relevant, and the appeal to

---

[295] Wildman (2008): 143.

contemporary science that questions certain forms of determinism is the strategy to go about.

As a consequence of TPI, therefore, the DAD has become, in the wake of the DAP, for the most part a debate about causal determinism and indeterminism. "The question of an 'openness' (indeterminism, chance) versus a 'closedness' (determinism) in the world," writes James Cushing, is "*the* fundamental issue in relation to possibilities for a particular way of God's action."[296] In other words, if science provides the right kind of gaps in affirming causal indeterminism, then there is no theological danger of inserting divine action into these gaps, since these are gaps in nature, and not in knowledge, and hence are not likely to be closed. For this reason the God of the gaps strategy in this new form is widely regarded as a theologically valid approach. The new God of the gaps strategy also explains why the DAD, in particular during the decade of the DAP, was caught up in, and has been preoccupied with, diverging interpretations of particular scientific theories.

In short, NIODA theorists have to show, according to the incompatibilist premise, that causally indetermined systems admit of, or provide room for, OSDA. Proponents of NIODA typically seek to establish this premise by what I called the new and ontological God of the gaps strategy: assuming God's activity in ontological gaps. Three conditions must be met to get this theo-physical incompatibilist OSDA off the ground: OSDA is possible if (1) ontological indeterminism is the case, (2) ontological indeterminism provides ontological gaps, and (3) ontological gaps provide room for OSDA. The incompatibilist premise would then seem to hold if indeterminism provides gaps and these

[296] Cushing (2001): 99.

gaps are theologically relevant. This is the twofold strategy to establish the positive claim of TPI *given* causal indeterminism.

3.3. Scientific, Philosophical, and Theological Objections

The purpose of this final section is to show that the incompatibilist premise, namely that it is causal indeterminism that provides room for divine action, faces objections on philosophical, scientific, and theological grounds. I have shown so far that the metaphysical burden of TPI is to establish that (1) causal indeterminism is the case and that (2) causal indeterminism provides the specific openness required for theo-physical incompatibilist OSDA. The constructive incompatibilist argument can be stated as follows:

(1) Nature is a causally indetermined system.
(2) Causally indetermined systems admit of, or provide room for, OSDA.
(3) Therefore, nature admits of, or provides room for, OSDA.

The first premise is taken to be a scientific one. Indeterminism is an insufficient but necessary condition for incompatibilist OSDA because TPI states that causally determined systems preclude OSDA. The second is the incompatibilist premise. The phrases 'admit of' and 'provide room for' are used interchangeably here. All objections discussed below concern the question whether, given indeterminism, nature in fact provides the kind of openness for incompatibilist OSDA that premise (2) implies.

3.3.a. Indeterminism, Gaps, and the Notion of Causation

In particular, advocates of the new God of the gaps strategy have to illustrate that (i) causal gaps follow from causal indeterminism and that (ii) these causal gaps provide room for God to act in nature. This, then, is the gaps strategy in support of the incompatibilist premise:

(i) Causally indetermined systems provide causal gaps.

(ii) Causal gaps provide room for OSDA.

(iii) Therefore, causally indetermined systems provide room for OSDA ('incompatibilist premise').

To start with premise (ii) first, there are fundamental constraints on the kinds of causal gaps that can purportedly provide room for OSDA. In order to be relevant, the ontological gaps have to have two essential characteristics. The openness required for God to act in nature demands in addition to causal indeterminism (and thus the rejection of causal determinism) that (a) the determination of these underdetermined events makes an objective difference, and that (b) the underdetermined events are an integral part of the causal nexus (and thus the rejection of interventionism). If one of these conditions is not met, the NIODA project fails.[297] It should be noted that I will only briefly comment on these conditions because what I aim for is a change in the framework, not a recalibration of the God of the gaps.

Requirement (a) ensures that the gaps in which God acts can actually affect and bring about theologically relevant effects. I discussed above already in detail the presumption that the divine determination of undetermined or underdetermined events has to make an objective difference, and reached the conclusion that the condition that God can *effectively* bring about the effects he wants by these means involves at least various scientific uncertainties.

Requirement (b) maintains that the causal gaps have to be intrinsic to nature rather than extrinsically caused by God. If one believes that God depends on ontological gaps to provide the necessary room for his action, one seems left with two fundamental options: either these gaps are already an inherent part of nature, or they have to be generated

[297] Tracy (2000): 310-1; Tracy (2008): 253.

externally on occasion. That is to say, either these gaps are inbuilt features of nature or God has to intervene to create these features contrary to nature. Russell explains:

> If nature itself lacks such causal gaps, God must act in special events to create these gaps. Such an account of particular divine action is clearly interventionist: in order to act in nature God must intervene in these processes by suspending them and violating the laws that describe them.[298]

The former option is an appeal to (what I will term) 'intrinsic gaps', while the latter is an appeal to 'extrinsic gaps'. NIODA requires that the relevant causal gaps are intrinsic, not extrinsic, to nature. On the contrary, divine intervention posits extrinsic gaps.

While I agree with NIODA proponents that divine action must not be conceived as merely extrinsic, wherefore their focus on intrinsic features of nature is to be welcome, I am opposed to conceiving of the intrinsic nature of God's causal involvement in terms of ontological gaps. The theological difficulty with divine action within such intrinsic gaps is that God's activity is extrinsic to nature – despite, or better, because of God being a player *within* the conglomerate of creaturely causes. God's providential care remains fundamentally an exterior action *upon* the object in question rather than exemplifying God's presence *in* the object.

This difficulty, to be sure, is not resolved by the recourse to intrinsic gaps, because NIODA theorists exploit these gaps precisely insofar as natural causation is undetermined. To the extent that an object is undetermined, the divine end or purpose enters into it by a divine determination of what is naturally undetermined. The nature of the object is and remains thereby undetermined, since God brings about the determination externally without affecting (thus not intervening in) nature. Thus the space for divine action might be intrinsic to nature, but the end brought about by God is in no way intrinsic to the object,

---

[298] Russell (2001a): 295.

because the end is not part of, or due to, the subject's nature. The ontological gap provides intrinsic room precisely by lacking natural determination. This is a form of what I will later define as externally imposed teleology. To put it briefly, NIODA reflects God's intention but is in no way according to the 'intention' or nature of the subject being determined.

To summarise the main difficulty with premise (ii), the loophole ('intrinsic gap') might be said to be intrinsic to nature but not what God inserts therein (NIODA). The function of the loophole is merely to provide, as it were, a lack of *natural* causality to be supplemented by *divine* causality. By being inserted into such loopholes, divine causality must remain entirely extrinsic because it does in no way become part of nature. Despite its insistence on and sincere effort to establish a model of divine action that is noninterventionist, NIODA does not succeed in getting away from portraying divine activity in stark contrast to nature: NIODA cannot but appear as a divine act upon, an extrinsic re-direction of, and an unnatural mechanistic input into nature. Despite the appeal to 'intrinsic gaps' NIODA is therefore never truly an intrinsic part of nature: God's activity does not adequately manifest God's presence in nature.

Turning to premise (i), then, there is an argument to be made that indeterminism does not actually imply causal gaps, that the appeal to ontological gaps in fact rests on an illegitimate mixing and merging of deterministic and indeterministic ideas. Taking quantum mechanics as example, Michael Dodds makes a compelling case that QDA is incompatible with the Copenhagen interpretation. What QDA theorists exploit, Dodds claims, is not so much an indeterministic theory of quantum physics, but rather a hybrid interpretation neither accepted by adherers of indeterministic interpretations nor their scientific opponents. QDA does not sit well with the very interpretation of quantum

mechanics to which their proponents appeal because it merges elements specific to an indeterministic and deterministic interpretation of quantum mechanics, respectively.[299]

> (1) There are no natural determining causes for quantum events (inference from an *indeterministic* interpretation of quantum mechanics).
>
> (2) Determining causes are suitable for quantum events (inference from a *deterministic* interpretation of quantum mechanics).

By appealing to these two tenets of opposed interpretations of quantum physics, QDA theorists simultaneously ignore two further essential beliefs, respectively, namely that (1) in the case of indeterministic quantum theories *no* natural determining causes are needed, and (2) in the case of deterministic quantum theories what is needed are *natural* determining causes. On this basis they then conclude:

> (3) Since no natural determining causes are available, God might determine quantum events by way of divine determining causes (fusion and reinterpretation of both the indeterministic *and* the deterministic interpretation).

The conclusion QDA models reach is neither in accord with an indeterministic interpretation of quantum mechanics, nor with a deterministic alternative. Rather, QDA is a fusion of these interpretations partially accepting some while simultaneously rejecting others of their tenets: *pace* indeterministic, and in accordance with deterministic interpretations, QDA searches for a determining cause; *pace* deterministic, and in accordance with indeterministic interpretations, QDA then asserts that there are no natural determining causes for quantum events. Based on this twofold eclectic move, QDA finally goes at least beyond, if not contrary to, both theories by introducing a divine cause to determine the outcome of quantum measurements. Adherents of the Copenhagen interpretation would, therefore, be puzzled by the postulate of a divine *cause* for quantum events, for on their account no cause is needed at all; and their deterministic opponents

[299] Dodds (2012): 144-7.

would be struck by the postulate of a *divine* cause, for on their account what is needed is a natural cause.[300]

An example might help to illustrate the point.[301] Murphy rejects any hidden variable theory, only to introduce, as previously mentioned, God as the hidden variable. Out of four possible options Murphy first rules out that, on the grounds of an indeterministic theory, quantum events are determined by natural causes (i) internally or (ii) externally. Being left with the options of (iii) no determination or (iv) divine determination, she then opts for the latter because "all events must have a sufficient reason."[302] Dodds replies that at this stage Murphy switches to a deterministic theory implying the need for determination, although now turned into a philosophical rather than a scientific argument.[303]

The point is that indeterministic quantum theories, such as the Copenhagen interpretation, operate precisely on the assumption that there is no determining causality, and indeed no such causality is needed.[304] The physicist William Stoeger aptly expresses the idea:

> Some – for instance Ellis, Murphy, and Tracy – consider the indeterminacy at the quantum level to be an essential gap which requires filling [...]. [However,] indeterminacy is not a gap in this sense, but rather an expression of the fundamentally different physical character of reality at the quantum level. *It does not need to be filled!* To do so, particularly with divine intervention, would lead […] to unresolvable scientific and theological problems. *The demand for a cause to determine* the exact position and time of an event *misconstrues the nature of the reality* being revealed. Quantum events need a cause and have a cause, but not a

[300] Dodds (2012): 145.
[301] For further statements along the same line of reasoning, see Ellis (1999): 471-2 and Tracy (2003).
[302] Murphy (2000): 341-2; quotation on p.341.
[303] Dodds (2012): 146-7.
[304] In fact, the point of an indeterministic interpretation of quantum mechanics is that the quantum state is the complete description of the system, otherwise the indeterministic features would not emerge: "It must be emphasized that all the peculiar implications […] – objective indefiniteness, objective chance, objective probability, and nonlocality – depend crucially on the premise that a system's quantum state is a complete description of that system." (Shimony (2001): 6)

> cause *determining* [!] their exact time and position of occurrence, beyond what is specified by quantum probability (the wave function).[305]

The conclusion that indeterministic systems lack causation essentially rests on a deterministic understanding of causation. Ignacio Silva has convincingly argued in line with, and further explicating, Stoeger's statement that the way NIODA theorists describe causal *in*determinism remains essentially deterministic. Their definition of 'cause' goes something like this: a cause is that which determines the outcome of an event. This understanding is 'deterministic' insofar as causality is taken to entail essentially determination (what Stoeger calls a 'determining cause'), and as such, the two concepts of determination and causation merge to a considerable extent.

Only on such an understanding of causation can causal indeterminism be regarded as a 'lack of causality', for indeterminism indeed lacks *determining* causality. But rather than interpreting causal indeterminism as non-*deterministic* causation, as Stoeger insists in the citation, NIODA theorists view indeterministic processes, such as quantum measurements, as non-*causal* events claiming that quantum events lack causation and thus provide causal gaps.[306] For instance, Polkinghorne states that "individual quantum events are radically *uncaused*" and speaks, consequently, of a "radical lack of physical causality."[307] The analysis applies, however, to all NIODA theorists who claim that indeterministic natural causes are 'insufficient' to bring about their effects, thus leaving room for God to determine what is undetermined by natural causes.

The NIODA strategy therefore rests on the contested idea that something counts as a cause only if it determines an effect.[308] Consequently, causal indeterminism is purportedly

---

[305] Stoeger (2000): 242-3, n.4. My emphases.
[306] Silva (2015a): 105. For the in-depth analysis, see Silva (2009): 90-102.
[307] Polkinghorne (1988): 339.
[308] For a widely discussed philosophical case why causation is not determination, see Anscombe (1993).

a non-*causal* happening: causally indeterminate systems lack causation because they lack determination. Indeterministic causes are labelled 'insufficient' because they do not properly perform their function of determining the outcome. Hence indeterministic systems are said to lack causality and provide causal gaps.

These causal gaps and the lack of causality disappear, however, as soon as one drops the deterministic understanding of causation and operates instead with an indeterministic notion of causation. Then one simply deals with non-*deterministic* causation, but not a lack of causation: indeterminism lacks determination not causation. Non-causal events disappear, consequently, and no insufficient natural causation remains inherent to indeterministic systems. On an indeterministic account, the openness of indeterministic systems consists in the in-determination of its outcome, but this does not imply a-causation, that is, a lack of causation in the sense that one can, let alone must, insert a cause to overcome the in-determination.

To conclude, I have argued that apart from the obvious task of challenging a deterministic picture NIODA theorists also have to explain *how* indeterminism admits of OSDA; their burden of proof is twofold: (1) to illustrate that nature is causally indeterminate, a premise that has been reasonably established in the 'scientific turn' of the DAD, and (2) to show in a twofold step that causal indeterminism provides theology with the right kind of causal gaps to insert divine action, a premise I am concerned that NIODA theorists have not succeeded in establishing.

A critical philosophical and scientific assessment of models of theo-physical incompatibilist NIODA offers some evidence that indeterminism does not provide ontological gaps for OSDA; speaking of 'causal gaps' with regard to indeterminism seems, consequently, rather misleading. This tentative conclusion renders premise (i) of the

incompatibilist argument in support of the 'incompatibilist premise' questionable, namely the implication that causal indeterminism provides causal gaps open to divine determination. Moreover, even if indeterminism were to provide ontological gaps that could be filled with OSDA, these ontological gaps would be theologically relevant in the sense of (ii) providing room for OSDA only if (a) their causal determination makes an objective large-scale difference and (b) they are intrinsic to nature. With regard to these specific requirements I identified further concerns. Therefore, as it stands, the specific openness required for theo-physical incompatibilist OSDA does not seem to be sufficiently established, both philosophically and scientifically, in order to regard NIODA a robust model for divine action.

3.3.b. Two Ways of Avoiding Competition between God and Creature

There is yet a deeper and this time genuinely theological difficulty with NIODA. Michael Dodds shows in his landmark book, *Unlocking Divine Action* (2012), that it is the univocal concept of action operating in NIODA that creates the purported competition between God and creatures in their activity. 'Univocal causation' means for Dodds that a cause may operate with another cause of the same order to bring about an effect.[309] Only if one assumes divine and natural causes to be univocal causes can they possibly interfere with each other. Hence, the very fact that advocates of NIODA seek to avoid interventionism bespeaks a univocal understanding of divine and creaturely causation. Dodds explains:

> The desire to avoid such interference of course *presupposes that such interference is possible* – that the creator might act in such a way as to interfere with the very world he has created. *Such causal interference is possible, however, only between*

[309] Dodds (2012): 153, n.130. Note that this usage of 'univocal cause' differs from the scholastic usage of the term as denoting that cause and effect belong to the same species. Dodds states: "When I assert that some in the theology/science dialogue are thinking of God as a 'univocal cause,' I do not mean that they see God as belonging to the same species as some creature, only that they view God and creatures as being so alike that it is possible for their causalities to interfere with one another." (Dodds (2012): 153, n.130)

> *univocal causes*. It seems then that lurking somewhere behind this mode of discussing divine action there must be a univocal understanding of divine causality.[310]

The point Dodds makes here is that *only* univocal causes, causes of the same order, can compete with each other. Consequently, if God and nature are *not* univocal causes they cannot possibly be mutually exclusive, as stated by TPI: (TPI) Natural causation and OSDA mutually exclude each other. TPI therefore presupposes that God is a univocal cause.

Univocal causes can cooperate in bringing about an effect. If they do so, however, they only partly cause the effect, and necessarily interfere with other causes operating in the same causal order. The ratio of univocal causality is disproportional: the more one univocal cause causes, the less other causes contribute to some effect. In the case of a transcendent cause, by contrast, the purported competition between the causes disappears. A transcendent cause is a cause operating with a cause of a different order to bring about an effect. As such, the two causes both wholly, not partially, cause the same effect, despite there being another effective cause.[311]

Herbert McCabe gives an illustrative example. Imagine a basket full of apples and oranges. Both fruits naturally compete for available space. The more apples you put in, the less room there is for oranges, and *vice versa*. But this cannot reasonably be the case with God's presence. It is not as if the apples must be removed to make room for God, but rather the apples are there because of God's presence. God is not one factor alongside creatures such as apples and oranges.[312]

---

[310] Dodds (2012): 137. My emphases.
[311] Dodds (2012): 153, n.130, and 266.
[312] McCabe (2007): 73-4.

Similarly, it would appear that divine and creaturely activity cannot reasonably be presented in such a zero-sum perspective either. Yet this is precisely what NIODA in its theo-physical incompatibilist stance implies, that creaturely causality has to be causally limited, removed like apples to make room for oranges, to clear space for NIODA. In their respective causality, God and creatures are then like two men pulling a boat. The more one pulls, the less work is left to the other. Only if the first one is an insufficient cause for the boat's movement is there a possibility for the second one to step in causally. On this view, God and creature can jointly yet partially cause an effect, but no effect can be wholly caused by both God and creatures.

The difference between transcendent and univocal causation can be restated in terms of non-competitive causation in principle or in practice. Transcendent causation is non-competitive in principle, for a transcendent cause operates in or with causes of a different causal order it cannot possibly compete with, whereas NIODA avoids competition only in practice by metaphysically limiting the causality of God and nature, respectively.

The particular notion of competition employed in the context of NIODA is key: causes are in competition if and only if they are sufficient to bring about some effect. To avoid competition (in practice), then, (univocal) joint causes must be insufficient causes. Murphy explains:

> There is no competition between God and natural determinants because, *ex hypothesi*, the efficient natural causes at this level are insufficient to determine all outcomes.[313]

Tracy makes a similar point: "There is no competition with or displacement of finite causes here, since there is no sufficient finite cause."[314] Hence the competition TPI implies in

[313] Murphy (2000): 343.
[314] Tracy (2000): 318.

principle between natural causation and OSDA is avoided in practice by restricting both natural and divine causation to insufficient causation, respectively. Such a view clearly presupposes that both natural and divine causation are of the same order, for otherwise neither the question of competition would emerge in principle nor any restriction of divine or natural causality would be necessary.

A common objection to approaches implying a univocal concept of divine agency involves arguing that the univocity of the causality attributed to both God and creature assumes a degree of similarity between God and creature that many theologians would want to avoid. God and creatures are not such alike that they could possibly fall within the same order of causation. McCabe, for instance, asserts that the "idea that God's causality could interfere […] can only arise from [a …] notion of God as a very large and powerful creature – a part of the world."[315] If God is unlike creatures, his action must be so too: divine and creaturely action are therefore non-competitive not in practice, but in principle. Hence a univocal understanding of causation is not compatible with the very being of God as the cause of all things.[316]

The implicit univocity of divine and natural agency would indeed seem to imply a univocity of being, a making God creature-like, unless one separates agency from being, and treats only God's agency in univocal terms. Such a separation of being and agency has, I suspect, happened in the current divine action discourse, at least in the case of creatures. Wiles's notion of a genuine independence of agency suggests that creatures are dependent on God in their being, but independent of God in their agency. The same line of reasoning appears to crop up in NIODA models: the separation of being and agency would explain

[315] McCabe (2007): 76.
[316] Austriaco (2003): 950-5; Dodds (2012): 153, n.130. See also Dodds (2012): 160-204.

why GDA grounds in a compatibilist manner the being of creatures, but establishes in an incompatibilist manner the creatures' independence in action. Due to this independence of creaturely agency, OSDA then becomes limited by creaturely action. I have shown that TPI asserts only OSDA to be incompatible with natural causation; other forms of SDA and in particular GDA are regarded as compatible with causal determinism. Theo-physical incompatibilists are incompatibilists with regard to OSDA, but compatibilists with regard to GDA. Gregersen remarks: "If one were a rock-bottom incompatibilist, nature could do something without God doing it (whereby nature is no longer thought of as created by God)."[317] Put differently, the contrastive picture, the competitive view in principle, only concerns divine activity beyond the creation and conservation of creaturely being and, indirectly, activity.

Figure 1: The God-creation relation according to the NIODA framework:

$$noncontrastive \begin{bmatrix} GDA & - & OSDA \\ \downarrow & \ddots & \uparrow \Downarrow * \\ creaturely\ being & - & creaturely\ action \end{bmatrix} contrastive \Downarrow * NIODA$$

A difficulty with this theological move is that the partially incompatibilist position ascribes to creaturely agency, which is held to result from creaturely being merely created and conserved but not further actualised by God, a contested independence of God's activity. Alfred Freddoso labelled this position 'mere conservationism' and showed that it has traditionally been rejected on theological grounds.[318]

For this reason I suggest re-examining the assumed relationship between God and nature and, consequently, between divine and natural causation. The default position and

[317] Gregersen (2008): 194.
[318] Freddoso (1991); Freddoso (1994).

theological starting point of the DAP is the discussed dichotomy between uniformitarianism associated with Protestant liberal theology and interventionism associated with Protestant conservative theology. This dichotomy is rooted in a departure from, and in the broadest sense conceivable as a reaction against, the traditional view that God concurs in natural causation.

This claim takes us once again back to the beginning of the DAD and Dilley's critique of the Biblical Theology Movement. Recall that the controversy is largely rooted in the claim that there is no middle position between liberalism and conservatism. As mentioned, the dichotomy is premised upon the construction of a dilemma to illustrate the unfeasibility of the traditional middle position, the concurrentist solution to the conundrum of creaturely and divine causation, or the view that God and creatures conjointly bring about effects. Once again, Frank Dilley sets out the problem. He states:

> The conditions which would have to be satisfied to make this option plausible would be these: there must be two active agents, God on the one hand, and man or nature on the other, *both actually carrying out the same action independently*, in such a way that both parties are free, and neither produces the other's action.[319]

The theory that two agents can jointly cause one action has come to be known as 'double agency'. The Anglican theologian Austin Farrer coined the term to denote the concurrence of divine and creaturely agency for an identical action, namely as divine primary and creaturely secondary agent.[320] Dilley holds this traditional joint cause solution to be inconceivable insofar as the *unity of action* (as opposed to a unit of will, that is, of intentions) and the *duality of causes* exclude each other, respectively.[321]

---

[319] Dilley (1965): 78. My emphasis.
[320] Farrer (1967): v and 104. For Farrer's use of primary and secondary agency, see for instance Farrer (1967): 154.
[321] Dilley (1965): 79.

The purported dilemma of joint causation is as follows: either (1) the freedom of one agent must be denied so that one agent is freely active whereas the other agent is more of a passive instrument (*mutuality of freedom*), or (2) the work must be divided up between the agents so that both bring about the effect not wholly but partly (*mutuality of action*). This either/or decision is presented as the unsurmountable dilemma of traditional joint cause solutions.[322]

The problem with this dilemma between mutuality of freedom or action is that the premise of the argument is wrong, namely that to make double agency work both agents have to be 'carrying out the same action *independently*'. On traditional versions of double agency, there is no creaturely activity independent of God's activity. To take the most prominent example, Thomas Aquinas holds the view that creaturely secondary causation is always dependent on, and subordinate to, divine primary causation. The significance of such an account of secondary causation to the DAD then consists in this, that if the dilemma of the joint cause solution can be shown to be in fact a false dilemma, then the dichotomy between liberalism and conservatism, which set off the controversy, will be misconceived from the start. The result will be a genuine alternative to the standard model of divine action achieving a *tertium quid* without committing to the NIODA framework.

With this outlook I shall draw Chapter 3 to a conclusion. The purpose of PART ONE has been to indicate that the common recourse to, and search for, causal indeterminism is most likely more of an indication of the problem rather than a way of resolving the challenge the modern scientific worldview has posed to divine action. To borrow the words of Lydia Jaeger, perhaps "the question was badly framed."[323]

---

[322] Dilley (1965): 77-9.
[323] Jaeger (2012): 305.

The challenge underlying the 'scientific' turn in the DAD can be resolved not only by tackling the minor, premise (2), but also, and more effectively, by undercutting the major, premise (1). Hence the fundamental assumption of TPI on which the initial argument rests gets undercut.

(1) Causally determined systems preclude OSDA.
(2) Nature is a causally determined system.
(3) Therefore, nature precludes OSDA.

If TPC is a defendable position, then the need to make room for God to act in nature disappears. On this note I disagree with John Polkinghorne who claimed that the DAP successfully achieved "the defeat of the defeaters."[324] If my analysis is accurate, the standard model of divine action tackles the less promising candidate and in so doing accepts the contended premise of TPI. A theo-physical compatibilist solution seems theologically preferable, not least because it renders the minor irrelevant: whether or not nature is causally determined divine action in nature is *prima facie* possible.

Moreover, I have challenged the competition between divine and natural causation implicit in the position of TPI: (TPI) Natural causation and OSDA mutually exclude each other. The question that has eventually emerged in the context of the purported dichotomy between uniformitarianism and interventionism is the following. Is there an alternative concept of the providence of God implying OSDA but in a non-competitive manner so that not only the being of creatures but also their autonomous action is dependent on a divine action going beyond creation and conservation?

[324] Polkinghorne (2004): 191.

Summary of Part I

PART ONE discussed the DAD in terms of a three-stage development. The first stage sets the quest: is divine action in the world conceivable? The question was formidably posed by critics of the Biblical Theology Movement, and issued by a two-fold claim of Biblical Theology that divine action is the central biblical message, and that biblical language is the most appropriate way of expressing God's providence in history.

The second stage was a theological push-back on divine action *in* the world. Theologians 'from Bultmann to Kaufman' replied that divine action in the world is an outdated belief incompatible with the causal nexus implied by the modern scientific worldview. The argument against divine action in the world can be stated as follows:

(1) Divine action in a naturally causally determined system is impossible.
(2) The created world is a naturally causally determined system.
(3) Therefore, divine action in the created world is impossible.

The third stage of the DAD was a scientific push-back on premise (2). Yet a too-narrow focus on the question of causal indeterminism led some theologians into uncritically accepting premise (1). The standard model of divine action assumes that *only* causal indeterminism makes possible divine action in nature, that indeterminism provides room for OSDA. In assessing the standard model and its implications, PART ONE reached the conclusion that the 'critique of the critique' of the Biblical Theology Movement was not radical enough. Premise (1) itself is a contentious assertion, not least because it assumes an incompatibility between divine and natural causation.

This conclusion also opens the floor for debate about whether divine action, in particular if drawn from an understanding of human action univocally predicated to God, is the theologically most appropriate way of spelling out the providence of God. For at least

on the standard model of divine action a robust notion of providence is, consequently, conditioned by the thesis of causal indeterminism. Natural contingency must provide the *locus* for divine providence.

PART II: A NEW PROPOSAL – SAPIENTIAL-ORDINATIVE PROVIDENCE

In PART ONE I have argued that if we face difficulties conceptualising divine action in the world it might be advisable to revisit the underlying understanding of providence. In critiquing the standard model of divine action, I showed, among other things, that the DAD has been largely influenced by and operating with an actionistic notion of providence. In other words, most theologians conceptualise providence in terms of divine action, and take human action as a model for divine action. The fact that the current impasse in divine action theories is premised upon an approach drawing an understanding of providence from human agency, at times univocally predicated to God, supports the search for a different starting point for our theological investigation of the providence of God.

In response to this challenge, PART TWO sets out a new framework to discuss providence, which I shall characterise as 'sapiential-ordinative' to differentiate it from, and set it against, the 'actionistic' model prevalent in contemporary debates. In this alternative view, providence is primarily a reality in God and only secondarily a feature of the world. By exploring the teleological concept of Thomas Aquinas as a prime exponent of this view, I aim to illustrate a model of providence that is universal in scope and particular, both causally and intentionally, all the way down to the seemingly most unimportant occurrences in the world without in any sense invalidating the causality of creatures.

The main purpose of the following three chapters is to overcome the competitive picture previously discussed. Chapter 4 introduces the alternative notion of providence and reassesses the concept of secondary causation. Chapter 5 argues, on the basis of the doctrine of divine transcendence, that contingency is not so much the *locus* of divine action in the world, but rather the *effect* and *means* of providence. Chapter 6 explains the teleological structure of providence thus conceived.

Chapter 4:
Towards a Sapiential-Ordinative Understanding of Providence

Recent years have seen a certain revival of Thomistic ideas as part of a theological shift in the DAD.[325] Sarah Lane Ritchie accurately speaks of a *theological turn* in this regard, by which she means the theological questioning of the theoretical commitments of the standard position that has widely shaped the contemporary DAD. By scrutinising these assumptions, scholars seek to alter substantially the very framework of the conversation. Lane Ritchie characterises this turn as *theological* because representatives put into question the primacy of science in deciding the case of divine action by theologically (and philosophically) reflecting on the relationship between God and nature. The quintessence of this shift is that contrary to the overturned standard, and due to the new, theoretical commitments, science is not, and cannot be, the arbiter in deciding where and how divine action is possible.[326]

The theological turn concerns in particular TPI, which renders the scientific affirmation of causal indeterminism – interpreted as a lack of natural causation – the condition of possibility of divine action in the world. A prominent advocate of this theological shift is Alister McGrath, who recently encouraged "the [divine action] conversation to move beyond the framework of the 'Divine Action Project' into new approaches and paradigms."[327]

In her widely acclaimed book, *God and Creation in Christianity* (1988), Kathryn Tanner sheds light on the context of the theological discussion of divine action by differentiating two fundamentally opposed accounts of the God-creation relation: what she

[325] For an overview of the influence of Thomistic thought on the DAD, see Silva (2016a).
[326] Lane Ritchie (2017a): 361-8.
[327] McGrath (2015): 22.

calls the 'contrastive' and 'non-contrastive' view of divine transcendence and involvement. What distinguishes the two is whether divine transcendence is introduced in opposition to God's immanence, or whether his transcendence implies his immanence and causal involvement in creation.[328]

The 'contrastive' view effectively results, as William Placher exposed in *The Domestication of Transcendence* (1996), from a process in the modern era where theologians sought to put God into human concepts thinking he would fit our categories. To the influential view that God is 'their chief exemplification' rather than 'an exception to all metaphysical principles', Placher retorts, "[t]ranscendence that fits our categories has been domesticated."[329] Such a domesticated divine transcendence leads to a 'contrastive' view of transcendence and immanence,

> explaining God's difference from created things by saying that God was *transcendent* (distant, unaffected) in *contrast* to *immanent* (close, engaged). Rather than explaining how all categories break down when applied to God, they set the stage for talking about transcendence as one of the definable properties God possesses.[330]

The passage makes a theological case to introduce the concept of transcendence not in 'contrast' to immanence, but rather as expressing the fact that God does not fit into human concepts and that, consequently, our language about God and divine action cannot be taken in the same sense and as having the same meaning as in those cases where we predicate words, such as 'to act', to created objects.

Along these lines, I shall argue in Chapter 4 that God *is* an agent, but not in the same sense creatures are. Against the backdrop of the DAD, in particular the objection against accounts of double agency, I will contend, more specifically, that creaturely action is *not*

---

[328] Tanner (1988): 45-7.
[329] Placher (1996): 10. Placher is citing Whitehead (1969): 405.
[330] Placher (1996): 7.

independent of divine action, and that this divine activity in creaturely activity involves OSDA, a divine activity going beyond creation and conservation. Neither does this divine activity make creaturely activity less autonomous nor a non-genuine form of causation.

Section 4.1 introduces a new framework and argues that the distinction between providence and government is key to understanding primary and secondary causation. Section 4.2 addresses common objections against double agency. Section 4.3 introduces the concept of secondary causation thus questioning the dichotomy between interventionism and uniformitarianism.

4.1. The Nature of Sapiential-Ordinative Providence

In the following, I propose a sapiential-ordinative conception of providence, and will do so in contrast to the actionistic understanding of providence prevailing in the DAD, where divine action is largely modelled on human action. In this alternative approach the virtue of prudence functions as the human analogue of divine providence. Such a concept breaks open the narrow focus on action resulting from the common strategy of introducing providence in terms of divine action with reference to the philosophy of human action, and instead emphasises the transcendent character of God's activity and the immanent teleological structure of creation.

As mentioned in the introduction, the label 'sapiential-ordinative' comes originally from Reinhold Bernhardt. In his historical study, *Was heißt „Handeln Gottes"?* (2008), Bernhardt sets the prevailing action-based approach in current debates against a more traditional concept of providence, taking Thomas Aquinas as the prime exponent of this alternative view. Bernhardt coined the label to express firstly the primacy of providence as a God-internal intellective act, which only secondarily manifests itself in the structure and

order of creation (*sapiential*), and secondly the fact that ordering is the core of providence thus conceived (*ordinative*). On this view, God's providence *is* his eternal plan for creation. Characterising an account of providence as 'sapiential-ordinative' therefore means that it refers to a wise divine activity that teleologically orders the entire cosmos and all creaturely processes to divinely willed and appropriate ends.[331]

A consequence of this conceptual shift is that what the notion of divine action expresses within actionistic providence is to be interpreted as the effect and temporal execution of God's wise and prudent eternal order. Thus these labels are means to emphasise differences without aiming to negate similarities. The categories employed to articulate the sapiential-ordinative model are usually, as Bernhardt indicates, causality, efficacy, or activity rather than merely action. The benchmark of providence is consequently not *intentionality*, in the sense of a specific feature of human and divine action, but rather the more general notion of divine and natural *teleology*.[332] In short, the notions operative in the sapiential-ordinative approach are much broader than the narrow focus on action and intentionality in the contemporary debate, without neglecting or negating the importance of these aspects for the Christian notion of providence.

4.1.a. Prudence as Analogy for Divine Providence

Thomas Aquinas, a key proponent of this approach, notably draws a comparison between the human virtue of prudence and divine providence.[333] The reason for this

[331] Bernhardt (2008): 29-39.
[332] Bernhardt (2008): 35.
[333] *QDV* 5, 1; *ST* I, 22 pr.; *ST* I, 22, 1. For an earlier but unsatisfactory analogy which Aquinas used tentatively in his *Scriptum super Sententiis*, namely the *ars divina*: art being the *recta ratio factibilium*, see Torrell (2002): 563-7 and Ysaac (1961): 309-10.

analogy is, as he explains, that our understanding of divine providence is taken from human providence.[334]

In human endeavours, providence, then also called foresight, is concerned with future contingents insofar as human action can influence them.[335] Josef Pieper explains that 'foresight' here denotes "the capacity to estimate, with a sure instinct for the future, whether a particular action will lead to the realization of the goal."[336] Foresight or human providence is, according to Aquinas, the principal part of prudence. Although not identical with prudence, human providence is the essential element of prudence; other integral parts of prudence, such as memory of the past and understanding of the present, are more like required preparations for human providence to operate effectively.[337]

To approach the topic of divine providence in the tradition of Aquinas, I will briefly turn to his understanding of prudence. Prudence is one of the four cardinal virtues. It is a virtue of the practical reason, that is, reason concerning human end-directed activity.[338] The subject matter of prudence is human action, and the virtue directs more specifically means to ends. Servais-Théodore Pinckaers describes prudence as the virtue governing concrete action and fulfilling a function of judgment for other virtues: "Prudence discerns *hic et nunc*, according to circumstances, what is best in order to practice each virtue in its particular place."[339]

Aquinas follows Aristotle in defining prudence as 'right reason applied to action' (*recta ratio agibilium*). Prudence implies the act of counsel and judgement, but most of all

---

[334] *QDV* 5, 1.
[335] *ST* II-II, 49, 6.
[336] Pieper (1966): 18.
[337] *ST* II-II, 49, 6 ad1.
[338] *ST* II-II, 47, 2.
[339] Pinckaers (2005): 349.

command, that is, the application to action of the counselled and judged means.[340] Human providence as the principal part of prudence expresses this 'right order to an end' (*recta ordinatio ad finem*).[341]

Therefore, the essential feature of prudence that Aquinas appropriates for the doctrine of divine providence is the ordering function of human providence: prudence directs means to an end (and discerns wherein this end consists here and now) (*dirigit in his quae sunt ad finem*);[342] it orders other things to an end (*ordinare alia in finem*).[343] It should be noted, however, that unlike prudence, divine providence implies only ordering things subject to providence, but in no way an ordering in God to ends, for God himself is his only end.[344]

As our understanding of divine providence is taken from human providence, and human providence is the principal part of prudence, Aquinas holds the virtue of prudence to be the prime analogue of divine providence. Human providence, however, as an integral part of prudence orders means to ends. It deals with matters that (1) lie in the future and (2) are contingent rather than necessary; otherwise the agent would not be able to affect their outcome. In this thesis I shall argue that for Aquinas, divine providence shares the ordering feature essential to prudence and human providence without their respective limitation of time and the mode of causation.

4.1.b. A Twofold Account of Providence: Distinguishing Government from Providence

With these preliminaries in view, we are now ready to introduce Aquinas' twofold account of providence. The clearest exposition of his doctrine of providence and the main

[340] *ST* II-II, 47, 8.
[341] *ST* II-II, 49, 6 ad3.
[342] *QDV* 5, 1.
[343] *ST* I, 22, 1.
[344] *ST* I, 22, 1.

source for the following outline is his *Summa Theologiae* (1265-73).[345] In addition to being the immediate context of the *locus classicus* of so-called double agency (*ST* I, 105, 5), this choice seems apt since the treatise both reflects Aquinas' mature view and systematically unfolds the doctrine in its interconnectedness. The *Summa Theologiae* is also the place where Aquinas most clearly elaborates on the nature of the distinction between providence and government.

The context of his treatment of providence in the *Summa Theologiae* indicates Aquinas' basic line of reasoning, to which I first wish to draw closer attention. Providence is situated within his treatment of God (*ST* I), and therein notably *twice*: once in the section on the divine essence (*ST* I, 2-26) and again in the procession of creatures from God (*ST* I, 44-119). The first exposition is the treatment of *providence* (*ST* I, 22-24) located in his discussion of God's operations (*ST* I, 14-25) and, more specifically, of his will (*ST* I, 19-24). It concerns the divine will in conjunction with the divine intellect. The second exposition is an extensive treatment of the *execution of providence*, called government (*ST* I, 103-119). This section expounds the two effects of government, namely conservation (*ST* I, 104) and change of creatures (*ST* I, 105-119). Change of creatures is in turn caused either by God (*ST* I, 105) or by creatures (*ST* I, 106-119).

In analysing Aquinas' doctrine of providence we face "two radically different orders of intelligibility."[346] On this point, Michael Hoonhout comments:

> Aquinas thus 'speaks twice' of the mystery of providence, placing each discussion in different contexts […] because he knows that the manner in which God acts is not the manner in which creatures act […]. Providence in the first context has all the perfections of God because it is the provident *God* being discussed; yet

[345] The major treatises on providence include *In* I. *Sent.* 39-41; *QDV* 5-7; *SCG* III, 64-113; *ST* I, 22-25 and *ST* I, 103-119; *CT* I, 123-143.
[346] Hoonhout (2002): 6.

> providence in the second context has all the features of this world because it refers to the providential unfolding that is realized in this world.[347]

This citation indicates that to account for the fundamental difference between the way God acts and the way creatures act, Aquinas introduces a basic distinction in his exposition of the doctrine of providence. To providence as the act of God, Aquinas ascribes the perfections he ascribes to God; whereas providence as the act of creatures he explains, for the most part, in terms of the features he ascribes to the created world. It is this twofold treatment of providence, once as a *divine* or uncreated and once as a creaturely, that is, *natural* or created reality with its commonly associated attributes, that makes the Thomistic proposal at first glance look like a 'theological doublespeak'. For if one fails to distinguish government from providence and hence misses the context of assertions such as providence being mediated and immediate, created and uncreated, temporal and eternal, one faces apparently contradictory predicates being attributed to one and the same reality, which are in fact predicated in different respects.[348]

With this dual perspective in mind, we are now in a position to differentiate providence and government.[349] Aquinas argues that the general notion of providence encompasses essentially two elements: *providentia* and *gubernatio*. Aquinas states:

> Two things pertain to providence, namely, the reason of the order of things provided for to their end (*ratio ordinis rerum provisarum in finem*); and the execution of this order (*executio huius ordinis*), which is called government (*gubernatio*).[350]

The first element of the general concept of providence is the notion of providence in the specific sense (*providentia*): the reason, plan, type, or conception of the ordering of

---

[347] Hoonhout (2002): 5-6.
[348] Hoonhout (2002): 5-6.
[349] *ST* I, 22, 3; *ST* I, 103, 6; Aquinas makes use of the distinction as early as his *Scriptum super Sententiis* (*In* I *Sent.* 39, 2, 1 ad1); see also *QDV* 5, 1; *SCG* III, 94; *De Subst. Sep.* 15; *CT* I, 131.
[350] *ST* I, 22, 3. Unless otherwise indicated, all translations from the Latin are mine.

things toward their end, *ratio ordinis rerum in finem*.[351] The term *ratio* in this definition is notoriously difficult to translate, and Jean-Pierre Torrell rightly warns that the common translation as 'plan' must not be taken to imply any temporal anteriority.[352] Although the term 'plan' nicely contrasts providence with government as its 'execution', I shall translate with the broader term 'reason' to forestall strong and perhaps misleading connotations when it comes to questions concerning the nature and implications of the divine *ratio*, and also to emphasise similarities with prudence as the 'right reason applied to action'.[353]

Here is how Aquinas introduces providence:

> Since, however, God is the cause of things through his intellect, and so it behoves that the reason (*ratio*) of each of his effects pre-exists in him […], it is necessary that the reason of the order of things to their end (*ratio ordinis rerum in finem*) pre-exists in the divine mind. The reason (*ratio*), however, for things to be ordered to their end is providence (*providentia*), properly speaking.[354]

Aquinas is effectively saying that insofar as God's knowledge and will are the cause of all things,[355] the reason of all effects must exist in the divine mind, which is why providence as the reason for the ordering of all causes to their end must exist in God's mind.[356]

The statement that the *ratio ordinis rerum* exists, or 'pre-exists', in the divine mind needs some clarification. The word '*pre*-exist', which Aquinas uses in the citation above, is potentially misleading, as it does not imply a temporal precedence of the *ratio*, the divine

---

[351] *ST* I, 22, 1; "The providence of God is nothing other than the reason of the order of things toward their end (*ratio ordinis rerum in finem*)." (*ST* I, 22, 2) For an exposition of how Aquinas conceived of the entire order of the universe, see Wright (1957). "God has placed a twofold order in creatures, that of things to another and that of the whole universe to Himself. The second of these is the more important and to it the first one is ordered." (Wright (1957): 187)
[352] Torrell (2002): 567-8, n.19.
[353] In this connection I also hope to shed some light on objections raised against the notion of a providential plan by Wright (1966), who argues that the "central mystery here lies in the dependence of creatures and the temporal order upon God, and the inclusion of time within eternity." (Wright (1966): 29).
[354] *ST* I, 22, 1.
[355] *ST* I, 14, 8; *ST* I, 19, 4.
[356] *ST* I, 22, 1; "providence is nothing other than the reason of the order of things (*ratio ordinis rerum*) as it is in the divine mind" (*Quodl.* XII, 4).

reason of the ordering, but rather a causal dependence of the temporal execution on the divine reason as its cause. The temporal connotation of the prefix 'pre-' is in this instance due to our limited way of conceptualising a temporal event in relation to God's eternal now.[357] Only in this sense can we agree with John Rock that providence is the "pre-existence of the order of the universe in the Mind and Will of God."[358]

In this context a further similarity in the ordering function becomes apparent between divine providence and prudence. Prudence is an intellectual virtue including the act of the will, thus specifically related to moral virtues.[359] Like prudence, divine providence exists in the intellect but involves willing the end:[360] providence requires knowledge as directing and the will as commanding.[361] Both providence and prudence are forms of practical knowledge or practical reason.[362] The execution of providence, by contrast, through divine power, is not strictly speaking part of providence, although the execution is directed by providence.[363] Thus, Aquinas' concept of providence includes both the divine intellect and will, but does not include, in the same sense, divine power, which puts into execution what knowledge directs and the will commands.[364]

The second element of the concept of providence in the general sense is government. Government (*gubernatio*) is the execution, exercise, implementation or realisation of the ordering of things toward their end. Aquinas distinguishes providence as the *ratio* of the divine end-directed ordering from the *execution* of this ordering (*executio ordinis*):[365]

---

[357] Hoonhout (2002): 16, n.15; Torrell (2002): 567-8, n.19; Rock (1966): 72-7.
[358] Rock (1966): 71.
[359] *ST* II-II, 47, 1-7; *ST* I-II, 66, 3 ad3.
[360] *ST* I, 22, 1 ad3.
[361] *ST* I, 19, 4 ad4.
[362] *QDV* 5, 1; *ST* II-II, 47, 2.
[363] *QDV* 5, 1.
[364] *ST* I, 25, 1 ad4.
[365] *ST* I, 22, 1 ad2; *ST* I, 22, 3; *ST* I, 103, 6.

"government is nothing other than the direction of the things governed to their end (*directio gubernatorum ad finem*)."[366] Government refers to the bringing about of the providential ordering in created things, the concrete directionality of creatures under government. The *ratio* of government, the reason for the execution of the end-directed ordering, however, is called providence.[367]

A metaphor may help to illustrate the distinction. Imagine a mighty and benevolent queen reigning over her kingdom.[368] As wise, caring and provident monarch, the queen has a plan for her kingdom, a plan that is immediate to herself. It is not up to her ministers to decide what shall happen in the kingdom, but an immediate decision of the queen. Although in many actual kingdoms the ministers might have advised the monarch, or even overtaken the monarch's business to some extent, in our case none of the ministers tell our queen what to do. Our queen has a precise idea of how she wants her kingdom to be: a kingdom of prosperity, where her subjects flourish, but where law and order are maintained.

Nevertheless, the fact that the queen has an immediate plan of the order in her kingdom does not imply that she has to execute and put into practice this order herself; rather, in our case the execution of her will is the task of her ministers. They exercise and maintain her order. It is in fact part of the queen's wise and providential plan that her ministers execute the order she wills; and she has good reasons for doing so, including, in this instance, that as human monarch she cannot be present everywhere to govern immediately all her empire. The plan of the royal order, therefore, is immediate to the queen, whereas the execution of the order is mediated through her ministers. Similarly, Rock has suggested to distinguish

---

[366] *ST* I, 103, 3.
[367] *ST* I, 103, 6. This formulation brings Aquinas' doctrine of providence into close proximity to eternal law, which implies the *ratio gubernationis rerum* (*ST* I-II, 91). For the distinction between providence and eternal law, see Collins (1960).
[368] Aquinas mentions kings as an example in *ST* I, 22, 3 ad1; *ST* I, 103, 6 ad3.

between providence and government as the legislative and executive aspect of God's ruling.[369]

I shall now point out three essential characteristics of providence, two of which set it apart from government. First, providence is eternal. The reason of the ordering of things toward their end that exists in the divine mind is eternal, whereas government as the execution of this order is temporal.[370] The difference between eternity and temporality will provide a key to approaching the providence of God, which I shall explore in Chapter 5; a second key to government is the notion of mediacy that I will discuss in the present chapter.

Second, providence is immediate to God. The eternal reason of the ordering of things is inevitably immediate to God, whereas divine government as temporal reality can be, and usually is, mediated. Based on the distinction between divine providence and government, then, Aquinas explains that God has immediate providence but mediate government over the whole creation. Regarding providence, God immediately provides for the order of all things toward their end because the divine reason exists in the divine intellect. In respect of his government, however, God does not immediately govern all things; rather, he mediately executes the divine ordering of his creatures by bestowing the dignity of causation on creatures.[371]

By analogy, imagine that our queen bestows on her ministers the power to execute her royal order. If they do so, they act by virtue of being ministers of the queen, that is to say, by virtue of her royal power, and not simply by their own. Nonetheless, even if they have the power to legislate the royal order only as royal ministers, it is their doing that executes

---

[369] Rock (1966): 74.
[370] *ST* I, 22, 1 ad2.
[371] *ST* I, 22, 3; *ST* I, 103, 6.

the queen's plan.

As a reality immediate to God, providence exists only in God, but in no way in creatures. Providence is nothing in things provided for, but a reality in God, the provider: it is the reason of the ordering of things existing in the divine mind. Government, by contrast, passes out to external things. Government is in an active way in God, the governor, but also in a passive way in creatures governed.[372] The governing reality that exists in creatures is also called fate (*fatum*). By this Aquinas refers to God's providential order precisely as existing in governing secondary causes.[373] Fate in this specific sense refers to the disposition of secondary causes (*dispositio secundarum causarum*).[374] 'Disposition' here means a relation signifying order in creatures.[375] In this sense, secondary causes are ordered according to fate, because 'fate' denotes the order of secondary causes, as ordered by God in his providence.[376]

Third, providence and government are universal, in contrast to fate. Everything, down to the very particular, is subject to both providence and government because the causality of God extends to everything.[377] Only fate is not universal in this manner. Insofar as fate refers to the order of secondary causes, things are subject to fate to the extent that they are governed through mediate causes. Whatever God does without secondary causes is part of his providence and government as its temporal execution, but not of fate which implies a mediated execution.[378]

---

[372] *ST* I, 23, 2.
[373] *ST* I, 116, 2; "but fate is the unfolding (*explicatio*) of this [providential] order as it is in things." (*Quodl.* XII, 4)
[374] *ST* I, 116, 3.
[375] *ST* I, 116, 2 ad3.
[376] *ST* I, 116, 4.
[377] *ST* I, 22, 2; *ST* I, 103, 5.
[378] *ST* I, 116, 4.

In summary, sapiential-ordinative providence is primarily a reality in God and denotes only secondarily – then under the label of government – a reality in the world. Providence and government both concern the end-directed ordering of all creatures; they are two sides of one coin, namely, the eternal and temporal, the immediate and mediated element of the broad notion of providence. Insisting on the conceptual distinction is to unite the basic reality. As Hoonhout points out, due to the different elements 'providence' can denote, double affirmations are to be expected, but under different respects. Once they refer, under the label of providence, to the eternal and immediate divine reason of the ordering of things toward their end existing in the divine mind, and another time, under the label of government, to the temporal and mediated execution of this ordering.[379] Although the distinction does by no means of itself resolve the tension between predicates such as infallible providence and contingent execution, it opens up a conceptual space to specify the relation between divine and creaturely activity further.

4.1.c. Divine Government through Secondary Causation

I shall argue next that, at least concerning change in the world, secondary causation in Aquinas' sapiential-ordinative model of providence is the ordinary means of divine government. In his exposition of government, the temporal execution of God's providential order, Aquinas effectively distinguishes (a) two effects of government: (a-1) conservation and (a-2) change of creatures,[380] and (b) two modes of governing: (b-1) immediate and (b-2) mediated divine causality.[381]

[379] Hoonhout (2002): 6-7.
[380] *ST* I, 103, 4; *ST* I, 104 pr.
[381] *ST* I, 103, 6. Aquinas uses the Latin term *immediate*; see *ST* I, 104, 2 for (a-1) conservation and *ST* I, 105, 1-3 and 5 for (a-2) change of creatures. Aquinas notably restrains from using *immediate* in *ST* I, 105, 4 with respect to the human will, where he speaks of *sufficienter* instead.

The first effect of government is (a-1) conservation. Divine conservation is the doctrine that all creatures are constantly preserved and upheld in being by God, otherwise they would cease to exist.[382] Aquinas holds conservation to be the continuation of the act of creation, and not an additional act to creation. As continuation of creation, conservation does not imply change, for creation is, according to Aquinas, not change (*creatio non est mutatio*).[383] Unlike the act of creation, however, the conservation in being can be mediated.[384] Since scholars in the DAP generally accept creation and conservation (GDA) focusing instead on God's bringing about change in the world (OSDA), I turn without further comment to the second effect.

The second effect of government is (a-2) change of creatures (*mutatio creaturarum*), either through God or creatures.[385] In this context, I wish to highlight that it is not so much the question of the immediacy of God's action that sets apart divine and creaturely action, but rather the question of whether God acts mediately through creaturely causation. On Aquinas' view, there is essentially a 'mediated divine immediacy', which is often labelled 'immediacy of power' as opposed to an 'immediacy of supposit'. While the latter is precluded by a mediation of divine causation through secondary causes, the former is necessary for the agency of any created cause.

The *locus classicus* of God's working in creaturely agents (*ST* I, 105, 5) further bolsters this claim. At the centre of Aquinas' exposition of divine government it becomes apparent that (b-1) immediate and (b-2) mediated divine causality are not exclusive but inclusive modes of government, unless the first mode is taken to refer to God's changing creatures

---

[382] *ST* I, 104, 1.
[383] *ST* I, 104, 1 ad4; *ST* I, 104, 2 ad3; *ST* I, 45, 2 ad2.
[384] *ST* I, 104, 2. For the notable development in Aquinas concerning his rejection of an instrumental mediation of creation, see Baldner and Carroll (1997): 46-7.
[385] *ST* I, 105 pr.

immediately *and* not through creaturely causes. Hence apart from miracles, Aquinas takes God's activity bringing about change in the world as working in and through created causes and their activities, which is why the first mode of immediate divine causation is the prerequisite for the second mediated mode of government and indeed any creaturely operation. For every particular change in the world, every actualisation of potency, creaturely causation requires divine causation not distant from, but immediate to, the natural agent. Thus Aquinas concludes his argument affirming that "God works in all things *intimately*."[386]

Employing the distinction between primary and secondary causation helps to differentiate the modes of divine government. Rather than using immediacy as criterion of demarcation, I suggest distinguishing between (b-1) divine 'primary' causation *without* secondary causation and (b-2) divine primary causation *with* mediating secondary causation. One could alternatively seek to distinguish between (b-1) an immediacy of supposit and (b-2) an immediacy of power, but the demarcation in terms of secondary causation is more fitting for our purposes, namely, to argue that secondary causation is the ordinary and principal mode of divine government.

According to Aquinas, (b-1) divine primary causation without secondary causes constitutes by definition a miracle.[387] He explains:

> A miracle, however, is said to be full of admiration, so to speak, that is to say, it has a cause hidden simply and to all. This, however, is God. Whence these things done by God outside the causes known to us are called miracles.[388]

---

[386] *ST* I, 105, 5. My emphasis.
[387] I omit here the additional clause in Aquinas' account of miracles restricting its predication to unmediated divine primary causation that produces an effect beyond, or besides, the order of nature (*praeter ordinem naturae*), while at the same time in a sense pertaining to that order. The function of this clause is to exclude divine action such as creation or justification from falling within the definition of miracles (*ST* I 105, 7 ad1).
[388] *ST* I, 105, 7.

In this citation Aquinas asserts that a miracle takes place when an effect is manifest but its cause hidden; yet such lack of knowledge of the cause may occur relatively to some or absolutely. What constitutes a miracle in the strict sense are cases where the cause of the manifest effect is hidden absolutely. Since God as divine cause is hidden absolutely, the effects of the primary cause without the mediation of secondary causes is by definition a miracle; and it is the only instance of a miracle thus conceived. All other created causes may be hidden from us relatively, but not absolutely. That is to say, natural causes are in principle accessible to human reason. Effects of relatively hidden causes appear as miracles to those ignorant of the natural cause, but not to those in knowledge of the cause.[389] Thus, for Aquinas (b-1) primary causation without secondary causation is miraculous.

Secondary causation is key for understanding God's providential activity in the world in terms of government. Apart from miracles, (b-2) primary causality mediated through secondary causes *is* the temporal execution of the providence of God.[390] Indeed Aquinas holds secondary causes to be 'executors' of providence: "divine providence executes its effects through mediate causes."[391] Secondary causes are the principal mode of divine government, they are the natural executors of divine providence. If this were not the case, the doctrine of providence would amount to what is today known as occasionalism: the view that God is the only genuine cause.[392] Time and again Aquinas stresses that "the fact that God has immediate providence over all things does not exclude secondary causes, which are the executors of this [providential] order (*executrices huius ordinis*)."[393] This line of reasoning gives secondary causes immense dignity. Aquinas asserts: "If God

[389] *ST* I, 105, 7. See for instance *SCG* III, 101-2.
[390] *ST* I, 103, 6.
[391] *ST* I, 116, 2.
[392] *ST* I, 105, 5.
[393] *ST* I, 22, 3 ad2.

governed alone, things would be deprived of the perfection of causality."[394] In short, secondary causes are *governing* causes, that is, natural causes instituted to partake in the divine government.[395]

In summary, sapiential-ordinative providence is, analogous to the human virtue of prudence, essentially about ordering means to ends, namely, the divine ordering of creatures to their appointed end. The doctrine is based on two fundamental pillars: providence (*providentia*), the eternal reason (*ratio*) of the order, and government (*gubernatio*), the temporal execution (*executio*) of this order. While providence as the eternal reason existing in the divine mind is immediate to God, government as its temporal execution can be, and usually is, (b-2) mediated through secondary causes. Secondary causes mediate the government of God in both its effects: (a-1) in conserving creatures in being and (a-2) in bringing about change in creation. Hence the notion of secondary causation is deeply embedded in Aquinas' doctrine of divine government, for secondary causes function as the natural executors of divine providence.

4.2. Against a Common Misconception: On Double Agency and its Critics

As a next step, I shall address the problem that an explication of Aquinas' thesis that, apart from miracles, secondary causation is the execution of God's providential guidance, faces an external and internal difficulty. The discussion is complicated, on the one hand, by a common confusion about, if not misrepresentation of, the nature of primary and secondary causation in the DAD; and, on the other hand, by a notable development on Aquinas' part.

---

[394] *ST* I, 103, 6 ad2. Translation taken from Shapcote (2012): 499.
[395] *ST* I, 103, 6. See *SCG* III, 77; *QDV* 5, 8 s.c.9.

4.2.a. Austin Farrer's Theory of Double Agency

Austin Farrer's theory of double agency has decisively shaped the understanding of primary and secondary causation in the DAD, which Tracy elaborates: "Austin Farrer sketched an approach to questions about divine action that has exerted a persistent influence on Anglo-American discussions of this topic."[396] Indeed, prominent scholars have acknowledged the central importance of double agency.[397] Owen Thomas, for instance, stressed in a 1990 review essay updating his influential taxonomy of divine action theories that the question of double agency is "the key issue in the general problem of God's activity in the world."[398] Accordingly, Thomas recommended the topic as the most urgent task for further research around the time of the DAP. The reason he gives for the centrality of the concept of double agency is that, in light of Dilley's critique, unless one can provide a reasonable alternative one is forced either (a) to deny the sufficiency of one of the causes (mutuality of action), as the NIODA model does, or alternatively (b) to take refuge in the mysteriousness of God's activity, as Farrer does.[399]

The purpose of the following discussion is to overturn the common perception that there is no middle ground between (a) limiting the sufficiency of natural causation and (b) Farrer's double agency, by pointing out an alternative, (c) Aquinas' theory of secondary causation. I will argue that despite the similarity in terminology, the two proposals by Farrer and Aquinas differ considerably. To see why this is the case, we first need to look into Farrer's model.

---

[396] Tracy (1994): 79.
[397] For the legacy of Farrer and his theory of double agency, see Hebblethwaite and Henderson (1990).
[398] Thomas (1990): 46. For the original taxonomy, see Thomas (1983b).
[399] Thomas (1990): 50.

In the 1964 Deems Lectures, entitled *The Conceivability of a Divine Action in the World*, Farrer sets out "to illustrate the paradox of double agency, divine and creaturely, […] and to show that so far from being a speculative embarrassment, the paradox involved is the form of practical religious thinking."[400]

Two things are noteworthy here. First, Farrer introduces double agency as a paradox: 'the paradox of double agency'.[401] Based on his theological axiom that divine action in the world is and must be particular, the conundrum concerns the question of how to conceive of the relation between particular divine and creaturely action, that is to say, whether or not such a relatedness of action is specifiable and explicable.[402] Farrer states:

> It may be a tolerable language to describe our action as a cooperation with God; but such cooperation is nothing like cooperation with our fellow-beings, when our work and their work dovetail together in specifiable ways. […] The mystery is, how the action of any finite agents, whether severally or jointly, is subject to the causality of God.[403]

This citation poses the issue to which Farrer denies an answer. He advocates the view that the paradox of double agency is essentially unresolvable; it is and remains a mystery.

Second, Farrer maintains that the paradoxical or mysterious nature of double agency does not amount to a theological problem. He advocates a logical and a pragmatic palliative of the paradox of two agents for an identical action: namely, the doctrine of analogy and, more specifically, a pragmatic constraint characteristic to his theory of double agency.[404]

Analogical predication, to which Farrer ascribes only limited power of practical resolution, is the traditional assertion that creaturely attributes, such as agency, are

---

[400] Farrer (1967): v. The fundamental paradox comes up already in Farrer (1958): 309-15.
[401] Farrer (1967): v and 173.
[402] Farrer (1967): 61.
[403] Farrer (1967): 142-3.
[404] Farrer (1967): 104-5.

predicated to God analogically, not univocally. As Farrer declares, we cannot but conceive God's action in terms of human action, although God's activity should not be conceived in finite concepts; it is the infinitely higher analogue of human action. As such, divine action works 'on, in or through' creaturely action without competition or distortion.[405] Farrer explains:

> But as soon as we try to conceive [God's agency] in action, we degrade it to the creaturely level and place it in the field of interacting causalities. The result can only be […] monstrosity and confusion.[406]

Thus, Farrer proposes human action as the model for divine action but maintains a significant difference between them by stressing the analogical character of the predication of action. According to an analogical predication of agency, the two agents causing an identical action must differ in their respective agency; as Farrer states: "Two agents for the same act would be indeed impossible, were they both agents in the same sense and on the same level."[407] Unlike Aquinas, however, Farrer refuses to explicate further the sense and level of the divine agency in creaturely agency; the divine operation is 'God's secret'.[408] Farrer's central thesis is that the relation between the divine and creaturely agents is "inevitably indefinable, and that its being so is neither an obstacle to religion, nor a scandal to reason."[409]

His subsequent move alluding to religious practice in order to justify his avoidance to specify the causal relation in double agency brings us to Farrer's second palliative. The pragmatic constraint – the supplementary manoeuvre both specific and essential to Farrer's account – consists in the claim that speculatively relating the divine and creaturely agents

---

[405] Farrer (1967): 62-3.
[406] Farrer (1967): 62.
[407] Farrer (1967): 104.
[408] Farrer (1967): 142.
[409] Farrer (1967): 170.

is redundant for practical purposes. It is of no concern in religious activity, and it is this that relieves the practical tension of the paradox of double agency. To enter into a relationship with God, Farrer claims, one need not know about the causal relation:[410] "For man's business is to set himself in the line of the divine intention, not to manage a contact with supernatural force or transcendent process."[411] To this end, Farrer coins the term 'causal joint' to denote the causal relation between divine and creaturely causes and consequently dismisses the question as a "by-product of the analogical imagination."[412] By this he implies that the question of the causal joint results from taking human agency (inadequate but somewhat necessary) as an analogue for divine action. Farrer infers that, from a pragmatic religious point of view, the causal joint is theologically irrelevant. Farrer contends:

> [T]he consequence I propose to draw […] is that the causal joint (so to speak) between the infinite and finite action plays and in the nature of the case can play no part in our concern with God and his will. […] [T]he question about it is a question which does not arise and may be condemned as no question at all.[413]

The basic function of the pragmatic palliative is to demarcate two realms: the realm of religious concern focused on conformity with the divine will, and that of an inaccessible metaphysical relation of creaturely and divine double agency. Only the former practical issue is and must be manageable.[414] How God works in creatures is a mystery; the purpose of his working, the very notion of divine will and purposes, by contrast, is a clear enough concept to be employed in theology, Farrer concludes.[415] The Christian life therefore consists in a conformity to the divine will which the Christian takes as the 'blue-print'

---

[410] Farrer (1967): 65-6 and 105-6.
[411] Farrer (1967): 142.
[412] Farrer (1967): 65-6; quotation on p.66.
[413] Farrer (1967): 65.
[414] Farrer (1967): 105. Cf. Farrer (1967): 173.
[415] Farrer (1967): 110.

(Farrer's pragmatic antonym of the causal joint) of his action.[416] Union of will is the goal and object of religion.[417]

It is worth noting that in his entire argumentation Farrer clearly operates on an actionistic understanding of providence.[418] Brian Hebblethwaite and David Galilee defend the theory of double agency as the most sophisticated attempt to spell out providence in terms of agency: the analogue for divine agency being human agency.[419] They state that

> Farrer insists throughout his writings, personality and agency are inseparable. A personal God is a God who acts. […] [P]ersonalism involves the category of *agency*. Farrer only introduces the notion of double agency to try to make sense of divine agency in relation to creaturely agency […].[420]

In his writing providence serves as a formal, materially unspecified concept simply meaning 'God's action'. Farrer then specifies providence in a second step as a function of (a) creation, (b) conservation and (c) salvation.[421] The doctrine of divine application we find in Aquinas is clearly not part of his theory.

In summary, the features of Farrer's influential approach show that his theory of double agency is rooted in, and remaining essentially within, an actionistic understanding of providence. Furthermore, Farrer's logical, but especially his pragmatic, palliative of the paradox of double agency constitute, rather than provide a remedy for, the dilemma of double agency. Hence double agency must be distinguished from Aquinas' theory of secondary causation, for the latter provides, as I will show in due course, an explication of the intricate interplay between divine and creaturely causes in natural causation that is

---

[416] Farrer (1967): 106.
[417] Farrer (1964): 32. See also Farrer (1967): 53-7.
[418] The late Farrer published four books on providence: Farrer (1962); Farrer (1964); Farrer (1966); Farrer (1967).
[419] Galilee and Hebblethwaite (1982): 7-10; see also Hebblethwaite (1978).
[420] Galilee and Hebblethwaite (1982): 8.
[421] Farrer (1964): 53-5.

missing in the theory of double agency. The influence of double agency has therefore been a somewhat mixed blessing, at least insofar as Aquinas is read through the eyes of Farrer. Farrer does not, and indeed probably does not want to, accurately represent Aquinas' approach to providence.

4.2.b. The Opposition against Double Agency

The difficulty with Farrer's influential proposal is that it has muddied the waters and led to a confusion about the nature of Aquinas' teaching in the DAD. Ignacio Silva has convincingly argued that the bulk of the critique brought forth against Thomistic secondary causation either merges Aquinas' with Farrer's account, or neglects the full Thomistic picture. The objections science and religion scholars typically voice against the concept of secondary causation can be grouped into two categories.[422]

The first category challenges (1) the general validity of the concept of double agency. The concern that the proposal is philosophically unintelligible finds prominent expression in Polkinghorne's often-cited verdict that the notion of double agency is "an unintelligible kind of theological doublespeak."[423] A first version of this objection comes in form of (a) the charge of fideism – the opposition based on the view that primary causality is an unjustified resort to divine mystery. Polkinghorne writes:

> No explanation is offered of how it all works. Indeed, the search for an explanatory causal joint is declared to be futile, verging almost on the blasphemous. This leaves the idea looking like mere fideistic assertion […].[424]

What Polkinghorne questions is the intelligibility of primary causation. He objects that no philosophical account can be given to explain how primary causation works, accusing Aquinas and the like of fideism, by which he means that giving up on specifying the causal

[422] Silva (2013): 659-62. For a similar set of objections, see Austriaco (2003): 956-63.
[423] Polkinghorne (1994): 81-2.
[424] Polkinghorne (1998c): 86.

joint might be a position of last resort but certainly not a theological starting point.[425] Hence, Polkinghorne denigrates primary causality as "the imposition of a mysterious theological gloss on natural process"[426] which effectively removes any theological discussion.

The reason Polkinghorne keeps stigmatising primary causation as mysterious and fideistic is that he continually fails to distinguish Aquinas' and Farrer's accounts, objecting in fact to Farrer's dealing with the causal joint problem.[427] The confusion about these distinct approaches becomes apparent on closer inspection:

> *Farrer's own answer* would be that [… the causal joint] is a question we should decline to address […]. He writes in the tradition that speaks of God's primary agency as being at work in and through secondary agencies […] in an ineffable manner which can be affirmed by faith but which is veiled from the prying eyes of human reason. Despite the venerability of this way of thinking, *sanctioned by St. Thomas Aquinas* […], it seems to me to be a fideistic evasion of the problem.[428]

Contrary to Polkinghorne's claim, Farrer's way of handling the causal joint is in fact largely due to his pragmatic palliative and hence a peculiarity of Farrer's theological set-up that differs from Aquinas'. Unlike Farrer, Aquinas does not hesitate to give a precise explication of the intricate relation between divine and creaturely causation in his doctrine of secondary causality. It is therefore Farrer, not Aquinas, to whom Polkinghorne objects. If Polkinghorne is concerned with Farrer's causal joint solution, but turns the charge of fideism uncritically against Aquinas rather than against Farrer's familiar interpretation of primary and secondary causation, then one can and must retort that the fideism objection rests on an unwarranted fusion of Farrer and Aquinas.

---

[425] Polkinghorne (1998c): 86.
[426] Polkinghorne (1996): 31.
[427] Polkinghorne (1996): 31; Polkinghorne (1998a): 58; Polkinghorne (1998b): 334; Polkinghorne (1998c): 86; Polkinghorne (2000): 150.
[428] Polkinghorne (1998a): 58. My emphases.

A second and more substantial version of the validity objection concerns (b) the notion of sufficiency in accounts of primary and secondary causation. The objection can be stated as follows: "if 'sufficient' really means *sufficient*, then the idea of two sufficient causes for one event is clearly self-contradictory."[429] The objection implies that any theory of double agency is bound to fail because one action cannot proceed from two agents, unless it is causally divided: "There can be only one sufficient cause of any event, unless the term 'cause' when applied to God has no relation at all to its meaning when applied to finite beings."[430] In this view, double agency renders the notion of sufficiency 'utterly opaque'; it stretches the concept to the point of equivocation.[431] Tracy, for instance, claims that double agency works only if the two agents are the insufficient but jointly sufficient cause of the action.[432] To opt for reducing, in one way or another, the causal contribution of divine and creaturely agents to joint sufficiency represents, as we have seen, indeed a fairly common response to the dilemma of double agency. I will call this the *sufficiency objection*.

A corollary of the sufficiency objection is the claim that secondary causation will eventually lead either to occasionalism or deism. Murphy, for example, asserts that it is

> impossible to do justice to both accounts of causation (the problem of double agency); one inevitably slides back into occasionalism or else assigns God the role of a mere 'rubber stamp' approval of natural processes.[433]

The second category of criticism puts into question (2) the theological sufficiency of double agency. The objection states that any model of divine action based exclusively on primary and secondary causation is theologically insufficient because a theologically sufficient model must include OSDA, and the theory of secondary causation cannot

---

[429] Griffin (1983): 122-3.
[430] Griffin (1973): 180.
[431] Tracy (1994): 96, n.20.
[432] Tracy (1994): 98.
[433] Murphy (2000): 333. For a similar concern, see Barbour (1988): 42.

account for OSDA. Therefore, secondary causation might at best be employed to elucidate GDA, but needs at least to be supplemented by an alternative model explaining OSDA.[434] I shall call this the *mere conservationism objection*, for the objection apparently assumes that the function of primary causation in secondary causation is merely creation and conservation (GDA).[435]

For example, Tracy argues that if God bestows on creatures 'active powers of their own', then natural causation will be consequently incompatible with any divine activity going beyond the creation and conservation of these powers (OSDA), where the compatibility of divine and natural causation is restricted to GDA.[436] Tracy explains: "God must act (as creator/sustainer *ex nihilo*) in order for creatures to act (as efficient causes in nature)."[437] In contrast to creation and conservation, however, OSDA stands in competition with natural causation implying "a trade-off between divine and created agency;" the reason being that, in cases of OSDA, "creatures, exercising the causal powers *that God [creates and] upholds in them*, would not be sufficient to produce this effect without God's special action."[438] In other words, because God merely (creates and) conserves creatures and their powers, but is in no way active in the manifestation of these powers beyond their creation and conservation (OSDA), divine primary causation in and through secondary causes is essentially limited to creation and conservation (GDA) and hence must be rejected as an insufficient theological approach.

---

[434] The most explicit representative is Tracy (2008): 253-60. Similar objections appear in Murphy (2000): 333; Tracy (2000): 305-306; Ward (1990): 51; Wiles (1986): 34.
[435] Tracy tellingly calls God a "primary *creative* cause" (Tracy (2008): 256). I take the term 'mere conservationism' from Freddoso (1991): 554; Freddoso (1994): 133.
[436] Tracy (2008): 255. The argumentation is reminiscent of Wiles's notion of a 'genuine independence of agency.'
[437] Tracy (2008): 255.
[438] Tracy (2008): 256. My emphasis.

In summary, I have countered the misleading tendency to interpret Thomistic secondary causation through the lens of a seemingly similar but nonetheless profoundly different concept, Farrer's theory of double agency, and identified the standard objections against double agency within the science and religion dialogue. I have responded to Polkinghorne's verdict that primary causation is an unintelligible theological doublespeak by uncovering his confusion between Farrer's and Aquinas' accounts. Before addressing the remaining objections, an exposition of Aquinas' model of secondary causation is required.

4.3. The Concept of Secondary Causation

Much ink has been spilled on the nature of secondary causation. Despite being widely regarded as the trademark of a 'Thomistic approach' to divine action, the distinction between primary and secondary causation is in fact less clear-cut and straightforward in Aquinas than often assumed in the DAD. Aquinas uses the terms at times differently in varying contexts. For example, primary cause (*causa prima*) usually refers to God, although sometimes also to creaturely causes.[439] In order to avoid ambiguities, God must then be specified as the only universal primary cause – the primary cause that encompasses all other (primary and secondary) causes.[440] Moreover, Aquinas for the most part assumes rather than explicates the notions of primary and secondary causation. Considering its importance, surprisingly little extensive treatment of the concept will be found in his works, at least explicitly. Nonetheless, the terms can be given a precise meaning by *interpreting* them, that is, by using them like a placeholder to be filled out and substantiated in its respective context.

---

[439] For example in *ST* I, 14, 13 ad1; *ST* I, 19, 8; *QDP* 3, 7 arg.1; *CT* I, 139. In the context of providence it seems preferable to speak of the *causa prima* as a 'primary' rather than a 'first' cause to avoid a temporal understanding of the form of dependence it expresses.
[440] *ST* I, 19, 6 ad3.

The concept of primary and secondary causation is, most basically, a way of spelling out God's causal involvement in natural causation. The main focus of the following exposition is secondary causation as the execution of providence, and to explore Aquinas' statement in the *Compendium Theologiae* that "secondary causes do not act unless through the power of the primary cause,"[441] which he takes to explain how God acts immediately in the execution of providence mediated through secondary causes.[442]

A good way of introducing the distinction between primary and secondary causes is to start with Aquinas' *Commentary on the Book of Causes*, since it is one of the few places where Aquinas comments on, rather than simply assumes, the distinction. Proposition one of the *Book of Causes* states: "Every primary cause infuses its effect more powerfully than does a universal second cause."[443] Aquinas comments that this means "(1) that the first cause infuses the effect more powerfully than does the second cause; (2) that the impression of the first cause recedes later from the effect; (3) that it reaches the effect first."[444]

Aquinas analyses remark (1) with reference to Proclus saying that the secondary cause is the effect of the primary cause. As such, the secondary cause receives from the primary cause, and this is vital, not only the substance (*substantia*) but also the power to act (*virtus operandi*). Since causes are genuine only by virtue of their power, the very causation of the secondary cause is, therefore, caused by the primary cause. Secondary causation is what one might call 'caused causation'. Hence, the primary cause is in a way more cause of the effect of the secondary cause than the secondary cause itself.[445]

---

[441] *CT* I, 130.
[442] *CT* I, 135.
[443] *LDC* 1. Translation taken from Guagliardo, Hess, Taylor (1996): 7.
[444] *LDC* 1. Translation taken from Guagliardo, Hess, Taylor (1996): 7.
[445] *LDC* 1.

Two corollaries follow. First, the primary cause is more inherent in the effect than the secondary cause because what is in a thing more profoundly, namely what 'infuses the effect more powerfully', inheres in the thing to a higher degree. For this reason the impression of the primary cause recedes later, as stated in remark (2). Second, inasmuch as the secondary cause has its power by virtue of the primary cause (*per virtutem causae primae*) the primary cause is in the effect first, that is, in an eminent way, as remark (3) asserts.[446]

Aquinas succinctly summarises the proposed understanding by stating that "a lower cause acts through the power of a higher cause (*operatur per virtutem causae superioris*). Hence the power of the higher cause is the power of the power of the lower cause (*virtus virtutis causae inferioris*)."[447] From this exposition we can infer that secondary causes receive their power to act from the primary cause, which is then in a sense the power of the power (*virtus virtutis*) of the secondary cause. To the extent that causes act by virtue of their power, therefore, secondary causation is a form of caused causation.

I shall now introduce the analogy of divine and creaturely operation. The background and basis of the analogy of operation (*analogia operationis*) is the analogy of being (*analogia entis*). For Aquinas, God *is* being but creatures *have* being. That is to say, only God is being (*esse*) by his essence (*essentia*). Creatures are beings by participation, for "that which has being (*esse*) and is not being [by essence], is a being by participation (*ens per participationem*)."[448] Likewise, God *is* power but creatures, as we have just seen, *have* power by participation, for that which has power but is not power by essence has power by participation.

---

[446] *LDC* 1.
[447] *LDC* 9. Translation taken from Guagliardo, Hess, Taylor (1996): 68.
[448] *ST* I, 3, 4.

The issue is how does this participation in being (*esse*) and power (*virtus*) affect creaturely operation (*operatio*)? The question concerns what Bernard Lonergan calls the 'basic' and 'proximate' analogy between divine and creaturely operation, or primary and secondary causation: the basic analogy applies to the relation between essence and power, the proximate analogy to that between power and operation.[449] Analogy here means that although the basic structure of causation is similar, each basic component is essentially different in the case of God or that of a creature, and as such, the concept is predicated analogously.

Aquinas asserts that power (*virtus*), which is the principle of operation (*operatio*), proceeds from an essence (*essentia*); and operation, which is the actualisation of a power, in turn from its principle power: "Each power proceeds from the essence, and operation from power; whence whose essence is from another, necessarily that power and operation is from another."[450] Therefore, if an essence is dependent on something else (*ab alio*), so are the power and operation resulting from that essence. The two-fold conceptual link, and the corresponding basic and proximate analogy between divine and creaturely operation, can be schematically characterised as follows.

$$\underbrace{essentia \rightarrow virtus}_{basic\ analogy} \rightarrow operatio$$

$$essentia \rightarrow \underbrace{virtus \rightarrow operatio}_{proximate\ analogy}$$

Regarding the basic analogy, Aquinas teaches that in God essence and power are one,[451] whereas in creatures the agent (*ipsum agens*) and its power (*virtus agentis*) are to be

[449] Lonergan (1971): 84-8.
[450] *In* II *Sent.* 37, 2, 2.
[451] *QDP* 3, 7; *ST* I, 25, 1 ad2; *ST* I, 54, 1. On God's essence, see *ST* I, 3, 3-4; on God's power, see *ST* I, 25.

distinguished; or, put differently, the thing that acts and that by which the thing acts differ.[452]

$$\underbrace{essentia = virtus}_{basic\ analogy\ in\ God} \rightarrow operatio$$

$$\underbrace{essentia \neq virtus}_{basic\ analogy\ in\ creatures} \rightarrow operatio$$

Creaturely power is, consequently, dependent power. It is bestowed on creatures by God, the primary cause. Thus, the basic analogy signifies a fundamental dependence of creatures on God. Since in God the relation between essence and power is one of identity – that is to say, factual (*secundum rem*) but not conceptual (*secundum rationem*) identity – whereas in creatures it is one of non-identity, the power of creatures is derivative because it follows from an essence that is caused by another, namely by God, whose essence is to be existence. The basic analogy can be stated as follows:

$$\underbrace{essentia \rightarrow virtus}_{basic\ analogy} \rightarrow operatio$$

1) God: $essentia = esse = virtus$
2) $creatures$: $esse\ et\ virtus\ participatum/a$

Regarding the proximate analogy, the question is whether God is immediately active merely in the power of secondary agents, as is clear from the basic analogy, or whether God's activity also extends immediately to creaturely operation. Here, Aquinas' doctrine of divine application comes into play.

4.3.a. The Doctrine of Divine Application

It should be noted that the following exposition of the proximate analogy between divine and creaturely operation applies only to Aquinas' mature view. There is a notable

[452] *In* I *Sent.* 37, 1, 1 ad4; *SCG* III, 70; *QDP* 3, 7; *ST* I, 54, 1-3.

development in Aquinas' thought in this respect that I shall at this point simply register.[453] While in his earlier writings, in particular in his *Scriptum super Sententiis* (1252-56)[454] and in the *De Veritate* (1256-59)[455] Aquinas effectively restricts God's activity to the creation and conservation of the power (*virtus*) of secondary agents, he later explicitly extends God's activity affirming an immediate divine activity in every creaturely agent and operation that goes beyond the creation-conservation of their powers. Hence his mature position includes a divine operation in every creaturely agent (*operans*) or creaturely operation (*operatio*). Aquinas expresses the former view in the *Summa contra Gentiles* (1259-64)[456] and the *Summa Theologiae* (1266-73);[457] the latter he asserts in his extensive treatment of the topic in the *De Potentia* (1265-66).[458]

The doctrine of divine application first appears in the *Summa contra Gentiles*. In the context of an exposition of how God acts in creaturely action,[459] Aquinas again suggests distinguishing between the *agent* and its *power*: the thing which acts (*rem ipsam quae agit*) and the power by which it acts (*virtutem qua agit*). The agent then acts by virtue of its power. Insofar as the agent acts ultimately in virtue of the divine power, both the proximate creaturely cause and God can be said to cause one and the same effect wholly and immediately. The creature's own power is a derived power, a power caused, conserved and applied to act by God.[460] Aquinas writes:

> The power of the inferior agent, however, depends on the power of the superior agent, inasmuch as the superior agent [a] gives the power itself (*dat virtutem ipsam*)

[453] For more details, see Lonergan (1971): 84-8.
[454] *In* II. *Sent.* 1, 1, 4; *In* I *Sent.* 37, 1, 1 ad4.
[455] *QDV* 24, 14.
[456] *SCG* III, 67.
[457] *ST* I, 105, 5.
[458] *QDP* 3, 7.
[459] *SCG* III, 67-70.
[460] *SCG* III, 70.

> to the inferior agent through which it acts; or [b] conserves it (*conservat eam*), or also [c] applies it to act (*applicat eam ad agendum*).[461]

In other words, creatures *are* agents but *have* powers. Creaturely causation is 'caused causation' in that God (a) gives and (b) conserves creaturely powers, but also (c) applies these powers to act. God and creatures can both wholly and immediately cause one and the same action because creaturely agents act by virtue of God's power. God acts by an immediacy of power, whereas the creaturely proximate cause acts by an immediacy of supposit, the acting subject or individual substance.[462]

The doctrine of divine application finds its most detailed expression in the *De Potentia*. There we read that by applying the power to act, Aquinas does not mean the creation or conservation of that power, but rather God's moving the power to act:

> In the third mode one thing is said to be the cause of another's action to the extent that [c] it moves it to act (*movet eam ad agendum*); by this is not to be understood [a] the causation (*collatio*) or [b] conservation of the active power, but [c] the application of the power to action (*applicatio virtutis ad actionem*).[463]

The reason Aquinas states for the need of such a divine application is that "nothing moves itself or acts unless it be the unmoved mover."[464] The context suggests that what Aquinas is alluding to here is Aristotelian premotion, the motion of the unmoved mover necessary for every motion in the world.[465]

The account Aquinas presents in the *De Potentia* has a four-part structure. Silva calls the first two elements the *founding moments* of God's activity in creaturely operation, the

---

[461] *SCG* III, 70.
[462] *SCG* III, 70. On the latter see also *QDP* 3, 7; *ST* I, 36, 3 ad1 and ad4; "in each action two things must be considered, namely [1] the supposit of the agent (*suppositum agens*), and [2] the power by which it acts (*virtutem qua agit*)." (*ST* I, 36, 3 ad1).
[463] *QDP* 3, 7.
[464] *QDP* 3, 7.
[465] To avoid the implications of the theory of physical premotion, Robert Matava recently contested that Aquinas' theory of divine application implies motion (Matava (2016): 242-76). For a more convincing interpretation in terms of Aristotelian premotion, see Lonergan (1971): 63-116.

second two elements he terms *dynamic moments*.[466] On the one hand, God (a) causes and (b) conserves all creaturely powers in being. By causing and conserving creaturely powers God bestows on all creatures the powers by which they act. The creation and conservation of powers are the first and second moments of God's founding activity.[467]

On the other hand, God also (c) moves and applies these powers to act. The example Aquinas uses to illustrate the concept of application is a man moving a sharp knife, thus applying the sharpness of the knife to act, namely, to the act of cutting. In this sense the man is the cause of the cutting of the knife. Divine application is the third moment of God's activity, and the first moment of God's dynamic activity.[468]

The second dynamic moment is God's (d) instrumental application of creaturely powers. Every effect, namely insofar as it is, participates in being (*esse*). But being as such is an effect that only God can cause. Every creaturely agent producing an effect must therefore participate as an instrumental cause in God's activity.[469] Rudi Te Velde comments:

> Thomas attributes a double operation to the instrumental cause, one in virtue of its own power and another in virtue of the participation in the power of the principal cause. […Therefore,] the second cause has a *double* operation, one in virtue of its own nature and another in virtue of the immanence of the power of the first cause.[470]

Instrumental causation means that a principal cause makes use of the powers of the instrument beyond what the instrument could achieve on its own accord and through its own powers. For example, when chopping wood, the craftsman applies the power of the axe to act, but in a way that goes beyond the capacity of the axe. It is not merely by the

---

[466] Silva (2016a): 71-74; Silva (2015a): 110; Silva (2015b): 149; Silva (2014): 281. In earlier writings Silva called the former 'static moments' (Silva (2009): 235; Silva (2013): 336).
[467] *QDP* 3, 7.
[468] *QDP* 3, 7.
[469] *QDP* 3, 7. For further explication of this point, see Wippel (2000b) and Te Velde (1995): 160-183.
[470] Te Velde (1995): 173.

applied sharpness of the axe that the craftsman splits wood, but also by the power of the craftsman chopping. Yet, in a sense the chopping can also be said to be the act of the axe insofar as it participates in the power of the craftsman. In short, since God is the only cause of being as such, but every effect in a way participates in being, God is the principal agent of every secondary cause.[471] Such instrumental causation is the fourth moment, and second dynamic moment, of God's operation in creaturely operation. Aquinas summarises the idea as follows:

> In this manner, therefore, God is cause of each action inasmuch as he [a] gives the power to act (*dat virtutem agendi*), and inasmuch as he [b] conserves it (*conservat eam*), and inasmuch as he [c] applies the action (*applicat actioni*), and inasmuch as [d] every other power acts by virtue of his power.[472]

The same line of reasoning reappears in the *Summa Theologiae*, where Aquinas expresses the doctrine of divine application in terms of form. In discussing the four Aristotelian kinds of causes – formal, material, efficient, and final – Aquinas points out that end, agent, and form are all principles of action: the end in moving the agent, the agent as that which moves, and the form, or the power grounded in the form, as that which the agent applies to action.[473] When applied to God, Aquinas states that "God not only [a] gives forms (*dat formas*) to things, but also [b] conserves them (*conservat eas*) in being, and [c] applies them to act (*applicat eas ad agendum*), and is the end of all actions."[474] Again, Aquinas reiterates that if there are many ordered agents (*multa agentia ordinata*), the second agent always acts in virtue of the first, that is to say, in the power of the first (*in virtute*), "because the first agent moves the second agent to act (*primum agens movet secundum ad agendum*)."[475] Secondary causes always act in virtue of the power of the first

---

[471] *QDP* 3, 7.
[472] *QDP* 3, 7.
[473] *ST* I, 105, 5.
[474] *ST* I, 105, 5 ad3.
[475] *ST* I, 105, 5.

cause, and this means, according to Aquinas, that God moves secondary causes to act in accordance with their mode of causation grounded in their forms.

Returning to the initial issue, the discussed concept of 'caused causation' raises the question of how God causes causation; in which manner is secondary causation caused? Aquinas teaches at all times that God operates immediately (*immediate*) in all creatures; the question is not whether but where and how God is operative. Is God immediately operative in the creature's *virtus*, by his creation-conservation, or also in its *operatio*, by a divine application?

The brief discussion of divine application suffices to indicate that Aquinas teaches a divine operation in creaturely operation. The doctrine of divine application asserts in its most fundamental form that God not only (a) creates and (b) conserves in being creaturely powers, but also (c) applies and moves these powers to act. God's primary causation is therefore not restricted to the creation and conservation *of* creaturely causes, but God also acts *in* every creaturely operation. In keeping with the more detailed quadripartite structure, God applies these powers to act either (c) according to or (d) beyond the proximate agent's own powers. The fact that Aquinas firmly asserts as a necessary part of creaturely causation a divine application of every creaturely power to act, is ample evidence that according to his mature doctrine of secondary causation God's causal involvement in creaturely operation goes beyond the creation and conservation of creaturely power. Divine causality extends immediately to creaturely operation. I therefore conclude that God's primary causation in secondary causation immediately reaches the very operation of creaturely agents. The proximate analogy between divine and creaturely operation is then as follows:

$$essentia \rightarrow \qquad \underbrace{virtus \rightarrow operatio}_{proximate\ analogy}$$

1) divine operation in creaturely operation
(a) *creation* (dat virtutem)
(b) *conservation* (conservat virtutem)
(c) *application* (applicat virtutem ad agendum)
(d) *instrumentality*

2) creaturely operation *by virute of its power*
(*a*) *created and* (b) *conserved and* (d) *instrumentally* (*c*) *applied to act by God*

We can now bring our discussion of the proximate analogy to a close. The proximate analogy between divine and creaturely operation asserts firstly that by contrast to creatures, God's operation is not distinct from his power. God is his essence, and by his essence existence, for his essence is to be existence. Essence and existence are one in God, and so are not only his power following from his essence, but also his operation.[476] In creatures, however, essence and power differ not merely conceptually. Creatures *are* not being and power by their essence, but *have* being and power by participating in God's being and power. Furthermore, God is secondly active not only in the constitution of the creatures and their causal powers, but also involved in their very causality; the decisive element being the divine application of these powers to act in every creaturely operation. Thus the creaturely power is not its operation. The operation of creatures follows from, for they act in virtue of, their power created, conserved, and (instrumentally) applied to act by God. The proximate analogy can be illustrated as follows:

$$essentia = \underbrace{virtus = operatio}_{proximate\ analogy\ in\ God}$$

$$essentia \neq \underbrace{virtus \neq operatio}_{proximate\ analogy\ in\ creatures}$$

[476] *ST* I, 25, 1 ad2.

In conclusion, the concept of secondary causation as 'caused causation' implies that creaturely agents act by virtue of their power created, conserved, and applied to act by God. Aquinas clearly affirms an analogy between divine and creaturely operation, and arguably in a two-fold sense: (1) the basic analogy pertains to the relation between essence and power; and (2) the proximate analogy to the relation between power and operation. On the one hand, Aquinas suggests throughout his works the need to distinguish between a creaturely agent and its power to act; the power being derived from God. On the other hand, Aquinas eventually comes to understand that this means that God is not only intimately present in creaturely causation, but also causally involved in every manifestation of creaturely powers in the form of a divine application of these powers to act. Hence it is not only the power, but also each operation that is immediately dependent on God's activity.

4.3.b. Reply to Critics of Double Agency

With regard to discussions of primary and secondary causation in the DAD, I wish to present a note of caution. This middle position between uniformitarianism and interventionism and, to some extent, point of departure for the 'scientific turn' of the debate has at times been dismissed on the grounds of a deficient and inadequate account of secondary causation. Much more could and indeed needs to be examined about this crucial distinction, but however one assesses its ultimate success, it is more sophisticated than dismissals in passing assume and at the very least, deserves a detailed treatment, in particular if its rejection and departure from it is part of one's theological project.

I have argued that on Aquinas' account divine government happens for the most part through secondary causation. Secondary causes are the ordinary executors of divine providence. I have explained this primary causality mediated through secondary causes, more specifically, in terms of the discussed divine activity in every creaturely agent. The

preceding section argued that Aquinas' concept of primary and secondary causality has the following basic structure, and that divine application concerns the final and third pair:

$$\begin{array}{rccccc} \textit{divine primary causality}: & \textit{essentia} & = & \textit{virtus} & = & \textit{operatio} \\ & \downarrow & & \downarrow & & \downarrow \\ \textit{natural secondary causality}: & \textit{essentia} & \rightarrow & \textit{virtus} & \rightarrow & \textit{operatio} \end{array}$$

God operates in creaturely operations. Primary causation involves the giving being to and the upholding in being of every agent and its natural power, but also the application of this power to act. This divine activity makes created agents secondary causes. Secondary causation is 'caused' through God's creation, conservation, and application of the creaturely powers. A secondary cause is a *secondary* cause because its causation is dependent on, and subordinate to, God the primary cause, but it is nevertheless a secondary *cause* because it participates in God's power. Consequently, natural agents have genuine, that is, inherent although derived powers grounded in their form, and perform genuine operations by virtue of these divinely enacted powers. Hence the two orders of primary and secondary causation must not and in fact cannot be envisaged as in any form of competition. Divine and creaturely causation are not univocal but analogical forms of causation.

Let me bring this chapter to a close by responding to the two remaining standard objections critics of double agency have commonly raised in the DAD. Unlike version (a) of the validity objection, namely mistakenly taking primary and secondary causation to be the avoidance of a resolution of the paradox of double agency, version (b) claims that secondary causation is a non-sensical or at least problematic solution. The approach equivocates, as per the objection, terms like 'causation' or 'sufficiency' and can therefore at best verbally maintain a middle position that actually boils down to either occasionalism or deism.

In reply to the sufficiency objection it is important to see what Aquinas means when stating that "God works *sufficiently* in things in the mode of a primary agent, which does not make superfluous the operation of secondary agents."[477] Aquinas here guards against a merely *partial* attribution of the effect in question, the idea that God and creatures partly, rather than wholly, cause the effect. Put differently, there is no trade-off involved. Aquinas explains elsewhere:

> [T]he same effect is not in such a manner attributed to the natural cause and the divine power as if partly produced by God and partly by the natural agent, but [proceeds] wholly from both according to another mode: just as the same effect is wholly attributed to an instrument, and also wholly to the principal agent.[478]

The purpose of this passage is to clarify that competition between the agency of God and creatures is in principle precluded by distinguishing distinct causal levels, that is to say, primary and secondary causation, rather than in practice by limiting the sufficiency of one of the agents taken to operate on the same causal level. Sufficiency in this context means nothing other than that divine and natural agents are not univocal causes.

If the notion of sufficiency gets in the way, it might be useful to distinguish between relatively and absolutely sufficient conditions. Even in ordinary cases, such as a man cutting off an apple from a tree, actions are always embedded in a context; only within this context are actions sufficient to bring about an effect, such as an apple falling down. In this instance the context includes gravity; without gravity the apple would not fall even though the man cut it off from the tree. The human action is nevertheless sufficient to bring about the effect relative to this setting, that is to say, on its respective causal level.[479] The point of the analogy proposed by William Stoeger is that gravity is usually not thought of as taking away anything from the causal contribution of the man, nor does the man in cutting

---

[477] *ST* I, 105, 5 ad 1. My emphasis.
[478] *SCG* III, 70.
[479] Stoeger (2000): 254.

off the apple from the tree causally compete with gravity. The analogy may help in better understanding the notion of sufficiency (*sufficienter*) that Aquinas uses to emphasise the difference between primary and secondary causation so as to preclude, in principle, a zero-sum perspective between God and creature.[480]

Another way of saying the same is to distinguish between coordinate and subordinate causes correspondent with Réginald Garrigou-Lagrange; secondary causation is by nature subordinate, not coordinate causation.[481] Wherever creaturely causation has to be limited in order to make room for divine causation, however, natural and divine causes are viewed as coordinate causes: "the creature is not subordinate to the first cause; God and the creature are two coordinate causes, like two men rowing a boat."[482] Aquinas indeed rejects cooperation if understood as God and creature conjointly causing an effect, like two men dragging a boat, but teaches instead a cooperation in that God and creatures cause the same effect where creatures act by virtue of the divine power, like servants following orders cooperate with their lord.[483]

The present concern, however, is not so much with the notion of sufficiency, but rather the question on which causal level an agent acts. The reason why the sufficiency objection deems primary and secondary causation unintelligible is that fact that the interlocutor is operating with a univocal notion of causation not distinguishing different levels of causation. Hence the need to divide up the action between God and creature in terms of sufficiency rather than denying a zero-sum game locating God as primary cause at a different causal level than creatures as secondary causes. In short, the sufficiency objection

---

[480] *ST* I, 105, 5 ad1.
[481] Garrigou-Lagrange (1952): 453. See for instance *QDP* 3, 7 arg.4 and ad4.
[482] Garrigou-Lagrange (1952): 452.
[483] *Err. Graec.* I, 23.

is conditioned on a univocal conception of divine causation, therefore dividing the causal contribution of God and creatures up in a contrastive manner.

Against such a univocal understanding of divine action, I introduced natural causation as 'caused causation'. If natural causation is caused causation then there are different orders of causation, and the concept of primary and secondary causation is a way to conceptualise them: "One action does not proceed from two agents in one order, but nothing prohibits that one and the same action proceeds from a primary and secondary agent."[484] Secondary causation implies differentiating between agent and power in creatures: secondary agents derive their causal power from, and are, consequently, causally dependent in their operation on, God the primary agent. In their operations, creaturely agents are in need of God's activity in creating, conserving and (instrumentally) applying creaturely powers to act, because their powers are thus derived from God's power.

Finally, only if one views divine and creaturely activity in univocal terms might an account of secondary causation reduce to either occasionalism or deism. For, in acting in every creaturely operation by applying the created and conserved power to act, God is not a mere rubber stamp. Nor does this view lead to occasionalism, as creatures cause their effects by virtue of their intrinsic powers. Secondary causation is genuine causation because creaturely agents act by virtue of an inherent power that is, as the argumentation in the *Summa Theologiae* makes clear, grounded in their form. Creatures determine some effect as secondary cause by virtue of an inherent power created, conserved and applied to act by God. The concept of secondary causation thus serves a two-fold function: drawing a distinction between divine primary and creaturely secondary causes safeguards and balances at once (1) creaturely causality, that "God works in things in such a manner that

[484] *ST* I, 105, 5 ad 2.

things have their proper operation,"[485] and (2) God's intimate causal involvement in creaturely causality, for "it could not be given to a natural thing to operate without the divine operation."[486] In this manner secondary causes are *governing* causes, that is, natural executors of divine providence.

The mere conservationism objection, on the other hand, at least if lodged against Aquinas' doctrine of secondary causation, falls short in that it attacks an incomplete account missing out the doctrine of divine application. In stark contrast to the full picture, the objection presupposes that God merely (a) creates and (b) conserves natural powers (Tracy's 'active powers of their own'). According to Aquinas' theory, however, God's activity in and through natural powers goes beyond creation and conservation, including (c) a divine application of these powers. Therefore, the objection fails to establish the claim that divine primary causation through secondary causation amounts to mere conservationism, precisely because God applies creaturely powers to act.

Moreover, divine primary causation in creaturely secondary causation qualifies, at least on the tentative definition given in Chapter 1, as OSDA insofar as it is a divine act that (i) goes beyond creation and conservation. Apart from creating and conserving the creaturely agent and its causal powers, God applies these powers to act. This divine activity brings about an effect that goes beyond what the creature could achieve of itself. As such, primary causation is (ii) neither merely a human response to an event (subjective SDA) nor serves simply as a special function in furthering God's purpose (functional SDA). The category to which primary causation pertains is (iii) efficient rather than merely final causation. Even if, as I will argue in Chapter 6, divine primary causation implies final causation, God

[485] *ST* I, 105, 5. Translation taken from Shapcote (2012): 518.
[486] *QDP* 3, 7 ad7.

efficiently causes the 'caused causation' of created agents. Finally, (iv) the effects of primary causation are particular, here and now, rather than uniform. God is causally involved in each manifestation of every particular causal power. That is to say, here and now he applies this creature's power to act thus bringing about this particular effect. But if primary causation qualifies as OSDA, then the full approach will be theologically sufficient even on the premises of the objection.

Consequently, we have arguably before us a *tertium quid* between liberal uniformitarianism and conservative interventionism. I demonstrated in PART ONE that the dichotomy is based on the inconceivability of the traditional joint cause middle position, and addressed some of the major objections raised in the DAD. In light of this discussion we can finally come back to Dilley's claim about the independence of creaturely agency. I argued that at least on Aquinas' account of primary and secondary causation, creaturely action is not independent of divine action but a form of 'caused causation'. In contesting that God is not causally involved in creaturely causation beyond the creation and conservation of the creature's powers, I highlighted that even if we deny dovetailing the divine and creaturely action so that they need to be limited in order to make room for OSDA (mutuality of action), it will not follow, as Dilley claimed, that the genuine agency or freedom of one agent is denied (mutuality of freedom). The reason for this is that on the proposed sapiential-ordinative approach serving as an instrument in God's government does not render the creature merely a passive instrument, but is rather the condition of possibility of creaturely freedom and genuine agency. It is God's bestowing on creatures 'caused causality', by a divine action of giving, upholding and (instrumentally) applying to act creaturely powers, that makes the creature an agent in the world.

In this chapter, I have been promoting a sapiential-ordinative understanding of providence. In contrast to the prevailing actionistic model, I suggested the virtue of prudence rather than human action as the analogue for divine providence. On this account, providence is not primarily divine action, but expresses first and foremost God's eternal teleological ordering of creation. Taking Aquinas as key exemplification, I showed that at the heart of this concept of providence is the distinction between providence and government, the eternal reason of this ordering and its temporal execution, and that natural causation is the ordinary way of divine government. In so doing I advocate a change of framework; an alternative framework that, I suggested, can incorporate some of the concerns expressed in the DAD, for instance the call for OSDA, without falling prey to the discussed objections against and limitations of the standard model of divine action.

Furthermore, I have addressed two types of objections raised against primary and secondary causation. The first category challenges (1) the general validity of the concept of double agency. The central concern is the unintelligibility of double agency itself: the theory of double agency is the mere statement, but not the resolution, of a paradox. The second category of objection challenges (2) the theological sufficiency of the concept. The unease is not so much that double agency cannot account for providence, but rather that it only accounts, at best, for GDA, but not OSDA. It turned out that (1-a) the fideism objection is concerned with Farrer's theory of double agency rather than Aquinas' approach; the 'no solution' charge in fact entirely neglects Aquinas' doctrine of secondary causation, as does Farrer's theory of double agency. The (2) mere conservationism objection, on the contrary, addresses the Thomistic approach but misses out the essential doctrine of application; it does not take into account the full mature picture. The problem with (1-b) the sufficiency objection is that it presupposes a univocal notion of causation. If and insofar as Aquinas' concept of primary and secondary causation works with an

analogical concept of causation, however, the objection fails: at least on the interpretation of secondary causation as ‘caused causation’ the notion of causal orders expresses the fact that creatures act by virtue of the divine power, and the notion of sufficiency that a trade-off is impossible on the analogical conception of primary and secondary causation.

Chapter 5:
The Status of Contingency in Sapiential-Ordinative Providence

The preceding chapter elucidated Aquinas' sapiential-ordinative notion of providence, and introduced the concept of secondary causation as the ordinary execution of divine providence. I suggested that natural causation is a dependent and subordinate form of operation, which participates in God's causality. In this chapter, I will consider more closely the relation of providence to contingency. The objective is to show that the doctrine of divine transcendence as expressed in the writings of Aquinas goes towards explaining how contingency can be both the *effect* and *means* of providence.

Section 5.1 provides the wider context of Aquinas' attempt to integrate contingency into his doctrine of providence. Section 5.2 elaborates the doctrine of transcendence. Section 5.3 draws out some implications for God's government of and through natural contingencies.

5.1. Revisiting the Role of Contingency in Providence

The purpose of this chapter is to explore how Aquinas accommodates natural contingency. Bernard Lonergan and Bernard McGinn have called to attention an important development in Aquinas' thought in this regard.[487] Aquinas defines providence more or less consistently as the ordering of creatures to their proper end. Moreover, he maintains at all times that the execution, called government, is mediated.[488] In contrast to these relatively persisting elements, one finds a shift from his early work to his later writing about

[487] Lonergan (1971): 63-116, in particular pp.76-80; McGinn (1975). See also Lonergan (2013).
[488] *In* I *Sent.* 39, 2, 1-2, in particular *In* I *Sent.* 39, 2, 1 ad1 and ad5; *QDV* 5, in particular *QDV* 5, 1; *SCG* III, 64; *SCG* III, 71-77; *SCG* III, 90; *SCG* III, 94-95; *SCG* III, 97-98; *SCG* III, 111, in particular *SCG* III, 94; *De Subst. Sep.* 13-15, in particular *De Subst. Sep.* 15; *ST* I, 22, in particular *ST* I, 22, 3; *ST* I, 103, in particular *ST* I, 103, 6; *CT* I, 123; *CT* I, 130-132; *CT* I, 140; *CT* I, 141, in particular *CT* I, 131.

the status of contingency, in particular in his theological synthesis of providence and the Aristotelian thesis of contingency. What undergoes a considerable transformation, therefore, is not necessarily the basic understanding of providence, but rather the relation of providence to natural contingency.

I will argue that this transformation is significant because through his struggle to integrate contingency Aquinas gradually gains insight into the transcendent nature of God and finds ways of expressing the transcendence of God's knowledge, will, and operation. Thus Aquinas establishes his mature doctrine of divine transcendence.

5.1.a. Providence and Aristotle's Refutation of Determinism

The context of Aquinas' discussion of providence and contingency is Aristotle's refutation of determinism.[489] Aristotle had refuted, at least according to Aquinas, the thesis of determinism by showing both its premises to be wrong, namely, that (1) every effect has a *per se* cause and (2) given the cause, the effect necessarily follows. If both premises were true, everything would happen by necessity.[490] In contrast to this deterministic thesis, Aristotle posited and defended the reality of the *per accidens*, that is, "the fortuitous combinations and interferences of causes and the fortuitous coincidences of unrelated predicates in the same subject."[491]

As a result of the undeniability of the *ens per accidens*, Aristotle rejected a deterministic account of causation on grounds of two antitheses: (i) what happens *per accidens* has no *per se* cause; (ii) it is not the case that, given the cause, the effect necessarily follows, for

[489] Lonergan (1971): 77; McGinn (1975): 741-2; Jacobi (1977): 30; Goris (1996): 283-4.
[490] *Meta.* VI, 2-3; *Meta.* XI, 8; *In* VI *Meta.* 3; *In* XI *Meta.* 8; *ELPH* I, 14; *De Subst. Sep.* 13; *SCG* III, 86; *SCG* III, 94; *Quodl.* XII, 4; *De Malo* 6 ad21; *De Malo* 16, 7 ad14; *ST* I, 22, 4 arg.1; *ST* I, 115, 6. For more details on Aristotle's rejection on determinism, see Dudley (2012): 271-324.
[491] Lonergan (1971): 77. For Aristotle's treatment of the *ens per accidens*, see *Meta.* V, 6-7; *Meta.* V, 30; *Meta.* VI, 2-3; *Meta.* XI, 8.

some effects can be impeded.[492] The basic idea is that "an accidental (*per accidens*) effect has an accidental cause, just as a proper (*per se*) effect has a proper cause."[493]

For Aquinas, the problem with Aristotle's suggestion was that refuting determinism in this manner threatens to undercut God's providential guidance of the *ens per accidens*. The dilemma resulting from Aristotle's thesis, encapsulated in premises (i) and (ii), is as follows. If the doctrine of providence does not imply causal determinism, then at least one of the following premises must be denied: (1) every effect can be reduced to a *per se* cause; (2) given the *per se* cause, it is necessary to posit the effect. In the case of God's providence, however, denying either of the two statements seems to create difficulties. If premise (1) does not hold, the *scope* of providence will be limited; not everything would be subject to providence as a *per se* cause. Denying premise (2), on the other hand, would result in limiting the *certitude* of providence; positing providence as a *per se* cause, the effect would not necessarily follow. Hence a strong notion of providence implying both a universal scope and the causal certitude of providence seems to imply causal determinism.[494]

The challenge from Aristotle's refutation of determinism lies in the fact that if it were the case that any denial of the Aristotelian anti-deterministic premises (i) and (ii) implies causal determinism, then the only theologically acceptable solution for Aquinas would be to concede that providence imposes necessity on nature. When Aquinas sought to accommodate contingency in his theology he consequently faced the difficulty of bringing together (A) the universal scope and (B) the causal certainty of providence with Aristotle's refutation of determinism: that (C) not everything happens by necessity.

---

[492] *Meta.* VI, 2-3; *Meta.* XI, 8; *In* VI *Meta.* 3; *In* XI *Meta.* 8; *ELPH* I, 14; *SCG* III, 86; *SCG* III, 94; *Quodl.* XII, 4; *De Malo* 6 ad21; *De Malo* 16, 7 ad14; *ST* I, 115, 6.
[493] *In* VI *Meta.* 2.
[494] *SCG* III, 94.

5.1.b. The Operative Notion of Contingency

As a first step, we need to have a closer look at the notion of contingency operative in this argumentation. In two parallel passages in his commentaries on Aristotle's *Peri Hermeneias* and *Metaphysics* Aquinas clarifies what he means by contingency in the context of providence.

Aquinas distinguishes three kinds of contingency (*triplex genus contingentium*) with Aristotle: (a) *contingens ad utrumlibet*, what proceeds from choice and is indeterminate to alternatives; (b) *contingens ut in pluribus*, what is caused by (non-rational) nature and happens for the most part; and (c) *contingens ut in paucioribus*, what occurs by chance and happens for the least part. If everything happened by necessity (*ex necessitate*), none of these kinds of contingency would exist.[495]

As the background of the distinction, Aristotle teaches that the cause and principle of the *ens per accidens* is that which happens neither always nor for the most part, but constitutes a third class of event:[496] "The accidental, then, is what occurs, but not always nor of necessity, nor for the most part."[497] Aquinas takes this statement to mean that (b) what happens for the most part is the cause and principle of the *ens per accidens* in that the accidental can only occur where things do not happen always and by necessity (*semper et ex necessitate*); the *ens per accidens* is the absence of that which happens for the most part, that is to say, (c) what happens only in a few instances, implying that the cause in question does not cause its effect without fail. For this reason (b) the *contingens ut in pluribus* and (c) the *contingens ut in paucioribus* stand and fall together: if that which happens for the most part were never to fail, then there would be no *ens per accidens* and causal

[495] *ELPH* I, 13.
[496] *Meta.* VI, 2; *Meta.* V, 30.
[497] *Meta.* XI, 8. Translation taken from Aristotle (1984b): 1682.

determinism as described above would hold. By contrast, if effects occur for the most part, then in some instances things will happen *per accidens*.[498] "For when an agent produces its effect for the most part, and not always, it follows that it fails in a few instances; and this is the *per accidens*."[499] For Aquinas an effect can therefore be in its cause by necessity or by an inclination, implying that it can be impeded, or purely by potency.[500]

In a second step, Aquinas then fleshes out the basic notions by discussing three ontological interpretations. Some have introduced these notions 'according to result' (*secundum eventum*): (I) the impossible is that which will never be; (II) the necessary that which will always be; and (III) the possible or contingent that which will sometimes be and sometimes not be. Others have defined them 'according to exterior restraints' (*secundum exteriora prohibentia*): (I) the impossible is that which is always prevented from being true; (II) the necessary that which cannot be prevented from being true; and (III) the possible or contingent that which can be prevented or not prevented from being true.[501]

The reason why Aquinas rejects both sets of definitions as inadequate is that they confuse *definiens* and *definiendum*, that which defines and that which is defined in a definition.[502] In the first case the distinction is *a posteriori*: the fact that something will always be does not make the thing necessary; rather, the notion of necessity should explain why it will always be. In a similar manner, the second explanation is exterior and accidental: that something does not have an impediment does not make the thing necessary; rather, the notion of necessity should explain why an impediment will never occur.[503]

---

[498] *In* VI *Meta.* 2; *In* XI *Meta.* 8.
[499] *In* VI *Meta.* 3.
[500] *ELPH* I, 13.
[501] *ELPH* I, 14.
[502] Jacobi (1977): 25-6.
[503] *ELPH* I, 14.

Aquinas takes Aristotle to hold a third position introducing contingency on the basis of 'the nature of things' (*secundum naturam rerum*): (I) the impossible is that which is in its nature determined solely to non-being; (II) the necessary that which is in its nature determined solely to being; and (III) the possible or contingent that which is in its nature not fully determined to either being or non-being.[504] Grounding the distinction in this manner in the nature of things makes, according to Klaus Jacobi, contingency and necessity ontologically and not merely epistemologically distinct.[505]

Aquinas further modifies this understanding of contingency by adding another premise. We have to take into consideration both the active and passive potencies. Contingency implies not only the possibility of matter to alternatives, but also that the passive potency is not fully determined to one of these possibilities by the active potency. If, therefore, an active potency fully determines the passive potency, then the effect will not be contingent, even if the passive potency itself is not determined to either being or non-being. In other words, the term 'nature' in the phrase 'according to the nature of things' refers, at least in the corporeal realm, to form and matter. Contingency therefore implies that the cause is neither in its matter nor in its form fully determined to being or non-being.[506]

Finally, the natural sources of contingency are (1) the conjunction of independent causal chains, that is, the concurrence of causes not subordinate to each other (*concursus causarum*), (2) the defect of the agent, or lack of active causal powers (*defectus agentis*), and (3) the indisposition of matter: the recipient might not be properly disposed to receive a specific form from the agent (*indispositio materiae*).[507] All these sources can impede a

[504] *ELPH* I, 14.
[505] Jacobi (1977): 24.
[506] *ELPH* I, 14.
[507] *In* VI *Meta.* 3; see also *SCG* III, 99 where Aquinas speaks of (1) a *fortius agens*.

proper effect. They are *per accidens* causes of the *ut in paucioribus*. As a mode of causation, calling something a *per accidens* cause in this instance means that the effect is besides the proper effect of the cause. Something is besides the proper effect when it happens neither always nor for the most part, but *ut in paucioribus*.[508] "Events are contingent because *per se* causes alone are not sufficient to explain them."[509] Hence the *ens per accidens* does not sit well with the thesis of causal determinism.

5.1.c. The Ultimate Reason for Contingency

Regarding the ultimate reason for natural contingency, I shall identify with McGinn two important changes in Aquinas' thoughts occurring between the *Scriptum super Sententiis* (1252-56) and the *De Veritate* (1256-59).[510] These modifications are preliminary but decisive steps towards the doctrine of divine transcendence first appearing in the *Summa contra Gentiles* (1259-64).

The first change I wish to highlight concerns Aquinas' exclusive attribution of contingency to the proximate cause in the *Scriptum super Sententiis*. According to his early account, it is the secondary cause rather than the primary cause that determines whether an effect is necessary or contingent in the execution of providence; necessary secondary causes produce necessary effects, whereas contingent secondary causes produce contingent effects. Hence the medium of secondary causation appears as the cause of contingency.[511]

In the *De Veritate* Aquinas overturns his previous teaching and declares God the transcendent primary cause as the new reason for contingency in nature. He writes:

---

[508] *In* V *Meta* 3.
[509] Dudley (2012): 318.
[510] McGinn (1975): 743-9.
[511] *In* I *Sent.* 38, 1, 5.

> And so we do not say that some of the divine effects are contingent merely because of the contingency of secondary causes, but more because of the disposition of the divine will, which provided such an order of things.[512]

Aquinas asserts that the previously stated reason, namely that contingency is due to secondary causation, is not false but must be subordinated to the new one: God's willing it to be so. God always and inevitably has the prime responsibility in willing the necessary to be necessary and the contingent to be contingent. God could in fact bring about contingent effects without secondary causes; natural contingency does not depend on the causal mediation of creatures.[513]

Since Aquinas is at times ambiguous in this respect, it is worth supporting this new thesis with further evidence from the *Summa Theologiae* where he states that it might seem at first sight that the source of natural contingency are solely the secondary or mediating causes. Aquinas rejects this view on two grounds. If contingency were merely or even primarily due to the proximate natural cause, it would follow firstly that a defect of the secondary cause could impede the effect God wills, and secondly that contingency would seem beyond the intention and will of God.[514] Both reasons mark, as will become apparent below, changes in his exposition.[515] To counteract these unwanted conclusions, Aquinas proposes as a base for natural contingency the efficacy of the divine will (*propter efficaciam divinae voluntatis*):[516]

> And so for some effects he has prepared (*aptavit*) necessary causes, which cannot fail, from which effects arise by necessity; for others, however, he has prepared defectible contingent causes, from which effects come about contingently. The reason, therefore, why effects willed by God happen contingently is not because the proximate causes are contingent, but rather because God has willed them to come about contingently, he has prepared contingent causes for them.[517]

---

[512] *QDV* 23, 5.
[513] *QDV* 23, 5.
[514] *ST* I, 19, 8.
[515] *In* I *Sent.* 38, 1, 5; *In* I *Sent.* 47, 1, 2.
[516] *ST* I, 19, 8.
[517] *ST* I, 19, 8.

The point Aquinas makes here and in parallel texts is that one ought not ascribe the contingency of an effect solely or even primarily to its proximate cause. Although implementing contingency and necessity in the created world happens in an important sense through proximate causes, the ultimate base and reason for contingency is the efficacy of God's will. In willing necessary and contingent effects, God in his providence ordains necessary and contingent causes to necessary and contingent effects, respectively. Created secondary causes are the proximate causes, but God is the primary cause for contingency and necessity in natural causation.[518]

The second alteration concerns the kind of certitude the providence of God implies.[519] His almost exclusive focus on God's knowledge indicates that in his early treatise in the *Scriptum super Sententiis* Aquinas experienced some difficulty applying the transcendence of God's intellect to his will. Lonergan speaks of 'theoretical shortcomings' in this regard, which result in puzzling formulations such as 'beyond the will of God' (*praeter Dei voluntatem*) and, relating to God's operation, 'many things happen in which God does not operate' (*multa fiunt quae Deus non operatur*).[520] These statements are not in line with his later teaching.[521]

While taking the certitude of providence primarily to be a certitude of knowledge rather than causation in the *Scriptum super Sententiis*, in the *De Vertitate* Aquinas poses the specific question of the causal certitude of providence not contenting himself with basing

[518] *ST* I, 19, 8; see also *SCG* I, 85; *SCG* III, 94; *Quodl.* XI, 3; *De Subst. Sep.* 15; *ST* I, 22, 4; *CT* I, 140; *In* VI *Meta.* 3; *ELPH* I, 14. There are at times passages, even in his mature writing, that appear to endorse the earlier view. For a discussion and why these might be simplified stock responses, see McGinn (1975): 746-7.
[519] That divine providence is certain Aquinas endorses unequivocally throughout his writings: *In* I *Sent.* 39, 2, 2; *SCG* III, 94; *ST* I, 22, 4; *ST* I, 23, 3; *ST* I, 23, 6; *ST* I, 25, 3 ad4; *De Malo* 16, 7 ad14-15; *Ratio. Fid.* 10; *In* VI *Meta.* 3; *ELPH* I, 14; *Resp. Be.*; *De Subst. Sep.* 15; *CT* I, 139-141; *Quodl.* XII, 3.
[520] *In* I *Sent.* 47, 1, 2; Lonergan (1971): 78.
[521] For contrary statements, see for instance *SCG* III, 67; *ST* I, 19, 8.

the certitude of God's providence on his transcendent knowledge.[522] In drawing a distinction between the certitude of knowledge (*certitudo cognitionis*) and the certitude of order (*certitudo ordinis*), Aquinas now explains that the notion of providence as the divine ordering and directing of all creatures implies more than a certitude of knowledge. The doctrine also involves a causal certitude, that is, one regarding the order of cause to effect. This order of cause to effect is certain if the cause unfailingly produces its effect.[523]

In summary, I have indicated that Aquinas' thought undergoes a development in the course of which he reaches two conclusions. First, the certitude of providence is not only (1) a certitude of knowledge but also (2) a causal certitude, that is, a certitude of the order of cause to effect. The role divine knowledge plays in his early discussion of providence vindicates the picture of an overemphasis on God's intellect. In the recurring treatments of the topic the causal aspect of providence and the divine will come to the fore. The epistemological aspect does not disappear but is supplemented; knowledge is a necessary but insufficient condition for providence.

Second, the ultimate source of contingency is (i) the providence of God rather than (ii) the disposition of secondary causes. The direct attribution of contingency and necessity to the efficacy of the divine will is a turning point. The cause of contingency is now immediately the will of God and does not essentially depend on the mediation of secondary causation. Thus, Aquinas fully subordinates the proximate cause under the divine will and makes providence the source of natural contingency. Proposing the divine will as direct

---

[522] *In* I *Sent.* 38, 1, 5; *In* I *Sent.* 40, 3, 1. Unlike in later writings, Aquinas replies, for instance, to the objection that secondary causes might impede providence merely by an appeal to God's transcendence knowledge (*In* I *Sent.* 38, 1, 5; see ST I, 19, 6 ad3). On the limits of Aquinas' early account of God's will of contingency, see also *In* I *Sent.* 47, 1, 1 and Paluch (2016). The initial parallelism between intellect and will that Aquinas draws is that God's knowledge is certain insofar as things are in act, and God's will is fulfilled insofar as the will is specified by the actual circumstances.
[523] *QDV* 6, 3.

reason for natural contingency is Aquinas' decisive step towards a transcendent understanding of providence.

5.2. The Doctrine of Divine Transcendence

Following Bernard Lonergan's proposal, I suggest interpreting Aquinas' doctrine of divine transcendence as the theory that allows him to apply the solution of God's knowledge of future contingents to his will and, consequently, to his operation.[524] In other words, God's intellect and will – which are ultimately one in Aquinas' view – must be transcendent in a similar manner. To illustrate the doctrine of transcendence, I will first treat the divine intellect in section 5.2.a, then the divine will in section 5.2.b, and finally the divine operation in section 5.2.c.

In *Free Creatures of an Eternal God* (1996), Harm Goris identifies two sets of distinct but related problems about God's providence of contingencies. The first and diachronic problem is that, if God foreknows future contingents, then those future events seem to be determined and fixed rather than indeterminate. Hence to the extent that providence includes foreknowledge, providence and contingency seem to be incompatible. The problem of God's infallible *knowledge* of future contingents Goris calls (1) the 'problem of temporal fatalism' since it concerns a temporal relation. The second and synchronic difficulty consists of the fact that if God irresistibly wills (and efficaciously causes) contingents, then those events seem to be causally necessitated. Hence to the extent that providence includes not only knowledge of but also God's willing contingents, providence and contingency seem to be incompatible. The problem of God's irresistibly *willing*

[524] Lonergan (1971): 103-9; Lonergan (2013): 334-6.

contingents Goris calls (2) the 'problem of causal determinism' since it concerns a causal relation.[525]

5.2.a. Divine Intellect: God's Knowledge and the Problem of Temporal Fatalism

Aquinas teaches at all times that God's knowledge of future contingents is essentially not *fore*knowledge but knowledge of what is eternally present to God. God has infallible knowledge of all things, including future contingents, because God not only knows things (a) in their causes but also (b) in themselves and in their being.[526] God does not know future contingents *as* future but *as* present (*futurum ut est praesens*).[527] In fact, it would be impossible even for God to know future contingents as future, for contingents are unknowable (with certainty) in their causes since they are not fully determined in their nature to being or non-being.[528]

In establishing the transcendence of God's intellect, Aquinas heavily draws on Boethius.[529] Robert Sharples demonstrates that Boethius is the first to hold together and apply in combination three propositions to the problem of divine knowledge of future contingents; three propositions we also find in Aquinas' account: if (1) the nature of knowledge is according to the mode of the knower rather than the object known and (2) God's mode of being is eternal, that is to say, past, present, and future are all at once present to God, then it can be argued that (3) divine knowledge of future contingents imposes only a conditional, but not an absolute, necessity on the object known: on the condition that God

[525] Goris (1996): 54-66. Aquinas discusses these two problems in *In* I *Sent.* 38, 1, 5; *QDV* 2, 12 and *QDV* 23, 5; *SCG* I, 67 and *SCG* I, 85; *De Subst. Sep.* 14 and *De Subst. Sep.* 15; *ST* I, 14, 13 and *ST* I, 19, 8; *ELPH* I, 14.
[526] *In* I *Sent.* 38, 1, 5; *QDV* 2, 12; *SCG* I, 67; *ST* I, 14, 13; *CT* I, 133-4; see also *Ratio. Fid.* 10; *De Malo* 16, 7 ad15; *ELPH* I, 14; *Quodl.* XI, 3; *ST* I, 86, 4.
[527] *QDV* 6, 3 ad6.
[528] *QDV* 2, 12.
[529] See in particular *In* I *Sent.* 38, 1, 5.

knows it the object is necessary (N(p→q)), but in and of itself the object known might not be necessary (N(q)).[530]

The key to this solution is (2) the notion of eternity. Boethius famously defines eternity as 'the complete possession all at once of illimitable life' (*interminabilis vitae tota simul et perfecta possessio*).[531] Aquinas interprets the term *possessio* to mean immutability. The possession that eternity is, is firstly a possession of life rather than mere being, and secondly illimitable, that is to say, there is no beginning and end. The further qualifications 'complete' and 'all at once' exclude any succession ('before' and 'after') and time (past, present, and future). The notion of eternity then consists in "the apprehension of the uniformity of that which is entirely outside of motion" and hence time and space.[532] What is most important for our present purpose is that eternity is, as Eleonore Stump and Norman Kretzmann highlight, a mode of being not reducible to, but compatible with, time.[533]

In his eternity, all at once is present to God without succession. Premise (1) asserts that an eternal mode of knowing follows from God's eternal mode of being. While all things come about successively in time, succession is excluded from God's eternal mode of being: all things in time – past, present, and future – are present to eternity.[534] Boethius denies, on account of God's eternal mode of being, that divine knowledge of the future is, properly speaking, *fore*knowledge; what we might call foreknowledge from our perspective in time is for God not knowledge of the future but of what is eternally present to him. Boethius reasons that since past, present, and future are simultaneous in the eternal present, the providence of God is called *pro*vidence ('looking forward spatially') rather than

[530] Sharples (2009): 216-20; all three conditions are present in *In* I *Sent.* 38, 1, 5 corp. and ad3.
[531] *De Cons. Phil.* V, 6. Translation taken from Stump and Kretzmann (1981): 431.
[532] *ST* I, 10, 1.
[533] Stump and Kretzmann (1981): 434.
[534] *ST* I 14, 13.

*prae*vidence ('looking forward in time').[535] Aquinas reiterates that providence means seeing something in front of oneself rather than before it happens, not the future but what is present to God's eternity. Aquinas likes to illustrate the simultaneity of past, present, and future with a spatial analogy taken from Boethius: a man standing on the top of a mountain simultaneously overlooking an entire valley, thus seeing the road and all the people walking on it at once. God knows all created things, including future contingents, because God sees, as it were, from eternity each and every point in time, all present at once.[536]

The spatial analogy for God's eternal mode of knowing must not be taken to mean, however, that providence implies God's speculative rather than practical knowledge. Aquinas hastens to add that God's knowledge is not, as it were, passive, but the cause of all things and of their providential ordering.[537] "Consequently, in Him beings are not known because they *are*. On the contrary, they *are* because they are known and willed."[538] What Francis Meehan aptly expresses in this citation is that divine knowledge does in an important sense not depend on created objects but that, on the contrary, the object known depends on the knowledge and will of God; for, according to Aquinas, God's knowledge and will are the cause of all things.[539] God's knowledge, conjoined with his will, is the reason why things are: knowledge as directing and the will as commanding.[540] By contrast, divine knowledge is in no way discursive, for God does not know the effect *through* the cause, reasoning, as it were, from cause to effect. God knows the effect *in* the cause, that is ultimately to say, he knows all things *in himself* as their cause.[541]

---

[535] *De Cons. Phil.* V, 6. Translation taken from Walsh (1999): 112.
[536] *In* I *Sent.* 1, 5; *QDV* 2, 12; *ST* I, 14, 13 ad3; *In* VI *Meta.* 3; *ELPH* I, 14; *Quodl.* XI, 3; *CT* I, 133; *Ratio. Fid.* 10.
[537] *QDV* 5, 1 arg.4 and ad4.
[538] Meehan (1940): 287.
[539] *ST* I, 14, 13; *ST* I, 19, 4.
[540] *ST* I, 19, 4 ad4; *ST* I, 25, 1 ad4; *ST* I, 25, 5 ad1.
[541] *ST* I, 14, 7, in particular arg.2 and ad2.

God knows all things, including future contingents, in their presentness in eternity. On this basis, Aquinas employs (3) the concept of conditional necessity. He points out that the necessity God's transcendent knowledge implies is a conditional necessity: if Socrates runs, then he necessarily runs, namely on the condition that he runs; but Socrates does not run by necessity: he could have chosen not to run. That Socrates runs by necessity is not required for a conditional necessity; but given that Socrates runs and as long as he runs, he necessarily runs. By contrast, providence does not imply an absolute necessity.[542] To take a further example from Boethius, knowing a man to walk and the sun to rise by observation does not render obsolete the man's free choice or the sun's necessary rising. In a similar manner that knowledge of the present does not impose absolute necessity on the man's walking, so also does knowledge of the future eternally present to God not impose any necessity on the man's working, other than conditional necessity.[543]

On this point, McGinn comments:

> [B]ecause God is completely outside the temporal order, He sees all existents as here and now existing, and not merely as existing in their causes, although He sees the causes as well. He sees these existents as necessary, but by a *hypothetical necessity*, i. e. because they here and now *are*, and not by an *absolute necessity*, i. e., because they are the result of some necessary cause. If A, then A – but the protasis [('If A')] does not posit an anterior necessary cause, it merely affirms the reality of what appears in the apodasis [sic!] [('then A')].[544]

Only if one were to conceive of God's intellect as being contained in the order of time (past, present, and future) would God's knowledge be based not on (b) the things in themselves, but merely on knowledge of (a) their natural causes. Only then would God's knowledge of future contingents be uncertain.[545]

---

[542] *In* I *Sent.* 38, 1, 5, in particular ad3 and ad4; *QDV* 24, 1 ad13; *SCG* I, 67; *In* VI *Meta.* 3; *CT* I, 133; *Ratio. Fid.* 10; *De Malo* 16, 7 ad15.
[543] *De Cons. Phil.* V, 6.
[544] McGinn (1975): 744. My emphases; 'are' italicised in the original.
[545] *ELPH* I, 14.

In conclusion, to say that the intellect of God is transcendent means that in his eternity God knows all moments in time, including the future, in its presentness. Divine knowledge is certain because in God's mode of existence, our past, present, and future are all present to him at once, and as such, God has eternal knowledge of all things (a) in their causes and (b) in themselves. Future contingents are unknowable (a) in their causes since in their nature they are not fully determined to one effect; however, (b) in themselves as actual effects these events are neither future but present, nor contingent but determinate and hence knowable.[546]

5.2.b. Divine Will: God's Willing and the Problem of Causal Determinism

In his mature writing Aquinas teaches that God's will causes the modality of secondary causes.[547] The causal mode of natural effects results, as previously mentioned, in an important sense from their proximate causes, but only due to the efficacy of the divine will.

Apart from God's knowledge and the problem of temporal fatalism, the theological worry that prompted Aquinas to explicate contingency as an effect of providence was that if the will of God cannot be impeded, then God appears to necessitate his effects:

(1) "Every cause that cannot be impeded produces its effect by necessity."
(2) "The will of God cannot be impeded."
(3) "Therefore, the will of God imposes necessity on willed things."[548]

Aquinas has two sets of replies contesting the conclusion by rejecting premise (1) when applied to God. In both cases he argues that God *is* (2) a cause that cannot be impeded, the will of God is irresistible,[549] yet also a cause that does *not* produce all effects by necessity.

[546] *ST* I, 14, 13.
[547] *QDV* 23, 5; *SCG* I, 85; *ST* I, 19, 8; *ELPH* I, 14; *In* VI *Meta.* 3.
[548] *ST* I, 19, 8 arg.2. Aquinas presents a similar argument in *In* I *Sent.* 47, 1, 1 arg.2.
[549] *ST* I, 19, 6.

The first and initial answer is in terms of conditional necessity.[550] Aquinas applies the same concept previously employed in the context of the divine intellect to the divine will. The idea is that the objection rests on an equivocation of the term 'necessity'. Take as an example the following argument from God's knowledge:[551]

(1) Whatever God knows is *necessary*.
(2) Future contingents cannot be *necessary*.
(3) Therefore, God cannot know future contingents.

The term 'necessary' signifies in the first instance a conditional necessity and in the second an absolute necessity: God's knowing all things does not make every effect happen by necessity, but rather every effect happens necessarily the way God knows it to be. The objection fails to distinguish between the necessity of the consequence (necessarily, if God knows this, then this must be) and the necessity of the consequent (necessarily, this must be).[552] Likewise, the necessity consequent upon God's irresistible will is a conditional necessity: that the will of God cannot be impeded does not make the effects absolutely necessary; but if God wills an effect, then this effect must be by a conditional necessity.[553]

Lonergan goes so far as to argue that Aquinas uses the concept of conditional necessity even in the context of God's operation:[554]

(1) If God knows this, then this must be.[555]
(2) If God wills this, then this must be.[556]
(3) If God causes this, then this must be.[557]

According to Lonergan, to avoid an equivocation, the 'this' of the apodosis must be taken

---

[550] *In* I *Sent.* 47, 1, 1 ad2.
[551] *ST* I, 14, 13 arg.3.
[552] *ST* I, 14, 13 ad3.
[553] *In* I *Sent.* 47, 1, 1 ad2.
[554] Lonergan (1971): 103-9; Lonergan (2013): 334-6.
[555] *In* I *Sent.* 40, 3, 1; *In* I *Sent.* 38, 1, 5 ad3 and ad4.
[556] *In* I *Sent.* 47, 1, 1 ad2.
[557] *ST* I, 116, 3; *ST* III, 46, 2.

in the same sense as the 'this' of the protasis. Since God knows things as present, therefore, the 'this' in 'then this must be' must also be present and hence implies only a conditional necessity. What is conditionally necessary, however, might in and of itself be either (absolutely) necessary or contingent. Put differently, whether or not the necessity of the consequent is absolute or conditional depends on the necessity or contingency of the event.[558]

The second and more mature answer to the objection that the will of God imposes necessity on nature is in terms of what I will call transcendent causation. Aquinas argues that the will of God is also the cause of the causal modality of the effect willed. Rather than imposing necessity on all effects, God can will contingencies insofar as his will extends both to (a) the effect and (b) its causal modality. The effect of God's will is in one sense necessary because irresistible, but the necessity primarily concerns the mode the effect willed by God comes about.[559]

For this second solution Aquinas first needed to develop a transcendent model of the will of God, along the following lines. The compatibility of (i) irresistibly willing an effect and (ii) the effect being contingent is conceivable only if God 'transcends the order of necessity and contingency' (*transcendit ordinem necessitatis vel contingentiae*).[560] Aquinas argues that God as the cause of being (*ens*) is outside the order of beings (*ordo entium*) whose source and constituting ground he is. He then suggests that necessity and contingency are but a 'difference of being' (*differentia entis*) or an 'accident of being' (*accidentia entis*).[561] As differences of being, necessity and contingency fall within the

---

[558] Lonergan (1971): 107-8; Lonergan (2013): 336.
[559] *ST* I, 19, 8 ad2.
[560] *ELPH* I, 14. In *In* VI *Meta.* 3 Aquinas also calls this order a 'law' (*lex necessitatis vel contingentiae*).
[561] *ELPH* I, 14 (*differentiae entis*); *In* VI *Meta.* 3 (*accidentia entis*); see also *Quodl.* XI, 3 (*modo esse*); *De Subst. Sep.* 15 (*propriae differentiae entis*).

order of beings and are caused by God the cause of being. Thus, the will of God, by constituting the order of beings, establishes the very order of necessity and contingency. All created causes, by contrast, fall within the order of beings and under this established law of contingency and necessity.[562]

Within this order of beings, causes that cannot be impeded bring forth necessary effects; for within the divinely established order of necessity and contingency an effect proceeding from an unfailing cause cannot but be necessary. As the cause of the order of beings, however, God can irresistibly cause an effect that is contingent, because he constitutes the order of necessity and contingency.[563] Goris comments: "A created necessary cause excludes the contingency of the effect, but the uncreated necessary cause does not. On the contrary, it constitutes the modality of the effect."[564] Hence Aquinas argues that the mutual exclusiveness of (i) unfailing cause and (ii) contingent effect is a consequence of, and valid only within, the order of beings.

In short, whatever causes, as the cause of being, the order of beings and hence, as the cause of the differences of being, the law of necessity and contingency can (i) irresistibly bring forth (ii) a contingent effect. This compatibility is a unique feature of the causation of God, the cause of being, that does not apply to any creaturely causation. For only the will of God extends to the very contingency and necessity in natural causation. Only God wills, by willing the order of beings and hence also the proper differences of being, the very necessity and contingency of secondary causes.[565]

---

[562] *ELPH* I, 14; *In* VI *Meta.* 3.
[563] *ELPH* I, 14; *In* VI *Meta.* 3.
[564] Goris (1996): 298.
[565] *ELPH* I, 14; *In* VI *Meta.* 3.

5.2.c. Divine Operation: God's Transcendent and Universal Causation

The parallelism between divine intellect and will comes to full light in his commentary on Aristotle's *Peri Hermeneias*, where Aquinas places divine knowledge and will on equal footing stressing that they must not be judged according to the manner our intellect and will operate.[566]

Being outside the order of time (*ordo temporis*), God knows all things as present, which is why his knowledge does not necessitate: the necessity the divine knowledge implies is a conditional necessity. God knows future contingents in themselves rather than in their causes. Only if we assume God to know future events in their causes, as we do, would God necessitate them. The fallacy is therefore to compare the eternal God to creatures that fall within the order of time.[567]

Likewise, being outside the order of beings (*ordo entium*), God wills created beings and the differences of being. Since necessity and contingency as causal modes are differences of being, God even in irresistibly willing an effect does not necessitate the effect: the necessity the divine will implies is that things happen according to God's will, either necessarily or contingently. As the cause of the order of necessity and contingency, God wills the necessary to be necessary and the contingent to be contingent. The fallacy is again to overlook the essential difference between the will of the transcendent God and the will of creatures within the order of beings.[568]

Yet, spelling out the transcendence of the divine will faces an inherent difficulty. While the transcendence of the divine intellect and God's relation to time can be illustrated by a

[566] *ELPH* I, 14.
[567] *ELPH* I, 14.
[568] *ELPH* I, 14.

spatial analogy, namely, one can compare the order of time to the order of place (*ordo loci*), the fact that God is not a cause among causes lacks a readily available analogy.[569] In any case, the spatial analogy cannot be appropriated in the latter context. God's causing of the order of beings not only differentiates, like time and eternity, the mode of being of corporeal creatures from that of God, but also constitutes itself the difference. Without his act of creation there would be neither an order of beings nor an order of time or place. This situation somewhat limits the conceivability of the transcendence of the divine will. On this point, Michal Paluch comments that "we can understand such an explanation but we cannot imagine it."[570]

Nonetheless, Aquinas suggests at least a partial analogy in that when drawing the genus of a triangle a geometer needs to specify also the proper difference of that genus making the triangle scalene, isosceles or equilateral. Similarly, if necessity and contingency are proper differences of being, then God as the cause of being will also have to specify which kind of being he wills, namely necessary or contingent beings.[571]

Once the transcendent nature of God's knowledge and will is established, we can apply the same line of reasoning to God's causation. The doctrine of transcendence asserts that if God's intellect and will are equally transcendent, that is to say, if God is outside the order of time and the order of beings, then the divine operation resulting from intellect and will must also be transcendent. As cause of being, God is the only cause whose effect cannot be impeded and where the effect can nonetheless be contingent. This unique compatibility is due to God's transcendence. I call this mode of causation 'transcendent causation' because God 'transcends' in the discussed sense both the order of time and the order of

[569] *ELPH* I, 14.
[570] Paluch (2014): 1162.
[571] *De Subst. Sep.* 15.

beings; and it is a form of causation because God brings about the order of beings, including contingency as difference of being.

An important function of transcendent causation is to explain the compatibility of God's irresistibly willing some effect and the effect being contingent, not fully determined in its nature to either being or non-being: God as transcendent cause wills the contingent like the necessary. In being a transcendent cause outside of the order of necessity and contingency, which God himself establishes, the effect of God's operation can be both unfailing and contingent. In short, to the extent that God is outside the order of beings divine irresistibility and natural contingency are compatible. Transcendent causation is then the reason why (B) the causal certitude of providence is compatible with natural contingency.

The first essential characteristic of divine operation is that God is transcendent cause. The second is the reason why (A) the universal scope of providence and contingency are compatible: God is universal cause. Universal causation means that God's causality extends to everything insofar as it is some being (*ens*), including the accidental (*ens per accidens*).[572]

In commenting on Aristotle's *Metaphysics* Aquinas addresses the question of the reducibility of the *ens per accidens* to God as *per se* cause by differentiating two senses of the *per accidens*: the accidental as (a) not belonging to a causal order or as (b) a contingent mode of causality (*accidentia entis*). If the causal order extends as far as the causality of a cause, then nothing can be *per accidens* with regard to God in the sense of (a) being outside of his causal order. God is universal cause, that is to say, a cause whose causality extends

[572] *In* VI *Meta.* 3.

to everything insofar as it exists. Everything is causally related to God as the primary cause, even though it might not be causally related to other secondary causes. Hence, in no sense can the accidental exist in this respect.[573] Aquinas explains:

> It follows, therefore, that all things which take place here as they are referred to the divine primary cause are found to exist ordered and not accidentally (*per accidens*); although by comparison to other causes they might be found to be accidental (*per accidens*).[574]

On the basis of the concept of universal causation, everything including the *ens per accidens* is causally related to God the primary cause. By analogy, if two men meet at a market place their encounter might be accidental. Neither of the two had the intention to meet the other. Not knowing of their presence, their reasons for going there are *per accidens* causes of their encounter. Suppose, however, that both are servants of a master who sent them. In this instance, we can identify a *per se* cause of their encounter with respect to their master, namely his sending the servants to meet at the market place, even if there are only *per accidens* causes among the servants. In this way *per accidens* causes can be grounded in a *per se* cause without thereby negating the accidentality of the event with respect to their proximate causes.[575]

If God's causality extends to everything, then so will his providential order. The negation of the *per accidens* as (a) a denial of a causal relation to providence does not do away, however, with the *per accidens* as (b) a mode of secondary causation. On the contrary, transcendent divine causality extents to the accidents of being. Contingency is due to the efficacy of the divine will and a consequence of providence. There is then no need to relativise the scope of providence. The causal reducibility of *per accidens* causes to God as *per se* cause is compatible with contingency as a mode of creaturely causation,

---

[573] *In* VI *Meta.* 3.
[574] *In* VI *Meta.* 3.
[575] *ELPH* I, 14; *ST* I, 116, 1.

because God is also transcendent cause. McGinn speaks of an inversion of the Aristotelian position in this regard:

> [Aquinas] rejects Aristotle's position on *per se* causes, because God through his providence is the *per se* cause of all things, even contingents; but he retains the Aristotelian contingent effect, because God is also a transcendent cause who produces effects as necessary or contingent according to his pleasure.[576]

Thus, Aquinas eventually arrives at a harmonisation where the *per accidens* is reducible to God as its per *se cause*, but where at the same time this reduction does not negate but rather affirms the reality of contingency.

From the *Summa contra Gentiles* onwards Aquinas then teaches that the providence of God is the *per se* cause of the *ens per accidens*:[577] "divine providence is the *per se* cause that this effect comes about contingently."[578] Indeed, "divine providence is the *per se* cause of all things that happen in this world, at least of good things."[579] Here, Aquinas again reasons that subject to providence are not only effects, but also their causes and modes of being (*modo essendi*); for God knows, wills, and causes as transcendent cause the necessary as well as the contingent.[580]

In short, the mature doctrine of transcendence consists in this, that God transcends the order of time and the order of beings. God does not have foreknowledge but knowledge of what is eternally present, because he is outside the order of time. What is known as present, however, is conditionally necessary. Likewise, the irresistibility of God's will and the efficacy of his causation do not necessitate the effects, because he is not a cause among causes, but as the cause of being constitutes the order of beings. Only as a part of the order

---

[576] McGinn (1975): 751.
[577] *SCG* III, 94; *ELPH* I, 14; *In* VI *Meta.* 3.
[578] *SCG* III, 94.
[579] *ELPH* I, 14.
[580] *SCG* III, 94.

of beings would irresistibly causing and bringing forth a contingent event be mutually exclusive.

To conclude, I argued in this chapter that the theological tension with Aristotle's refutation of causal determinism results primarily from (A) the universal scope and (B) the causal certitude of providence: if (i) not every effect has a *per se* cause, then what about God's providence of the *ens per accidens*; and if (ii) it is not the case that, given the *per se* cause, the effect follows necessarily, then what about the effects of providence as the *per se* cause of the ordering of all things to their appointed ends?

Divine universal causation makes possible a resolution of the first Aristotelian challenge. Aquinas limits the scope of premise (i), that what happens *per accidens* has no *per se* cause, to particular created causes; the premise is not applicable to God the universal cause. Hence if the *ens per accidens* is taken to exclude a divine order in the sense of being causally unrelated, then it is to be denied, for nothing can be causally unrelated to the divine universal primary cause; but if it expresses contingency as a causal mode, then providence in no way excludes the *ens per accidens*. That the providence of God is the *per se* cause of every *ens per accidens* does not also imply a denial of the accidental in the first sense, for the *ens per accidens* is not an absolute, but a relative, concept. Something might be accidental with respect to secondary causes, while at the same time although in a different respect, namely insofar as it is causally related to God, belonging to God's universal causal order. Along these lines Aquinas argues that contingency is compatible with (A) the universal scope of providence.

Transcendent causation makes a resolution of the second Aristotelian challenge possible. Aquinas argues that if applied to God, premise (ii), that given the cause, the effect follows necessarily, does not imply that the effect comes about by necessity rather than

contingently. As transcendent cause, the providence of God extends to the very contingency and necessity of secondary causes. Hence, if providence is posited, the effects follow necessarily, but not by (absolute) necessity. Rather, given providence as a *per se* cause, the effects follow necessarily the way God wills them to come about, according to his will either necessarily or contingently. In other words, the causal relation between the divine will and his effects is a necessary one: God's will cannot be impeded, but does not imply the necessity of the effect as a causal modality of secondary causes.[581] God gives secondary causes their very causal modality. In this manner, Aquinas argues that contingency is compatible with (B) the causal certitude of providence.

To summarise, Aquinas' resolution of the initial dilemma involves showing that (1) every effect, insofar as it is, has God as its *per se* cause (reducibility thesis of the *ens per accidens*) and that (2) given God as *per se* cause, the effect follows necessarily, but not by (absolute) necessity (compatibility thesis of God's irresistibly willing contingency). Hence neither (A) the universal scope nor (B) the causal certitude of providence necessitate nature, and Aquinas' doctrine of providence is *prima facie* compatible with Aristotle's conclusion that (C) not everything happens by necessity.

5.3. Divine Government through Natural Contingencies

So far, I have argued that, at least according to Aquinas' sapiential-ordinative model, two features are essential for an integration of natural contingency into the doctrine of providence. The first requirement is the reducibility of the *per accidens* causes to the providence of God as its *per se* cause (reducibility thesis). The *ens per accidens* is not an absolute concept. Aquinas establishes this claim by employing the notion of universal

[581] Goris (1996): 297-8.

causation. God is universal cause. His causality extends to all causes, and as such, all other causes fall under his causal order. God as universal cause excludes accidentality in the sense of an irreducible entity. Such an *ens per accidens* would not be causally related to providence and must therefore be rejected. To deny a causal relation of a created being to God is to misunderstand the status of creatures: God is the primary cause whose causation extends to everything insofar as it is and acts. There can be no accidental in the sense of not belonging to the causal order of God, for then it would not be. Hence, in one sense all necessary and contingent causes are, and must be, reducible to God the universal cause.

Yet the reducibility of the *ens per accidens* to the providence of God does in no way negate the reality of natural contingency. Rather, providence is the ultimate reason for contingency as well as necessity. Aquinas embeds contingency in the providence of God by showing God to be the transcendent cause of contingency. The second requirement is the compatibility of divine providence and natural contingency (compatibility thesis). Contingency as an accident of being, that is, contingency as a causal modality, is not only compatible with providence, but God is also the condition of possibility of contingency thus conceived. God is transcendent cause. As the ground and source of the order of contingency and necessity, God causes contingent causes to be contingent and necessary causes to be necessary. Natural contingency occurs in the world only because it is part of divine providence.

5.3.a. Contingency as Effect and Means of Providence

Having explained the notion of natural contingency, I shall now explore the function of contingency in providence. We have seen in Chapter 4 that in the sapiential-ordinative tradition providence refers, in analogy to prudence and human providence, to the reason

for a teleological order of means to ends. The function of providence is to order: *ordinare res in finem*.[582]

If divine providence is modelled in analogy with human providence, which is an ordering of means to ends restricted to future and contingent things, one might object that God appears to be rather limited in his providential ordering of creatures. The reason why human providence is restricted in this manner is that human beings have neither causal influence over the past and what is already present, nor over what happens by necessity.[583] The question which sets the scope of providence is therefore what the agent in question can causally influence; to what does his causality extend. These restrictions cannot, therefore, reasonably be applied to God, the author of nature; for God institutes the order of time and beings, including the order of contingency and necessity.[584]

While human providence is only a particular and limited cause, divine providence is both universal and transcendent. God is transcendent cause because he is outside the order of beings and time; he is universal cause because his primary causality extends to everything insofar as it is and acts. Hence the doctrine of transcendence forecloses a univocal predication restricting divine providence to future contingents on at least two grounds. That certain limiting aspects of the teleological notion of human providence have to be denied when applied to God is clear from God's transcendent causation, for as eternal being nothing is future to him, and also from God's universal causation, for as cause encompassing all causes his causality affects everything. In his providence in an important sense nothing is accidental and future to God. His universal and transcendent primary causation extends to, and eternally encompasses, the contingent and the necessary alike.

---

[582] *ST* I, 22, 4.
[583] *ST* II-II, 49, 6.
[584] *ST* I, 22, 2 ad3.

Unlike the case of human agents, everything is subject to God's end-directed ordering of creatures.

Although divine primary causation is universal and transcendent, it has particular effects. From the *De Veritate* onwards we find a two-fold thesis concerning divine providence and natural contingency stating that the efficacy of the divine will includes not only God's bringing about (i) some effect, but also (ii) the causal mode of this effect: thus the necessary or contingent causation bringing forth some effect is placed at God's disposal.[585] The statement is a result of Aquinas' altered explanation for the contingency of natural causes previously discussed, namely that the disposition of the divine will is the ultimate reason for contingency rather than the contingency of the proximate cause.[586] In the *Compendium Theologiae*, for example, Aquinas expresses the efficacy of the will as follows:

> Likewise, the will of God, because it is the universal cause of things, is not only about this that something happens, but also that it happens in this manner. To the efficacy of the divine will, therefore, pertains not only [i] that happens what God wills to happen, but also [ii] that it happens in the mode he wills it to happen.[587]

We read that the efficacy of the divine will extends not only (i) to the effect God brings about, but also (ii) to its causal modality, or the mode of the coming about of the effect of God's will.

There are two dimensions to this thesis. On the one hand, Aquinas specifies that subject to providence is (ii) the mode of natural causation.

---

[585] *QDV* 23, 5; *Quodl.* XI, 3; *SCG* I, 85; *SCG* III, 94; *ST* I, 19, 8; *CT* I, 140.
[586] *QDV* 23, 5.
[587] *CT* I, 140.

Thesis 1: Natural contingency is an *effect* of divine providence.

> The effect of divine providence (*effectus divinae providentiae*) is not just that something happens in whatever mode, but that something happens either contingently or necessarily. And so what divine providence disposes to happen infallibly and necessarily happens infallibly and necessarily, and what the reason (*ratio*) of divine providence maintains to happen contingently happens contingently.[588]

Aquinas presents the thesis that contingency is the effect of providence in reply to the objection that Aristotle's refutation of determinism supposedly implies that providence necessitates nature.[589] As seen, however, the necessity implied by the efficacy of the divine will does not primarily pertain to the necessity by which an effect follows from its natural cause, but rather concerns the very necessity or contingency of natural causes as the *effect* of divine providence. Put differently, the necessity divine providence implies pertains to 'the certitude of providence' (necessity of consequence) and not 'the necessity of the effects' (necessity of consequent).[590] The efficacy of the divine will, even if irresistible, is compatible with contingent effects because contingent causes are contingent precisely because God knows, wills and providentially ordains them to be contingent. In his providence God establishes contingency in the created world. In this sense, then, we can state natural contingency to be the effect of divine providence. The efficacy of the divine will includes (ii) the mode of natural causation.

On the other hand, Aquinas' thesis on providence and contingency asserts that the will of God extends to (i) the effect. Now one could collapse Aquinas' two-fold thesis by taking natural contingency itself to be the end rather than a means of providence, and claim that it is only the *contingency* of the effect rather than the contingent *effect* that is the subject of providence. In other words, one might assume that the will of God refers, at least in the

---

[588] *ST* I, 22, 4 ad1.
[589] *ST* I, 22, 4 arg.1.
[590] *ST* I, 22, 4 ad3.

case of contingent causation, merely to the causal mode of the governing causes rather than to the specific effects these governing causes bring about. Against this reading, I add that natural contingency is the *effect* and *means* of providence.

Thesis 2: Natural contingency is a *means* of divine providence.[591]

In stating contingency to be a means of providence I mean that divine providence concerns not only the general fact of contingency in nature, but also implies and encompasses the specific effects brought about by contingent natural causes, since God orders contingent causes to bring about specific effects. At this point it might help to draw a distinction between the *ordering* to some end and the *attainment* of that end. The former concerns the teleological structure of providence, whereas the latter relates to the certitude of providence. The focus of the present thesis is the ordering of providence to ends. Contingency is, consequently, not simply an effect of providence but a means to an end, namely the divinely ordained and governed but nonetheless contingent ends of naturally contingent things. Providence orders *all* things to particular ends.

This particularity of God's government can be seen from his knowledge, will, and causation. First, Aquinas explains that because of God's transcendent knowledge providence as the eternal reason for the ordering of creatures to ends includes all the details

[591] The following list shows that Aquinas does not collapse the contingent *effect* and the *contingency* of the effect, but consistently upholds the distinction between (i) the specific effect and (ii) the causal modality God wills: [i] *ut non solum fiat id quod Deus vult fieri* […]*; sed* [ii] *ut fiat eo modo quo Deus vult illud fieri, ut necessario vel contingenter* (*QDV* 23, 5); [i] *non solum vult ea esse, sed* [ii] *tali modo esse, scilicet necessario vel contingenter* (*Quodl.* XI, 3); *voluit [ii] istum vel illum effectum non solum esse, sed etiam [ii] illo modo esse, scilicet vel contingenter, vel necessario* (*Quodl.* XI, 3); [i] *non solum sit quod Deus vult esse, sed etiam* [ii] *ut hoc modo sit sicut Deus vult illud esse* (*SCG* I, 85); [i] *non solum hunc effectum esse, sed [ii] hunc effectum esse contingenter, alium autem necessario* (*SCG* III, 94)]; *non solum sequitur* [i] *quod fiant ea quae Deus vult fieri; sed* [ii] *quod eo modo fiant, quo Deus ea fieri vult* (*ST* I, 19, 8); *sequitur* [i] *quod non solum fiant ea quae Deus vult fieri; sed* [ii] *quod fiant contingenter vel necessario, quae sic fieri vult* (*ST* I, 19, 8 ad2); *pertinet non solum* [i] *ut fiat quod Deus vult, sed* [ii] *ut hoc modo fiat quomodo illud fieri vult* (*CT* I, 140).

down to the very particular; God is not restricted in his divine providence like human agents in their human providence who do not have knowledge of all the particular details.[592]

Second, Aquinas' distinction between (i) effect and (ii) causal mode stems from another distinction Aquinas draws concerning the *efficacy* of agents, namely that between that which happens (*secundum id quod fit*) and its mode of becoming and being (*secundum modum fiendi vel essendi*). For Aquinas efficacy means both that a cause brings forth an effect and also that the effect has a particular mode of being or becoming due to its cause. For example, a lack of active powers in a seed might prevent a well-formed plant growing, which in turn affects its mode of being. In the case of God, whose will is most efficacious, this distinction applies to his causality in an eminent but positive way, for his power lacks nothing:[593]

> Therefore, since the will of God is most efficacious, it follows not only that these things happen which God wills to happen, but also that they happen in this mode which God wills them to happen.[594]

Hence the efficacy of the divine will does not take away the particularity of the effect willed, but adds that because God's will is most efficacious his primary causality extends also to the modality of secondary causation.

Third, I showed in Chapter 4 that on Aquinas' account of primary and secondary causation creaturely powers are derived from the power of God inherently grounded in their form. Although natural powers are rooted in an inherent form, the natural power cannot transition from *posse agere* to *actu agere*, that is, from being in potency to act to actually acting, without God moving it to act, namely by a divine application. Primary

---

[592] *SCG* III, 94; *SCG* III, 74.
[593] *ST* I, 19, 8; see also *QDV* 23, 5.
[594] *ST* I, 19, 8.

causation is needed in each and every particular operation of creatures because it is not part of the natural power to move itself to act.

In short, that God's knowledge, his will, and his causality extends to and affects everything does not take away that God knows, wills, and causes the singular, the particular, the creaturely operation. Insofar as divine knowledge and will are the cause of all things, the providence of God as the ordering of all creatures to their due ends is and must be universal *and* particular. God orders each and every thing to its due end.[595]

We have seen how by gradually establishing a parallelism between God's intellect and will in their transcendence Aquinas unfolds the transcendent character of God's operation. Aquinas asserts that God's will is beyond the order of beings, just as God's knowledge is beyond the order of time, and so divine providence can be affirmed to be both universal and certain, and yet incorporate contingency. In his providence God orders all things, the contingent like the necessary. Aquinas tackles the causal dimension of providence with the following three theses: (1) the direct causal ascription of contingency to God the primary cause, that is to say, contingency is due to the efficacy of the divine will (contingency as *effect* of providence); (2) the reducibility of the *ens per accidens* to God's providence as its *per se* cause (reducibility thesis: universal causation); and (3) the compatibility of being an unfailing cause and producing an irresistible effect outside the order of beings (compatibility thesis: transcendent causation). As a clarificatory note we may now add that (4) God's causation is universal and transcendent but has particular effects (particularity thesis: contingency as *means* of providence).

[595] *ST* I, 22, 2.

5.3.b. Government and the Sources of Contingency

We are now finally in a position to address the topic of God's government through natural contingencies. If contingencies are both an effect and a means of providence, the following question might arise in the context of the government of God: how can God employ contingent secondary causes to execute temporally his eternal reason for the providential order without putting at risk the realisation of this order? Can contingent secondary causes upset God's providential order in the way at times unreliable ministers of a human queen executing her royal order?

Here is Aquinas:

> However, if for all things that can act it is necessary that in acting they minister to him [God], it is impossible that any agent impedes the execution of divine providence [i.e. the divine government] [1] by acting contrary to it (*sibi contrarium agendo*). Nor is it possible that divine providence [!] is impeded [2] by a defect of some agent or patient (*per defectum alicuius agentis vel patientis*): because every active and passive power is caused in things accordance to the divine disposition. […] Therefore, it remains that divine provision cannot at all be frustrated.[596]

Aquinas makes two points in support of the thesis that contingency is a means of providence. These correspond with the three natural sources of contingency mentioned previously, namely (1) the conjunction of independent causal chains, (2) the defect or lack of active causal powers of agents, and (3) the indisposition of matter: recipients might not be disposed to receive a form.[597] To show how whatever could potentially impede God's government is in turn part of his providence, we have to look at each of these natural sources of contingency.

The interference of unrelated causal chains is the first source of contingency. According to the reducibility thesis, there are no causally irreducible *per accidens* causes with regard

[596] *SCG* III, 94.
[597] *In* VI *Meta.* 3.

to God the universal primary cause. All natural causes are subordinate to the divine primary cause, where no secondary cause can be causally unrelated to God: "whatever exits, and in whatever way it exists, comes properly under the causality and direction of that cause."[598] Thus, by means of the concept of universal causation Aquinas excludes any external interference to the causal order of God's government.

Consider however the following objection. Suppose one holds the belief that chance and providence mutually exclude each other and that the incompatibility is expressed in terms of a contradiction between being subject to providence and coming about by chance:[599]

(1) Nothing subject to providence is by chance.
(2) Therefore, if everything is subject to providence, then nothing will be by chance.
(3) But some things are by chance.
(4) Therefore, not everything is subject to providence.

Following Aquinas' reasoning we can reply by differentiating two different respects, namely the particular order resulting from a particular cause and the universal order resulting from a universal cause, to argue that something can deviate from the order of a particular cause, but not from the order of a universal cause, insofar as particular causal orders are part of God's universal causal order. An effect can escape, so to speak, the order of a particular cause, namely when there is another impeding particular cause. But each and every particular secondary cause, including the impeding one, is in turn contained under the universal primary cause. Therefore, an effect of secondary causes cannot possibly escape the causal order of God the universal primary cause.[600]

---

[598] *In* VI *Meta.* 3.
[599] *ST* I, 22, 2 arg.1.
[600] *ST* I, 22, 2 ad1; see also *ST* I, 103, 7.

Providence and chance do not contradict each other because we attribute the predicates 'being ordained' and 'being by chance' in different respects. If and insofar as some effect falls outside the order of a particular cause, we call it chance; but if and insofar as this same effect falls under the universal cause, it is ordained. In other words, we attribute chance to a particular cause insofar as some accidental cause is not part of the order of this particular cause. But if we change perspectives, if we consider both causes as part of the universal causal order, then the chance cause is not causally unrelated but ordained. To use Aquinas' example again, if a master sends two servants to a place their meeting might be by chance with respect to the two servants. If we also take into consideration their master who sent them, however, then their meeting is not by chance but rather providentially ordained. In short, chance and divine providence do not mutually exclude each other, at least insofar as they are ascribed to different causal orders.[601]

The first argument is therefore that all secondary causes are *governing* causes. If and insofar as natural causes are genuine causes, their causality is ordered to minister God, that is to say, to execute his providential order. Whatever acts, acts by virtue of the power of God. In consequence of the universal governing function of secondary causation explained in Chapter 4 natural causes cannot impede divine government. Natural causes can only fail to execute the providential order. One might tentatively call such a failure an 'internal impediment' in contrast to an 'external interference'. The point is that because all natural causes are governing causes, there is no natural causation outside of God's government.

The active power of the agent and the passive power of the patient are the second and third natural source of contingency. On the one hand, if the patient is not properly disposed to receive a form, even a powerful agent will not be able to impose a specific form on some

[601] *ST* I, 22, 2 ad1.

object. Yet matter as potentiality is an effect of God's causality and therefore subject to his providence.[602] On the other hand, secondary agents in various ways depend on, participate in, and are subordinate to God the primary agent. According to the doctrine of divine application, God is causally involved in natural causation. Aquinas argues in the present context that because God operates in creaturely operations things happen according to his will, either necessarily or contingently, either permitting or preventing secondary causes to fail. We read in the *Summa contra Gentiles*:

> Neither, however, can defects of secondary causes, which are produced as the mediation of the effects of providence, remove the certitude of divine providence […]: *because God himself operates in all* (*cum ipse Deus in omnibus operetur*), and in accord with the decision of his will. […] Hence to his providence pertains sometimes to permit defective causes to fail, sometimes to preserve them from failure.[603]

The first thing to note in this passage is that although for Aquinas God can prevent defects of secondary causes through his involvement in creaturely causation, providence in fact permits defects: "To providence, however, pertains to permit some defects in things which are subject to providence."[604] An important difference between the compatibility of providence and defects of secondary causes on the one hand and of the causal certitude of providence and contingency on the other is that God in no way causes these defects; the defects are exclusively due to the secondary causes.[605]

Moreover, in analogy to human providence, Aquinas suggests that God can bolster or empower contingent secondary causes in acting as a primary cause in creaturely operations, so that a particular effect can come about which would otherwise have been prevented due to a lack of active or passive powers.[606] In other words, insofar as the divine application

---

[602] *In* VI *Meta*. 3.
[603] *SCG* III, 94. My emphasis.
[604] *ST* I, 23, 3.
[605] *CT* I, 140.
[606] *CT* I, 140.

involves bringing agent and patient "in the right relation, mutual disposition, spatial proximity for motion naturally to ensue,"[607] both the lack of active powers in the agent and the indisposition of matter in the patient are part of the ordering operation of God in creaturely operation in his government. Hence Aquinas lists three things in support of the certitude of divine providence concerning contingencies: (1) the infallibility of divine knowledge, (2) the efficacy of the divine will, and the (3) wisdom of the divine disposition (*sapientia divinae dispositionis*) which finds adequate ways of bringing about an effect.[608]

The second argument Aquinas presents is that the specific disposition of both the agent and the patient is caused by God and hence in an important sense in accordance with his providential plan. According to the compatibility thesis, necessity and contingency are, as accidents of being, known and willed by God; they are an integral part of, not an external hindrance to, God's providential plan. Note that when talking about internal impediments, Aquinas changes the referent from government to providence as that which cannot be impeded. The reason seems to be, as Aquinas explains elsewhere, that the providential order cannot be resisted insofar as it proceeds from God the universal cause, but only insofar as it proceeds from particular causes.[609]

As particular causes, creatures can resist, or fail to bring about, particular goods or ends.[610] These effects depart in a sense from the order of providence, but only regarding their particular causes, for whatever falls short in one respect falls within the order of the divine government in another respect.[611] "Hence, what seems to deviate from the divine will in one order falls back under it in another order."[612] At least in this universal sense no

---

[607] Lonergan (1971): 89.
[608] *CT* I, 140. Aquinas presents a similar list in *Quodl.* XII, 3;
[609] *ST* I, 108, 8.
[610] *ST* I, 108, 8 ad1.
[611] *ST* I, 103, 7.
[612] *ST* I, 19, 6.

defect of a secondary cause can impede the effect of the universal primary cause, because every effect will again fall within the universal government.[613]

In short, the basic idea of the discussed citation is that nothing can fall outside of the divine government. Consequently, no creaturely operation executing providence can *externally* interfere with his government (external interferences). Nor can governing secondary causes ultimately *internally* frustrate God's universal providence, at least insofar as their capability to fail and be impeded is due to God's will, although their actually doing so is due to their own causality, but then falls in turn within the universal providence in a different respect (internal impediments).

By way of conclusion I wish to reiterate the importance of distinguishing between primary and secondary causation in divine government. On the one hand, in secondary causation there is natural contingency, there are causal accidents, and there are defects and indispositions on part of both the agent and the patient. On the other hand, primary causation is the transcendent source of contingencies, universal causation excludes the accidental, and even the occurring defects and indispositions in secondary causes are providentially ordered. God governs natural contingencies not because he determines what is left undetermined, as NIODA theorists would have it, but rather because as transcendent and universal agent God knows, wills, and causes in a unique way.

In light of the discussion I suggest that the question whether God puts at risk his plan, like a human queen, by leaving the execution to ministers might be answered in the negative. The reason and decisive difference between human and divine providence is that whatever could potentially impede the divine government is in turn part of divine

---

[613] *ST* I, 19, 6 ad3.

providence. Unlike the case of created agents, each of the sources of contingency is part of God's providence and through his primary causation in secondary causation of his divine government. Despite their conceptual similarities we cannot, therefore, treat the providence of God and of a human queen alike.

5.3.c. Beyond Theo-Physical Compatibilism

The preceding chapters have argued for a 'compatibility' of divine and natural causation, whether the latter be contingent or necessary, by taking sapiential-ordinative providence as an alternative starting point. In contrast to the position of TPI discussed in Chapter 3 holding at least natural causation and OSDA to be mutually exclusive, I have introduced divine and natural causation as analogical rather than univocal notions. Aquinas' theory of primary and secondary causation implies that the agency of God is different in kind from the agency of creatures. The resulting position is, I shall now suggest, compatibilist in the sense of denying natural causation and OSDA to be mutually exclusive, yet not claiming the compatibility of two entities on the same level. Whether or not one wants to label this position 'TPC', it entails the denial of TPI: (TPI) Natural and divine causation (OSDA) mutually exclude each other.

The key to approaching natural and divine causation, including OSDA, as non-competitive in principle rather than merely in practice, is the notion of transcendence. Divine transcendence implies that God is outside and thus not part of the order of time and the order of beings. Moreover, God as the transcendent source of all being operates in all creaturely operations. Three corollaries follow from God's transcendence. First, God *knows* past, present, and future all at once. He knows our future as present. Everything is present to God from eternity. Second, God *wills* necessity and contingency as natural features of the order of beings, as accidents or proper differences of being. He does so

without subjecting himself to the order of beings. God wills the contingent like the necessary. Third, God *operates* in every creaturely operation. Not only the being and power of all creatures, but also their causality is dependent on, participating in, and subordinate to God's being, power, and operation. To arrive at this conclusion, it was necessary to parallel divine intellect, will, and operation in that all three must be viewed as a transcendent cause: God's knowledge is beyond the order of time; God's will is beyond the order of beings; and God's operation is beyond natural causes. Hence God knows, wills, and causes the necessary like the contingent.

The undertaken theological analysis exploring a sapiential-ordinative notion of providence contributes and reacts to the recent DAD in reframing the question of God's action in the world. Rather than viewing natural indeterminacies as providing the *locus* for providence and hence rendering natural causation an obstacle to OSDA, I have presented a theological perspective that reverses the logic of the argumentation. Contingency and necessity are accidents of being and as such a feature of secondary causes. These secondary causes are the ordinary executors of divine providence. If and insofar as God governs the world through necessary and contingent secondary causes, he could be subjected to natural necessity or contingency only if he were part of the order of beings to which these accidents of being pertain. But as the cause of being he transcends this order, and consequently the order of necessity and contingency is subject to God as its proper cause.

Both necessity and contingency are *effects* and *means* of divine providence and forms of government involving primary causation. Only if God were to determine everything in his eternal providential order, would nature be determined and natural causation deterministic. What follows from this is not so much that if the world were causally determined, God would not act specially in it (OSDA), but rather that the world could not

naturally unfold differently – precisely because God knows, wills, and causes it that way. For even if all natural causes were determined to one effect and nothing within nature could prevent that effect from coming about, God would still be intimately causally involved in this deterministic natural causation. Such a causal involvement in secondary causation would, I suggested above, qualify as OSDA, at least on the definition introduced in Chapter 3.

Two objections might arise against this view. The first is that in this case *in*determinism limits providence. Causal indeterminism and OSDA are compatible insofar as God operates in creaturely operations and hence, one might object, to the extent that creaturely operations are determining some effect. But indeterminism is the denial of determination. Therefore, God does not operate in secondary operations to the extent that these natural operations are indeterminate. The argument that divine causality is limited to natural determination presupposes, however, that indeterminism implies a lack of causation rather than determination. On the proposed view, by contrast, God causes contingent causes to be contingent and orders them to their end, even if they are not determined in their nature to one effect. The notion of causation relevant for the distinction between primary and secondary causation is not reducible to determination, let alone natural determination. Therefore, insofar as causation is not determination God can also act 'in and through' indeterminate processes.

The second objection is that determinism nonetheless imposes a limitation on God, for once he installed necessary causes he cannot act otherwise. God cannot act *specially* 'in and through' determined natural processes (OSDA). On the proposed view, however, natural causation is not causation created and conserved by God; it is causation created, conserved and (instrumentally) applied to act. Hence God acts also specially 'in and

through' determined natural processes, at least insofar as he applies necessary causes (instrumentally) to act.

The theological discussion of divine action proves to be so laden because the topic reveals, to borrow the words of Thomas Schärtl, "what we truly think about the concept of God and the relationship between God and the world."[614] Any statement of the incompatibility between natural and divine causation assumes at some point an independence of creaturely activity from God. The common idea seems to be that God creates and conserves creaturely powers but is not further involved in the created and conserved creaturely causation, and as such, creaturely causation appears to be independent in at least its 'determination'. Therefore, if natural causes determine something, then God, on whom this determination is only dependent in its creation and conservation, is excluded since a further subordination of created causality is denied.

This assumption raises the question of whether the subordination of creaturely causation to divine causation is partial, limited to creation and conservation, the initiation and establishment of natural causation, or rather something that goes all the way down to instantiations of natural causation. This study has argued that secondary causation is 'caused causation'. According to Aquinas' account of primary and secondary causation, creaturely autonomy increases with dependence on God not merely in being ('genuine independence of agency') but also in action. Creatures act by virtue of their power. God creates and conserves in being and applies to act all creaturely powers, also instrumentally, that is to say, in accordance with or beyond the creatures' derivative but inherent powers. The powers created, conserved and applied by God are inherent in creatures, and by virtue of these powers creatures cause and act. Hence creatures act the more, not the less, God

[614] Schärtl (2015): 79.

acts in them. As Simon Tugwell so aptly puts it: "The fact that things exist and act in their own right is the most telling indication that God is existing and acting in them."[615] If this view is maintained, no incompatibility between natural and divine causation is conceivable, since they are not causation of the same kind. Causation is not a univocal concept applied to God and creatures alike.

The relation between God and creatures is, consequently, *sui generis* – a relation according to which creatures are more autonomous in their being and action the more God acts in them. Consider Karl Rahner's axiom that dependence on God and creaturely autonomy "vary in direct and not in inverse proportion."[616] If God is transcendent in the discussed sense then creaturely autonomy and dependence on God will be directly proportional; they will not vary, as in the case of univocal causes, in inverse proportion. The more creatures depend on God, the more they are autonomous.[617] Dependence on God grounds creaturely autonomy, whereby "autonomy […] does not decrease, but increases in the same proportion as dependence on God."[618] In this view, the transcendence of God *is* ultimately his immanence that grounds rather than limits creaturely autonomy.

This non-competitive picture is relatively uncontroversial regarding creaturely *being*, at least among theologians in the DAD generally accepting creation and conservation. The point of contention is whether this argument also applies to creaturely *action*. Although TPI implies a proportional ratio with regard to GDA, it entails a disproportional ratio between creaturely dependence and autonomy with regard to OSDA. Creaturely autonomy can only be established by limiting OSDA. This competitive picture has a detrimental effect

[615] Tugwell (1988): 213.
[616] Rahner (1984): 79.
[617] Rahner (1984): 79.
[618] Rahner (1984): 79.

on our understanding of God's immanence. Unlike analogical concepts of divine causation, univocal and competitive approaches diminish the transcendence of God and, consequently, both divine immanence and creaturely autonomy. In contrasting God's transcendence with his immanence, TPI sets divine immanence and creaturely autonomy against each other thus limiting at once God's and creatures' causality in the world.

To conclude, there are two ways of avoiding competition between divine and natural causation, one presupposing a univocal concept of agency, therefore limiting divine and natural agency to insufficient causation, respectively; the other operating on a notion of transcendent causation, therefore objecting in principle to such a contrastive picture. The non-competitive view is theologically preferable because it does not threaten to limit God's immanence by diminishing God's transcendence, nor creaturely autonomy by setting it against dependence on God, if not in being then certainly in acting. According to this second view, any "perceived clash or interference […] will indicate a problem, not with the two causalities, but with one's conceptualization of them."[619]

In summary, in this chapter I have shown that Aquinas argues contrary to Aristotle that (1) everything, including the *per accidens*, is reducible to God's providence as its *per se* cause. That God's providence is the *per se* cause of every *ens per accidens* does not imply, however, that things are not accidental in the sense of not fully determined in their nature to being or non-being, only that they are not causally unrelated to God the primary cause. (2) If providence is posited, the effect follows necessarily, but not by (absolute) necessity; rather, it follows necessarily in the manner God has ordained it to be, either (absolutely) necessarily or contingently.

[619] Dodds (2012): 155.

The clue to the proposal is the transcendence of the divine intellect and will. If God has knowledge of past, present, and future all at once from eternity and if, moreover, God's knowledge and will are parallel cases, for his intellect and will are ultimately one, then the conundrum of God's willing contingencies has to be given a similar solution: God wills at once the necessity and contingency in nature. He wills the necessary and the contingent alike. Natural contingency is fully subject to divine providence as is natural necessity because, just as God knows future contingents from outside the order of time, namely, as eternally present, so, too, God wills the particular contingent from outside the order of beings, namely, in establishing as transcendent cause the very order of contingency and necessity. Likewise, similar to the way God knows future contingents not through their causes but in their being from outside the order of time, God directs natural contingencies not (as secondary cause) through determining their causes but (as primary cause) by dispositioning and bringing these causes into proximity from outside the order of beings.

The doctrine of transcendence also has important implications for the divine operation. As primary cause of the causality of creatures, God is intimately involved in natural causation. God acts in secondary causes by creating and conserving the intrinsic powers by which agents act. God further works in each and every secondary cause by applying to act and instrumentally directing these powers thus bringing about effects that exceed the power of the proximate cause. As such, God's transcendent primary causation is both universal and particular. In this view, divine transcendence – God's knowing, willing, and causing as an agent outside the order of time and the order of beings – implies his causal immanence.

Chapter 6:
The Directionality of Nature as Consequence of Sapiential-Ordinative Providence

In the previous two chapters I gave a basic outline of Aquinas' account of providence arguing that his model of providence is sapiential-ordinative, and drew out some implications for the status and function of natural contingency. In this chapter I shall highlight that on the proposed view, providence is a teleological concept referring to the doctrine of ends or final causes. According to Aquinas, the notion of ends is indispensable for a proper understanding of human and divine providence.

To clarify the vital importance of teleology, Aquinas explicitly states in the *De Veritate* that if one were to negate final causality, one would consequently negate divine providence: "I reply that […] providence regards the order to an end (*ordinem ad finem*); and so all who deny a final cause ought in consequence to deny providence […]."[620] The reason why Aquinas' concept of providence cannot do without ends or final causes is that providence is the reason of an *end*-directed order, and government the temporal execution of this *end*-directed order. In his providence and through his government God orders all created things teleologically, that is, to their appointed and proper ends.

This chapter explores in particular the teleological dimension of government as the temporal execution of God's providence through secondary causes. The question I set out to answer is an explicitly theological one: how can providential divine ends become governing natural ends? In other words, if sapiential-ordinative providence is an essentially teleological or end-directed conception, how do these ends come about in time and creation, and where do they come from? Hence the task is decidedly not an exercise in natural theology, but consists in arguing in favour of natural teleology. The starting point

[620] *QDV* 5, 2.

of the present enquiry is providence, its end point nature, namely the directionality of governing natural causes resulting from the proposed theological model. The objective is once again to provide a model of divine and natural causation that is both non-competitive and end-directed.

The purpose of this chapter is to argue specifically, through a long detour including general historical considerations as well as specific objections raised within this history of teleology against Aquinas' understanding of teleology, that the ends of the executed providential order are given through providence and with the constitution of creatures; immanent teleology can be embedded in the doctrine of providence. I will defend that a modified version of Aristotelian teleology is available to Aquinas. The very fabrics of creation is then pregnant with and full of directionalities. Final causes, or 'that for the sake of which' creaturely processes are instantiated, are built into the concept of sapiential-ordinative providence.

To this end, section 6.1 retrieves the notion of teleology to clarify what it means to say that Aquinas holds a teleological understanding of nature. In answering the question 'What is natural teleology in Aquinas?' section 6.2 probes into a neglected notion Aquinas uses to spell out natural teleology, namely appetency. Section 6.3 draws out some implications of the proposed model that God directs nature through appetites.

6.1. Teleology Revisited

To identify the kind of teleology this chapter retrieves, a few preliminary words are in order about the concept of teleology in general. The term 'teleology' is notoriously difficult to define, not least because it is used in so many different ways. Today, it is commonly associated with purpose, directionality and even design or other related concepts.

According to its etymological roots, however, the English word 'teleology' denotes a theory of ends: in Greek *teleos logos*. The German philosopher Christian Wolff coined the Latin term *teleologia* in 1728 to refer to the part of natural philosophy that studies final causes.[621] Since its inception, teleology has also been religiously connoted because Wolff himself makes a notable reference to God common in the 18th century: final causes in nature show and are brought about by God's intentions.[622]

The enquiry into final causes in a broader sense goes back at least to Plato and Aristotle. In this wider and more general sense of the notion, not restricted to natural philosophy, teleology concerns the doctrine of final causes denoting 'that for the sake of which a thing is (done)' or comes about.[623] For the present purpose it will prove helpful to take teleology in the wider sense referring to the Aristotelian doctrine of final causality. Something is teleological, therefore, if it has a final cause. Final causality as such, and hence teleology in the wider sense, do not necessarily imply a reference to God.

6.1.a. Why Final Causality Matters

While the topic of teleology in the narrower sense is controversially discussed in the field of science and religion, in particular in connection with questions about design and purpose, final causality is hardly mentioned at all. Even when discussing providence final causes receive surprisingly little attention in the DAD. This notable lack of attention is all the more striking if one considers that final causality matters for the doctrine of providence in both its sapiential-ordinative and actionistic variances.

On Aquinas' sapiential-ordinative model, God orders all creatures to their ends not only

---

[621] Wolff (1732): 38.
[622] Schmid (2011a): 7-8.
[623] *Phys.* II, 3; *Meta.* V, 2.

as efficient but also as final cause, by which Aquinas means that "God himself is the cause of every operation as its end."[624] By this 'end', it should be noted that all goodness participates in God, and all operations seek a good or apparent good. Hence government as the execution of the divine ordering is intelligible only if understood as God's concrete and particular ordering of things to an end. The fact that government refers to a teleological order raises in turn the question of the specific status of the ends in creation. We saw in Chapter 3 that for Aquinas, God works in creaturely causes by giving and upholding in being creaturely powers (founding moments) as well as by applying them (instrumentally) to act (dynamic moments), but I omitted commenting on the fact that God is also the end of all creaturely operation.

Consider, for example, the *locus classicus* of secondary causation in the *Summa Theologiae* where we read that God is not only causally involved in creaturely operations as efficient cause but also final cause: "God does not only give forms to things, but also conserves them in being and applies them to act, *and is the end of all actions*."[625] Although admittedly we do not know the particular ends of God's providence, for his wise and eternal guidance of and care for creatures is beyond our grasp, we can nonetheless enquire into the general nature of the divinely willed ends in God's government. If God has in mind eternally the ends of creatures in his providence, how do these ends come about in time and creation through secondary causes? Are secondary causes themselves directed towards these ends, and if so how? In short, the concept of providence cannot be treated merely in terms of efficient causation; final causation is an indispensable element of both providence and government.

---

[624] *ST* I, 105, 5.
[625] *ST* I, 105, 5 ad3. My emphasis.

Final causes matter, not only for a sapiential-ordinative but also for the actionistic model. A recourse to final causality is essential for theories of divine action. If approached from the perspective of God as a personal agent, the very concept of divine *action* implies final causality. Without some form of intentionality divine action would arguably not count as an action. In any case, the category of SDA is based and ultimately makes sense only on the assumption that God acts for an end, otherwise he could not act for a *particular* end. In fact, the 'intentional distinction' distinguishes between GDA and SDA in terms of divine intentionality. It should be noted in this context that on the 'efficient distinction' SDA by no means excludes intentionality. I highlighted in Chapter 1 that the 'efficient distinction' provides merely a criterion of demarcation, not a definition of SDA – a definition would, as per the common consensus, have to include God's intentionality.[626] In other words, if one does not purge the philosophy of action of final causes, then applying action theory to God will involve final causes at least in form of divine intentions. Hence actionistic providence drawing an understanding of providence from divine and human action requires some form of final causality.

Therefore, if both sapiential-ordinative and actionistic providence include final causality, the pressing question becomes not so much *whether* but *which* form of final causality we affirm in our models of providence. I will discuss the teleology of the actionistic model in more detail in Chapter 8. At this stage, I shall focus on the exposition of natural teleology in the sapiential-ordinative tradition. Before presenting my own proposal, however, I will situate Aquinas within the wider historical context and current discussion about Thomistic teleology.

[626] See section 1.3. and Saunders (2002): 20.

6.1.b. An Overview of the Modern Transformation of Teleology

Historical scholarship nowadays speaks of a transformation of teleology and final causes during the Scientific Revolution. While earlier generations of historians claimed that with the rise of the mechanical philosophy of nature in the early modern period, and the corresponding rejection of Aristotelian hylomorphism, an elimination of final causes in natural philosophy took place, Margaret Osler, among others, has shown, to the contrary, that the understanding of final causation underwent a significant transformation:[627]

> What is at stake here is not the rejection of final causes *per se*, but their reinterpretation within a new concept of nature. With the mechanical reinterpretation of final causes, the idea of individual natures that possess immanent finality was replaced with the idea of nature as a whole which is the product of the divine artificer.[628]

With a new concept of nature, final causes were reinterpreted. Broadly speaking, mechanical philosophy purports that nature is stripped bare of innate tendencies, substantial forms, and hence immanent final causes are eliminated from natural philosophy, and particles of matter are consequently viewed as inert.[629] Thus the Aristotelian idea of individual natures that possess immanent finality is rejected. Nonetheless, teleology was by no means altogether purged from natural philosophy because, as Osler shows in her historical studies, natural philosophers like Pierre Gassendi (1592-1655), Robert Boyle (1627-1691) and Isaac Newton (1642-1727) held that finality was imposed on nature from without. Speaking of an elimination of final causes would therefore be misleading. Rather, in giving final causes a new form and place in God, mechanical philosophy launched in the

[627] Osler (1996); Osler (2001). For a general history of final causes, see Spaemann and Löw (2005).
[628] Osler (1996): 390.
[629] For a more detailed discussion of the main tenets of mechanical philosophy, see Henry (2002): 68-97 and Brooke (2014): 158-205; Pasnau (2011) provides an in-depth study of the underlying metaphysical transformation.

early modern period a transformation of final causes from immanent to externally imposed teleology.[630]

In the years to come the transformed and divinely imposed teleology was in turn subjected to severe criticism. While external teleology flourished during the times of Newton, culminating in William Paley's *Natural Theology* (1802) and similar arguments, the extrinsic understanding of teleology of a more Platonic parlance was eventually seriously threatened by new scientific theories such as Darwinian evolution.[631]

Interestingly enough, with the demise of external and extrinsic forms of teleology in the 19th century immanent teleology began to be discussed again, in particular in the biological sciences. The context of these debates are reductionist attempts to unify the sciences by reducing biology ultimately to (non-teleological) physics.[632] The watershed article, *The Idea of Teleology* (1992), by the eminent biologist Ernst Mayr is evidence of the regained interest in the status of a differentiated notion of teleology in the sciences, in defence of the autonomy of biology.[633] Differentiating cosmic from three scientifically acceptable forms of immanent teleology, Mayr contends:

> The recognition that three seemingly teleological processes, that is, teleonomic processes, teleomatic processes, and the achievement of adaptedness by natural selection, are strictly material phenomena, has deprived teleology of its former mystery and supernatural overtones.[634]

Following the common consensus among philosophers of biology that teleological language is *de facto* widespread in biology, the question became if teleological language

---

[630] For more details on the complex history of this transformation, see Schmid (2011a): 363-84.
[631] For a detailed historical account, see McGrath (2011); for a discussion of ways to retrieve English natural theology, see McGrath (2017). Instead of recalibrating arguments based on extrinsic and imposed teleology, I will in the following pursue an alternative way focusing on immanent teleology.
[632] Mayr (1996). Some authors, including Pinsent (2013) and Oderberg (2008), claim that, contrary to common consensus, even physics and the inorganic world involve teleology.
[633] Mayr (1992). To understand why this question is connected to Aristotelian teleology, see Gotthelf (1976).
[634] Mayr (1992): 134.

can be in principle eliminated entirely from biology, which was unsuccessful until today, or at least reduced to non-teleological language without loss of content; if both endeavours fail teleology appears to be an irreducible feature of nature.[635] Some philosophers of biology have lately pushed for this latter interpretation due to, amongst other things, the teleological structure of biological organisms and functions.[636] Reviewing the literature, Mark Perlman concludes:

> Teleology has certainly made a comeback in philosophical circles in the last thirty years. It went from a suspect or disreputable notion, ready for elimination, to the hottest topic in philosophy of biology […].[637]

A second topic where something akin to Aristotelian teleology is being discussed again are contemporary theories of causality. Within the influential powers and dispositions camp, especially within the so-called neo-Aristotelian movement, immanent forms of teleology have become an acceptable feature of nature again.[638] If causality *per se* is in some sense teleological because natural powers and dispositions tend to manifest themselves in certain ways, then teleology would underlie all the natural sciences. As a commentator puts it,

> what is essential to teleology is an inclination toward an end […, that] something […] 'points to' precisely those outcomes […]. In short, if *A* is by nature an *efficient* cause of *B*, then generating *B* must be the *final* cause of *A*.[639]

The upshot of these and similar debates is that teleology made a tentative return, to some extent even in the natural sciences, but it is clear that grand cosmic as well as purely

---

[635] For an overview of the discussion, see Takacs and Ruse (2013): 26-9; for a critical assessment of Ruse's contribution, see Walsh (2014); for a classification of the different positions taken in the debate, see Feser (2010): 145-9 and, in much more detail, Perlman (2004).
[636] For a discussion of the case for teleology in contemporary biology, see Walsh (2008) and Walsh (2015), in particular pp.186-207.
[637] Perlman (2004): 46.
[638] Mumford (2009) provides a good overview of the recent dispositional ontology. For why these developments suggest teleology, see Oderberg (2017); Feser (2014): 111-6; Feser (2013): 747-9. Upon reviewing the literature Feser concludes, "is it possible within the context of contemporary philosophy and science to revive the Aristotelian notion of immanent finality […]? Not only is such a revival possible, it is actual." (Feser (2013): 747)
[639] Feser (2013): 714-5.

extrinsic teleological claims of the sort associated with Paley and other, more recent proponents of externally imposed teleology are scientifically highly problematic, at least if inferred directly from nature. Unlike these forms of teleology, however, immanent teleology gained traction with the sciences again.

6.1.c. Aquinas' Concept of Teleology and the Inconsistency Objection

In the Aristotelian tradition teleological phenomena imply both final and efficient causes, where teleology might refer to two different although related things: (1) to an *end*, goal, or purpose, or (2) to the *directionality*, tendency, or finality towards an end, goal or purpose. The end is the final cause; the end-directionality, the directionality towards that end, however, is a combination of efficient and final causation. The (1) end might in turn be (1-a) intrinsic or (1-b) extrinsic to the thing; and the (2) end-directionality might be (2-a) immanent to or (2-b) externally imposed on the thing.[640] We therefore need to distinguish *immanent* from *externally imposed* teleology with regard to the end-directedness, and *intrinsic* from *extrinsic* teleology with regard to the end.[641]

Moreover, there are two distinct questions one can ask about teleology. First, one can generally ask about *whether* something is teleological: whether a thing exhibits an (2-a) immanent or (2-b) externally imposed directionality, and whether the end is (1-a) intrinsic or (1-b) extrinsic. Alternatively, one can also enquire about the *origin* and *source* of an affirmed directionality, and the *benefactor* of a given end. As regards the latter question we need to distinguish cases where (1-i) the end is beneficial for the thing itself from cases where (1-ii) the end is not beneficial for the thing but rather for something else. The former might be called *internal* teleology, the latter *external* teleology. The source or origin of the

[640] The latter distinction is sometimes also referred to as intrinsic and extrinsic teleology.
[641] Feser (2014): 97-8.

directionality, on the other hand, might be (2-i) purely intrinsic, (2-ii) purely extrinsic, or (2-iii) both intrinsic and extrinsic. Following Edward Feser, we can accordingly classify the standard positions affirming end-directionality as follows (excluded are eliminativist and reductionist accounts): (A) *Aristotelian teleology* states that the source of directionality is (2-i) purely intrinsic; (B) *Platonic teleology* states that the source of directionality is (2-ii) purely extrinsic; (C) *Thomistic teleology* states that (2-iii) the proximate source is intrinsic while the ultimate source is extrinsic.[642] These distinctions can be schematically summarised as follows:

Classification of Teleology	
(1) End	(2) End-Directionality
(1-a) intrinsic (1-b) extrinsic	(2-a) immanent (2-b) externally imposed
Benefactor of Teleology	Source of Teleology
(1-i) internal (1-ii) external	(2-i) purely intrinsic ((A) Aristotelian teleology) (2-ii) purely extrinsic ((B) Platonic teleology) (2-iii) intrinsic and extrinsic ((C) Thomistic teleology)

In a detailed study of the history of final causes philosophically reconstructing Aquinas' account of natural teleology in terms of a dispositional causal theory, Stephan Schmid poses a substantial objection against the conceivability of the concept of (C) Thomistic teleology as a form of (2-a) immanent teleology having (2-iii) a proximately intrinsic *and*

[642] Feser (2014): 98-9. See also Feser (2010): 145-9; Feser (2013): 723-5.

ultimately extrinsic origin of its end-directionality.[643] The main issue is that in integrating his philosophical and broadly-speaking Aristotelian model of natural teleology into his theological doctrine of providence, Aquinas introduces a controversial condition, the so-called cognition condition, which reduces the fact that powers and dispositions are directed towards certain manifestations – what Aquinas expresses with the words *in/tendere* and might today be called dispositional intentionality – ultimately to cognitive intentionality.[644] The cognition condition (CC) states:

> (CC) For something to happen for an end some knowledge of the end is required: *quod fiat aliquid propter finem, requiritur cognitio finis aliqualis*.[645]

From this cognition condition Aquinas infers that since not all creatures have knowledge of the end to which they are ordered, God as their agent cause knowing the end is responsible for directing them through what he calls an *impressio Dei*: God gives them their natures and thus the specific directionality they exhibit.[646] The context of the statement is Aquinas' discussion of government. Hence God's government would *prima facie* seem to consist in the fact that through directing their particular natures God directs Nature.[647]

---

[643] Schmid (2011a): 91-101. For a shortened English version, see Schmid (2011b). Reconstructing Aquinas in terms of powers and dispositions is by no means an uncommon move in present-day scholarship. For a detailed discussion of powers in Aquinas and modern dispositional ontology, see Feser (2014): 45-79 and 101-6.

[644] Schmid (2011a): 92. In explicating his thesis that "every agent acts for an end", Aquinas notably states both that "[e]very [..] agent tends (*tendit*) to some determinate effect, which is called its end," and that "every agent in acting intends (*intendit*) some end" (*SCG* III, 2). Schmid (2011a): 35-105, provides a detailed analysis suggesting to read these and similar statements as implying a dispositional (as opposed to cognitive) intentionality. I will focus more on the aspect of *tendere* rather than *intendere* and prefer to speak of tendencies, for unless one is willing to accept something like physical intentionality (Molnar), natural intentionality (Heil) and the like, the term 'intentionality', at least in the modern sense, is misleading in this context (Feser (2014): 111-6).

[645] *ST* I-II, 6, 1.

[646] *ST* I, 103, 1 ad3.

[647] Schmid (2001a): 92-4.

Schmid contends, however, that by introducing the cognition condition Aquinas has in fact eliminated immanent natural teleology.[648] The basic claim is that *God* cannot *immanently* direct things to their ends. Schmid argues for this proposition in terms of a dilemma:[649]

(1) Either something has immanent ends or not.
(2) If something *has* immanent ends, then the ends are according to its nature.
(3) If the ends are according to its nature, then God cannot direct to these ends.
(4) If something *has no* immanent ends, then God can direct to ends, but only derivatively.
(5) Therefore, in neither case can God immanently direct things to ends.

To analyse this dilemma we first have to turn to Schmid's distinction between immanent and derivative teleology. Note that despite talking about (1) ends Schmid is not concerned with the question of who benefits from the ends ('what for') and therefore the effective range or scope of the ends – what he calls intrinsic and extrinsic teleology: intrinsic teleology meaning that (1-i) the directed thing itself benefits from the end, extrinsic teleology that (1-ii) the end is external and something else benefits from it. Rather, the distinction concerns the origin ('where from') of the (2) end-directedness. Immanent teleology means that the origin of the end-directedness lies (2-i) within the directed thing itself, whereas derivate teleology means that the origin of the end-directedness lies (2-ii) outside the directed thing.[650] The distinction between immanent and derivative teleology is slightly ambiguous, however, because it leaves open the question of whether a combination of (2-i) and (2-ii) is in principle possible.[651]

---

[648] Schmid (2011a): 366.
[649] Schmid (2011a): 101.
[650] Schmid (2011a): 11.
[651] Schmid states, on the one hand, that "[e]ither the purposefulness of a purpose can be reduced to further purposes, or not" (Schmid (2011a): 11), suggesting that the distinction allows only for (2-i) *purely* intrinsic or (2-ii) *purely* extrinsic origins, and then the thesis that God cannot *immanently* direct things to ends would seem to be reached on purely definitional grounds; on the other hand, he also introduces the distinction on

Now, if (5) is taken to imply that, given (CC), God can in *no* case immanently direct things to ends, the distinction between immanent and derivative teleology – implicit in (1) and explicit in (4) – will have to be exhaustive in the sense that, given that something is teleological, it can be either derivatively or immanently teleological, without immanent and derivative teleology necessarily being mutually exclusive. In fact, if the distinction were to exclude not only a third option but also the possibility of combining the two, then there would be no need to set up a dilemma in the first place, for the conclusion that God cannot immanently direct external agents would follow from the mutual exclusive definition of immanent and derivative teleology.

On this basis, then, Schmid blocks a government of God through immanent teleology with premises (2) and (3) restricting divine government to derivative teleology discussed in (4). Schmid writes:

> [His] theistic underpinning of natural teleology […] deprives Aquinas of the possibility of accounting for [immanent] teleology in nature. If it is indeed God who is responsible for the finality of natural things, they do have their purposes only in a derivative sense […].[652]

We therefore need to take a closer look at premises (2) and (3). Premise (2) is an expression of the Aristotelian thesis that the origin of immanent teleology, an end-directedness that lies within the directed thing itself, is the nature of the thing in question. Immanent teleology, if it exists, uncontroversially results from the nature of things.

The controversial point is proposition (3) – provided we read (1) as leaving open the possibility of (2-iii) a combination of derivative and immanent teleology, otherwise the conclusion would not depend on (3) at all. The premise suggests that if and insofar as

---

the basis of the question whether or not the ends are "grounded (*begründet*) in the explained phenomena itself" (Schmid (2011a): 16), and this formulation seems to leave open in principle the option of (2-iii) intrinsic and extrinsic teleology, against which Schmid then can pose the dilemma presently discussed.

[652] Schmid (2011b): 38.

something happens according to its nature it cannot be directed to an end by God. Here we encounter yet another manifestation of the competitive picture discussed in detail in PART ONE: the idea that divine and natural causation are somewhat incompatible, although now related to final causes. Schmid claims:

> If natural substances do have natural […] inclinations towards some ends […], there is no need for God to direct them towards these ends, for they intrinsically are [directed]; and if they do not, even God cannot help them.[653]

Schmid's dichotomy is premised upon the assumption that a divine directing of creatures implies that God changes or modifies a thing's nature or essence. These natures Schmid takes to be logically necessary and therefore not at God's disposal.[654] From these premises he concludes that God cannot direct things by immanent teleology:

> If these ends belong to things according to their nature, then speaking of God directing them (*darauf festlegt*) is downright nonsense. For, these things would not be the things they are, were they not directed to the ends to which they are directed.[655]

To meet the inconsistency objection we have to show that this conclusion does not follow. What needs to be examined in reply to Schmid's charge against (C) Thomistic teleology is in what sense natures are directed towards their ends, and how God installs and directs these ends in Aquinas' theory of natural teleology. To that end, I now turn to Aquinas.

6.2. The Theory of Appetency: A Fresh Assessment

My argument in defence of immanent natural teleology consists in showing that in Aquinas' sapiential-ordinative model of providence appetites – *appetitus* being a technical

[653] Schmid (2011b): 35.
[654] Schmid (2011b): 33-5.
[655] Schmid (2011a): 368.

scholastic term which I will define throughout this section – play an essential role in the execution of providence through secondary causes. The theory of appetency illuminates the government of God through natural teleology. For if

(i) government is the ordering of creatures to an end (*finis*), and
(ii) this end is furthermore a good (*bonum*), and
(iii) good is that which all strive for (*appetere*),

then appetites – in the technical sense which refers to the power, capacity or faculty directing this striving for the good – help to explain the specific directedness of creatures to the divinely ordained ends.

The close link between appetites and government may be seen from Aquinas' explications of government and the good. Aquinas states – in accordance with premises (i) and (ii) – that government is the ordering of creatures to an end that is a good: (i) "government is nothing other than the direction of the things governed to an end (*ad finem*), [ii] which is some good (*bonum*)."[656] Good, however, he explains in terms of appetency, namely that which all strive for: (iii) "good is what all desire (*appetunt*)."[657] Since creatures are directed towards their ends or goods in virtue of their appetite, the notion of appetency explains, or at least goes towards explaining, the end-directedness of natural processes.

Hence the theory of appetency in Aquinas provides a link between government and the directionality of creatures. Aquinas explains that "because [1] all things proceed from the divine will, [3] all things in their own way are inclined to the good through the appetite (*per appetitum*), although in different modes."[658] Implicit in the statement is the belief that in willing, God wills himself as an end, but others as ordered to himself as an end. To make

[656] *ST* I, 103, 3.
[657] For instance *ST* I, 5, 1.
[658] *ST* I, 59, 1; see *QDV* 22, 5.

the argument valid we need to add the implicit premise that [2] what proceeds from the divine will is ordered to good.[659] The question then becomes *how* creatures are inclined to good, and the answer is through appetites. In other words, Aquinas links natural teleology with appetency. The passage then states that (3) all creatures are ordered to good because (1) by the creative act of God all creatures proceed from the divine will, but (2) whatever proceeds from the divine will is ordered to good. Consider the general statement as a comment about divine providence; a statement Aquinas then specifies in saying that in his government God orders all creatures to the good through their appetites.

6.2.a. Appetite: A 'Dangerous' Notion

With this brief outline in view, we are now in a position to begin the exposition of the theory of appetency. When speaking of a theory of natural appetency in Aquinas, I should start by mentioning that Aquinas does not provide a ready-made doctrine of natural appetites. William O'Connor rightly remarks: "We shall search in vain throughout all his works for a question or even a single article entitled, *De appetitu* (or *desiderio*) *naturali*."[660] Rather, natural appetites appear throughout the *corpus* in various places and functions. A theory of natural appetency can therefore at best be reconstructed by going through and analysing the often scattered and brief remarks, drawing them together into a coherent and consistent view. In his study, *The Theory of Natural Appetency in the Philosophy of St. Thomas* (1944), Gustaf Gustafson notes:

> In reading the voluminous works of St. Thomas, one interested in natural appetency will be struck by two considerations: (1) the incidental nature of St. Thomas' treatment of the question; (2) the fundamental character of natural appetency and its wide range of applicability in the Thomistic synthesis.[661]

[659] *ST* I, 19, 2; *QDV* 22, 1.
[660] O'Connor (1947): 97.
[661] Gustafson (1944): 29.

The present aim of probing into the theory of natural appetency is to understand how God can guide creatures by implementing natural ends into nature; how, according to Aquinas, God impresses and grounds ends in nature through form and matter.

The term 'natural appetency' (*appetitus naturalis*) is in a sense "one of the most misleading expressions in scholastic philosophy."[662] A main reason for confusion is that the connotation of the modern English word 'appetite' is essentially psychological; a reader might therefore be misguided to the extent that the English notion of appetency does not signify what the Latin concept *appetitus* is supposed to capture, at least in the scholastic technical sense of the word.[663] For this reason scholars keep pointing out that for Aquinas appetite (*appetitus*) is a *metaphysical*, not a psychological, notion.[664] If read as a psychological concept, the theory of natural appetency would lead to bizarre forms of animism and anthropomorphism. Hence Jorge Laporta warns that the term 'appetite', and in particular 'natural appetite', is 'dangerous'.[665] The terminological issue needs to be flagged at the outset so as not to prevent giving the underlying concept a careful theological consideration; afterwards the 'dangerous' notion might be substituted by a more appropriate term.

Aquinas introduces the concept of an appetite (*appetitus*) in the technical sense as nothing but an inclination (*inclinatio*);[666] in English one might alternatively want to speak of a tendency or a directionality.[667] Aquinas takes the Latin *appetere* to derive from *aliquid*

---

[662] Gustafson (1944): 68.
[663] For a detailed terminological analysis of inclination-terms in scholasticism, see Cunningham (2013).
[664] Gustafson (1944): 68; Laporta (1965): 23-4; Laporta (1973): 40; Cunningham (2013): 329.
[665] Laporta (1965): 23; Laporta (1973): 40.
[666] *ST* I-II, 8, 1; *De Malo* 16, 2.
[667] That the fundamental meaning of appetite is an inclination, tendency, or directionality can be readily seen from various nothing-other-than identifications of the term throughout the *corpus*: *Appetere autem nihil aliud est quam aliquid petere quasi tendere in aliquid ad ipsum ordinatum* (*QDV* 22, 1); *appetitus nihil aliud esse videtur quam quaedam directio in finem* (*QDV* 22, 3 arg.2); *appetitus nihil aliud est quam inclinatio appetentis in aliquid* (*ST* I-II, 8, 1); *appetitus nihil est aliud quam inclinatio quaedam in appetibile* (*De malo* 16, 2).

petere: to seek or beseech something, which he then translates and interprets 'as if tending to something to which it is ordered'.[668] More specifically, Aquinas refers to the appetite as an inclination towards an end – an end he further specifies as something suitable (*conveniens*) and desirable (*appetibile*). Every appetite is an appetite for good; the end to which an appetite inclines is always a good.[669] Aquinas indeed closely ties the appetite to the good: the appetite is an appetite for good because good is what all have an appetite for.[670] The appetite is essentially an inclination towards something needed.[671] Since an appetite is an inclination towards a good, the appetite signifies an imperfection to the extent that the end is not yet attained. The proper object of an appetite is something which the being having the appetite does not possess; only in a secondary sense can 'appetite' denote the possession of a good.[672]

Fundamentally, Aquinas knows of two kinds of appetites. Appetites are related to form (*forma*), one of the two hylomorphic principles of being, in two ways: there is (1) an appetite *for* form and (2) an appetite *according to* form. In the case of the 'appetite for form', the form is the object of the appetite, whereas the 'appetite according to form' is an appetite that follows a form.[673] I will call the former *material natural inclinations* and the latter *formal natural inclinations* because matter (*materia*), the other hylomorphic principle of being, is the subject of the 'appetite for form', whereas the 'appetite according to form' follows the various kinds of forms.

More precisely, each corporeal being has, as a compound of form and matter, formal natural inclinations in virtue of its form and material natural inclinations in virtue of its

---

[668] *QDV* 22, 1.
[669] *ST* I-II, 8, 1; *De Malo* 16, 2.
[670] *SCG* II, 47.
[671] *In* I *Phys.* 15.
[672] *QDV* 22, 2 ad4; *ST* II-II, 163, 2; *SCG* I, 72.
[673] Gustafson (1944): 69-70.

matter. It is important to keep in mind, however, that it is always the *agent* as a whole rather than any of its parts that acts. The agent acts, and it acts in virtue of its power, the principle of its operation, in the case of creatures in virtue of its active and passive potencies, and in the case of corporeal creatures in virtue of its form and matter.[674] In short, while it will prove helpful to analyse the nature of corporeal agents in terms of form and matter, it is important to keep in mind that it is the agent that acts and exhibits formal and material natural inclinations.

6.2.b. Formal Natural Inclinations

To attain an end naturally, a prerequisite of natural teleology, creatures require three things, says Aquinas: a *nature* proportionate to the end; an *inclination* to the end consequent upon the nature; and finally an *operation* or movement toward the end.[675]

First, if we want to analyse the operation of creaturely agents we have to enquire into their nature:

> A nature, for St. Thomas as for Aristotle, is an intrinsic principle of change, but also by the very fact of its existence it has a definite orientation to its proper good. This is its natural appetite. Things then are both dynamic and directed.[676]

The quotation brings out the dynamic nature of Aristotelian natures and the intrinsic character of natural inclinations. Indeed, a natural inclination is, to borrow the words of Sean Cunningham, "the nature considered in relation to its end."[677]

Second, inclinations are grounded in and follow upon forms. The basic axiom illuminating formal natural inclinations asserts that upon each form follows *some* inclination. On this basis, Aquinas then distinguishes three kinds of forms and introduces,

---

[674] *ST* I, 77, 1.
[675] *QDV* 27, 2.
[676] Gustafson (1944): vii.
[677] Cunningham (2013): 390.

consequently, three types of inclinations. On the one hand, there are (i) natural forms upon which purely natural inclinations follow. On the other hand, there are apprehended forms upon which, if apprehended (ii) by the senses, a sensitive inclination follows, and if apprehended (iii) by the intellect, an intellectual inclination follows.[678] The first inclination Aquinas calls (1) natural appetite (*appetitus naturalis*), the second (2) sensitive appetite (*appetitus sensitivus/sensibilis/animalis*) and the third goes by the name of (3) intellectual or rational appetite or, more commonly, will (*appetitus rationalis/intellectualis/ intellectivus* or *voluntas*).[679]

Third, natural operations follow and are specified by this tripartite of inclinations. As analysed by Aquinas, they have the following structure: *forma (natura)* – *inclinatio* – *operatio*. From each specific form follows a specific inclination and from each inclination a particular operation or movement. The various appetites, or formal natural inclinations, are specific forms of the inclination linking form and operation.[680] Michael Sherwin observes that we therefore have a 'dual principle' of operation. Agents act through form and inclination.[681] Indeed, form is also called first act and operation second act because form is the principle of operation;[682] yet form is also the principle of inclination.[683] These inclinations, or appetites, are the cause of motion insofar as they move the powers by which

---

[678] *ST* I, 80, 1-2; *ST* I-II, 8, 1.
[679] The following list includes passages where Aquinas explicitly mentions all three appetites: *In* III *Sent.* 27, 1, 2; *QDV* 22, 4; *QDV* 23, 1; *QDV* 25, 1; *SCG* I, 72; *SCG* II, 47; *SCG* III, 26; *SCG* IV, 19; *SCG* IV, 36; *ST* I, 19, 1; *ST* I, 19, 9; *ST* I, 59, 1; *ST* I, 60, 1; *ST* I, 87, 4; *ST* I-II, 1, 2 ad3; *ST* I-II, 8, 1; *ST* I-II, 17, 8; *ST* I-II, 26, 1; *ST* I-II, 29, 1; *ST* I-II, 35, 1; *ST* I-II, 40, 3; *ST* II-II, 29, 2 ad1; *Quodl.* IV, 11, 1; *De Virt.* 1, 6; *De Malo* 6; *De Malo* 16, 2; *In* II *De Anima* 5. Note that despite the difference between *ratio* and *intellectus* rational and intellectual appetite are the same because both know the universal, although in different modes, namely the former knows discursively, the latter by simple intuition (*ST* I, 59, 1 ad1).
[680] *De Malo* 6; *In* II *De Anima* 5; *QDV* 27, 2; *Super* II *Cor*. 5, 2; *Super Gal*. 5, 6; *De Virt.* 4, 3; *Quodl.* IV, 11, 1.
[681] Sherwin (2005): 39.
[682] *QDP* 1, 1; *ST* I, 105, 5; *SCG* II, 47.
[683] *SCG* IV, 19.

the agent acts:[684] "every operation of each thing is caused from appetite."[685] The appetite moves and directs all powers in the manner of an efficient cause, for it is a disposition of the moving agent.[686]

With the basic structure of formal natural inclinations in view, we are now in a position to explore all three kinds of 'appetites according to form'.

6.2.b.i. Natural Appetite

As all formal natural inclinations, the natural appetite proceeds from an intrinsic principle, to wit, a form, otherwise it would not be natural.[687] The distinctive feature of natural appetites is that they result from (i) a *natural* form.[688] A natural form is a form individuated by matter; it is the form *of* a corporeal being.[689] That is to say, natural forms exist in the things actualising their substantial being rather than in the senses or the intellect as apprehended forms. As an inclination resulting from a natural form only, the natural appetite is devoid of apprehension and knowledge. Hence the inclination is determined to one end (*ad unum*).[690] In other words, the good towards which a natural appetite tends is fixed and steady; it is a necessary inclination.[691]

Thus Aquinas defines the natural appetite (*appetitus naturalis*) as a natural inclination (*inclinatio naturalis*), or alternatively as an order (*ordo*) or ordination (*ordinatio*), towards a suitable end in accordance with the thing's nature.[692]

---

[684] *De Malo* 6; *In* III *De Anima* 16.
[685] *In Div. Nom.* 4, 9.
[686] *QDV* 22, 12.
[687] *ST* I-II, 6, 4; *De Virt.* 2, 1.
[688] *ST* I, 81, 2; *ST* I, 87, 4.
[689] *De Malo* 6.
[690] *ST* I, 80, 1; *ST* I-II, 8, 1.
[691] *QDV* 22, 6.
[692] The following list of nothing-other-than identifications across the *corpus* illustrates Aquinas' use of the term 'natural appetite': *appetitu naturali, qui nihil est aliud quam naturalis inclinatio* (*Super Io.* 3, 2); *naturalis appetitus absque cognitio, quod nihil aliud importat quam inclinationem naturalem* (*In Div. Nom.* 4, 9); *appetitus naturalis nihil est aliud quam inclination naturae ad aliquid* (*De Malo* 3, 3); *appetitum*

To conclude, natural appetency is a natural inclination lacking apprehension of its end; it is a non-intentional directionality. For all inanimate beings have, unlike rational creatures, neither cognition nor, unlike non-rational animals, some apprehension of the end to which they exhibit tendencies, but seek, as it were, their ends through their natural appetite.

6.2.b.ii. Sensitive Appetite

The sensitive appetite takes a middle position between the natural and the rational appetite. It differs from the natural appetite in that both sensitive and rational appetite require some form of apprehension. The latter two result from an apprehended form, not merely a natural form. The specific form of apprehension in turn differentiates sensitive and rational appetite. The sensitive appetite proceeds from (ii) a form apprehended by the senses, whereas the rational appetite follows from (iii) a form apprehended by the intellect.[693]

While appetite is a common feature of all creatures, the sensitive appetite is specific to animals having in themselves not only an appetite but also the apprehended good moving the appetite. Hence, while the natural appetite involves an intrinsic principle of inclination and motion, the sensitive and especially the rational appetite are in a sense self-movers – they have a 'soul' (*psyche*) in the Aristotelian sense of the word. The specific appetites of animate and rational beings transform them stepwise to move and direct themselves; they

naturalem, qui nihil aliud est quam inclinatio rei in finem suum naturalem qui est ex directione instituentis naturam (*In* III *Sent.* 27, 1, 2); *nihil est igitur aliud appetitus naturalis quam ordinatio aliquorum secundum propriam naturam in suum finem* (*In* I *Phys.* 15); *nihil enim est aliud appetitus naturalis quam quaedam inclinatio rei, et ordo ad aliquam rem sibi convenientem* (*QDV* 25, 1). For a list of simple identifications, or is-(called)-statements, and further occurrences, see Cunningham (2013): 323, n.12; Laporta (1973): 41, n.9.

[693] *QDV* 15, 3; *De Malo* 16, 2. At times Aquinas also speaks of sensitive and intellective knowledge (*SCG* III, 26).

not only have inclinations, but their respective appetite also enables them to incline themselves actively.[694]

Unlike the natural appetite, the sensitive appetite is not inclined to this object insofar as it is this object, but having apprehension of the end tends to this object insofar as it is apprehended as good. By apprehending the end by the senses the animal distinguishes appetible from non-appetible goods, therefore not tending by necessity to its natural object like the natural appetite. Unlike the rational appetite, however, the sensitive appetite does not tend to the very reason of the appetibility of an end, that is, goodness itself. The latter requires intellectual apprehension and therefore a rational appetite. Hence the sensitive appetite is not determined to one particular end, but once an object is apprehended as appetible, the non-rational animal will seek it. Only the rational appetite being inclined to goodness can incline itself to this or that particular end.[695]

6.2.b.iii. Rational Appetite (Will)

The will is the only appetite that has dominion over its inclinations. The rational appetite is neither merely an inclination like the natural appetite, nor an externally determined mover like the sensitive appetite, but has in addition to being an inclination and mover, power over its inclination.[696]

The natural appetite as inclination following a natural form is determined to one (*ad unum*). The sensitive appetite as inclination following a sensitively apprehended form is – due to its individual nature – also determined to one (*ad unum*), but only upon apprehension: animals perceiving by their senses different forms can behave differently.

---

[694] *QDV* 22, 3-5; for the powers of the soul, see *ST* I, 78, 1.
[695] *QDV* 25, 1.
[696] *QDV* 22, 4.

Yet, once the object is perceived as good, the animal is not free to choose but determined to the apprehended good.[697]

The rational appetite, on the contrary, as an inclination following an intellectually apprehended form, remains – due to its universal nature – indeterminate to many (*ad multa*).[698] The will is indeterminate with respect to: (i) its object, for it can will this or that; (ii) its act, for it can will or not; and (iii) its order to the end, for it can will good or apparent good.[699] Yet, even the will has a necessary inclination to good as its natural end. The natural appetite of the will is directed to happiness. Aquinas calls the fact that as an appetite the will cannot will anything without being inclined to it the 'necessity of natural inclination'.[700] Hence only in its natural orientation to the good is the will necessitated, but otherwise undetermined.[701]

Aquinas variously parallels and demarcates the rational and natural appetite by contrasting the analogous inclinations consequent upon intellectual and natural form.[702] The internal relation between these types of appetites is hierarchical and inclusive rather than exclusive. The highest appetite integrates and shapes the lower ones without absorbing them.[703]

---

[697] *De Malo* 6.
[698] *De Malo* 6.
[699] *QDV* 22, 6.
[700] *QDV* 22, 5.
[701] *QDV* 25, 1.
[702] The following list includes (nothing-other-than) identifications in evidence of the analogical nature of appetites: *actus voluntatis nihil aliud est quam inclinatio quaedam consequens formam intellectam, sicut appetitus naturalis est inclinatio consequens formam naturalem* (*ST* I, 87, 4); *actus voluntatis nihil est aliud quam inclinatio quaedam procedens ab interiori principio cognoscente, sicut appetitus naturalis est quaedam inclinatio ab interiori principio et sine cognitione* (*ST* I-II, 6, 4); *actus voluntatis nihil est aliud quam inclinatio quaedam voluntatis in volitum, sicut et appetitus naturalis nihil est aliud quam inclinatio naturae ad aliquid* (*De Malo* 3, 3); *sicut inclinatio naturalis in rebus naturalibus appetitus naturalis nominatur, ita in rationalibus inclinatio apprehensionem intellectus sequens, actus voluntatis est* (*De Virt.* 2, 1).
[703] *QDV* 22, 4-5; see for instance *SCG* IV, 36.

Having briefly reviewed each appetite, we can now see that all three kinds of appetites share an inclination in accordance with their nature, that is, their specific form. About the inclinations following upon a thing's form, Aquinas writes:

> The inclination of each thing, however, is in the thing itself according to the mode of it. Hence the natural inclination is in the natural thing naturally; and the inclination which is the sensitive appetite is in the sentient thing sensitively; and likewise the intellectual inclination, which is the act of the will, is in the intellective thing intellectually […].[704]

In short, since the nature of ontologically different beings, such as inanimate objects ('natural appetite'), plants and animals ('sensitive appetite'), and intellectual substances ('rational appetite'), differs, so does their appetite.

In conclusion, appetites are inclinations. Their differences result from the form or lack of apprehension of the end to which they tend. A natural appetite is an inclination following upon (i) a natural form; the inclination results from a substantial form, and lacking apprehension is determined to one end. A sensitive appetite is an inclination due to (ii) a form apprehended by the senses. Only creatures with senses exhibit these inclinations determined upon apprehending a good. A rational appetite, or the will, is an inclination following upon (iii) a form apprehended by the intellect. The will, presupposing a being with intellect, is the only appetite that has dominion over its inclinations.

6.2.c. Material Natural Inclinations

The term 'material natural inclination' denotes an appetite for form. More specifically, material natural inclinations result from matter's appetite for form, for creatures composed of form and matter have an appetite for form in virtue of their matter. According to Aquinas, matter is found both under form and under privation. Matter insofar as it is

[704] *ST* I, 87, 4.

informed constitutes, together with form, formal natural inclinations; matter insofar as it has a privation, however, exhibits an appetite for form. In both cases matter provides a potency for actuality, but in different respects. While in the case of formal natural inclinations matter provides the potency for being actualised by form, matter's appetite for form is itself an inclination. Material natural inclination is an expression that matter strives for actualisation, that is, desires to be actualised through form.

6.2.c.i. Matter's Appetite for Form

In commenting on Aristotle, Aquinas defends the view that it is the nature of matter to seek and desire form. He writes:

> Since form is something good and appetible, matter, which is different from privation and form, naturally (*apta nata*) seeks and desires (*appetere et desiderare*) it according to its nature.[705]

Avicenna protests that this statement is counterintuitive, for matter does not possess any form or power to incline it towards anything. Hence speaking of matter seeking form appears at best figurative speech. In reply, Aquinas explicitly defends an 'appetite for form' (*appetitus formae*) in a non-figurative way. The reason for an appetite absent of form is that matter, as a principle of being, plays a decisive role in actualising composite beings. The potency of matter is needed to explain change, for without a corresponding passive potency an active potency could not bring about an end. There are then, says Aquinas, two aspects of every ordering of corporeal beings to an end to be taken into consideration: form and matter. Both contribute in a distinct way to the directing of bodily creatures to their ends.[706] Aquinas states:

---

[705] *In* I *Phys.* 15.
[706] *In* I *Phys.* 15.

> Not only, however, is some being in actuality ordered to its end by an active power, but also by the matter according to which it is in potency; for form is the end of matter.[707]

Matter's appetite for form is then an expression of the order of matter to form. Indeed, Aquinas makes clear that matter's appetite for form means nothing other than that matter is ordered to form as potentiality to actuality: form is the end of matter inasmuch as potency is ordered to actuality.[708]

The ordering of matter to form Aquinas calls an appetite for form to express the fact that potency is ordered to and hence seeks, as it were, actuality.[709] This dovetails well with Aquinas' general view that appetites are appetites for actuality and perfection. Perfection consists in the transition from potentiality to actuality. Matter's appetite for form is an appetite for actuality. As long as a creature is to some extent in potency, it seeks (*appetere*) actuality and desires (*desiderare*) a more perfect actualisation.[710] Matter being in potency to form therefore seeks (*appetere*) form as the imperfect seeks its perfection.[711]

6.2.c.ii. How Potency is Ordered to Actuality

Aquinas' teaching on the appetite of matter for form is a consequence of his metaphysical thesis that potency is ordered to actuality. We have seen that matter's appetite for form is part of the ordering of potentiality to actuality; it expresses the ordering of matter as potency to form as actuality. Matter seeks form because form is the end of matter.

In a famous passage in the *Summa contra Gentiles* (*SCG* III, 22) Aquinas elaborates how potency is ordered to actuality. Insofar as each being desires its own perfection and actualisation, each being in potency tends towards actuality. Matter seeks (*appetere*) form

---

[707] *In* I *Phys.* 15.
[708] *In* I *Phys.* 15.
[709] *In* I *Phys.* 15.
[710] *In* II *De Anima* 7.
[711] *In* I *Meta.* 1; *SCG* II, 83; *SCG* III, 22; *QDV* 21, 2.

insofar as it is in potency to it. The gradation is as follows. Prime matter is in potency to elementary forms. Elements are in potency to mixed forms. Mixed bodies are in potency to vegetative souls. Plants are in potency to animal souls. Animals are in potency to intellectual souls. Human beings are, according to Aquinas' ontology, the ultimate end of matter and generation. Therefore, prime matter is in potency and ordered to be informed eventually by a human soul.[712]

The point of interest here is not so much the particular scheme itself but rather the way in which potency is ordered to actuality. The underlying claim is that God orders all created reality to himself as an end.[713] This ordering to actuality includes not only every being in virtue of its form, but also in a sense, matter as the principle of being.[714] If potency is ordered to actuality, then to the extent that matter is potency and form actuality, matter will be ordered to form. The basic structure of the argument is as follows:

(1) Potentiality is ordered to actuality.
(2) Matter is potentiality.
(3) Form is actuality.
(4) Therefore, matter is ordered to form.

For Aquinas actuality is the perfection of potentiality (*actus est perfectio potentiae*). Something is in act, however, only insofar as it has form. And since good is to seek one's perfection, form and actuality are *appetibile*, that is, what beings strive for.[715] Aquinas explains:

> Form is something divine and best (*optimum*) and desirable (*appetibile*). It is something divine because every form is some participation in the likeness of the divine being, which is pure act: for something is in actuality insofar as it has form. It is best because actuality is the perfection of potentiality and its good: and as a

[712] *SCG* III, 22.
[713] *SCG* III, 17.
[714] *SCG* III, 22.
[715] *In* I *Phys.* 15.

> consequence it follows that it is desirable (*appetibile*) because something seeks (*appetit*) its perfection.[716]

In this passage Aquinas explains why matter is ordered to form: (1) through form creatures participate in the divine pure act because they are actual by virtue of their form; (2) matter is ordered to actuality because actuality is the end and perfection of potentiality; and from this it follows (3) that form by which things are actualised is something desirable because everything, including matter, seeks its perfection. Hence matter as potency is ordered to form as actuality as its perfection.

Three corollaries follow. First, matter has an appetite for form insofar as it has privation.[717] Privation is the negation, absence or removal of form. As such, privation is not identical with, but rather a feature of, matter: matter is not privation, but has privation; for being under one form it is in privation to another. [718] Matter seeking form can neither mean that it strives for the current form which it already possesses, for an appetite desires what is not possessed; nor for its privation, for then the being would seek its own corruption. Rather, matter seeks form to the extent that it is, and as informed matter remains, in potency to form. The term 'appetite for form' then implies that matter under this particular form is still in potency to other forms.[719] In consequence, there will be an appetite for form so long as the current form does not actualise and fully exhaust the potentiality of matter.[720] Aquinas writes:

> And because matter still remains in potency to another form while it is under some form, there is always in it an appetite for form (*appetitus formae*). This is not because of a dislike for the form which it has, nor because it seeks to be the contrary at the same time, but because it is in potency to other forms while it has some form in act.[721]

---

[716] *In* I *Phys.* 15.
[717] *SCG* III, 20; *De Div. Nom.* 4, 3.
[718] *In* I *Phys.* 13; *In* I *Phys.* 15.
[719] *In* I *Phys.* 15.
[720] *In Psalm.* 32; *SCG* III, 20; *SCG* II, 30; *In* II *De Anima* 7.
[721] *In* I *Phys.* 15. Translation taken from Blackwell, Spath, Thirlkel (1963): 65.

Second, matter seeking form is not an operation, yet matter provides the subject for change. The appetite for form is an ordering of matter *to* form and as such lacking both form and power. Therefore, matter's appetite for form cannot constitute an operation. Aquinas makes this abundantly clear when refuting an argument implying that formless matter has its own operation (*operatio*), namely, to seek form.[722] Aquinas retorts that the appetite for form (*appetitus formae*) is not an act *of* matter (*actio materiae*) but a relation of matter *to* form (*habitudo materiae ad formam*): matter is in potency to form or has the form potentially.[723] Since form exists in matter *potentially*, and potency cannot reduce itself to act, matter cannot seek form in the sense of actualising itself but rather receives form from an external agent.[724]

Matter nonetheless contributes to its actualisation in that it provides the subject for change. Matter is neither being in act nor non-being simply, but being in potency. As such, matter is the condition of possibility of all generation and corruption.[725] Matter as potentiality is a necessary but insufficient condition for actualising form and thus the ordering of corporeal creatures to ends. Matter is not an active power but the receptive and passive counterpart to form as that by which the potentiality is actualised. Yet, the ordination of matter to form might be characterised as natural on account of its passive principle, for Aquinas claims that sometimes a motion is "not natural by reason of the active principle, but only by reason of the passive principle, that is matter, in which there is a natural appetite for natural form."[726] That matter contributes to change in that as subject of change it enables and constrains what comes to be through form is furthermore supported

[722] *QDP* 4, 1 sc.2.
[723] *QDP* 4, 1 ad sc.2.
[724] *ST* I-II, 1, 2; *In* V *Meta.* 5; *De Virt.* 1, 8.
[725] *In* I *Phys.* 15.
[726] *SCG* III, 23.

by various statements stressing that what is in potency has a natural appetite to be in actuality.[727]

Third, matter seeking form constitutes an inclination. Although it cannot actualise itself, matter is nonetheless ordered to actuality in that it is created and made to receive form. The purpose of matter is in a sense to provide as potency for form the basis for actualisation. Aquinas indeed states that as created by God prime matter desires actuality, and that its appetite for form is nothing other than privation ordered to act; it is nothing but an inclination to form.[728] Since matter seeks form insofar as form is in matter potentially, 'matter's appetite for form' denotes a potential form being ordered to an actual form.[729] Material natural inclinations therefore result from the fact that potency is ordered to actuality. Aquinas' dictum that matter is for the sake of form (*materia est propter formam*) can then be taken to mean that matter has a disposition for, or rather is a disposition towards, form (*dispositio ad formam*).[730] This is what it ultimately means to be a potency: "a potency is always a potency *for* […], and in that sense entails finality or directedness."[731] Indeed, that matter is directed to form means for Aquinas that form is in matter potentially "insofar as it has an aptitude and order to it."[732] Therefore, to the extent that matter is potency for form it is directed to form.

What is of particular interest for the present purpose is Aquinas' parallelism between the natural appetite and matter's appetite for form:

> Therefore, the natural appetite (*appetitus naturalis*) is nothing other than an ordination of things to their end in accordance with their proper nature. Not only, however, is some being in actuality ordered to its end by an active power, but also

[727] *CT* I, 115; *QDV* 21, 2; *SCG* III, 22; *In* I *Meta.* 1; *In* II *De Anima* 7.
[728] *In Div. Nom.* 4, 3.
[729] *QDV* 22, 1 ad3.
[730] *De Motu Cordis*. For the dictum, see for instance *In* I *Meta.* 1; *In* I *Phys.* 1; *ST* I, 105, 5.
[731] Feser (2014): 100.
[732] *In Div. Nom.* 4, 9.

> by the matter according to which it is in potency; for form is the end of matter. Therefore, for matter to seek form (*materiam appetere formam*) is nothing other than being ordered to form as potency is to actuality.[733]

This passage shows that both the natural appetite and the appetite for form are natural inclinations lacking apprehension of their respective end. They are inclinations because they signify a tendency towards an end; they are natural because the order to the end is intrinsically grounded in a principle of being, that is to say, in form and matter respectively; they finally lack apprehension because neither of the two is elicited by the senses or the intellect. Yet, the appetite for form differs from the natural appetite in that it also lacks power. The appetite for form is a material not a formal natural inclination, an inclination in virtue of matter, not in virtue of form.

In summary, the directionality of matter to form consists in the fact that matter is directed to form as potency is ordered to actuality. Matter seeking form, the appetite for form, is therefore an inclination. The material natural inclination does not rely on any activity of matter, but matter entails a directionality, an ordination to actuality, in providing the potency for form, and exhibits a disposition to be actualised in a specific way. Thus by its nature matter seeks, as it were, form to be fully actualised so long as there is potency left unactualised. Although being the passive, not the active, principle of nature, matter as potency nevertheless contributes to this ordination: matter is the subject of change and as such naturally ordered to, and for the sake of, form. Matter cannot bring about the actualisation of its potency itself, but by its nature it is the condition of possibility of any change. The appetite for form signifies the most passive striving for actualisation. It is a *material* natural inclination because it results from matter; and a *natural* inclination on account of this passive principle. Only on the basis of a fundamental orientation of potency

[733] *In* I *Phys.* 15.

to act can matter be open for receiving form. In other words, to the extent that form as actualisation is regarded as the fulfilment of matter as potentiality, matter seeks form.

6.3. Immanent Natural Teleology: Government through Appetency

In this chapter I have been arguing that appetites are a way of explaining how implemented goals direct natural processes, and how these goals can be understood to be God-given. In particular, I have suggested that formal and material natural inclinations account for the directionality of nature in the ordinary execution of providence. In this final section I shall first distinguish two forms of directionality and, after replying to the inconsistency objection, explain in what sense God is the end of all actions.

6.3.a. Why Natural Inclinations are Natural: On Directing and Being Directed to an End

The end-directed ordering of all secondary causes, says Aquinas, is proximately effected by their appetites, be they rational, sensitive or natural – or, one might add, an appetite for form.[734] The question that remains to be answered is why these formal and material natural inclinations are *natural* inclinations.

If in God's providence all things are directed and properly disposed to their due ends, how does this directionality come about in God's government? In his account of natural teleology, Aquinas distinguishes two general ways in which something can be ordered or directed to an end: something can be moved and directed (1) by itself (*per seipsum*): *seipsum ad finem movens*, or (2) by something else (*ab altero*): *ab alio motum ad finem*. The essential difference between directing oneself to an end and being directed by another is cognition (*cognitio*). Here Aquinas' cognition condition mentioned above comes into

[734] *ST* I-II, 1, 2.

play. Whatever directs, needs cognition of the end to which it directs; otherwise it is directed. In this manner Aquinas contrasts rational and irrational nature. Only rational creatures (1) direct themselves, for they have dominion over their actions. The inanimate and irrational animate world, by contrast, (2) are both being directed, although in a different way. While irrational animals have some apprehension of the end, inanimate creatures possess neither cognition nor apprehension.[735] This much is clear from the outlined theory of appetency.

Now, one can in turn (2) be directed in two ways: something can be directed to an end (2-a) naturally or (2-b) violently. The difference consists in the fact that (2-a) natural inclinations proceed from an intrinsic principle of these inclinations (*principium inclinationis*), while (2-b) violent inclinations have an extrinsic principle of inclination. The question concerning the source of teleology is therefore, does God in his government direct things (2-ii) merely externally to their ends, or does he (2-iii) also internally incline things themselves to these ends. An inclination is natural, according to the proposed scheme, only if the directionality of the one directing to the end becomes in a sense (2-i) the directed thing's own directionality. On these conceptual grounds Aquinas argues that God orders all things to their ends naturally, not only the things (1) directing themselves in virtue of their rational appetite but also the things (2) being directed in virtue of their sensitive or natural appetite.[736]

Turning to the theme of divine government, Aquinas writes:

> [A]ll natural things are inclined to that [end] which is suitable for them, having in themselves a certain principle of inclination, as a result of which the inclination is natural, so that in a manner they go themselves and are not merely led to the given

[735] *QDV* 22, 1; *ST* I-II, 1, 2; *In* III *Sent.* 27, 1, 2.
[736] *QDV* 22, 1.

> end […], inasmuch as they cooperate with the one inclining and directing them through an in-given principle.[737]

The passage shows that Aquinas expressly teaches (2-a) an immanent natural teleology. Things are inclined because of an intrinsic principle. God's government is therefore not through (2-b) externally imposed teleology; the inclinations God imposes are natural.

The intrinsic principle of inclination in question is first and foremost the form of a thing. Formal natural inclinations are natural because they follow upon an inherent or intrinsic form, be it apprehended or natural. In his government God directs all things by giving them, upholding and applying to act a form, a form that internally inclines each subject to the end God intended and directed to externally. If, by contrast, creatures would merely receive an extrinsic form impressed upon them, the inclination would have to be characterised as violent. The distinctive feature of natural formal inclinations is accordingly the subject's contribution to the movement by an inclination consequent upon its own form, be it a natural form or a form apprehended by the senses or the intellect.[738]

Likewise, creatures can be directed to an end in a secondary way in virtue of their matter. Material natural inclinations are natural because they follow upon matter as a principle of nature constituting corporeal beings. These inclinations might not be natural in virtue of their active principle but are nonetheless natural in virtue of their passive principle.[739] When the material aligns with the formal natural inclinations it is natural relative to the particular being; but when the material diverges from the formal natural inclination it is natural in a different sense, a sense which might include the corruption of the individual being. Whatever the status of an inclination characterised as natural purely

[737] *QDV* 22, 1.
[738] *QDV* 22, 1.
[739] *SCG* III, 23.

in virtue of its matter ultimately is, form is the proper principle of inclination and operation.

An operation which does not proceed from an intrinsic principle cannot be natural. It is thus clear that what is in a thing against the natural inclination or appetite is violent.[740] Aquinas holds that even God almighty could not make a motion *natural* which does not proceed from – and hence is in accordance with – an intrinsic principle, for this would imply a contradiction. That is not to say that agents cannot act externally on, and therefore against the natural inclination of, objects. A human being can, for instance, throw a stone upwards. The statement only implies that such an action would be violent. All one could do to make the stone tend upwards *naturally* would be to change its nature. Hence, a movement is either brought forth (2-b) by an extrinsic principle, an external agent and therefore violent, or (2-a) by an intrinsic principle, a natural inclination and therefore natural.[741]

In light of this distinction Aquinas reiterates that God guides nature *naturally*:

> God moves all things to their own actions to which they are nonetheless inclined through their own forms. And so it is that he disposes all things sweetly, because he gives to all things forms and powers (*virtutes*) inclining them to that which he himself moves them, so that they tend to it not forcedly, but as it were of their own accord.[742]

To conclude, according to Aquinas, there are two basic ways of ordering something to an end: something can either (1) direct itself to the end or (2) be directed to the end; while the former is always natural, the latter can happen either (2-a) naturally or (2-b) violently. (2) Being directed through a natural or sensitive appetite is natural, like (1) directing oneself through a rational appetite. Moreover, the appetite for form, although not being a proper inclination following upon form, still constitutes an inclination in the sense of a

---

[740] *SCG* I, 39.
[741] *De Virt.* 2, 1.
[742] *De Virt.* 2, 1.

directionality towards form grounded in an intrinsic principle of nature. What makes the appetites as formal and material inclinations natural is the fact that creatures exhibit these tendencies in virtue of an intrinsic principle of nature. Hence divine government involves (2-a) immanent teleology, his directing creatures is *natural* to them, for God governs through appetites.

6.3.b. Reply to the Inconsistency Objection

With this much discussion of the source question in Aquinas' teleological concept of secondary causation we can revisit the inconsistency objection discussed above stating that either God in his providence directs things to their ends or natures do, but that these two are competing and ultimately incompatible explanations. Recall that premise (3) of Schmid's dilemma asserts that if the ends are according to its nature, then God cannot direct to these ends. In other words, the origin of the corresponding end or final cause can either be God or natures, but not both. If this were the case, then drawing a distinction between an immediate and proximate origin of these natural tendencies would not be an option.

In reply, we need to see how (2-a) immanent teleology can (2-iii) also be divinely guided precisely because God and natures are non-competitive causes:

> Just as secondary causes have genuine causal power of their own despite their ultimately deriving it from God, so too is the teleology of natural objects immanent to them despite their ultimately deriving that too from God.[743]

In this citation Feser makes the point that the line of reasoning for a non-competitive theory of primary and secondary causes is similar in the cases of efficient and final causation. Indeed, Aquinas takes the distinction between primary and secondary causation to apply to all four Aristotelian causes: there are primary and secondary causes in efficient and, by

[743] Feser (2013): 724.

derivation, final, formal and even material causation.[744]

John Wippel comments on the issue at hand that for Aquinas "what ultimately causes the form of a natural agent is also responsible for that agent's inclination to its given end."[745] Therefore, God as the primary cause efficiently causing the form of things also directs all creatures to their ends by imparting on them an inclination.[746] These natural inclinations following upon form, as I have been arguing, *are* the discussed natural, sensitive, and rational appetites. Formal natural inclinations belong to the nature or essence of a thing. Coming to the controversial point, then, Aquinas' teaching regarding the *impressio Dei* does not, contrary to the objection, imply an external temporal impression upon an already existing thing but rather "a permanent inclination which is part of their very being."[747] Formal natural inclinations are directed towards an end in virtue of their form; the form and nature of a thing, however, are ultimately due to God. Hence the above mentioned scheme must be expanded:

$$\begin{array}{lccccccc} impressio\ Dei\colon & giving, upholding\ and\ (instrumentally)\ applying\ form\ to\ act & & & & & & \\ \downarrow & & \downarrow & & \downarrow & & \downarrow & \\ natura\ (forma) & \rightarrow & appetitus\ (inclinatio) & \rightarrow & operatio & \rightarrow & finis & \end{array}$$

According to the presented theory of appetency, the natural directionality of creatures is primarily grounded in form (formal natural inclinations) and secondarily grounded in matter (material natural inclinations) and thus in both cases inherent in their nature or essence. God's naturally directing things to an end consists therefore in this, that he imparts on creatures their natures. On the topic of the *impressio Dei* on natural things which

---

[744] *LDC* 1.
[745] Wippel (2000a): 484-5.
[746] Wippel (2000a): 496.
[747] Wippel (2000a): 484. Schmid (2011a): 100, interprets Aquinas as saying that God directs natural things *for* their own good but not *according to* their natures, which he holds to be impossible in the case of an *impressio Dei*.

Aquinas frequently likened to an archer's impression on an arrow, Aquinas comments:

> But in this [the impression from God] differs, because that which creatures receive from God is their *nature*; what, however, natural things are imprinted with by man is beyond their nature, it belongs to the violent.[748]

In this passage Aquinas explains that an *impressio Dei* is the imparting of natures on things. Feser comments: "The act of ordering a natural cause to its typical effect just *is* the imparting to it of a certain nature or substantial form."[749] Creatures are immanently directed to their proper ends in virtue of their form and matter. The divine act of providentially directing them is not one in addition to, and distinct from, his creative act constituting creatures. Rather, God directs each creature to an end in creating and conserving its form (and matter) and in applying it (instrumentally) to act. Aquinas explicitly states that God in establishing nature (*instituente naturam*) "has given each nature its proper inclination convenient for it."[750] On this point, Cunningham comments:

> For St. Thomas, the divine *impressio* 'upon' nature is not a foisting of something foreign upon an already constituted nature. […] In an important sense, with respect to each particular kind of thing, the divine *impressio* is itself the nature of the thing.[751]

In efficiently causing creatures to have particular natures, God naturally and (2-a) immanently directs them to their ends, precisely (2-iii) by imparting natures to corporeal creatures which are immanently end-directed in virtue of their form and matter. Hence the source question can be answered by distinguishing God's giving forms to beings, his upholding them in being and applying them to act, from the thus constituted nature of things naturally inclining them to their ends, namely the formal and material natural inclinations.

---

[748] *ST* I, 103, 1 ad3. My emphasis.
[749] Feser (2013): 736. My emphasis.
[750] *QDV* 25, 1.
[751] Cunningham (2013): 377. See also Gustafson (1944): 82-3.

In short, Aquinas would only hold two incompatible tenets if he were to envision natures as independent of God, but he does not. Rather, Aquinas combines what Schmid calls derivative and immanent teleology in the sense that natures proximately account for their directionality and natural tendencies, and so the teleology is (2-a) immanent rather than (2-b) externally imposed, while God is the one who constitutes and ultimately directs these natures in making them teleological and imparting on them certain ends. Distinguishing between the kind and source of teleology, Aquinas combines and harmonises (2-a) immanent teleology with an extrinsic source precisely in assuming (2-iii) two sources of teleology, one immediate, the other mediate. God imparts on creatures particular appetites directing them immanently to the providentially ordained ends.

Now, one might reply that such merely 'constitutive responsibility' (Schmid) is insufficient for divine providence, because

> the cognition-condition […] requires that the end-directedness of substances *is due* to some cognition of these ends. Yet, precisely this is not the case if God […] constitutes their teleological essences. It is *accidental* for their constitution […] that God *recognizes* these essences […].[752]

The difficulty with this line of reasoning, however, is that it first attributes to Aquinas essences in a rather Platonic fashion which God can merely decide to instantiate, and in doing so, furthermore, misses the dynamic moments of divine causality. Although God has divine ideas of all essences, natures exist as concrete composites of form and matter.[753] In constituting these natures, God not only gives and upholds in being the forms of creatures, but also applies them to act.

---

[752] Schmid (2011b): 34, n.26.
[753] *ST* I, 15. For a book-long treatment of the topic, see Doolan (2008). Doolan concludes: "On this point, Thomas is emphatically clear: divine ideas are not the *per se* subsistent universals posited by Plato." (Doolan (2008): 246)

To quote the passage from the *Summa Theologiae* again, "God does not only give forms to things, but also conserves them in being and applies them to act, and is the end of all actions."[754] According to this text, God is intimately and causally involved in directing creatures to an end not only in constituting them, but also in every particular manifestation of their directionality. That creatures' specific appetites are directed towards a specific end is 'due to' and not 'accidental for' God's constituting their natures dynamically, for these are not Platonic essences. Although God has eternal ideas of natures and the *ratio* of their end-directedness exists in the divine mind, they are constituted in their concreteness and directed to their ends in and through his act of creation, conservation and application. God's government has to be conceptually distinguished from his providence. Although the reason for the end-directedness is the cause of the end-directionality, this does not take away any reality from, but rather constitutes in a dynamic way, secondary causation.

On these grounds I conclude that, contrary to the inconsistency objection, Aquinas' model of final causality is *prima facie* at ease with Aristotelian (2-a) immanent teleology, although going decidedly beyond Aristotelian (2-i) purely intrinsic teleology, in particular with respect to claims about divine providence. Since God's primary causation, whether final or efficient, does not compete with secondary causation, Aquinas' embedding of natural finality in God's providence seems to be consistent. The cognition condition certainly changes the perspective on teleology, but does not essentially alter teleology at the natural level. If this is the case, then we are in a position to bring both (C) Aquinas' and (A) Aristotle's concept of natural immanent teleology into conversation with modern philosophy and science, in particular with the ontology of powers and dispositions discussed above.

---

[754] *ST* I, 105, 5 ad 3.

6.3.c. God as Final Cause of all Creaturely Operation: The End and the Good in Creatures

I have argued that Aquinas' understanding of providence is teleological; that in his ordinary government God executes his providential end-directed order through secondary causes; and that in his theory of appetites, at least in my analysis as formal and material natural inclinations, we have a form of divinely-guided immanent natural teleology. In a final step, I shall return to the question: in what sense is God the final cause of all natural operations and inclinations?

We saw in Chapter 4 that secondary causes act by virtue of the power of God the primary cause. The distinction between primary and secondary causation applies, however, not only to efficient, but also final causation. Unlike the efficient cause, the role of the final cause is to be desired (*desiderari*) or strived for (*appeti*). Secondary final causes 'cause', that is, the ends are desirable and appetible, only by virtue of the goodness of God the primary final cause.[755] Therefore, in efficiently causing the natures of things and ordering them towards ends through their respective appetites, God is the ultimate end and primary final cause of every creaturely operation towards these ends: "Just as God, because he is the primary efficient agent, acts in every agent, so too he is, because he is the ultimate end, sought (*appetitur*) in every end."[756]

The link between God being efficient and final cause of all creaturely operations is easiest expressed in terms of participation. The argument proceeds as follows:[757]

(1) Every (end-directed) operation strives for a good.
(2) Every good (is good insofar as it) participates in the divine goodness.

---

[755] *QDV* 22, 2; see also *LDC* 1; *SCG* III, 17.
[756] *QDV* 22, 2.
[757] *ST* I, 105, 5.

(3) Therefore, every (end-directed) operation strives for participation in the divine goodness.

(4) Therefore, in his goodness God is the cause of all (end-directed) operations as an end.

The first thing to note about premise (1) is that I discuss it as a *theological* proposition following on from the presented sapiential-ordinative model of providence, and not as a philosophical axiom. Whether or not the statement is philosophically demonstrable, the claim being made here is that if God in his providence orders all things to their ends, and in his ordinary government orders all things *immanently* to these ends, then all things act for an end in the sense of being *naturally inclined* to these divinely ordained ends.

The second point I wish to highlight about premise (1) is the close tie between end and good. Aquinas interprets the end *as* good; for him *propter finem* and *propter bonum* are interchangeable in extensional contexts.[758]

> *Omne agens agit propter finem*: every agent acts for an end.[759]
>
> *Omne agens agit propter bonum*: every agent acts for a good.[760]

In fact, according to the thesis of the convertibility of the transcendentals, good and being are factually the same (*secundum rem*) and differ only conceptually (*secundum rationem tantum*). It is the aspect of being appetible (*appetibile*) that the notion 'good' (*bonum*) adds to 'being' (*ens*). Unlike 'being', 'good' conveys the meaning of being desirable or attractive.[761] Aquinas follows Aristotle in explicating the good as being appetible:

> *Bonum est quod omnia appetunt*: good is what all desire, or strive for.[762]

---

[758] *SCG* III, 17.
[759] *SCG* III, 2.
[760] *SCG* III, 3.
[761] *ST* I, 5, 1.
[762] *ST* I, 5, 1.

Insofar as agents act for an end they strive for something; yet what they strive for is a good. In seeking an end creatures seek a good. Note carefully, it is not the fact that all strive for the good that makes the good appetible. Rather, it is the appetibility of the good that makes the good what all desire. Since good and being are factually the same, what all desire is their perfection and being in act.[763]

Just as the task of the efficient cause is to act, so the role of the final cause is to be appetible.[764] Good is correlated to final causality because it moves the appetite; the actualisation of the appetite is in a sense the result of the good as its moving principle.[765] Good then also provides the terminus for the appetite.[766] The appetite comes to rest if and only if it reached the good to which it was directed. In short, good is what "makes nature seek ends."[767] Hence, according to Aquinas, good implies or is 'reducible to' or explicable in terms of final causality.[768]

Turning to premise (2), every good participates in some likeness of the divine goodness. Through creaturely appetites the providential ends become natural ends. In striving for an end, creatures seek to become like God (*assimilare*), at least insofar as their flourishing exemplifies at least some sort of goodness. If creatures participate in God's being, then creaturely ends and goods will likewise participate in God the highest good and ultimate end. In tending to their own perfections creatures exhibit, in various ways, natural tendencies to the divine likeness (*similitudo*).[769] What creatures seek in acting is some form of perfection and actuality. But every *bonum* participates in the *summum bonum* like every

[763] *ST* I, 5, 1; *QDV* 22, 1.
[764] *QDV* 22, 2.
[765] *In* I *Ethic.* 1.
[766] *ST* I, 5, 6; *SCG* III, 3.
[767] Gustafson (1944): 84.
[768] *ST* I, 5, 4; *ST* I, 5 pr.
[769] *SCG* III, 17-22.

ens participates in the *esse subsistens* through some similitude. God is the one who is being itself, who gives being to all creatures, who constantly upholds them in being and applies their creaturely powers to act. In the same way, insofar as creatures strive for their ends and seek their perfection and actualisation, they seek God, who is pure act: they seek a participation in his goodness, for being and goodness are ultimately one.[770] In short, if creatures strive for actuality, and God is pure act, then creatures strive for a certain assimilation.

From the implication that (3) every (end-directed) operation strives for participation in the divine goodness, following from (1) and (2), one can conclude that (4) God is the ultimate end of all things; he is the ultimate final cause. Nonetheless, as I have been arguing, creatures also have in-built ends and genuine final causes, they have appetites, formal and material natural inclinations, which immanently direct them to their ends. In drawing them thus to perfection, actuality and himself, God is the final cause of every creaturely operation. Regarding the nature of final causality we can therefore conclude that the causality of the end consists ultimately in the good, but formally in the appetite.[771] Since God is the ultimate good, God is the ultimate final cause of all creaturely operations; yet the directionality is formally grounded in the creaturely appetency. In this way, then, as we read in the *locus classicus* of secondary causation, God is "the end of all [creaturely] actions."[772]

Returning to the topic of government through appetency, all creatures are naturally inclined to the ends and the good God willed for them. That is to say, all things naturally seek (*appetere*) good. It is worth reiterating in this connection that *appetere* denotes a

[770] *ST* I, 105, 5.
[771] Gustafson (1944): 89; *QDV* 22, 2.
[772] *ST* I, 105, 5.

natural inclination, for in a 'violent' movement the object might be pushed and pulled to a good but does not seek this good. The appetite is some form of seeking, a tendency to an end or good it was ordered to by God. For Aquinas, the ultimate end of divine government is God himself, namely the goodness in and to which creatures tend or are inclined to participate and assimilate. In one sense, therefore, the end of government is that creatures by acting for the end or good assimilate to the highest good, that is, God the first and highest good. Since creatures in general assimilate to God insofar as they are good or become good, in another sense there are two ends of government, namely, the conservation in the good and the motion to the good. In yet another sense, however, there are innumerable particular ends and ways in which this ultimate end of government can come about.[773] In all these ways creatures seek some good, because God in his divine wisdom has ordered everything to its proper end in a natural way: by an intrinsic principle that directs the end-directed movement as if seeking good itself. Thus through its own movement nature tends to the divinely intended and ordered ends. Such a natural movement Aquinas, citing the Book of Wisdom (8:1), calls 'sweet' (*suavis*).[774]

In summary, in discussing the directionality of nature in this chapter, I have highlighted the significance of the ends of providence for the executed providential order. I have argued that sapiential-ordinative providence is an essentially *teleological* conception. What I hope to have shown is that there is a way of integrating divine ends for nature into a theological vision that neither nullifies the reality of divine providential ends nor the intrinsic nature of the natural execution of these divinely intended ends. With this I took a stance on the theological question of whether to envisage the teleology implied by providence as merely externally imposed on or also immanent to nature. I advocated a view according to which

[773] *ST* I, 103, 4.
[774] *QDV* 22, 1.

providential ends existing in God's mind are not so much executed through divine actions extrinsic to nature, but rather through an implementation of those very goals in nature. The main difference to the approaches outlined in PART ONE is that the proposed divine providential ends are not divinely (although non-interventionally) inserted ends *in* nature but rather intrinsic ends *of* nature.

Summary of Part II

PART ONE argued that the standard model of divine action is problematic because it implies a univocal and competitive conception of divine and natural causation. PART TWO has explored an alternative theological framework to move beyond the current theo-physical incompatibilist paradigm and the preoccupation with the topic of intervention. To that end, I have proposed the virtue of prudence and human providence as an alternative and promising analogy to revisit the doctrine of providence; the actionistic model is not the only way to conceptualise providence.

Prudence is a virtue that orders means to ends. The sapiential-ordinative model brings the teleological dimension of providence to the fore: divine providence is the ordering of all created things to ends. I showed that Aquinas approaches the providence of God from a dual perspective distinguishing providence as the eternal reason for this order from government as its temporal execution. Apart from miracles, divine government takes place through secondary causes.

> (1) Divine government as the temporal execution of divine providence, which is the eternal reason for the order of all things to their end, ordinarily takes place through secondary causes.

Secondary causation is 'caused causation'. Secondary causes act by virtue of the power of God. God the primary cause constitutes secondary causes foundationally by way of (a) giving creatures powers and (b) by conserving them in being, as well as dynamically by (c) applying to act and (d) instrumentally using the creaturely powers. Without God's constant causal activity in every operation of each secondary cause, there would be no natural causation at all.

> (2) Divine government is mediated through the order, disposition and directionality of secondary causes, which depend in every operation on God's creation, conservation and (instrumental) application.

In constituting natural causation by giving, conserving and applying creaturely powers grounded in their forms, God also directs those powers teleologically. Immanent formal and material natural inclinations imprinted in creatures direct them in various ways to the ends to which God directs them in his providence. Aquinas conceptually distinguishes the tendency resulting from a natural inclination from the ordering of this natural inclination: the fact that things tend to ends is due to their appetite; the reason why they tend to specific ends is due to the divine ordering of the appetite to these ends. In this way Aquinas harmonises, contrary to the inconsistency objection, the seemingly opposed concepts of derivative and immanent teleology. In his government, God directs through immanent natural teleology, that is, formal and material natural inclinations. Despite natures being the proximate source of immanent natural teleology, however, God is the ultimate source of all formal and material natural inclinations. Even if one were to characterise this third form of teleology in-between (2-i) purely intrinsic and (2-ii) purely extrinsic teleology as derivative, this would by no means imply that it is (2-b) externally imposed and 'violent'. Rather, (C) Thomistic teleology is (2-a) immanent teleology with (2-iii) both an extrinsic and intrinsic source of the end-directionality. God's directing creatures in his government through appetites is, after all, a form of natural teleology.

The teleological approach shifts the challenge from causal determinism to indeterminism, for in a deterministic world God would be providential in a particular manner by ordering every cause to its effect by necessity. On a spatiental-ordinative model, contingency as a causal mode not fully determined in its nature to an effect becomes the challenge for particular providence. The Aristotelian twofold thesis of indeterminism raises the fundamental challenge for Aquinas' account, namely, to bring into harmony (A) the universal scope of providence with premise (i): that not every event has a *per se* cause; and

(B) the certainty of providence with premise (ii): that given the cause, the effect does not necessarily follow.

After having explored the similarity of human and divine providence in showing both to be forms of end-directed ordering, I drew out the understanding of divine transcendence as key to a compatibility between divine and natural causation. While human providence can only affect future and contingent events, God as universal cause affects everything, including the contingent. If God's causality extends to everything in the fourfold manner discussed above, nothing can be accidental in the sense of not being causally related to him, although the event might be accidental with respect to other secondary causes.

(3) As universal cause, God is the *per se* cause of the *ens per accidens* (*reducibility thesis*).

The doctrine of divine transcendence states that God is outside the order of time and the order of beings. As transcendent cause, God's knowing, willing, and causing created beings does not necessitate them. His eternal knowledge imposes a conditional but not an absolute necessity on creatures. Moreover, the efficacy of his will constitutes contingency as causal mode, but in no way takes away contingency from the created world. The fact that God is the *per se* cause of the *ens per accidens* only implies that nothing can be accidental with respect to God's primary causation; nonetheless, causes can be contingent in their modality, that is, not fully determined to one effect in their nature.

(4) As transcendent cause, God in knowing, willing, and causing (future) contingents does not take away but constitutes natural contingency (*compatibility thesis*).

The combination of universal and transcendent causation, then, makes intelligible God's government of and through contingent natural processes. Aquinas safeguards both the reality of the accidental and natural contingency on the one hand and the certitude and universal scope of providence on the other by arguing that (i) the accidental exists only

with respect to other natural causes but not with respect to the government of God; and that (ii) given providence as cause the effect follows necessarily, but not by (absolute) necessity; rather, it necessarily follows the way God ordains it to be: God knows, wills, and causes natural effects either to be necessary or contingent. His universal and transcendent causation is universal and particular insofar as his knowledge and will are the cause of all things, and his primary causation extends to every instantiation of secondary causation.

(5) The government of God is universal and particular (*particularity thesis*).

Among the effects of his universal government are the particular effects of natural causes, whether they are necessary or contingent. God applies the power of all created secondary causes to act, also instrumentally. God's causing governing causes, his applying to act their powers, is particular, including both the causal modality and the effects of causes. The doctrine of divine application involves the actualisation of the potency of, and bringing into the right disposition and proximity, secondary causes.

On the basis of the proposed view of secondary causation as the ordinary execution of divine providence, I suggest an alternative relation of providence to contingency:

(6) Natural contingency is the *effect* and *means* of divine providence.

Natural contingency is the *effect* of providence because providence is the cause of natural contingency; contingency is also a *means* of providence because in his temporal government contingent causes further his eternal providence.

PART TWO has explored a sapiential-ordinative and theo-physical compatibilist re-conceptualisation of the belief that God is *gubernator mundi*. I conclude that an objective and particular form of divine action in the world postulated in the DAD (OSDA) is available without the current preoccupation with intervention (NIODA) and the corresponding disadvantages stemming from the underlying competitive picture (TPI).

Challenging the outlined objection of the early DAD on more fundamental grounds than the standard model of divine action has done opens up an alternative reply. There is arguably no causation of creatures independent of God's operation in each and every manifestation of their creaturely powers. This non-competitive view finally disposes of the need for room for divine action and the claim that contingency must provide the *locus* for providence.

PART III: AN APPLICATION – REFRAMING AN EVOLUTION DEBATE

PART THREE applies the actionistic and sapiential-ordinative model of providence discussed in PART ONE and TWO to one of the most pertinent current issues in the science and religion dialogue: the directionality of biological evolution and its wider implications. I shall argue that a reframing of the contingency debate is possible because the doctrine of divine providence does not require the inevitability of the evolution of human life if considered in and of itself, but only as a consequence of God's providence.

To this end, Chapter 7 outlines the famous controversy between Gould and Conway Morris about the directionality of biological evolution, and then presents a critical assessment of some of its implications. Chapter 8 evaluates the theological responses, both from an actionistic and sapiential-ordinative perspective. I shall argue that the actionistic NIODA theory faces further and more specific limitations in the context of biological evolution, and suggest that the proposed sapiential-ordinative model can remedy at least some of these limitations.

Chapter 7:
Replaying the Tape of Life: The Directionality of Biological Evolution

The controversy between Harvard palaeontologist, Stephen Jay Gould, and his Cambridge colleague, Simon Conway Morris, about what would happen if one were to rerun the tape of life is famous, particularly in the field of science and religion. This debate, ostensibly about the interpretation of fossils, has implications for the possible direction of biological evolution and the probability of the emergence of human life.

The trigger and empirical basis for this widely discussed debate was the reinvestigation of the Burgess Shale of British Columbia, Canada – one of the most important *Lagerstätten* (fossil localities) enabling palaeontologists to study the period after the Cambrian explosion and its immediate aftermath.[775]



This reconstruction of Burgess Shale fossils shows the extraordinary richness and oddity of some of the animals that do not neatly fit into our modern taxonomy.[776]

---

[775] For a discussion of the significance of the Burgess Shale, see Brysse (2008): 1-55. The term 'Cambrian explosion' refers to the rapid diversification of animal life during the period roughly between 550 and 485 million years ago (Conway Morris (1998): 31-2). The debate between Conway Morris and Gould also has a personal dimension; for the latter see Conway Morris and Gould (1998). For the mutual influence on each other's views, see Conway Morris (1998): vii. Conway Morris gives a brief but illuminating history of Gould's thought in Conway Morris (1998): 9-12.

[776] Figure taken from Conway Morris (1998): Colour plate 3.

The purpose of this chapter is to show how this controversy about the directionality of biological evolution, and especially the worldview-related implications drawn from it, threatens to lock providence into the constraints of science. To see why this is the case, we first need to look into Gould's argument and Conway Morris's reply.

7.1. A Drunkard's Walk: The Evolutionary 'Gospel of Contingency'

In *Wonderful Life* (1989) Stephen Jay Gould presents the case of the Burgess Shale to a wider public audience, challenging conventional iconographies of the ladder of progress and the cone of increasing diversity.[777] He argues that the reinvestigation of the fossils of the Burgess Shale, undertaken by Harry Whittington and his students Derek Briggs and Simon Conway Morris, calls for a new view of the history of life as radically contingent rather than progressive and predictable. Taking these fossils as an exemplary case study, Gould sets out to make a case for the immense significance of historical contingency in biological evolution. He states:

> [The Burgess Shale fossils have] confronted our traditional view about progress and predictability in the history of life with the historian's challenge of contingency – the 'pageant' of evolution as a staggeringly improbable series of events, sensible enough in retrospect and subject to rigorous explanation, but utterly unpredictable and quite unrepeatable.[778]

The new view of life Gould advocates is based on contingency rather than the two conventional pillars of progress and predictability; as Gould famously puts it, "almost every interesting event of life's history falls into the realm of contingency."[779]

---

[777] For an illustration of the ladder of progress and the cone of increasing diversity, see Gould (1989): 27-45.
[778] Gould (1989): 14.
[779] Gould (1989): 290.

Gould's scientific claim is that there is no directionality in biological evolution. His argument has two basic premises.[780]

The first premise is that the cone of life is inverted.[781] Gould calls this the bottom-heaviness of evolutionary trees.[782] Biological disparity, the range of basic body plans or designs (*phyla*), decreases rather than increases over geological time.[783] To account for this decrease, Gould introduces the concept of decimation, the massive elimination of early lineages.[784] Thus his evolutionary slogan is diversification and decimation:[785] a notion that concerns biological designs, not species.[786] The scientific evidence Gould invokes in this connection is that, for the purpose of classification, many of the Burgess Shale fossils do not fit into the *phyla* of presently living species. According to Gould, the fossils of the Burgess Shale show that, after an initial burst of anatomical variety, a drastic decimation of body plans took place reducing the many initial *phyla* to the few today known ones. The evolution of species after the Cambrian explosion, which has commonly been described in terms of progress and increasing complexity, is then really just a diversification of species based on a few surviving designs. Accordingly, Gould's first premise states that the cone of life is inverted because since the Cambrian explosion biological diversity, the number of species, has increased but disparity, the range of *phyla*, has decreased, which is why decimation becomes the central driving force of biological evolution.[787]

---

[780] For a thesis statement, see Gould (1989): 301.
[781] Gould (1989): 47 and 233.
[782] Gould (1989): 301-4.
[783] For Gould's discussion of the concepts of disparity and diversity, see Gould (1989): 49.
[784] Gould (1989): 47, especially the footnote.
[785] Gould (1989): 46-7.
[786] Gould (1989): 49.
[787] Gould (1989): 207-18 and 24-5.

The second premise is that the process of decimation is an utterly contingent process.[788] John Beatty has pointed out that Gould operates with two rather different notions of contingency: what might be called contingent *per se*, or possible not to be, and contingent *upon*, or dependent upon. Put differently, contingency can either mean that different outcomes are possible from the same initial state (contingency *per se*) or that different prior states lead to different outcomes (contingency upon). The first notion of contingency – Beatty labels it Gould's (A) unpredictability interpretation – refers to events that are of themselves *not* necessary, the second notion to events that are necessary *for* an outcome – what Beatty calls Gould's (B) causal dependence version.[789]

The distinction between these two senses of contingency, which Gould unfortunately does not draw himself but nonetheless makes use of in a somewhat blurred sense, helps to understand his argument from contingency. To illustrate the importance of contingency in the process of decimation, Gould introduces his now-famous thought experiment of replaying life's tape:[790]

> I call this experiment 'replaying life's tape.' You press the rewind button and, making sure you thoroughly erase everything that actually happened, go back to any time and place in the past – say, to the seas of the Burgess Shale. Then let the tape run again and see if the repetition looks at all like the original. [1] If each replay strongly resembles life's actual pathway, then we must conclude that what really happened pretty much had to occur. [2] But suppose that the experimental versions all yield sensible results strikingly different from the actual history of life.[791]

---

[788] Gould (1989): 50-1 and 223-4.
[789] Beatty (2006): 338-9; Beatty (2016): 36. For Gould's discussion of contingency, see Gould (1989): 283-91. The following statement is a clear example of contingency upon. Gould says that a historical explanation rests "on an unpredictable sequence of antecedent states, where any major change in any step of the sequence would have altered the final result. This final result is therefore dependent, or contingent, upon everything that came before" (Gould (1989): 283). By contrast, a plain example of contingency *per se* are "events that did not have to be, but that occurred for identifiable reasons" (Gould (1989): 284).
[790] Gould (1989): 45-52.
[791] Gould (1989): 48.

In other words, the thought experiment of replaying the tape of life assumes the introduction, in the replay, of a random act of decimation from an identical starting point.[792] The purpose of the metaphor is to make intelligible Gould's claim that the source of decimation is contingency (*per se*), that "the grim reaper of anatomical designs is only Lady Luck in disguise."[793]

There are two scenarios to consider, and Gould offers two corresponding explanations: the outcome of the replay could either (1) resemble the factual world, or (2) look rather different. For either (i) survivors 'prevail for cause', Gould's phrase for adaptive superiority, in which case, he argues, each replay will yield similar results; or (ii) survivors do not prevail for cause, and Gould's second premise – the contingency (*per se*) of decimation – is established.[794]

The problem with (i) 'survival for cause' is, according to Gould, that adaptive superiority, including features such as anatomical complexity and competitive ability, must be explicable beforehand, otherwise the slogan 'survival of the fittest' becomes tautological: 'survival of those who survive'. Fitness must be predictable. One needs empirical evidence of the adaptive superiority prior to the process of decimation. Thus Gould makes the criterion of being able to pick out the winners beforehand the basis of his argument against survival for cause.[795]

"But if we face the Burgess fauna honestly," Gould contends, "we must admit that we have no evidence whatsoever – not a shred – that losers in the great decimation were systematically inferior in adaptive design to those that survived."[796] This is (A) the

[792] Gould (1989): 227.
[793] Gould (1989): 48.
[794] Gould (1989): 48-50 and 233-4.
[795] Gould (1989): 236.
[796] Gould (1989): 236.

unpredictability version of contingency. Decimation is unpredictable, wherefore (ii) survivors do not win for cause because adaptive superiority is not predictable. Gould expresses the contingency (*per se*) of decimation thus conceived by his lottery metaphor. Decimation is radically contingent; it is like a lottery: the biological evolution (of species) is based on a 'decimation (of body plans) by lottery'.[797]

Based on the two discussed premises condensed in his metaphor of 'decimation by lottery' Gould concludes his thought experiment with a prediction that has since become a widely influential statement:

> Wind back the tape of life to the early days of the Burgess Shale; let it play again from an identical starting point, and the chance becomes vanishingly small that anything like human intelligence would grace the replay.[798]

It is at this point that the second sense of contingency comes to the fore. Gould not only claims that decimation as driving force of evolution is a (*per se*) contingent process, but also that human life is contingent *upon* a particular lineage. Gould concludes his book with the statement that if the cordate *Pikaia*, the first recorded member of our phylum and therefore the first known member of our immediate ancestry, "does not survive in the replay, we are wiped out of future history," and infers that "humans exist […] because *Pikaia* survived the Burgess decimation."[799] This is (B) the causal dependence interpretation of contingency.

The notion of contingency operative in Gould's argument is thus arguably a combination of the (A) unpredictability and (B) causal dependence interpretation of contingency. Both are essential for what historians call 'turning points' in a branching tree

---

[797] Gould (1989): 237-9. See also Gould (1989): 47, footnote; for his use of 'decimation by lottery' and similar formulations, see Gould (1989): 244, 260-2, 276, 288, 301-2, 304, 306.
[798] Gould (1989): 14.
[799] Gould (1989): 323.

of possibilities: a historical outcome depends on prior states of which at least some are contingent *per se*.[800] History matters, as Gould seeks to argue, when the future depends on a particular past, and this particular past happened, but was not bound to happen. As Beatty shows, Gould's unpredictability interpretation alone would undermine the value of history. For if every outcome in the history of life were equally improbable in each and every case, the particular history would not matter. What leads to 'Gouldian contingency' is rather the dependence of, say, human beings upon prior events that are themselves *per se* contingent.[801] Hence Gould concludes:

> When we realize that [A] the actual outcome did not have to be, that [B] any alteration in any step along the way would have unleashed a cascade down a different channel, we grasp the causal power of individual events […] because each holds the power of transformation.[802]

In summary, in *Wonderful Life* Gould argues that the Burgess Shale shows that the evolution of life is essentially a decimation by lottery because (a) the apparent decrease of disparity has to be accounted for by a process of decimation, and (b) this process is contingent in the twofold sense. On his view, the evolution of the human species seems to be extremely improbable. The combination of contingency *per se* and contingency upon is then what leads Gould to his famous conclusion about the history of life: "any replay of the tape of life would lead evolution down a pathway radically different from the road actually taken."[803]

7.2. Inevitable Humans: The Evolutionary 'Gospel of Inevitability'

In *The Crucible of Creation* (1998) Simon Conway Morris sets out to challenge

[800] Beatty (2016): 35-6.
[801] Beatty and Carrera (2011): 493-5.
[802] Gould (1989): 284.
[803] Gould (1989): 51.

Gould's presentation of the Burgess Shale fossils. He objects to both of Gould's major claims about (a) the variety of body plans in the Cambrian and (b) the significance of contingency for the history of life, and presents a new perspective on the wider implications of the Burgess Shale. The lesson Conway Morris draws from the fossils is that it is not so much historical contingency as the ubiquity of evolutionary convergence that accounts for the history of life. His goal is to counteract in particular the thesis that the evolution of human life is undirected.[804]

Conway Morris agrees with Gould that the Burgess Shale fauna gives new and rich insights into the nature of the Cambrian explosion, but disagrees that the scientific discoveries call for a radically new view of the history of life, on two principal grounds.[805]

The first reason is that he takes (a) the apparent exuberance of *phyla* in the Burgess Shale to be an artefact of biological classification.[806] There is general agreement that in the course of biological evolution we see an increase in diversity, the number of species. The point of disagreement between Gould and Conway Morris concerns the question of disparity, the range of basic body plans or *phyla*. On Gould's view, disparity reaches its maximum in the Cambrian explosion and was afterwards decimated, whereas Conway Morris argues that new research increasingly shows that in the process of biological evolution we not only see an increase of diversity but also of disparity, and that this also applies to the Burgess Shale fossils.[807]

---

[804] Conway Morris (1998): vii-viii.
[805] Conway Morris (1998): 138-9.
[806] Conway Morris (1998): 170. For a detailed discussion of the problems of classifying the Burgess Shale fossils, see Conway Morris (1998): 169-98.
[807] For a general discussion of the scientific evidence, see Conway Morris (1998): 205-21; for an examination of the Burgess Shale fauna, see Conway Morris (1998): 169-98.

If Conway Morris is correct that biological disparity does not massively decrease, then the mechanism of decimation so central to Gould's argument for the role of historical contingency will be seriously undermined. Along these lines, Conway Morris questions Gould's metaphor of an inverted cone of life with maximum disparity during the Cambrian and, consequently, Gould's mechanism of decimation.[808]

The second reason why Conway Morris rejects Gould's view of life are evolutionary convergences, being defined as "the recurrent tendency of biological organization to arrive at the same 'solution' to a particular 'need'."[809] Evolutionary convergence is the widespread phenomenon that biological organisms resemble each other despite having different ancestors, that is to say, although they originate within different lineages. Life, as it were, comes up with similar solutions to a problem. For example, sabre-tooth cats and sabre-tooth tigers are well separated in evolutionary history but have very similar large canines extended from the mouth. These convergences show, according to Conway Morris, that the types of organisms that can emerge through the process of biological evolution are not only limited but severely constrained. Not everything is possible. In fact, in biological evolution many things are impossible.[810] Due to the ubiquity of evolutionary convergence, Conway Morris profoundly disagrees about (b) the role contingency plays in the history of life:

> The reason for discussing convergence here is that its recognition effectively undermines the main plank of Gould's argument on the role of contingent processes in shaping the tree of life […]. Put simply, contingency is inevitable, but unremarkable. It need not provoke discussion, because it matters not. There are not an unlimited number of ways of doing something. For all its exuberance, the forms of life are restricted and channelled.[811]

---

[808] Conway Morris (1998): 205-8 and 138-9.
[809] Conway Morris (2003): xii.
[810] Conway Morris (1998): 202-4. For an extensive discussion of evolutionary convergences, see Conway Morris (2003): 106-310.
[811] Conway Morris (1998): 13.

While the evolutionary pathways are innumerable, the end results of these developments are severely constrained. These constraints are evident in the various evolutionary convergences. Hence Conway Morris argues that the outcome of the evolutionary process, although not its particular pathway, seems to be rather predictable.[812]

What is more, Conway Morris asserts, *pace* Gould, that for the history of life "contingent processes are an irrelevance"[813] and objects that Gould's metaphor of rerunning the tape of life misses the point:

> Surely this whole argument, focusing on the implausibility of humans as an evolutionary end product, misses the point. It is based on a basic confusion concerning [a] the destiny of a given lineage […] versus [b] the likelihood that a particular biological property or feature will sooner or later manifest itself as part of the evolutionary process.[814]

In this citation Conway Morris questions Gould's assumption that biological properties are contingent upon a particular biological lineage. Even if one were to grant firstly that decimation is the driving force of evolution, which, as we have seen, Conway Morris deems objectionable, and secondly that decimation is a *per se* contingent process, it would not follow, according to Conway Morris, that similar biological properties do not emerge in replays of the tape of life precisely because they are not contingent upon a particular evolutionary pathway.

The distinction between contingency *per se* and contingency upon sheds good light on the disagreement. Conway Morris acknowledges the role contingency *per se* plays in (a) "the origin, destiny, or fate of a particular lineage," but emphasises that for (b) "the likelihood of the emergence of a particular property" the question of contingency *per se* is

---

[812] Conway Morris (1998): 202.
[813] Conway Morris (1998): 205.
[814] Conway Morris (1998): 201-2.

unimportant, if not to say irrelevant.[815] This is the case because biological properties are not contingent *upon* a particular lineage. In emphasising the role of historical contingency for the tree of life, says Conway Morris, Gould confuses the probability of, on the one hand, the survival of a particular lineage and, on the other hand, the emergence of a biological property. The reason for this has, I submit, to do with the two-fold notion of contingency operative in Gould's line of reasoning. By contrast, Conway Morris denies that biological properties depend upon a particular lineage concluding that "the role of contingency in individual history has little bearing on the likelihood of the emergence of a particular biological property."[816]

Conway Morris therefore replies to Gould's argument that if the cordate *Pikaia*, the first recorded member of our phylum, had not survived human beings would have been wiped out:[817]

> The fact that we arrive here via an immensely long string of species that originated in something like *Pikaia* rather than some other crepuscular blob is a wonderful scientific story, but it is hardly material to our present condition.[818]

In other words, since biological properties do not depend upon a particular lineage, the ubiquity of evolutionary convergence suggests that something like human beings – as a biological property, not a species originating in a particular biological lineage – will inevitably evolve irrespective of the destiny of the cordate *Pikaia*:[819]

> Here the reality of convergence suggests that the tape of life, to use Gould's metaphor, can be run as many times as we like and in principle intelligence will surely emerge.[820]

---

[815] Conway Morris (1998): 14.
[816] Conway Morris (1998): 139.
[817] Gould (1989): 323.
[818] Conway Morris (1998): 14.
[819] Conway Morris (1998): 13-4.
[820] Conway Morris (1998): 14.

On Conway Morris's view, then, there is a directionality in evolution. Biological evolution is quasi-directed, or constrained, towards certain recurrent biological properties. It is with respect to these that Conway Morris contests Gould's thesis: "Rerun the tape of life as often as you like, and the end result will be much the same."[821] This directionality incorporates contingency, but renders it irrelevant for the outcome of the evolutionary features. Evolutionary convergence trumps Gouldian contingency.

Is biological evolution then a directional process? While Gould initially stated that his thought experiment cannot possibly be performed,[822] I note that recent developments show that the biological sciences are, in fact, making some progress towards an empirical adjudication. These developments include more studies of convergent evolution,[823] evidence from evolutionary genetics, especially empirical studies of fitness landscapes,[824] and experimental evolution, including parallel replay experiments, analytic replay experiments and historical difference experiments testing micro-evolution.[825] Although no definite conclusion has yet been reached, the direction to which this new evidence points is that evolution might be much more predictable than previously thought.[826] A recent review paper concludes accordingly:

> While it is too early to derive any definite conclusion, recent observations suggest that there are predictable portions within life's tape and that evolution might not be as unpredictable as once thought 25 years ago, when Stephen Jay Gould formulated his original question.[827]

---

[821] Conway Morris (2003): 282.
[822] Gould (1989): 48.
[823] For a discussion of why evolutionary convergence is open to different interpretations, see Lenormand, Chevin, Bataillon (2016).
[824] For a review of empirical work on fitness landscapes, see de Visser and Krug (2014). The genotype-phenotype mapping presented in Louis (2016), for instance, indicates bias in the arrival of genetic variation.
[825] For recent review articles, see Blount, Lenski, Losos (2018); Blount (2016a); Orgogozo (2015); Lobkovsky and Koonin (2012).
[826] Blount, Lenski, Losos (2018): 663; Louis (2016): 114-5; Orgozono (2015): 8-9; de Visser and Krug (2014): 488; Lobkovsky and Koonin (2012): 6.
[827] Orgogozo (2015): 9.

As stated in this conclusion, accumulating evidence suggests a more predictable course of evolution than Gould's hypothesis, although the common consensus holds that the evidence is far from decisive to settle the question of the repeatability of biological evolution.[828]

7.3. Locking Providence: 'The Secularisation of Providence'

The disagreement in the contingency debate concerns the significance of contingency for the course of biological evolution. We have seen that, on the one hand, Gould argues that the scientific evidence of the reappraisal of the Burgess Shale calls for a radically new view of life and evolution. His thesis is that the evolution of human life is utterly contingent and that no directionality is inherent in biological evolution. Conway Morris, on the other hand, retorts that the inferences Gould draws are mistaken. According to Conway Morris, the evolution of human life is rather inevitable due to the phenomenon of evolutionary convergence. Hence, while Gould claims that rerunning the tape of life would most certainly result in a world absent of the human species, Conway Morris counters that biological properties such as human intelligence are an evolutionary inevitability.

Why should this scientific controversy be of relevance to theology? One of Gould's reasons for highlighting the role of contingency is to demonstrate the improbability of the evolution of humans.[829] He takes his proposal to be another Freudian wounding blow to human narcissism; the new emphasis on contingency in life's history is intended to shatter our conventional self-understanding.[830] Here is Gould:

---

[828] Blount, Lenski, Losos (2018): 663; Louis (2016): 115; Blount (2016a): 90; Blount (2016b): 258; Orgogonzo (2015): 9; de Visser and Krug (2014): 488; Lobkovsky and Koonin (2012): 6.
[829] Gould (1989): 24.
[830] Gould (1989): 43-5.

> We cannot bear the central implication of this brave new world. If humanity arose just yesterday as a small twig on one branch of a flourishing tree, then life may not, in any genuine sense, exist for us or because of us. Perhaps we are only an afterthought, a kind of cosmic accident, just one bauble on the Christmas tree of evolution.[831]

According to Gould, we are left with two options: either to accept that we are an unintended product of history, or to close our eyes to the apparent fact that life is a mere product of chance. Assuming that purpose and contingency are in stark contrast, Gould denounces the view that human life is anything other than a product of chance as distorted because, from a scientific point of view, the history of life is a history of decimation by lottery.[832]

Therefore, Gould rejects a view of "life's history as the fulfilment of a divine purpose,"[833] a phrase, incidentally, that shows the way in which he conflates or even identifies evolutionary directionality with God's providential care. He states:

> If the history of life shows God's direct benevolence in its ordered march to human consciousness, then decimation by lottery, with a hundred thousand possible outcomes (and so very few leading to any species with self-conscious intelligence), cannot be an option for the fossil record.[834]

What Gould is effectively describing here is the not uncommon view that belief in providence, God's guidance of the evolutionary process, amounts to a belief in predictable progress, or evolutionary directionality. In other words, if one equates providence with the two pillars of the conventional view, predictability and progress, then one will arrive at the conclusion that if and insofar as this world evolves predictably and progressively, God may be acting in evolution. But if it turns out that evolution is a contingent, unpredictable and non-progressive process, then we will have to abandon the concept of providence.

---

[831] Gould (1989): 44.
[832] Gould (1989): 44-5.
[833] Gould (1989): 288.
[834] Gould (1989): 262.

Addressing his worldview-related agenda, biochemist and Nobel laureate Christian de Duve dubbed Gould's thesis 'the gospel of contingency'.[835] By this he means that in Gould's writings contingency becomes something like a 'creed' Gould spreads to uproot the Christian belief that the evolution of humankind "reflects some kind of directionality in biological evolution."[836] Indeed, to convey the origin of human life as a random process, Gould compares the evolution of life to a drunkard's walk: evolution lacking directionality, intentionality, and purpose, is stumbling through history like a drunk through the alleys at night.[837]

By contrast, Conway Morris is widely applauded for having stood against the Gouldian view of the history of life as utterly contingent and without directionality, thus having secured a theologically acceptable view of the evolution of life. Consider the following statement:

> [T]he constraints of evolution and the ubiquity of convergence make the emergence of something like ourselves a near-inevitability. Contrary to received wisdom and the prevailing ethos of despair, the contingencies of biological history will make no long-term difference to the outcome.[838]

Humans are not a random accident but rather an inevitable product of the evolutionary history. In contrast to de Duve's 'gospel of contingency' label, Eörs Szathmáry terms positions stressing the inevitability of human life 'the gospel of inevitability'.[839]

The resonance of these opposed claims in the reception of the debate is indicative of a deep discomfort among Christians that a lack of directionality in evolution might render obsolete the doctrine of providence: that scientific directionality and divine purpose are

---

[835] De Duve (1996): 771.
[836] De Duve (1996): 771-2; quotation on p.771.
[837] Gould (2011): 149-51.
[838] Conway Morris (2003): 328.
[839] Szathmáry (2002): 779.

inextricably linked. Despite a different assessment of the significance of contingency both the gospel of contingency and the gospel of inevitability seem to agree at least on this, that God's guidance of evolution implies directionality in the scientific sense. When recently commenting on the contingency debate, historians of science Peter Harrison and Ian Hesketh identified the apparent implication that human beings are an improbable accident of evolutionary history as the major historical point of contention concerning evolution that remains a theological challenge up to this day.[840] Philosopher of biology Michael Ruse, for instance, writes:

> [F]or the Christian, human beings are necessary. Their arrival in this universe is not a matter of chance or whim – might have been, might not have been. […] And here's the rub: evolution through natural selection makes all this very problematic.[841]

Ruse here explains that according to the Christian doctrine of providence human beings had to evolve, but that evolution does not show the necessary directionality. The theological doctrine of providence lacks warrant because the scientific description of evolution does not imply an evolutionary directionality towards human beings.[842]

The discussion makes apparent that the notion of providence has radically changed: the non-directionality of evolution is a problem for theology that needs a scientific resolution, namely, evolutionary directionality. What is telling about Ruse's comment in this regard is that he thinks 'that science is needed' to fix the problem of providence. Since science cannot fulfil the theological demand, Ruse suggests a multiverse theory as remedy. If the number of attempts is infinite, then somebody will eventually win the lottery ticket.[843]

---

[840] Harrison and Hesketh (2016): 2.
[841] Ruse (2016): 312.
[842] Ruse (2016): 314-6.
[843] Ruse (2016): 323-5; quoted expression on p.323.

What is theologically questionable about proposals linking providence and directionality in this manner is the assumption that the doctrine of divine providence requires a directionality of evolution that science can describe. Put differently, if biological evolution does not exhibit an overall directionality then, by implication, God did not guide the evolutionary process. Alister McGrath recently spoke of a secularisation of providence in the evolutionary debate, by which he means the substitution of providence by evolutionary directionality. He urges that this secular alternative based on evolutionary directionality must not be equated with the theological doctrine of divine providence. McGrath consequently exposes attempts to present the theory of evolution as a defeater of the doctrine of divine providence as theologically flawed. What is objectionable in such attempts is the implication that an absence of a universal directionality from the scientific account of evolution speaks against divine providence.[844]

With McGrath I agree that the contingency debate is of interest to theology because divine providence should not be taken to be identical with directionality in evolution. Coming back to the first of the two initial positions mentioned in the introduction, natural contingency might *limit* a secularised version of providence, namely evolutionary directionality – although only on Gould's account, for, according to Conway Morris, convergence trumps contingency. Insofar as divine providence and natural directionality are distinct, however, it is *prima facie* not apparent why contingency should limit *divine* providence.

In the final chapter I shall show that in fact neither of the two discussed theological models of providence restricts itself to the statement that evolution is directional. Rather, the thesis is that God directs nature. Providence then is not concerned exclusively with

[844] McGrath (2009): 194-5.

natural processes, but also takes into consideration God's activity in these processes. The directionality resulting from sapiential-ordinative and actionistic providence does not equal the scientific directionality of evolution: it is not the claim that if you replay the tape of life, from a natural point of view, human beings will inevitably evolve again; but rather the implication is that God has *somehow* brought forth humans intentionally and willingly in this, the actually existing, tape of life, however likely that scenario might be from a scientific point of view.

By contrast, the secularised notion of providence diverges from divine providence in that it assumes that if God wills to bring forth humans through evolution, then their origin must be an inevitable outcome of evolution considered in and of itself. This notion needs to be subjected to theological criticism, since it locks providence into unwarranted scientific constraints. Only if one takes providence to mean evolutionary directionality can the scientific contingency-versus-directionality debate between Gould and Conway Morris directly negate or resolve the question of God's providential guidance of biological evolution. Otherwise the doctrine of providence will neither rest on, nor restrict providence to a directionality of evolution from a scientific point of view.

Chapter 8:
Evaluating the Theological Responses

In the preceding chapter, I argued that God's providence concerning biological evolution does not equal evolutionary directionality. This assumption would 'lock' divine providence unwarrantedly into the scientific constraints that are subject to the outlined contingency debate. To 'unlock' the doctrine of providence, I will address in this chapter the question of what form of directionality, if any, divine as opposed to secularised providence implies with regards to evolution.[845]

The way in which God is envisioned to direct evolution depends not least on the notion of providence employed. I shall argue that both the actionistic and the sapiential-ordinative model of divine providence imply a kind of directionality, although not the one the sciences describe. To this end, sections 8.1 and 8.2 compare an actionistic and sapiential-ordinative approach to evolution, both opposing in different ways the secular version of providence. Section 8.3 draws out some implications for the contingency debate.

8.1. The Limitations of NIODA as a Response to Evolutionary Contingency

The purpose of this section is to show the limitations of NIODA as a response to the challenge from evolutionary contingency. The limited applicability of NIODA in the context of evolution is significant because NIODA is not only a standard option in current divine action theories but, unsurprisingly, also a common approach to so-called theistic evolution. Theistic evolution is, broadly speaking, a theological movement seeking to affirm divine providence in biological evolution by developing a theology of nature rather than a natural theology. Basically, the objective is a theological interpretation of nature and

[845] I take the conceptual pair of locking/unlocking the notion of providence from Dodds (2012).

evolution: God creates human beings through the process of biological evolution. Theistic evolution sets itself emphatically in opposition to various forms of Creationism and the Intelligent Design movement by affirming and committing itself to the fundamental tenets of the scientific theory of evolution.[846]

In the 1978 Bampton Lectures, Arthur Peacocke famously replied to Jacques Monod that evolution is not so much governed by pure chance but rather by an interplay of chance and law.[847] Although scholars in the science and religion field generally agree with Peacocke's assessment, NIODA approaches nonetheless deem such a reply theologically insufficient for a robust account of theistic evolution. The reason is that the NIODA theory is committed to regarding God's providential guidance of evolution as special providence, and consequently NIODA models call for an account of theistic evolution explaining the particularity of God's guidance. Put differently, the concern with Peacocke's initial reply is that it appears to rest on the assumption that what is needed for a doctrine of providence is some form of evolutionary directionality. But what if, on a secularised notion of providence, Gould rather than Conway Morris turns out to be correct about the role contingency plays in evolution?

Among the three main versions of NIODA – bottom-up, lateral, and top-down or part-whole approaches – God's special providential guidance of biological evolution through QDA, as the only bottom-up approach, is the most distinct version of NIODA. Alister McGrath, for instance, comparing the three NIODA approaches for the purpose of theistic evolution comments:

---

[846] For a survey of theories of theistic evolution, see Peters and Hewlett (2003): 115-57. For a critical assessment of the concept, see Jackelén (2007). Jackelén argues convincingly that 'theistic evolution' is a misnomer and should rather be called 'theology of evolution.'

[847] Peacocke (2004). Peacocke explores the notion of chance as the 'search radar' of God (Peacocke (2004): 95).

> The attempts of both Peacocke [i.e. the top-down approach] and Polkinghorne [i.e. the lateral approach] to explore possible scientific frameworks for accommodating our understanding of divine action are to be applauded, even though their limits must be conceded.[848]

The reason is that, for one, the lateral approach has fared less well in the recent decade, and secondly, in the context of biological evolution it is unclear whether top-down or part-whole approaches ultimately rely on more fundamental sources of indeterminism. Russell, for instance, insists that

> contrary to the hopes of most previous attempts at theistic evolution, it seems unlikely that top-down or whole-part approaches are of much value when we are seeking to interpret evolution at the precognitive and even preanimate era.[849]

Therefore, for the purpose of discussing NIODA in the context of biological evolution I shall take QDA as the only bottom-up approach as exemplar for NIODA, and will focus more specifically on the work of Robert Russell. Russell has published most extensively on a NIODA based theory of theistic evolution and is therefore rightly credited for being its key proponent.[850]

The objective of Russell's quantum mechanics based NIODA model (QM-NIODA) is to explain the directionality of biological evolution. As part of his new defence of theistic evolution, the motivation for doing so is clearly theological: God needs to guide biological evolution because "biological evolution […] *is* God's way of creating life."[851] The *explanandum* of Russell's theory is the basic theological assumption that "God not only creates but guides and directs the evolution of life."[852] The guidance Russell aims for is of a specific rather than merely general sort; in opposition to previous attempts to formulate

---

[848] McGrath (2011): 238.
[849] Russell (2003): 347.
[850] Russell presents his NIODA defence of theistic evolution first in Russell (1995) and then in Russell (1998b), and republished shortened and slightly revised versions of the latter in Russell (2003) and Russell (2008b): 212-25. For the evolution of Russell's thought on the topic and related publications, see Wegter-McNelly (2006).
[851] Russell (2008b): 215.
[852] Russell (2008b): 215.

a concept of theistic evolution concerning general providence, with his concept of special providence Russell seeks to explain God's action in particular biological processes.[853]

First we need to make explicit the major premises of QDA in the context of evolution, which Russell praises as one of the most fruitful applications of QDA. The basis of the QM-NIODA model for explaining the directionality of biological evolution is ultimately physics: "Where science employs quantum mechanics and philosophy points to ontological indeterminism, faith sees God acting."[854] The QM-NIODA model purports that God, in his (special) providence, directs genetic mutations by determining the quantum events underlying these mutations. In this way genetic mutations are the *locus* of QDA.[855] The claim being made is that quantum physics provides a source of genetic mutation. God acts at the level of the genotype, which then affects the phenotype and in further consequence the evolution of species.[856]

In more detail, Russell's QDA model is based on a two-step argument.[857]

(1) Quantum mechanics plays a role in genetic mutations.
(2) Genetic mutations play a key role in biological evolution.
(3) Therefore, quantum mechanics plays a (key) role in biological evolution.

Granting the two basic pillars of Darwinian evolution, namely variation and natural selection, Russell maintains that genetic mutation is, in accordance with premise (2), the key factor for variation on which natural selection operates.[858] Premise (1), however, receives little support in his publications acknowledging instead a variety of 'unsettled

[853] Russell (1995): 19.
[854] Russell (2003): 354.
[855] Russell (2008b): 216.
[856] Russell (2008b): 224, n.8.
[857] Russell (2008b): 217.
[858] Russell (2008b): 216-7.

questions' in regard to potential quantum sources of genetic mutations.[859]

Moreover, there is a difference between playing a role and being a determining factor: if (1) quantum mechanics does not play a *key* role in genetic mutations, then it will not follow that (3) quantum mechanics plays a key role in biological evolution, but only that it plays *some* role; the role, however, might not be determining in the relevant sense. For a condition of the possibility for QDA to work at theistic evolution is that changes at the quantum level not only affect, but at large and effectively bring about genetic mutations.

Both of these related uncertainties about premise (1) limit the explanatory force of QM-NIODA for the agenda of theistic evolution.

Another difficulty concerns premise (2). The problem with his QM-NIODA model focusing on God directing genetic mutations is, as Russell admits,[860] that there are various other sources of contingency in biological evolution. This is Gould's contribution constituting the challenge from historical contingency. Even if genetic mutations were directed, the process of evolution might still have no directionality. Decimation, for instance, as Gould envisaged it, is a random process. The adaptiveness of organisms does not seem to secure their survival.

Russell knows about these sources of contingency related to both natural selection and hereditary variation. To evade the objection that other sources of chance might upset God's governing evolution through directing genetic mutations, Russell – and this move is worth highlighting – appeals time and again to the classical notion of eternity.[861] He argues that

---

[859] Russell (2008b): 217-9; quoted expression on p.218; Russell (2003): 356-8; Russell (1998b): 206-8; Russell (1995): 25-7.
[860] Russell (2008b): 219; Russell (2003): 358; Russell (1998b): 220; see also Russell (1998b): 205, n.43.
[861] Russell (2008b): 219-20; Russell (2003): 358; Russell (1998b): 220-1; Russell (1995): 25; see also Russell (2008b): 224, n.16.

because God has knowledge of the future as eternally present, God can direct the mutations accordingly.[862]

What Russell is effectively doing in replying to the challenge from contingency is to account for genetic mutations with QDA only to leave all other sources of contingency in evolution to God's transcendent knowledge. In replying that God has eternal knowledge of all circumstances Russell at least partially concedes to the notion of divine transcendence explored in this study. Without this appeal to God's transcendence the QDA proposal would in fact not evade Gould's objection from contingency.

Russell's appeal to the classical concept of eternity is only a partially satisfying move, however, for two reasons. First, to the extent that his QM-NIODA theory of theistic evolution rests on God's transcendent knowledge, his reply to the challenge from contingency presupposes a concept of divine transcendence that is ultimately not fully at ease with the general NIODA framework. For if God is transcendent in this way, his causation cannot be univocally conceived. Second, his appeal to the classical concept of eternity, which is an expression of the classical concept of divine transcendence, raises the question why only apply such an understanding of transcendence to God's knowledge rather than to his will and operation as well. If to evade the objection that other sources of contingency might upset and make impossible God's guidance of evolution through QDA demands or at least makes it plausible to envision God as transcendent agent, why make use of God's transcendence only as last resort?

---

[862] If this were not the case, the following objection could be raised. If God only knows the past, present, and determinate future, but not the indeterminate future (other than the probability of future contingents), then God will either not act prior to the indeterminate event because of his limited knowledge of the future, in which case the macroscopic effects of his action would not be instant but probably delayed due to the time period of the amplification process; or God will act before the indeterminate event, in which case God's action could go wrong because it would be based on a presumption and guess owed to probability calculus (Sansbury (2007): 114-8).

8.2. The Fruitfulness of the New Perspectives from Aquinas

We have seen that the major premise and presupposition of QDA in the context of biological evolution is that quantum phenomena not only underlie but also determine genetic mutations, which in turn must be key to account for the course of evolution. If one does not accept this premise and the implied link between quantum mechanics and hereditary variation, then it will not be possible to apply QDA in this manner to theistic evolution. Moreover, the QM-NIODA model explaining theistic evolution is, at least in the discussed version, based on a second premise. Even if one were to accept the first premise, one would have to account for relevant sources of contingency other than genetic mutations. Russell resolves this second difficulty by appealing to God's transcendence; but if God's transcendence is part of the answer, why not, as I have been suggesting, apply this principle more broadly? After all, a transcendent approach would overcome the need to get strongly involved in, or take a particular position concerning, the relationship of quantum mechanics, evolution and directionality.

How, then, does God act in the world on a transcendent account? Sapiential-ordinative providence suggests that God ordinarily governs his creation, down to the very particular, through secondary causes. Creaturely causes are God's chosen primary way to execute his eternal providential plan for and care of the world. God does then not act so much *on* creatures but *within* creatures. A condition of possibility of this alternative view is that divine action is not a univocal cause; nor is the predication of action in this instance an equivocation. To forestall theological anomalies and to prevent misconceptions, we ought consistently to use the concept of action analogically. Divine action is an analogical cause because God is radically different from creatures, and so is his action. As creator, sustainer, and governor of the entire cosmos, God acts in the world as universal and transcendent cause.

The concept of primary and secondary causation makes this apparent. The distinction is an instrument to express the difference in agency between God and creature. God as primary cause works in and through secondary causes by (a) creating and (b) conserving all creaturely powers and furthermore by (c) applying to act and (d) instrumentally using and directing these powers. Thus conceived the notion of secondary causation is a valuable theological alternative to the concept of OSDA or NIODA.

On the proposed view, how might God act in evolution? An example from biologist Nicanor Austriaco may serve to illustrate this view of God's action applied to biological evolution.[863] In 2002 a research group from the Max Planck Institute proposed in a *Nature* article, in collaboration with scholars from the University of Oxford, that one or two genetic mutations in the human FOXP2 gene, estimated to have occurred during the last 200,000 years of human history, might be crucial for the evolution of language as a uniquely human trait, since FOXP2 is the first known gene involved in the development of language.[864]

The genetic mutation was most likely mediated by DNA polymerase in this instance because the type of mutagenic event in question, as Austriaco points out, usually occurs through random errors in the DNA synthesis or the repair of DNA damaged by high-energy radiation or chemical mutagens.[865] Now suppose that the human FOXP2 gene linked to the development of language occurred in an anatomically modern human with a single mutation, for example, when a particular DNA polymerase repaired a DNA strand damaged by high-energy radiation.[866]

---

[863] Austriaco (2003): 984; Austriaco (2016): 197-9.
[864] Enard et al. (2002). The validity of this particular thesis does not matter that much; it only serves to illustrate the proposal and can, if necessary, easily be substituted.
[865] Austriaco (2003): 948.
[866] Austriaco (2016): 197-8.

About this simplified example Austriaco writes:

> God acts in this event as first cause because he *gives* the DNA repair molecule and the DNA strand their *existence* as particular kinds of things with particular *natures*. The DNA strand can be repaired by the DNA polymerase because God made them what they are. Indeed, the DNA repair molecule was able to introduce a random mutation into the FOXP2 gene precisely because God knew it and thus created it as error-prone and capable of randomly making mistakes. In introducing the genetic mutation into the DNA strand, the DNA repair molecule was functioning according to its God-given and God-guided nature.[867]

The theological suggestion being made here is to assume God to be active in the mutagenic event leading to the human FOXP2 gene by making all the elements involved what they are: God (a) creates and (b) conserves the *natures* of all causal factors which contribute to the chance mutation, as particular kinds of things with particular powers. The DNA polymerase has the power to repair the DNA strand and randomly introduce a genetic mutation into the FOXP2 gene because God made it thus: it is the God-given power of the DNA polymerase that accounts for the genetic mutation in combination with all the other factors, such as the DNA strand, high-energy radiation, and so on, which are equally caused by God.

What is more, in accordance with Aquinas' doctrine of divine application we can add that whatever all the elements that together account for the mutagenic event contribute causally, each manifestation of relevant powers, every actualisation of their potencies, is also caused by God as primary cause by (c) applying the creaturely powers (d) instrumentally to act. It is not only the existence of the agents involved that God causes, but also their very causation.

Most importantly, when God in his government makes use of secondary causes in this fourfold sense all accidental causes are thereby reduced to his providence. On a

[867] Austriaco (2016): 198. My emphases.

transcendent and universal account of providence, God is the *per se* cause of all *per accidens* causes. Nothing is accidental, or causally unrelated, in regard to his primary causation. Everything is subject to God's providence, including the 'random' mutagenic event. It should be noted that randomness in evolutionary biology is usually not taken in the mathematical sense of 'equally likely in all directions' but rather means that, as Gould puts it, the variation is "*unrelated to the direction of evolutionary change*."[868] The mutation does not happen in order to bring about an adaptive trait; variation and adaptation are unrelated. It is this separation of the source of variation from the force of change that Monod describes as 'chance and necessity'.[869] The salient point about the proposed theory of divine primary causation is, consequently, that in his government God causally relates all the naturally unrelated elements of the presently discussed chance mutation. Since his causation is transcendent, the events can be contingent, but because it is also universal – causally extending to each and every secondary cause, whether *per se* or *per accidens* – no accidents are possible with respect to his providence.

About this chance mutation, Austriaco goes on to say that

> the mutagenic event that made human FOXP2 what it is today, can be said to have been ordained from all eternity, and in this sense be *providential*, because in knowing the DNA repair molecule as error-prone, God *knows* it as error-prone and existing at a particular time and in a particular place. Therefore, the *contingent event* which gave rise to human FOXP2 occurred at the time and place that it did because God knew it and allowed it to exist precisely as happening at that time and place. It is a contingent event because God made it such.[870]

What Austriaco is effectively saying in this second statement is that a contingent event, such as the chance mutation in the FOXP2 gene, can be, and is in this instance, providentially guided because God knows and ordains it from eternity. Nevertheless,

---

[868] Gould (2002): 144.
[869] Gould (2002): 144.
[870] Austriaco (2016): 198-9. My emphases.

falling under God's providence does not take away the contingency of the event. As transcendent cause, God wills and causes not only some effect but also its causal modality, that is, he causes events to be either necessary or contingent. What is excluded from the government of God is not contingency, being not fully determined in one's nature to one effect, but only being causally unrelated to God the primary cause, although these events can be unrelated to other secondary causes. The *ens per accidens* is a relative, not an absolute concept.

The reason Austriaco gives in support of the compatibility of natural contingency and divine providence, namely divine knowledge, is not fully expressive of Aquinas' mature account, but can easily be expanded; God's knowledge needs to be supplemented by his willing and causing.

God *knows* future and contingent events such as the mutagenic event that led to the human FOXP2 gene. He knows future contingents because in his eternity, seeing as present all at once past, present, and future, God has knowledge not only of things in their causes but also in themselves and in their being. Knowledge of what is eternally present implies only a conditional necessity in the sense that if God knows something to be, then it must be, but what is known might be either necessary or contingent – like my knowing Socrates to sit makes it necessary that he sits (as long as he sits), but does not necessitate his sitting. God has knowledge even of a contingent mutagenic event because nothing is future to God.

Likewise, God *wills* contingents like the mutation that led to the human FOXP2 gene. He wills the necessary and the contingent alike because, as transcendent cause outside the order of beings, God wills and causes the very order of necessity and contingency. Contingency, like necessity, is but a difference of being, an accident of being subject to the one who causes being. As the cause of the order of beings, God orders contingent causes

to bring about contingent effects. By implication, then, the mutagenic event happened the way it did because God willed the mutation to happen contingently – in this instance probably mediated by a DNA polymerase at times randomly introducing mutations into the FOXP2 gene.

Finally, God *causes* and brings about contingents like the mutagenic event that gave rise to the human FOXP2 gene. He does so by acting as divine primary cause causing the very causality of secondary causes, including the relevant causal factors in the evolution of the human FOXP2 gene. God (a) creates and (b) conserves, for example, the power of the DNA polymerase making it the specific agent it is. God also (c) applies the power to act so to introduce the mutation into the FOXP2 gene in this instance and (d) uses it as instrument enabling the actualisation of the creaturely potentialities beyond its own nature so to give rise to a novel and specifically human characteristic by acting as the principal cause. These latter dynamic moments clearly show the intimate and dynamic nature of God's causal involvement in every creaturely action and are a sign of the efficacy of God's activity. God's causing of an effect through secondary causes is efficacious but does not make the effect necessary because as transcendent cause his efficacy extends not only to the effect but also to its mode of coming about.

At the same time it is the creaturely agent, by virtue of its inherent powers, that brings about the effect as secondary cause. Such secondary causes God can order in ways only a transcendent and universal primary cause can; for instance, ordering agents to produce ends that, abstracting from his primary causation, appear and are causally unrelated. God's ordering of contingent causes to particular contingent events can at least not be externally interfered by causally independent chains of causation, although internal impediments like patients not being properly disposed to receive some effect, or secondary causes falling

short of producing an effect, might occur in governing secondary causes, thus falling under God's providence in another respect.

In short, contingent events like chance mutations are secured 'in spite of' God's knowledge, will and causation because he is an eternal, transcendent and universal agent. While sapiential-ordinative providence integrates and embeds contingency as not being fully determined to one effect, accidentality in the sense of being causally unrelated to, or not being ordered by, God the primary cause is excluded from God's universal but particular government through secondary causation. The same line of reasoning applies to all natural causes, including the various other factors involved in biological evolution.

8.3. The Operative Notions of Teleology

The challenge from contingency entails that the contingency enshrined in biological evolution questions theological beliefs, such as the one that God in his providence ordains human beings to come about through an evolutionary process. Secularised providence claims that the necessary directionality must be scientifically discoverable; otherwise we have to give up the hope that our existence might be purposeful in this way. I suggested that secularised providence might be part of the problem rather than the solution because it locks providence into the constraints of science, and I noted that there are at least two ways to unlock providence.

8.3.a. Unlocking Actionistic Providence: The Limits of Externally Imposed Teleology

The actionistic model, at least in the case of NIODA, unlocks the notion of providence by way of divine externally imposed teleology. God guides evolution by imposing directionality. Recall that the hallmark of actionistic providence is using human action as a model for divine providence. The causal influence of human action exerted on external

things (transeunt action) is concrete and often what Aquinas would call 'violent' in the sense that it goes against a thing's natural tendency – like picking up a stone. Human action exerts influence on externals paradigmatically by acting *upon* things. If univocally applied to God, this setup tends to make providence a sort of pushing and pulling: an action not in accord with the natural tendencies resulting from the nature of the thing itself.

The main difference between immanent and externally imposed teleology consists in the fact that in the former case, but not in the latter, the *nature* of the thing exhibiting the finality accounts for the directionality toward the end. Feser illustrates the difference thus:

> That the parts of a watch are directed toward the end of telling time has nothing to do with the nature of the parts themselves. The time-telling function is imposed on the parts entirely from outside, by the watchmaker and the users of the watch. The finality here is thus extrinsic. By contrast, the tendency of an acorn to grow into an oak is intrinsic to it in the sense that it is just in the nature of an acorn to grow into an oak.[871]

This citation illustrates that the distinction between externally imposed and immanent teleology ultimately boils down to the question whether inherent natures account for the directionality. That is not to say, of course, that the parts of the thing receiving an imposition, such as the parts of the watch, do not have natures themselves, which they do, but that these natures do not account for the finality of the thing, such as the watch and its time-telling function.

In general, the NIODA manifesto states that God can act in the world, in a special and noninterventionist manner, if and only if the world allows for such divine action; only if the world provides the structures and openness God needs to act in nature. In accordance with its core, TPI, the NIODA agenda then specifies that if and to the extent that natural processes are indeterminate, God can act in nature because causal indeterminism,

[871] Feser (2014): 97.

interpreted as a lack and insufficiency of natural causality, provides an opportunity for OSDA to take up the room and determine what is left undetermined or underdetermined by natural causes.

Such theo-physical incompatibilist divine action might not go against the laws of nature but it does go against the natures of things, like an arrow being directed by the archer. The reason is that the finality is not expressive of the particular natures of things.

In particular, if applied to the question of biological evolution, the specific line of reasoning regarding QDA runs as follows: If (a) indeterministic processes at the quantum level provide room for NIODA, and to the extent that (b) such QDA has an impact on genetic mutations and (c) these directed mutations furthermore affect the overall directionality of biological evolution, then God can be said to direct the course of biological evolution by directly acting in quantum events.

The goal-directedness of evolution resulting from NIODA is then not identical with, and conditioned by, a scientifically discernible directionality. The ends in question are God's ends, the ends of his action in nature, imposed from the outside on nature. It is direct divine action that introduces, determines and brings about the goals of evolution. In the case of NIODA this is supposed to happen in concrete, separate and in principle distinguishable cases. In this way the question shifts from the scientific evidence for the directionality of evolution to the necessary room for such a divine imposition.

If there is room for such divine action, so the argument goes, then even if science might not be able to discover directionality in biological evolution, theology can still affirm it. To the extent that the factual course of evolution is ontologically indeterminate, God can direct it through NIODA. Evolution does not have to exhibit any directionality, say, towards the origin of the human species; nature in and of itself needs not to unfold immanently towards

specific ends, since God can guide the course of evolution externally in and through the indeterminacies of nature.

Thus in the context of biological evolution a similar picture emerges. If God determines what is left undetermined by natural causes, divine action might not be an intervention because indeterminacies, as integral parts of nature and by their very nature, purportedly provide metaphysical space. The action, however, God could perform in this manner would be extrinsic to and against the nature of creatures in the sense that the resulting directionality is neither expressive of, nor rooted in, creaturely natures.

Natural things *are* directed but by virtue of God's action; creatures in no way direct *themselves*. Even if the natures of things were to provide room for NIODA they would still not *qua* natures contribute to the resulting directionality. Such an immanent approach is prevented by the underlying competitive picture between divine and natural causation. It should be noted that this is a statement about OSDA rather than GDA. What is of concern is not the creation and conservation of natures or their general guidance through law and chance but God's action in the indeterminacies of nature. When God acts in the indeterminacies of nature directing nature, it is precisely not nature directing itself but God filling up, as it were, what is left and remains underdetermined by nature. Divine action goes 'contrary' to natures in virtue of using "created natural gaps."[872] The externally imposed teleology that NIODA is cannot, by its very setup, be in accordance with the natures of things because it exploits their indeterminacy.

The price to unlock providence, even if one could quash all the principal objections against the NIODA framework and more specifically its applicability to evolution, is that

[872] Russell (2008b): 214.

ultimately the resulting directionality has nothing to do with nature, other than that it purportedly makes room for God to direct nature. The notion of teleology operative in these models results not from 'determinations from within by nature' but from 'determinations impressed from without' by God.[873] In consequence, the bullet one has to bite if one wishes to hold and endorse this view is that for the doctrine of providence, or at least special providence, divine externally imposed teleology is essential.

In Chapter 6, I noted that, unlike immanent forms of teleology which come up for discussion and are still employed especially in (the philosophy of) biology, externally imposed teleology, and in particular divinely imposed teleology, is a highly contentious notion. This sort of teleology is not only methodologically erased from the sciences, but more importantly, if employed in an exclusive manner, it threatens to deprive natural agents of their causal powers and natural operations. The finality is not part of nature, not according to the nature of things, but divinely determined from the outside, so to speak. Nature becomes to some extent irrelevant for the direction. Nature is underdetermined; God determines the directionality precisely because and to the extent that nature is insufficient to account for it. This view is somewhat reminiscent of the mechanistic philosophy with its divinely imposed laws of nature externally directing inert matter which the DAP set out to overcome. The resulting directionality is God's intention at nature's expense.

8.3.b. Unlocking Sapiential-Ordinative Providence: The Advantage of Divinely-Guided Immanent Teleology

So far, I have identified a secularised version of providence as a threat for the doctrine of providence because it postulates and posits a scientific directionality of evolution. I have

[873] The formulation is taken from Gustafson (1944): 63.

also argued further that NIODA is only of limited value for responding to the evolutionary challenge from contingency because it remains unclear how a divine determination of genetic mutations resolves the dilemma that the human existence might be contingent *upon* earlier evolutionary lineages which are in turn contingent *per se*. On the theo-physical incompatibilist assumption, divinely guided genetic mutations alone will not do the job. The conclusion reached is that neither reducing providence to scientific directionality nor viewing God's guidance as tinkering with genetic mutations appears to be a particularly successful option for a theology of evolution.

With this much consideration of the limitations of a prominent actionistic model of theistic evolution, we can now proceed to unlock the notion of providence with the aid of a sapiential-ordinative conception. Up to this point, I indicated, in a merely negative manner, what teleology a sapiential-ordinative providential guidance of evolution does not imply. In particular, I have argued that the operative notion is neither a scientifically discernible directionality *of* evolution, as in the case of secularised providence, nor an externally imposed teleology *on* evolutionary processes, as in the case of actionistic providence. An alternative to both forms of teleology would have to be, *pace* actionistic providence, *immanent* in nature and, *pace* secularised providence, *divinely guided*. What we are looking for then is what I will call divinely-guided immanent teleology, or Thomistic teleology.

Regarding the present question of the directionality of biological evolution I propose an understanding of sapiential-ordinative providence implying at least a two-fold directionality: (a) a specific directionality of individual organisms, substances or agents grounded in their form – the 'natural appetite' for their perfection – and (b) a general directionality rooted in the matter of compounds – 'matter's appetite' for form. I previously

called them formal and material natural inclinations, respectively. While the first finality is specific to a being, the second one can point beyond that being. I say at least two directionalities because Karl Rahner proposed a third directionality partly based on Aquinas, what he calls (c) self-transcendence. I will close my exposition with a discussion of this speculative extension combining the two basic finalities.

8.3.b.i. Formal Natural Inclinations: The Directionality of Natures

Providence in the sapiential-ordinative tradition is the ordering of all created things to their ends. It refers in the primary sense to the conception of the ordering as it exists eternally in God. In this way God has an immediate providence over each and every creature. Since providence as this reason for the order of nature exists in the divine mind and God's knowledge and will is the cause of things, providence is the immediate origin of nature's end-directedness. Providence directs nature, and nature exhibits a directionality because God ordains it to ends.

On the other side of the coin, sapiential-ordinative providence includes divine government. Government is the temporal execution of the eternal divine conception of this order. As argued in Chapter 4, God's ordinary government is exercised through secondary causes. Secondary causes mediate God's eternal plan through their own causality. Natural causation is therefore the primary *locus* of government. Natural causes are the proximate origin of the directionality of nature. Government through secondary causation implies ends or final causes because it is the temporal execution of the eternal reason for an *end*-directed order. The fundamental natural orientation towards these appointed ends of all secondary causes is what Aquinas calls 'natural appetite'. Appetency is an immanent end-directionality directing creatures to their divinely ordained ends.

Combining the two sides of the coin, then, natural teleology, that is, the teleology of natures, originates *ultimately* in God, then called providence, but *proximately* in the natures of creatures, referred to as divine government or fate. As mediated through secondary causes, the finality of sapiential-ordinative providence is immanent in creatures because rooted in their natures. The order of nature is therefore teleological due to, rather than in spite of, God's particular rather than merely general working in and through natural teleology. Here again the principle applies that if the ratio between creaturely and divine activity is proportional, not disproportional, then creatures direct themselves to ends the more, not the less, God directs them. He bestows on creatures active potencies, natural inclinations and appetites whereby they actively strive for their ends rather than passively receive their directionality. All natural teleology originates in and is immediate to God but is nonetheless executed through secondary causes and immanent in creatures.

Appetites express tendencies in nature, and the concept of appetency grounds them in forms and the kinds of being exhibiting these inclinations. Now even if one were to disagree about the underlying philosophical analysis, the phenomena thus described would need not be controversial from an evolutionary point of view. Formal natural inclinations are inclinations in virtue of a thing's form, a tendency toward an end. The end towards which things exhibit this directionality is their perfection: the full actualisation of their potencies or capacities. Organisms are clear examples of such appetency. They strive, as it were, for preservation and maintenance, they reproduce, grow and generally undergo development. Moreover, many living things, having their principle of change in themselves, undergo a specific kind of developmental change striving for and ever fuller reaching their mature form. But the applicability of formal natural inclinations is in no way restricted to the biological realm. All causal powers, as power theorists maintain, exhibit a fundamental directedness toward an end. So in a more generalised way we can say that, if there are

causal powers in nature, then they exhibit, to the extent that they display finality, essentially properties of appetency.

8.3.b.ii. Material Natural Inclinations: The Directionality of Nature

The model proposed to account for the directionality of natures gets distorted if one loses sight of the fact that the first concept of natural appetency is essentially restricted to and limited by (metaphysical) species, for the simple reason that appetency in this sense is grounded in substantial form. In virtue of what a thing is, having the form it has, the thing strives for the end appropriate to it, but it does not, at least of itself, actively strive beyond what it is. This is why Leo Elders cautions that formal natural inclinations in Aquinas must not be taken as transgeneric tendencies:

> [Aquinas] does not mean transgression beyond the boundaries of a genus, but activity which, at a given level, imitates as well as it can, what higher beings do at their level.[874]

In this sense the directionality of natural appetites, when focusing on living things, is loosely speaking not evolutionary because *prima facie* species-restricted.

Nonetheless, I have suggested in Chapter 6 that appetency goes deeper than natural inclinations in virtue of form. As compounds of form and matter, corporeal beings have a two-fold basis for natural tendencies, causal powers or active potencies and its correlate, potentiality or passive potencies. What I would like to suggest is that the directionality of *Nature*, of nature as a whole, is from a natural point of view the directionality of *natures*. Yet, since corporeal beings have a two-fold directionality, so does Nature. We can therefore expand the directionality of Nature to include material natural inclinations:

[874] Elders (1984): 56.

> It is true that substantial forms as such resist substantial change; nevertheless the disposition which they together with matter develop in the whole subject make that subject passive to the influence of other agents that can bring about that change.[875]

This passage from McWilliams illuminates formal and material natural inclinations: that appetites of active potencies result in action, whereas appetites of passive potencies result in receiving.[876] All natures are actively end-directed in virtue of their form and corporeal natures, but also have in themselves a principle of being, matter, which passively directs them towards a higher actualisation.

Following Joseph Donceel, we may read the controversially discussed *locus classicus* of the finality of Nature in the *Summa contra Gentiles* (*SCG* III, 22) as containing the following syllogism:[877]

(1) "The intention of everything existing in potency is to tend through motion to actuality."

(2) "The vegetative soul is in potency to the sensitive, but the sensitive to the intellectual."

(3) Therefore, the intention of the vegetative soul is to tend through motion to the intellectual soul.[878]

Premise (1) is an expression of matter's appetite for form (*appetitus materiae*) and thus a metaphysical finality – a "hunger for actuation"[879]; it is nothing other than what I previously introduced as material natural inclination. The thesis is that what exists in potency tends (through motion) to actuality because potency is ordered to actuality.[880] Jacques Maritain points out that this finality is "*transnatural* with regard to its own

---

[875] McWilliams (1954): 164.
[876] McWilliams (1954): 167.
[877] Donceel (1965): 299-300. Some have read this passage as being restricted to the generation of a given species (Chaberek (2017): 75-7). The development of the embryo mentioned in the passage serves, however, as an example to illustrate a general thesis. The majority of scholars reads the passage as an expression of a finality of the created order (De Koninck (2008a): 263-8; Maritain (1997): 88-91; Moreno (1973): 440-2; Donceel (1965): 299-300; Rahner (1965): 92, n.15; Brisbois (1949): 119-21).
[878] *SCG* III, 22.
[879] McWilliams (1954): 165.
[880] *SCG* III, 22. Aquinas uses *intentio* and *appetitus materiae* interchangably (*SCG* III, 4).

nature."[881] In virtue of its matter a corporeal being can tend towards a form beyond its specific nature. Matter strives for a higher actualisation.

Premise (2) is a specific statement of the general thesis that matter is in potency to form, and, until the current form fully actualises the potency of matter, the matter will be and remains in potency to different and higher forms. In fact, as seen in Chapter 6, the passage concerns not only what we today would call biological evolution, but also cosmological evolution. On the classic gradation, it is not only the vegetative soul that is in potency first to a sensitive and then to the intellectual soul, but more fundamentally prime matter is in potency to forms of elements, elements are in potency to forms of mixed bodies and mixed bodies are in potency to souls.

The syllogism finally states that the actualisation takes place 'through motion' and therefore calls for an adequate and proportionate agent. Only what is in act can actualise potency by educing form from the potency of matter.[882] What we have to add from an evolutionary perspective is that this actualisation takes place through an evolutionary process: "The tendency of nature towards superior forms is realized through evolution."[883] Through evolution matter is successively reduced to act. To the extent that such a transitioning from vegetative to sensitive and intellectual life factually took place, its possibility is established. The additional claim being made is that this evolutionary change needs potentiality, and that potentiality is order to actuality. The former is a philosophically

---

[881] Maritain (1997): 90.
[882] *ST* I, 2, 3: "For to move is nothing other than to educe something from potency to act; something cannot be reduced from potency to act, however, unless through some being in act […]." For the time being I have to skip the question why the principle of (proportionate) causality is not violated by evolutionary accounts. For sketches of how God's principal and primary causality in instrumentally used secondary causality can account for this, see Klubertanz (1941); Luyten (1951); Donceel (1965); De Koninck (2008a): 235-354; Dodds (2012): 193-204; for a hylomorphic approach to biological evolution as the gradual alteration of the disposition of matter that eventually results in an eduction of a new substantial form, see Moreno (1973); Maritain (1997); O'Rourke (2004); Tabaczek (2015); Austriaco (2018).
[883] Moreno (1973): 443.

substantiated and defendable thesis: no change and motion without potency; the latter I have sought to make intelligible at least within Aquinas' doctrine of providence. Therefore, assuming that the human soul is a form that actualises matter at least to a high degree, we can conclude with Charles de Koninck that on Aquinas' view "matter is essentially ordered to man"[884] because "potency is essentially ordered to act."[885]

In the contingency debate it is most of all the question of how this evolution took place, how this potentiality was actualised, that is disputed. The point about contingency in biological evolution is that among the natural agents bringing about variations and in the process of natural selection there are *per accidens* causes. For instance, the finality of the causality of the source of raw material is unrelated to the adaptiveness of the resulting biological trait.[886] Aquinas would say that the effect is not intended by the agent. On the proposed account, however, God in his providence is the *per se* cause of all accidental causes. Natural contingency and accidentality exist as features of secondary causality, namely not being fully determined in one's nature either to being or non-being and being causally unrelated, but the latter is only possible with respect to other natural causes, for God's government causally relates back everything to him as primary cause. Therefore, whether agents act as *per se* or *per accidens* causes, whether purpose or chance reigns in natural processes, God in his primary causation is the governor of all these processes.

8.3.b.iii. Self-Transcendence: A Potential Link

The conclusion one reaches concerning the factual course of the actualisation of the potency of matter is arguably a matter of perspective because it depends on the question of which agents one is willing to take into consideration. In Chapter 4, I suggested that natural

[884] De Koninck (2008b): 407.
[885] De Koninck (2008a): 263.
[886] Gould (2002): 144.

causation, or manifestations of powers, result from powers created, conserved and (instrumentally) applied to act. Aquinas' concept of primary and secondary causation is a metaphysical analysis of the intricate interplay of the causal contribution of God and creaturely agents *in natural causation*. The subject matter of his analysis are the natural agents we find in nature and describe scientifically, without being restricted to scientific modes of analysis. Unless the scientific notion of causation is absolutized without methodological warrant, however, no problem occurs regarding such a theologico-philosophical analysis of natural causation.

Admittedly, from a scientific point of view, there might be no overall directionality of Nature stemming from the various natural agents actualising these potentialities. It might turn out that evolution is a matter of contingency in the Gouldian sense. Nevertheless, it is legitimate, a least *prima facie*, to interpret the being in potency to actuality as a sort of directionality if considered as being created and ordered by God; especially if the gradual actualisation is interpreted as being actively and providentially guided by God. This latter interpretation of the material natural inclinations is theologico-philosophical rather than scientific. Whether or not science detects directionality, which is the subject of the dispute between Gould and Conway Morris, the evolutionary course might be directed by God. Against this view one would have to bring forth arguments showing that potency cannot be ordered to actuality, or that God cannot guide the actualisation.

I will close my exposition of divinely-guided immanent teleology with a tentative discussion of a third kind of directionality linking the formal and material natural inclinations Aquinas uses to account for God's immanent ordering. If natural causation is caused causation in the sense that God not only (a) creates and (b) conserves all creaturely powers, but further (c) applies them to act and does so (d) instrumentally, then it might be

argued on more speculative grounds that created agents can, by virtue of God working in and through their operation, produce through their causality something ontologically more than they possess as agents.[887]

That an agent can cause by its own causality more than it possesses is what Karl Rahner calls self-transcendence (*Selbsttranszendenz*). Self-transcendence is a mode of becoming. By way of distinguishing becoming more (*Mehrwerden*) from mere becoming otherwise (*Anderswerden*), where the former implies an increase (and not just an alteration) of being (*Seinszuwachs*), Rahner argues that educing a substantial form from the potency of matter involves becoming more.[888]

What is in question here is not only (a) the self-fulfilment of creaturely natures, the directionality resulting from the formal natural inclinations, but also (b) the transcendence of these natures, the directionality resulting from the material natural inclinations.[889] The concept is applicable to evolution ordered by divine providence because by way of self-transcendence creatures would be enabled to reach, as it were, beyond their specific essence.[890] As such, self-transcendence would count as immanent teleology insofar as it is expressive of the causality of the creature exhibiting the teleology. [891] To the extent that there is a directionality beyond formal natural inclinations, namely the material natural inclinations, the specific essence of the creature, says Rahner, does not completely

[887] John Wippel argues that "for Thomas, whenever a new substance is efficiently caused by a natural or created agent, that agent's causation applies both to the act of being itself (*esse*) of the new substance and to a particular determination of *esse* as realized in that substance." (Wippel (2000b): 213) For a detailed discussion, see Wippel (2000b); Dodds (2012): 193-8; Silva (2016b): 168 speaks of an instrumental 'instantiation of being'.
[888] Rahner (1965): 71-3.
[889] Rahner (1965): 69.
[890] Rahner (1965): 92.
[891] Rahner (1965): 64.

determine the possibilities of the agent, although the potentiality of matter determines and limits what can follow directly and naturally from the current state.[892]

To account for the increase of being that 'becoming more' (*Mehrwerden*) implies, a cause is needed which can ultimately only be God in his universal and transcendent causality. What Rahner expresses with his notion of self-transcendence, I suggest, can be accounted for in terms of divine application – the divine actualisation of the creaturely power to act, the transition from *posse agere* to *actu agere*.[893] In Rahner's own words:

> Only by including God and his action is the self-transcendence by the creature possible which occurs in the passage from *potentia* to genuine *actus* which involves an increase of being.[894]

Rahner goes on the explain how this divine action in creaturely action is to be conceived:

> And only if God and his power is thought of as [i] comprised as a factor in the *efficacy* of the *finite agent* – […] without thereby [ii] becoming an intrinsic constituent of the *essence* of the *finite being* itself – and not simply as sustaining the *actus secundus* [i.e. the operation][895] as such and as received in the finite agent, can the act be conceived as produced by the finite agent itself.[896]

Rahner suggests that to account for creaturely self-transcendence divine causality needs to be (i) a constitutive part of creaturely *causality* without becoming (ii) an essential part of the creaturely *agent*: "[God] the infinite cause […] belongs to the constitution of the *finite cause* as such (*in actu*), but without forming an intrinsic constituent of the *finite being* as such."[897] The first part of the statement about causality ensures that the becoming in question is really a *self*-transcendence: the *creature* actively becomes something ontologically more (rather than merely passively undergoing substantial change). Rahner takes this to mean that the operation is ontologically more, or has more being, than the

---

[892] Rahner (1965): 89-90.
[893] Rahner (1965): 74-5.
[894] Rahner (1965): 77-8.
[895] Rahner (1965): 77.
[896] Rahner (1965): 78. My emphases.
[897] Rahner (1965): 80. My emphases.

agent. The second part about the agent stresses that it is nonetheless a case of self-*transcendence*: the creature actively becomes something ontologically *more* (rather than merely something else). Self-transcendence accounts for an increase of being.[898] Hence the notion of self-transcendence refers to "an agent's transcending itself in its operation."[899]

Put differently, creaturely causality is caused causality in that God (a) creates, (b) conserves and (c) applies to action all creaturely powers. In doing so, it is the creature that causes an effect, but it does so by virtue of the power of God who acts in and through it. Without the aid of the divine application the agent cannot cause anything, the creaturely power needs to be applied to act. If we also take into consideration God's (d) instrumental use of the created, conserved and applied powers, then the conclusion suggests itself that in a two-fold sense the creature can cause more than it would be able to by its own nature, namely, (c) by virtue of the divine application the creature's *causality* and (d) by virtue of the instrumental causation the *effect* of the creature's causality has more actuality than the creature as agent in virtue of his specific essence.

Such causation nonetheless happens 'with the causality' of the creature because it is the creaturely power that God uses. Being instrumentally used by God as principal agent, (d) the *creaturely* power grounded in and limited by the agent's nature brings about something that goes beyond what it can achieve on its own accord. Divine application (c) moves the *agent's* powers from *posse agere* to *actu agere*. The increase of being is therefore primarily caused by God, but secondarily by creatures. Without God's activity in creaturely causality, creatures would have no genuine causality at all, but with and due to

[898] Rahner (1965): 80.
[899] Rahner (1965): 88.

God's causal involvement it is *their* causality. The four moments of God's activity in creaturely activity are a constitutive part of creaturely causality.

What I wanted to indicate with this discussion is that it might be possible constructively to link material and formal natural inclinations in a speculative manner, and I tentatively suggested that if and insofar as God is a constitutive part of secondary causation, creaturely causation might have, in extending Aquinas' account, the potential to transcend at least some of the limitations the specific essence imposes on the agent possessing these creaturely powers.

8.3.c. The Difference it Makes

The advantage of unlocking the notion of providence by means of the proposed sapiential-ordinative model consists in remedying by and large the two main difficulties the actionistic NIODA model faces in performing the same task. Apart from general problems of the approach, the QM-NIODA theory has a specifically restricted applicability in the context of biological evolution and is therefore of limited value for replying to the challenge from contingency. Only by adding premises that are ultimately not at ease with the general framework can the theory work. Even then, the second difficulty is that the resulting teleology is purely externally imposed on nature by God. Due to the univocal understanding of divine and creaturely causation divine teleology is at nature's expense: NIODA is not an instrumental use of creaturely powers but making use of the lack thereof.

Sapiential-ordinative providence implies, and essentially depends on, what I called a divinely-guided immanent teleology. Applied to the question of the directionality of biological evolution this means that scientifically we can at best partially discern such a teleology in nature, for it is at least partly a theological and philosophical concept. Only if the perspective is not exclusively scientific but also includes explicitly a theological and

philosophical perspective, can one make intelligible such directionality. The directionality implied by the sapiential-ordinative model of providence is compatible with, but not reducible to, science.

Against externally imposed teleology, divinely-guided immanent teleology emphasises the importance of the natures of creatures and their striving in virtue of these created but intrinsic natures. This alternative perspective bestows on creatures the dignity of contributing to, and participating in, the divine providential guidance of the world and thus underscores the value of creatures and their teleological nature and causation. Divine government ordinarily happens through formal natural inclinations. If applied to the question of the directionality of evolution, the material natural inclinations become important because they express the passive directionality of being in potency to higher forms and actualisation.

While formal natural inclinations count as immanent natural teleology because the directionality stems from the intrinsic form, material natural inclinations are immanent in a different way; they are immanent to the corporeal creation in virtue of matter being a principle of being of corporeal creatures. This latter directionality has a cosmic and evolutionary dimension. Only if no potency is left has the material natural inclination reached its end. Material natural inclinations are divinely guided because the factual actualisation of these potencies through motion is subject to God's all-encompassing providence. If the metaphysical finality of creation is not in vain, if the end and actualisation of all creatures in virtue of their form and matter are ever reached, it happens through change requiring natural agents exercising God's universal government.

Such an actualisation of potency can only be brought forth by appropriate and proportionate agents with their formal natural inclinations, and the verdict is that this

actualisation is, at least in the case of biological evolution, an essentially contingent happening. What we are looking for to make natural teleology work is therefore a theory that secures both the reality of natural contingencies and its providential ordering.

The explanatory burden of the new perspectives from Aquinas rests ultimately on the transcendent nature of divine providence. On a transcendent account, the necessity implied by divine providence is a hypothetical one: necessarily, if God knows, wills, causes this, then this must be. But what is known, willed, and caused can be either necessary or contingent. The necessity is a *necessity of the consequence*, not a *necessity of the consequent*. This sets the approach apart from the impoverished account of secularised providence based on the inevitability of evolution; evolution need not be necessary in this sense. By guiding the evolution of the human species God does not necessitate biological evolution. From a scientific point of view, contingent processes in the Gouldian sense may indeed go towards explaining the gradual actualisation of potencies, yet from a theological point of view, even if human life is contingent *upon* contingent *per se* events, human life will be divinely ordained and providentially guided because God is the *per se* cause of all the *per accidens* causes.

The scientific and theological statements do not contradict each other because they refer to the evolution of the human species under different respects, either abstracting from or including divine primary causality: if we abstract from God's involvement in creaturely causation and focus on secondary causation only, then biological evolution might indeed turn out to be contingent in the Gouldian sense; but if we take into consideration God's transcendent and universal causation in creaturely causation, then natural contingency and accidental causation, real with respect to natural causes, become divinely ordained causation.

As theologians, we can content ourselves with positing a directionality of evolution as a *theological* or philosophical thesis. God's transcendent providence does not necessarily rely on goals, progress, and predictability in *biological* explanations. With this remark I do not propose to split reality; there is but one. Rather, I argue for changes in the theological outlook. In combining a sapiential-ordinative approach to the providence of God with the doctrine of divine transcendence, it becomes methodologically possible to abstract from primary causation in the natural sciences and hold all the same that if we take into consideration God's universal and transcendent government of all creaturely operations, then even naturally undirected events can be guided by God, immanently and teleologically, to particular ends. What makes possible a re-framing of the contingency debate is the fact that we can base our discussion on an altogether new conceptualisation of divine providence.

Summary of Part III

In PART THREE I set out to show the fruitfulness of the proposed alternative by contrasting the new perspectives from Aquinas with the NIODA theory and its limitations. To this end, I applied the general principles discussed in PART ONE and TWO to a pertinent question in the science and religion dialogue, namely the topic of the directionality of biological evolution.

The starting point of the discussion was a scientific dispute between Stephen Jay Gould and Simon Conway Morris about the role of contingency in biological evolution. At stake is the relative significance of historical contingency and evolutionary convergence. The former thesis states that the evolution of a particular species is contingent upon contingent *per se* events and therefore improbable; the latter concept bespeaks of a directionality concerning the emergence of similar biological properties in independent lineages rendering irrelevant the probability of the emergence of a specific species within a given lineage. The purpose of the presentation was to show that what locks providence into these scientific constraints is the assumption that the doctrine of providence implies a natural directionality of evolution. The controversy, as well as its reception, is indicative of a secularised notion of providence. Since an end-directedness of speciation is not at ease with the current view of evolutionary biology the only route open would accordingly seem to be an appeal to evolutionary convergence.

As remedy, NIODA, a standard option at theistic evolution, seeks to unlock providence by inserting divine action into the indeterminacies of nature arguing that God determines the otherwise undirected or only partially directed evolutionary unfolding of creation by directing genetic mutations. But this proposal, even if it can be made to seem plausible, will only result in external teleology. God merely imposes directionality on nature from

the outside. What nature contributes to its directionality is solely the room provided by its indeterminacies for God to act and direct nature. The quantum-based NIODA model has strong and quite controversial implications and faces several limitations in evading the objection from contingency, including the need to appeal to a notion of divine transcendence that is arguably not at ease with its general framework.

The new perspectives from Aquinas suggest a different avenue. God guides the evolutionary processes through formal and material natural inclinations. Natures have tendencies, and so does Nature, at least from a theological and hylomorphic point of view. If abstracted from primary causation, however, nature and biological evolution will appear at times directed and at times undirected. Thus, a claim to a directionality of biological evolution toward human life might involve more than a purely scientific explanation; we need to take into consideration God's providential primary causation. The key to opening this different avenue is that God's causation as universal and transcendent agent is compatible with and incorporates natural contingency:

> Some things God may order by nature, others by chance […], but all are under providence. Providence is their first cause, though it moves some things by necessity and some by contingency.[900]

Aquinas' doctrine of divine transcendence indicates a way to explicate the compatibility between divine providence and natural contingency in that contingency is affirmed as genuine reality of creaturely causation but accidents are negated in God's providence.

If the basic line of reasoning of PART THREE is valid, then approaching the question of the directionality of biological evolution in the context of a sapiential-ordinative and transcendent model of providence helps to reframe the contingency debate between Gould

[900] Harrington (1954): 176.

and Conway Morris because the new perspectives from Aquinas offer not only reason to reject the secularised notion of providence operative in the controversy but, more importantly, provide a substantive alternative. What theology demands is not the directionality of biological evolution from a scientific point of view, but God's guidance of biological evolution; a providence that can accommodate and incorporate natural and historical contingency. On the proposed view, immanent teleology is endorsed as far as it goes, but the vital hinge is that on a transcendent account there is nothing accidental to God. God can guide even contingent processes to their appointed ends. He is universal and transcendent agent, the creator, sustainer and providential applicator of all creaturely powers to act. His providence rules over necessary and contingent processes. He knows, wills, and causes the contingent as well as the necessary, and orders and guides natural processes through themselves in a transcendent and immanent manner.

CONCLUSION

In this thesis I set out to argue that there is a viable alternative to the contested standard model of divine action in the field of science and religion today and the underlying conception of providence. The key insight of this study is that providence can not only be analysed in terms of human and divine action, as is commonly done and presumed in the divine action debate (DAD). I have pointed out that there is a longstanding tradition taking human providence as an analogy for divine providence. The creaturely prime analogue for providence in this alternative vision is not human action but the virtue of prudence. The action-based model under scrutiny in PART ONE I labelled actionistic providence; the alternative prudential model explored in PART TWO I called sapiential-ordinative providence.

This change of perspective in conceptualising providence is significant for several reasons. First, the stern focus on divine action has led to a preoccupation with divine intervention. The common reasoning underlying much of the DAD has been that providence is essentially divine action and that, if the concept of action can be predicated to God and humans alike and human action requires causal indeterminism, then divine action and hence providence will also require indeterminism. If the latter is not given, the only option available for God to act in nature are contested divine interventions. By contrast, prudence as the virtue essentially ordering means to ends is a teleological notion. Any model based on human providence as the principal part of prudence, therefore, lends itself to a teleological understanding of providence. In emphasising the ordering function of prudence as the quintessence of divine providence the debate can move away from the topic of intervention, or their negation.

Second, in attempting to get away from interventions while at the same time holding fast to an actionistic understanding of providence, NIODA, the current standard model in divine action theories, has significantly narrowed the scope of providence by positing a need for room for divine action. A core commitment of the NIODA model is theo-physical incompatibilism (TPI), or the view that causally determined systems preclude objective special divine action (OSDA). The result of this presupposition is that God can act, or act non-interventionistically, only in the indeterminacies of nature. Hence scholars committed to TPI take contingency to provide the *locus* for providence. By contrast, in distinguishing providence from government and seeing government as ordinarily coming about through natural causes, sapiential-ordinative providence broadens again the scope of providence in viewing both necessity and contingency as *effects* and *means* of providence. Both are properly speaking characteristics of secondary causation to be distinguished from primary causation. Since primary causation in and through secondary causation, whether contingent or necessary, qualifies as OSDA, TPI can be done away with as a theological premise even on the conceptual grounds of the recent debate. Causal indeterminism is, consequently, not the condition of possibility of divine action in nature.

Third, the contested view that contingency *limits* providence and the reply that contingency rather provides the *locus* for providence share a univocal understanding of divine and natural causation. Both positions agree that natural causation is incompatible with certain forms of divine causation; the actionistic standard model diverges from the objection against providence from contingency only in taking indeterminism, interpreted as a lack of natural causation, to provide room for divine causation precisely to the extent that contingency amounts to natural non-causation. By contrast, in emphasising the transcendent nature of God's government in and through natural causes, sapiential-ordinative providence helps to re-conceptualise divine and natural causation in non-

competitive terms, since divine and natural causation are introduced as analogical rather than univocal concepts. For the same reason, neither must the ordering function of prudence be univocally applied to God: human and divine providence are analogical not univocal predications. God's teleological ordering of creatures is decisively different from human providence, not least because the latter is restricted to future and contingent events. Sapiential-ordinative providence works only on a transcendent account of God's activity.

Along these lines, the discussion of sapiential-ordinative providence yields and supports a paradigm shift from a competitive to a non-competitive picture of divine and natural causation based on a change from a univocal to an analogical predication of causation. This conceptual modification is accompanied by a long-awaited and radical shift away from the question of intervention towards a new direction, highlighting instead the significance of natural teleology for understanding providence.

In this conclusion I will briefly summarise the findings of this thesis and will then finish with a few closing remarks.

PART ONE, on the history and main systematic developments of the DAD, brought to light two crucial presuppositions lurking behind the standard model of divine action. By historically contextualising this approach, I showed that as a starting point the Biblical Theology Movement has set the agenda of the DAD. Biblical Theology's central claim that the essential teaching of Scripture is divine action goes towards explaining why providence has been conceptualised in those terms. Second, the so-called 'liberal modern worldview' implicit in the critique of Biblical Theology, which sparked off and further refined the research agenda of the DAD, discloses why the standard model is theo-physical incompatibilist by default. The reason is that the underlying modern scientific challenge posed against divine action in nature is an expression of TPI. The standard model adopted

the basic premise of their interlocutors, the major (1), only denying the minor (2). The thereby emerging category of special divine action (SDA), or OSDA, is an attempt to avoid uniformitarian divine action – the view that there is only one single act of God, namely, the enactment *of* nature, thereby denying any further divine action *in* nature – that at the time represented an influential although contested theological stance in reaction to the 'liberal modern worldview'. The alternative and novel reply was to a large extent focused exclusively on causal indeterminism as the *locus* of providence. The standard position can be schematically presented in terms of a syllogism:

(1) Causally determined systems preclude OSDA.
(2) Nature is *not* a causally determined system.
(3) Therefore, nature does not *prima facie* preclude OSDA.

The question I posed to this reply tackling the minor rather than the major is the following: why should indeterministic systems admit of OSDA if deterministic ones preclude it? The crux of the NIODA model, I argued, is the additional claim that (1') causal indeterminism provides room for OSDA.[901] The contested evidence NIODA theorists propose in support of this premise is that causal indeterminism implies a lack of natural causation, an ontological gap that could be filled with divine causation. I argued that this new God of the gaps strategy is not convincing on scientific and philosophical grounds, not least because of a conflation of indeterministic and deterministic theories, and has furthermore strong theological implications since it presupposes a univocal and competitive understanding of divine and natural causation.

PART ONE then concluded that there are scientific, philosophical, and theological reasons to reconsider the initial theological premise of TPI. Natural contingency, or causal

[901] On this presupposition, NIODA theorists can then conclude that insofar as (2') nature is causally indetermined (3') nature provides room for OSDA.

indeterminism, might not in the relevant sense provide a *locus* for divine providence. This situation does not constitute a theological crisis, however, because questioning TPI deconstructs at once the very reason why God was supposed to need space in the first place. In rejecting TPI, the theological need for room for God to act in nature disappears, for the alternative view avoids competition between divine and natural causation in principle rather than merely in practice; creaturely and divine causation are not univocal notions.

PART TWO, on Aquinas' doctrine of providence, explored an alternative vision espousing both a sapiential-ordinative understanding of providence and a non-competitive model of divine and creaturely causation. With Aquinas I have advanced the proposal that the way we need to distinguish between primary and secondary causation to avoid theological aporias so, too, it helps to distinguish providence from government. Regarding providence, God has in his mind the eternal reason for ordering all creatures to their end, executed in his government ordinarily through secondary causes. Unlike providence as this divine reason and plan in God, government as the realisation of providence in time is primarily a reality in creation and creatures. Regarding government, God as the primary cause is causally involved in every instantiation of secondary causation by giving creatures their inherent powers and constantly upholding them in being (founding moments), but also by applying these powers grounded in form to act and applying them to act instrumentally (dynamic moments).

The characteristics of natural causation like contingency and necessity are characteristics of secondary causation and divine government, as such not applicable in the same sense to primary causation. Natural contingency, like necessity, exists because of the providence of God; in other words, God knows, wills, and causes contingencies like necessities as differences of being. As the cause of being, God causes the order of beings

and its proper differences. I have therefore suggested that contingency, like necessity, is an *effect* and *means* of providence.

On the one hand, natural contingency is an *effect* of divine providence, because ultimately it is the efficacy of the divine will that accounts for the occurrence of contingencies in nature. According to the doctrine of divine transcendence, God knows contingents not as future but as eternally-present (thus evading temporal fatalism). Likewise, he wills contingents not as cause among causes but as the transcendent cause of the order of beings to which contingency as an accident of being pertains (thus evading causal determinism). God finally causes contingents in giving, upholding and (instrumentally) applying creaturely powers to act contingently. Hence, divine government includes natural contingencies because God's will is efficacious in this way.

On the other hand, natural contingency is also a *means* of divine providence insofar as God has eternally ordered necessary and contingent secondary causes to particular effects executing his providence, respectively. In his providence, God orders all creatures to their appointed ends. Sapiential-ordinative providence is an essentially teleological notion. By analysing Aquinas' theory of natural appetency in terms of material and formal natural inclinations, I argued that God's ordinary government comes about by way of an immanent teleology having its proximate source in an intrinsic principle of nature, to wit, form or matter, but its ultimate source in God. Thus God is not only constantly at work in the world as the primary efficient cause, but also as the primary final cause of each creaturely operation, manifested in a tendency for actualisation, or life, or happiness. Put differently, both the efficient and final causality executing providence is mediated by secondary causes, yet both are conceptualised in non-competitive terms. Just as God works efficiently as

primary cause in secondary causes so, too, God teleologically orders all creatures to their appointed ends by natural appetites.

PART THREE, on the directionality of evolution, provided a final assessment of the two main approaches to providence discussed in PART ONE and TWO by way of clarifying a pertinent issue in the science and religion dialogue. Taking the widely discussed controversy between Stephen Jay Gould and Simon Conway Morris about what would happen if one were to rerun the tape of life as an example, I argued that contingency might *limit* a secularised notion of providence, but not divine providence. In the case of divine providence the question is not so much whether a particular evolutionary outcome was bound to happen from a natural point of view but rather whether, taking additionally into consideration God's activity in the world, God can somehow guide evolutionary processes to particular ends. From a scientific point of view, biological evolution needs not be a necessary or inevitable process.

The standard model of divine action, exemplified by its quantum-based flagship of theistic evolution, suffers at least two specific limitations in replying to the objection from evolutionary contingency. Since on their view contingency must provide the *locus* for providence, God can only tinker, in a questionable manner, with genetic mutations at the quantum level. But biological evolution is neither merely based on, nor are the contingencies involved in the various evolutionary processes limited to, genetic mutations. Hence, even if God could direct mutations by determining the underlying quantum processes, this would not necessarily imply a directionality of evolution. Moreover, the concept of teleology operative in the model is unappealing in its theological outlook. The form of teleology is purely externally imposed on nature and makes God's providential guidance of evolution an entirely unnatural feature.

To the new perspectives from Aquinas evolutionary contingency does not pose a problem because natural contingency is an effect and means of divine providence, as is natural necessity. As soon as the univocal conception of divine and natural causation is dropped, providence is neither limited by necessity or contingency, nor is it equated with either of the two. Rather, the contingency and necessity discussed in the natural sciences are characteristics of secondary causes and as such, from a theological point of view, the result of providence. More specifically, I have suggested that God directs nature with an immanent teleology having two sources of its directionality, namely God and natures. If applied to evolution, formal and in particular material natural inclinations go towards explaining evolutionary changes. It is most important to stress, however, that from a natural perspective limited to secondary causes this teleology might turn out to be fairly limited when it comes to analysing the particular course of biological evolution. Only in a theological perspective additionally taking into consideration primary causation might we be able to view evolution as directed towards particular ends, insofar as God works with the factual teleology we find in the evolutionary process. Such a divine directing of evolutionary processes can take place despite of all contingencies and accidents, for God is universal cause, wherefore accidentality is excluded from his government with respect to primary causation, although many events are causally unrelated to other secondary causes. God orders secondary causes in a unique way.

Along these lines, the present thesis has advocated for a sapiential-ordinative understanding of providence and a transcendent model of divine agency by examining Aquinas' approach to providence, his theory of primary and secondary causation, and divine government in relation to natural causation and teleology. I have argued, in a nutshell, that God's teleological ordering *of* the world implies that he is working *in* the world. Moreover, to get away from an externally imposed and univocal understanding of

divine action, I have highlighted the significance of the transcendence of God and the immanent end-directionality of secondary causes executing the divine providential order. I have aimed to show that a teleological concept of divine providence can, at least if God is transcendent, embed the scientific findings of chance and contingency in nature. There emerges then a middle position between rendering contingency either a limit to or the necessary room for providence. This third option integrating natural contingency into the providence of God on the grounds of God's transcendence appears theologically more nuanced insofar as it neither implies a competitive view of divine and natural causation nor presupposes causal indeterminism as the condition of possibility of divine action in the world.

With these new perspectives from Aquinas I shall come to a conclusion. Final causality and teleology matter not least for the doctrine of providence, especially in the sapiential-ordinative tradition. A teleological approach leads away from the narrow focus on the topic of intervention and opens up a new field of enquiry into the finality of creation and each and every creature. To where does God direct us? What is it that we naturally desire? By what means can we attain these ends? These questions give us genuine insight into what kind of beings we are. It also reveals the nature of the providence we are under. The view proposed and explored in this thesis suggests that God immanently directs creatures through in-given appetites ultimately to that form of participation and union with himself to which all creatures in their respective ways are called. Each kind of creature has its specific relation to God and is naturally directed to an end. God is not only creator but also governor; he calls us creatures in his providence and through his government – through all natural contingencies – to union with him who is our final end.

BIBLIOGRAPHY

1. Writings of Thomas Aquinas

S. Thomae de Aquino. 2016. *Opera Omnia*, recognovit ac instruxit Enrique Alarcón automato electronico Pompaelone ad Universitatis Studiorum Navarrensis aedes a MM A.D. Fundación Tomás de Aquino. https://www.corpusthomisticum.org/iopera.html.[902]

Aquinas, Thomas. *Ad Bernardum*. [=Resp. Be.]

Aquinas, Thomas. *Compendium Theologiae*. [=CT]

Aquinas, Thomas. *Contra Errores Graecorum*. [=Err. Graec.]

Aquinas, Thomas. *De Motu Cordis*. [=De Motu Cordis]

Aquinas, Thomas. *De Rationibus Fidei*. [=Ratio. Fid.]

Aquinas, Thomas. *De Substantiis Separatis*. [=De Subst. Sep.]

Aquinas, Thomas. *Expositio libri Peryermeneias*. [=ELPH]

Aquinas, Thomas. *In libros Physicorum*. [=In Phys.]

Aquinas, Thomas. *Quaestiones de Quodlibet*. [=Quodl.]

Aquinas, Thomas. *Quaestiones Disputatae De Malo*. [=De Malo]

Aquinas, Thomas. *Quaestiones Disputatae De Potentia*. [=QDP]

Aquinas, Thomas. *Quaestiones Disputatae De Veritate*. [=QDV]

Aquinas, Thomas. *Quaestiones Disputatae De Virtutibus*. [=De Virt.]

Aquinas, Thomas. *Scriptum super Sententiis*. [=In Sent.]

[902] All English translations from the Latin are mine, unless stated otherwise. The Latin texts listed below were retrieved from https://www.corpusthomisticum.org, edited by Enrique Alarcón (Pamplona: Universidad de Navarra, 2016).

Aquinas, Thomas. *Sententia libri De Anima*. [=In De Anima]

Aquinas, Thomas. *Sententia libri Ethicorum*. [=In Ethic.]

Aquinas, Thomas. *Sententia libri Metaphysicae*. [=In Meta.]

Aquinas, Thomas. *Summa contra Gentiles*. [=SCG]

Aquinas, Thomas. *Summa Theologiae*. [=ST]

Aquinas, Thomas. *Super ad Corinthios*. [=Super Cor.]

Aquinas, Thomas. *Super ad Galatas.* [=Super Gal.]

Aquinas, Thomas. *Super De Divinis Nominibus*. [=In Div. Nom.]

Aquinas, Thomas. *Super Ioannem*. [=Super Io.]

Aquinas, Thomas. *Super librum De Causis*. [=LDC]

Aquinas, Thomas. *Super Psalmos*. [=In Psalm.]

2. Other Abbreviated Writings

Aristotle. 1984a. “Physics.” In *The Complete Works of Aristotle: The Revised Oxford Translation*: *Volume One,* edited by Jonathan Barnes, 315-446. Translated by R.P. Hardie and R.K. Gaye. Princeton: Princeton University Press. [=Phys.]

Aristotle. 1984b. “Metaphysics.” In *The Complete Works of Aristotle: The Revised Oxford Translation*: *Volume Two,* edited by Jonathan Barnes, 1552-1728. Translated by W.D. Ross. Princeton: Princeton University Press. [=Meta.]

Boethius, Anicius Manlius Severinus. 1925. *De Consolatione Philosophiae: Libri Quinque,* quos denuo recognovit adnotationibus illustravit adiectis apparatu critico bibliographia indicibus biblico et alageriano Adrianus A Forti Scuto. Londini: Burns Oates & Washbourne LTD. [=De Cons. Phil.]

3. Other Literature

Abraham, William J. 2017a. *Divine Agency and Divine Action: Volume I: Exploring and Evaluating the Debate*. Oxford: Oxford University Press.

Abraham, William J. 2017b. *Divine Agency and Divine Action: Volume II: Soundings in the Christian Tradition*. Oxford: Oxford University Press.

Abraham, William J. 2018. *Divine Agency and Divine Action: Volume III: Systematic Theology*. Oxford: Oxford University Press.

Alston, William. 1993. "Divine Action, Human Freedom, and the Laws of Nature." In *Quantum Cosmology and the Laws of Nature: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and Christopher J. Isham, 185-207. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Anderson, Bernhard. 1957. *Understanding the Old Testament*. Englewood Cliffs, NJ: Prentice-Hall.

Anscombe, G.E.M. 1993. "Causality and Determination." In *Causation*, edited by Ernest Sosa and Michael Tooley, 88-104. Oxford: Oxford University Press.

Austriaco, Nicanor Pier Giorgio. 2003. "In Defense of Double Agency in Evolution: A Response to Five Modern Critics." *Angelicum* 80:4, 947-966.

Austriaco, Nicanor Pier Giorgio. 2016. "How Does God Create through Evolution?" In *Thomistic Evolution: A Catholic Approach to Understanding Evolution in the Light of Faith*, edited by Nicanor Pier Giorgio Austriaco, James Brent, Thomas Davenport, and John Baptist Ku, 192-200. Tacoma, Washington: Cluny Media.

Austriaco, Nicanor Pier Giorgio. 2018. "In Defence of Thomistic Evolution: A Response to Chaberek." *Public Discourse*, March 7, 2018. https://www.thepublic discourse.com/2018/03/20975/.

Baldner, Steven E., and William E. Carroll. 1997. "Introduction." In *Aquinas on Creation: Writings on the 'Sentences' of Peter Lombard: Book 2, Distinction 1, Question*

1, translated with an introduction and notes by Steven E. Baldner and William E. Carroll, 1-62. Toronto: Pontifical Institute of Mediaeval Studies.

Barbour, Ian G. 1988. "Ways of Relating Science and Theology." In *Physics, Philosophy, and Theology: A Common Quest for Understanding*, edited by Robert John Russell, William R. Stoeger, and George V. Coyne, 21-48. Vatican City State: Vatican Observatory.

Barbour, Ian G. 1998. "Five Models of God and Evolution." In *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, edited by Robert John Russell, William R. Stoeger, and Francisco J. Ayala, 419-442. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Barr, James. 1988. Art. "Biblical Theology." In *The Interpreter's Dictionary of the Bible: Supplementary Volume*, edited by George Arthur Buttrick, 104-111. Nashville: Abingdon Press.

Barr, James. 1999. *The Concept of Biblical Theology: An Old Testament Perspective*. London: SCM Press.

Bartsch, Hans-Werner. 1962. "The Present State of the Debate." In *Kerygma and Myth: A Theological Debate: Volume II*, edited by Hans-Werner Bartsch, 1-82. Translated by Reginald H. Fuller. London: SPCK.

Beatty, John, and Isabel Carrera. 2011. "When What Had to Happen Was Not Bound to Happen: History, Chance, Narrative, Evolution." *Journal of the Philosophy of History* 5:3, 471-495.

Beatty, John. 2006. "Replaying Life's Tape." *The Journal of Philosophy* 103:7, 336-362.

Beatty, John. 2016. "What are narratives good for?" *Studies in History and Philosophy of Biological and Biomedical Sciences* 58, 33-40.

Bernhardt, Reinhold. 2008. *Was heißt „Handeln Gottes"? Eine Rekonstruktion der Lehre von der Vorsehung*. Berlin: LIT Verlag.

Blackwell, Richard J., Richard J. Spath, and W. Edmund Thirlkel (trans.). 1963. *St. Thomas Aquinas: Commentary on Aristotle's Physics*. London: Routledge and Kegan Paul.

Blount, Zachary D. 2016a. "A case study in evolutionary contingency." *Studies in History and Philosophy of Biological and Biomedical Sciences* 58, 82-92.

Blount, Zachary D. 2016b. "History's Windings in a Flask: Microbial Experiments into Evolutionary Contingency." In *Chance in Evolution*, edited by Grant Ramsey and Charles H. Pence, 244-262. Chicago: The University of Chicago Press.

Blount, Zachary D., Richard E. Lenski, and Jonathan B. Losos. 2018. "Contingency and determinism in evolution: Replying life's tape." *Science* 362:6415, 655-665.

Bonhoeffer, Dietrich. 1967. *Letters and Papers from Prison*, edited by Eberhard Bethge. Translated by Reginald H. Fuller and revised by Frank Clarke and others. London: SCM Press.

Bonhoeffer, Dietrich. 2010. *Dietrich Bonhoeffer Works: Volume 8: Letters and Papers from Prison*, edited by John W. de Gruchy. Translated by Isabel Best, Lisa E. Dahill, Reinhard Krauss, and Nancy Lukens. Minneapolis: Fortress Press.

Böttigheimer, Christoph. 2013. *Handelt Gott in der Welt? Reflexionen im Spannungsfeld von Theologie und Naturwissenschaft*. Freiburg im Breisgau: Herder.

Brisbois, Père A. 1949. "Transformism and Philosophy." In *Theology and Evolution*, edited by E.C. Messenger, 109-123. London and Glasgow: Sands & Co.

Brooke, John Hedley. 2014. *Science and Religion: Some Historical Perspectives*. Cambridge: Cambridge University Press.

Brysse, Keynyn Alexandra Ripley. 2008. "The Burgess Shale: A Cambrian Mirror for Modern Evolutionary Biology." PhD thesis, University of Toronto.

Bultmann, Rudolf. 1958. "The Meaning of God as Acting." In *Jesus Christ and Mythology*, by Rudolf Bultmann, 60-85. New York: Charles Scribner's Sons.

Bultmann, Rudolf. 1960a. “A Reply to the Thesis of J. Schniewind.” In *Kerygma and Myth: A Theological Debate*, edited by Hans Werner Bartsch, 102-123. Translated by Reginald H. Fuller. London: SPCK.

Bultmann, Rudolf. 1960b. “Bultmann Replies to his Critics.” In *Kerygma and Myth: A Theological Debate,* edited by Hans Werner Bartsch, 191-211. Translated by Reginald H. Fuller. London: SPCK.

Bultmann, Rudolf. 1960c. “New Testament and Mythology.” In *Kerygma and Myth: A Theological Debate,* edited by Hans Werner Bartsch, 1-44. Translated by Reginald H. Fuller. London: SPCK.

Carroll, William E. 2008. “Divine Agency, Contemporary Physics, and the Autonomy of Nature.” *The Heythrop Journal* 49:4, 582-602.

Cartwright, Nancy. 1983. *How the Laws of Physics Lie*. Oxford: Clarendon Press.

Chaberek, Michael. 2017. *Aquinas and Evolution: Why St. Thomas’ Teaching on the Origins is Incompatible with Evolutionary Theory*. The Chartwell Press.

Childs, Brevard. 1970. *Biblical Theology in Crisis*. Philadelphia: Westminster Press.

Clayton, Philip. 2008. “Toward a Theory of Divine Action That Has Traction.” In *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress*, edited by Robert John Russell, Nancey Murphy, and William R. Stoeger, 85-110. Vatican City State: Vatican Observation Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Collins, Joseph. 1960. “God’s Eternal Law.” *The Thomist* 23:4, 497-532.

Conway Morris, Simon, and Stephen Jay Gould. 1998. “Showdown on the Burgess Shale.” *Natural History Magazine* 107:10, 48-55.

Conway Morris, Simon. 1998. *The Crucible of Creation: The Burgess Shale and the Rise of Animals*. Oxford: Oxford University Press.

Conway Morris, Simon. 2003. *Life’s Solution: Inevitable Humans in a Lonely Universe*. Cambridge: Cambridge University Press.

Coulson, C.A. 1955. *Science and Christian Belief*. Chapel Hill: The University of North Carolina Press.

Coyne, George V. 1988. "Preface." In *Physics, Philosophy, and Theology: A Common Quest for Understanding*, edited by Robert John Russell, William R. Stoeger, and George V. Coyne, 11-14. Vatican City State: Vatican Observatory.

Coyne, George V. 2008. "Foreword." In *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress*, edited by Robert John Russell, Nancey Murphy, and William R. Stoeger, viii-ix. Vatican City State: Vatican Observation Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Cross, Simon J.S. 2017. "Perspectives on Divine Action: Reflections on the Theological Legitimacy of Approaches to Divine Action in the V.O./C.T.N.S. Series 'Scientific Perspectives on Divine Action.'" DPhil thesis, University of Oxford.

Cunningham, Sean B. 2013. "Natural Inclination in Aquinas." PhD thesis, The Catholic University of America.

Cushing, James T. 2001. "Determinism Versus Indeterminism in Quantum Mechanics: A 'Free' Choice." In *Quantum Mechanics: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Philip Clayton, Kirk Wegter-McNelly, and John Polkinghorne, 99-110. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

De Duve, Christian. 1996. "The gospel of contingency." *Nature* 383:6603, 771-772.

De Koninck, Charles. 2008a. "The Cosmos." In *The Writings of Charles De Koninck: Volume One*, edited and translated by Ralph McInery, 235-354. Notre Dame, Indiana: University of Notre Dame Press.

De Koninck, Charles. 2008b. "Reflections on the Problem of Indeterminism." In *The Writings of Charles De Koninck: Volume One*, edited and translated by Ralph McInery, 401-442. Notre Dame, Indiana: University of Notre Dame Press.

De Visser, J. Arjan G.M., and Joachim Krug. 2014. "Empirical fitness landscapes and the predictability of evolution." *Nature Reviews Genetics* 15:7, 480-490.

Dilley, Frank. 1965. “Does the ‘God Who Acts’ Really Act?” *Anglican Theological Review* 47:1, 66-80.

Dodds, Michael J. 2012. *Unlocking Divine Action: Contemporary Science & Thomas Aquinas*. Washington, DC: The Catholic University of America Press.

Donceel, Joseph. 1965. “Causality and Evolution: A Survey of Some Neo-scholastic Theories.” *The New Scholasticism* 39:3, 295-315.

Doolan, Gregory T. 2008. *Aquinas on the Divine Ideas as Exemplar Causes.* Washington, DC: The Catholic University of America Press.

Drummond, Henry. 1894. *The Lowell Lectures on The Ascent of Man*. New York: James Pott & Co.

Dudley, John. 2012. *Aristotle’s Concept of Chance: Accidents, Cause, Necessity, and Determinism*. Albany: SUNY Press.

Edwards, Denis. 2000. “The Discovery of Chaos and the Retrieval of the Trinity.” In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and Arthur Peacocke, 158-175. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Elders, Leo. 1984. “The Philosophical and Religious Background of Charles Darwin’s Theory of Evolution.” *Doctor Communis* 37:1, 32-67.

Ellis, George F.R. 1993. “The Theology of the Anthropic Principle.” In *Quantum Cosmology and the Laws of Nature: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and Christopher J. Isham, 367-405. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Ellis, George F.R. 1999. “Intimations of Transcendence: Relations of the Mind and God.” In *Neuroscience and the Person: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, Theo C. Meyering, and Michael A. Arbib, 449-474.

Vatican City State: Vatican Observatory Publications and Berkeley, California: Center for Theology and the Natural Sciences.

Ellis, George F.R. 2000. “Ordinary and Extraordinary Divine Action: The Nexus of Interaction.” In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and Arthur Peacocke, 359-395. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Ellis, George F.R. 2001. “Quantum Theory and the Macroscopic World.” In *Quantum Mechanics: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Philip Clayton, Kirk Wegter-McNelly, and John Polkinghorne, 259-291. Vatican City State: Vatican Observatory Publications and Berkeley, California: Center for Theology and the Natural Sciences.

Enard, Wolfgang et al. 2002. “Molecular evolution of FOXP2, a gene involved in speech and language.” *Nature* 418:6900, 869-872.

Farrer, Austin. 1958. *The Freedom of the Will: The Gifford Lectures delivered in the University of Edinburgh 1957*. London: Adam & Charles Black.

Farrer, Austin. 1962. *Love Almighty and Ills Unlimited: An Essay on Providence and Evil containing the Nathaniel Taylor Lectures for 1961*. St. James’s Park, London: Collins.

Farrer, Austin. 1964. *Saving Belief: A Discussion of Essentials*. London: Hodder and Stoughton.

Farrer, Austin. 1966. *A Science of God?* With a foreword by the Bishop of London. London: Geoffrey Blens.

Farrer, Austin. 1967. *Faith and Speculation: An Essay in Philosophical Theology containing the Deems Lectures for 1964*. London: Adam & Charles Black.

Fergusson, David. 2018. *The Providence of God: A Polyphonic Approach*. Cambridge: Cambridge University Press.

Feser, Edward. 2010. “Teleology: A Shopper’s Guide.” *Philosophia Christi* 12:1, 142-159.

Feser, Edward. 2013. “Between Aristotle and William Paley: Aquinas’s Fifth Way.” *Nova et Vetera* 11:3, 707-749.

Feser, Edward. 2014. *Scholastic Metaphysics: A Contemporary Introduction*. Heusenstamm: Editiones Scholastiae.

Freddoso, Alfred J. 1991. “God’s General Concurrence With Secondary Causes: Why Conservation Is Not Enough.” *Philosophical Perspectives* 5, 553-585.

Freddoso, Alfred J. 1994. “God’s General Concurrence with Secondary Causes: Pitfalls and Prospects.” *American Catholic Quarterly* 68:2, 131-156.

Galilee, David, and Brian Hebblethwaite. 1982. “Farrer’s Concept of Double Agency: A Reply.” *Theology* 85:703, 7-10.

Garrigou-Lagrange, Réginald. 1952. *The Trinity and God the Creator: A Commentary on St. Thomas’ Theological Summa, Ia, q. 27-119*. St. Louis and London: B. Herder.

Gilkey, Langdon B. 1961. “Cosmology, Ontology, and the Travail of Biblical Language.” *The Journal of Religion* 41:3, 194-205.

Gilkey, Langdon B. 1963. “The Concept of Providence in Contemporary Theology.” *The Journal of Religion* 43:3, 171-192.

Göcke, Benedikt Paul, and Ruben Schneider (eds). 2017. *Gottes Handeln in der Welt: Probleme und Möglichkeiten aus Sicht der analytischen Theologie und Religionswissenschaft.* Regensburg: Friedrich Pustet.

Goris, Harm J.M.J. 1996. *Free Creatures of an Eternal God*. Leuven: Peeters.

Gotthelf, Allan. 1976. “Aristotle’s Conception of Final Causality.” *The Review of Metaphysics* 30:2, 226-254.

Gould, Stephen Jay. 1989. *Wonderful Life: The Burgess Shale and the Nature of History*. New York: W. W. Norton & Company.

Gould, Stephen Jay. 2002. *The Structure of Evolutionary Theory*. Cambridge, MA, and London: The Belknap Press of Harvard University Press.

Gould, Stephen Jay. 2011. *Full House: The Spread of Excellence from Plato to Darwin*. Cambridge, MA: The Belknap Press of Harvard University Press.

Gregersen, Niels Henrik. 2008. "Special Divine Action and the Quilt of Laws: Why the Distinction between Special and General Divine Action Cannot Be Maintained." In *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress*, edited by Robert John Russell, Nancey Murphy, and William R. Stoeger, 179-199. Vatican City State: Vatican Observation Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Griffin, David R. 1973. "Divine Causality, Evil, and Philosophical Theology: A Critique of James Ross." *International Journal for Philosophy* 4:3, 168-196.

Griffin, David R. 1983. "Relativism, Divine Causation, and Biblical Theology." In *God's Activity in the World: The Contemporary Debate*, edited by Owen C. Thomas, 117-136. Chico, California: Scholars Press.

Guagliardo, Vincent A., Charles R. Hess, and Richard Taylor (trans). 1996. *St. Thomas Aquinas: Commentary on the Book of Causes*. Introduction by Vincent A. Guagliardo. Washington, DC: The Catholic University of America Press.

Gustafson, Gustaf. 1944. *The Theory of Natural Appetency in the Philosophy of St. Thomas*. Washington, DC: The Catholic University of America Press.

Gwynne, Paul. 1996. *Special Divine Action: Key Issues in the Contemporary Debate (1965-1995)*. Roma: Editrice Pontificia Università Gregoriana.

Harrington, John. 1954. "The Concept of Chance and Divine Providence." *Proceedings of the American Catholic Philosophical Association* 28, 176-183.

Harrison, Peter, and Ian Hesketh. 2016. "Introduction: Evolution and historical explanation." *Studies in History and Philosophy of Biological and Biomedical Sciences* 58, 1-7.

Hebblethwaite, Brian, and Edward Henderson (eds.). 1990. *Divine Action: Studies Inspired by the Philosophical Theology of Austin Farrer*. Edinburgh: T&T Clark.

Hebblethwaite, Brian, and Edward Henderson. 1990a. “Introduction.” In *Divine Action: Studies Inspired by the Philosophical Theology of Austin Farrer*, edited by Brian Hebblethwaite and Edward Henderson, 1-20. Edinburgh: T&T Clark.

Hebblethwaite, Brian. 1978. “Providence and Divine Action.” *Religious Studies* 14:2, 223-236.

Henderson, Ian. 1956. *Myth in the New Testament*. London: SCM Press.

Henry, John. 2002. *The Scientific Revolution and the Origins of Modern Science*. Basingstoke: Palgrave.

Hoonhout, Michael A. 2002. “Grounding Providence in the Theology of the Creator: The Exemplarity of Thomas Aquinas.” *The Heythrop Journal* 43:1, 1-19.

Hume, David. 2007. *An Enquiry concerning Human Understanding*, edited with an Introduction and Notes by Peter Millican. Oxford: Oxford University Press.

Jackelén, Antje. 2007. “A critical view of ‘theistic evolution’.” *Theology and Science* 5:2, 151-165.

Jacobi, Klaus. 1977. “Kontingente Naturgeschehnisse.” *Studia Mediewistyczne* 18:2, 3-70.

Jaeger, Lydia. 2012. “Against Physicalism-Plus-God: How Creation Accounts for Divine Action in Nature’s World.” *Faith and Philosophy* 29:3, 295-312.

Johnson, Elizabeth A. 1996. “Does God Play Dice? Divine Providence and Chance.” *Theological Studies* 57:1, 3-18.

Kaufman, Gordon. 1968. “On the Meaning of ‘Act of God’.” *The Harvard Theological Review* 61:2, 175-201.

Kee, Howard Clark, and Franklin Young. 1957. *Understanding the New Testament*. Englewood Cliffs, NJ: Prentice-Hall.

Kirkpatrick, Frank G. 1983. “Understanding an Act of God.” In *God’s Activity in the World*, edited by Owen Thomas, 163-180. Chico, California: Scholars Press.

Klubertanz, George P. 1941. “Causality and Evolution.” *The Modern Schoolman* 19:1, 11-14.

Kocher, Richard. 1999. *Herausgeforderter Vorsehungsglaube: Die Lehre von der Vorsehung im Horizont der gegenwärtigen Theologie*. St. Ottilien: EOS Verlag.

Koperski, Jeffrey. 2000. “God, Chaos, and the Quantum Dice.” *Zygon* 35:3, 545-559.

Koperski, Jeffrey. 2015a. “Divine Action and the Quantum Amplification Problem.” *Theology and Science*, 13:4, 379-394.

Koperski, Jeffrey. 2015b. *The Physics of Theism: God, Physics, and the Philosophy of Science*. Chichester: Wiley Blackwell.

Küppers, Bernd-Olaf. 2000. “Understanding Complexity.” In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and Arthur Peacocke, 93-105. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Lane Ritchie, Sarah. 2017a. “Dancing around the Causal Joint: Challenging the Theological Turn in Divine Action Theories.” *Zygon* 52:2, 361-379.

Lane Ritchie, Sarah. 2017b. “With God in Mind: Divine Action and the Naturalisation of Consciousness.” PhD thesis, University of Edinburgh.

Langford, Michael J. 1981. *Providence*. London: SCM.

Laporta, Jorge. 1965. *La Destinée de la Nature Humaine solon Thomas D’Aquin*. Sorbonne: Librairie Philosophique J. Vrin.

Laporta, Jorge. 1973. “Pour trouver le sens exact des termes *appetitus naturalis, desiderium naturale, amor naturalis*, etc. chez Thomas D’Aquin.” *Archives d'Histoire Doctrinale et Littéraire du Moyen Âge* 40, 37-95.

Lenormand, Thomas, Luis-Miguel Chevin, and Thomas Bataillon. 2016. “Parallel Evolution: What does it (not) tell us and why is it (still) interesting?” In *Chance in Evolution*, edited by Grant Ramsey and Charles H. Pence, 196-220. Chicago: The University of Chicago Press.

Lewis, C.S. 1947. *Miracles: A Preliminary Study*. London: Geofrey Bles, The Centenary Press.

Lobkovsky, Alexander E., and Eugene V. Koonin. 2012. "Replaying the tape of life: quantification of the predictability of evolution." *Frontiers in Genetics* 3:246, 1-8.

Lonergan, Bernard J.F. 1971. *Grace and Freedom: Operative Grace in the Thought of St. Thomas Aquinas*, edited by J. Patout Burns with an introduction by Frederick E. Crowe. London: Darton, Longman & Todd and New York: Herder and Herder.

Lonergan, Bernard. 2013. "Gratia Operans: A Study of the Speculative Development in the Writings of St Thomas Aquinas". In *Collected Works of Bernard Lonergan: Grace and Freedom: Operative Grace in the Thought of St Thomas Aquinas*, edited by Frederick E. Crowe and Robert M. Doran, 151-450. Toronto: University of Toronto Press.

Louis, Ard A. 2016. "Contingency, convergence and hyper-astronomical numbers in biological evolution." *Studies in History and Philosophy of Biological and Biomedical Sciences* 58, 107-116.

Luyten, Norbert. 1951. "Philosophical Implications of Evolution." *The New Scholasticism* 25:3, 290-312.

Maritain, Jacques. 1997. "Toward a Thomist Idea of Evolution." In *Untrammeled Approaches*, by Jacques Maritain, 85-131. Translated by Bernard Doering. Notre Dame, Indiana: Notre Dame University Press.

Matava, Robert J. 2016. *Divine Causality and Human Free Choice: Bánez, Physical Premotion and the Controversy de Auxiliis Revisited*. Boston: Brill.

Mayr, Ernst. 1992. "The Idea of Teleology." *Journal of the History of Ideas* 53:1, 117-135.

Mayr, Ernst. 1996. "The Autonomy of Biology: The Position of Biology Among the Sciences." *The Quarterly Review of Biology* 71:1, 97-106.

McCabe, Herbert. 2007. "Causes and God." In *Faith Within Reason*, edited and introduced by Brian Davies, 48-66. London: Continuum.

McGinn, Bernard. 1975. “The Development of the Thought of Thomas Aquinas on the Reconciliation of Divine Providence and Contingent Action.” *The Thomist* 39:4, 741-752.

McGrath, Alister E. 2009. “The Secularization of Providence: Theological Reflections on the Appeal to Darwinism in Recent Atheist Apologetics.” In *The Providence of God: Deus Habet Consilium*, edited by Francesca Aran Murphy and Philip G. Ziegler, 194-207. London and New York: Bloomsbury T&T Clark.

McGrath, Alister E. 2011. *Darwinism and the Divine: Evolutionary Thought and Natural Theology*. Oxford: Wiley Blackwell.

McGrath, Alister E. 2015. “Hesitations about Special Divine Action: Reflections on Some Scientific, Cultural and Theological Concerns.” *European Journal for Philosophy of Religion* 7:4, 3-22.

McGrath, Alister E. 2017. *Re-Imagining Nature: The Promise of a Christian Natural Theology*. Oxford: Wiley Blackwell.

McGrew, Timothy. 2016. “Miracles.” *The Stanford Encyclopedia of Philosophy*, edited by Edward N. Zalta. https://plato.stanford.edu/archives/win2016/entries/miracles/.

McWilliams, J.A. 1954. “The Finality of Prime Matter.” *Proceedings of the American Catholic Philosophical Association* 28, 162-170.

Meehan, Francis X. 1940. *Efficient Causality in Aristotle and St. Thomas*. Washington, DC: The Catholic University of America Press.

Monod, Jacques. 1972. *Chance and Necessity: An Essay on the Natural Philosophy of Modern Biology*. Translated by Austryn Wainhouse. London: Collins.

Moreno, Antonio. 1973. “Some Philosophical Considerations on Biological Evolution.” *The Thomist* 37:3, 417-454.

Mumford, Stephen. 2004. *Laws in Nature*. London and New York: Routledge.

Mumford, Stephen. 2009. “Causal Powers and Capacities.” In *The Oxford Handbook of Causation*, edited by Helen Beebee, Christopher Hitchcock, and Peter Menzies, 265-278. Oxford: Oxford University Press.

Murphy, Nancey. 1996. *Beyond Liberalism and Fundamentalism: How Modern and Postmodern Philosophy Set the Theological Agenda*. Valley Forge, Pennsylvania: Trinity Press International.

Murphy, Nancey. 1999. "Introduction." In *Neuroscience and the Person: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, Theo C. Meyering, and Michael A. Arbib, i-xxxv. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Murphy, Nancey. 2000. "Divine Action in the Natural Order: Buridan's Ass and Schrödinger's Cat." In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and Arthur Peacocke, 325-357. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Murphy, Nancey. 2008. "Emergence, Downward Causation, and Divine Action.". In *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress*, edited by Robert John Russell, Nancey Murphy, and William R. Stoeger, 111-131. Vatican City State: Vatican Observation Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

O'Connor, William R. 1947. *The Eternal Quest: The Teaching of St. Thomas Aquinas on the Natural Desire for God*. New York, London, and Toronto: Longmans, Green and Co.

O'Rourke, Fran. 2004. "Aristotle and the Metaphysics of Evolution." *The Review of Metaphysics* 58:1, 3-59.

Oderberg, David S. 2008. "Teleology: Inorganic and Oganic." In *Contemporary Perspectives on Natural Law: Natural Law as a Limiting Concept*, edited by Ana Marta González, 259-279. Aldershot: Ashgate.

Oderberg, David S. 2017. "Finality revived: powers and intentionality." *Synthese* 194:7, 2387-2425.

Orgogozo, Virginie. 2015. "Replaying the tape of life in the twenty-first century." In *Interface Focus* 5:6 (20150057), 1-11.

Osler, Margaret J. 1996. “From Immanent Natures to Nature as Artifice: The Reinterpretation of Final Causes in Seventeenth-Century Natural Philosophy.” *The Monist* 79:3, 388-407.

Osler, Margaret J. 2001. “Whose Ends? Teleology in Early Modern Natural Philosophy.” *Osiris* 16, 151-168.

Oxford Latin Dictionary. 1982. “*providentia*.” In *Oxford Latin Dictionary*, edited by P.G.W. Glare, 1505. Oxford: Oxford University Press.

Paluch, Michal. 2014. “Recovering a Doctrine of Providence: A Report.” *Nova et Vetera* 12:4, 1159-1172.

Paluch, Michal. 2016. “The Salvific Will according to Aquinas: An Inspiration for Contemporary Theology?” *Doctor Communis* 1-2, 181-193.

Pasnau, Robert. 2011. *Metaphysical Themes 1274-1671*. Oxford: Clarendon Press.

Peacocke, Arthur. 1999. “The Sound of Sheer Silence: How Does God Communicate with Humanity?” In *Neuroscience and the Person: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, Theo C. Meyering, and Michael A. Arbib, 215-247. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Peacocke, Arthur. 2000. “God’s Interaction with the World: The Implications of Deterministic ‘Chaos’ and of Interconnected and Interdependent Complexity.” In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and Arthur Peacocke, 263-287. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Peacocke, Arthur. 2004. *Creation and the World of Science: The Re-Shaping of Belief*. Oxford: Oxford University Press.

Peacocke, Arthur. 2008. “Some Reflections on ‘Scientific Perspectives on Divine Action.” In *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress*, edited by Robert John Russell, Nancey Murphy, and William R. Stoeger, 201-

223. Vatican City State: Vatican Observation Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Perlman, Mark. 2004. “The Modern Philosophical Resurrection of Teleology.” *The Monist* 87:1, 3-51.

Pesch, Otto Hermann. 1967. *Theologie der Rechtfertigung bei Martin Luther und Thomas von Aquin: Versuch eines systematisch-theologischen Dialogs*. Mainz: Matthias-Grünewald-Verlag.

Pesch, Otto Hermann. 1970. “Existential and Sapiential Theology – The Theological Confrontation Between Luther and Thomas Aquinas.” In *Catholic Scholars Dialogue with Luther*, edited by Jared Wicks, 61-81. Chicago: Loyola University Press.

Peters, Ted, and Martinez Hewlett. 2003. *Evolution from Creation to New Creation: Conflict, Conversation, and Convergence*. Nashville: Abingdon Press.

Pieper, Josef. 1966. *The Four Cardinal Virtues: Prudence, Justice, Fortitude, Temperance*. Notre Dame, Indiana: University of Notre Dame Press.

Pinckaers, Servais. 2005. “Conscience and the Virtue of Prudence (1996).” In *The Pinckaers Reader: Renewing Thomistic Moral Theology*, edited by John Berkman and Craig Steven Titus. Translated by Mary Thomas Noble, Craig Steven Titus, Michael Sherwin, and Hugh Conolly, 342-355. Washington, DC: The Catholic University of America Press.

Pinsent, Andrew, and Timothy McGrew. 2015. “Editorial.” *European Journal for Philosophy of Religion* 7:4, 1-2.

Pinsent, Andrew. 2013. “Why matter matters to neo-Aristotelian teleology in mechanics.” *Anuario Filosófico* 46:2, 347-364.

Placher, William. 1996. *The Domestication of Transcendence: How Modern Thinking about God Went Wrong*. Louisville, Kentucky: Westminster John Knox Press.

Plantinga, Alvin. 2008. “What is ‘Intervention’?” *Theology and Science* 6:4, 369-401.

Polkinghorne, John. 1988. “The Quantum World.” In *Physics, Philosophy, and Theology: A Common Quest for Understanding*, edited by Robert John Russell, William R. Stoeger, and George V. Coyne, 333-342. Vatican City State: Vatican Observatory.

Polkinghorne, John. 1993. “The Laws of Nature and the Laws of Physics.” In *Quantum Cosmology and the Laws of Nature: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and Christopher J. Isham, 437-448. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Polkinghorne, John. 1994. *Science and Christian Belief: Theological Reflections of a Bottom-Up Thinker: The Gifford Lectures for 1993-4*. London: SPCK.

Polkinghorne, John. 1996. *Scientists as Theologians: A Comparison of the Writings of Ian Barbour, Arthur Peacocke and John Polkinghorne*. London: SPCK.

Polkinghorne, John. 1998a. *Belief in God in an Age of Science*. New Haven and London: Yale University Press.

Polkinghorne, John. 1998b. “Natural Science, Temporality, and Divine Action.” *Theology Today* 55:3, 329-343.

Polkinghorne, John. 1998c. *Science and Theology: An Introduction.* London: SPCK and Fortress Press.

Polkinghorne, John. 2000. “The Metaphysics of Divine Action.” In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and Arthur Peacocke, 147-156. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Polkinghorne, John. 2001. “Physical Process, Quantum Events, and Divine Agency.” In *Quantum Mechanics: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Philip Clayton, Kirk Wegter-McNelly, and John Polkinghorne, 181-190. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Polkinghorne, John. 2004. “Response to Wesley Wildman’s ‘The Divine Action Project’. *Theology and Science* 2:2, 190-192.

Polkinghorne, John. 2012. “Divine Action – Some Comments.” *Science and Christian Belief* 24:1, 31-32.

Pollard, William. 1958. *Chance and Providence: God’s Action in a World Governed by Scientific Law*. London: Faber and Faber.

Rahner, Karl. 1965. *Hominisation: The Evolutionary Origin of Man as a Theological Problem*. Translated by W.T. O’Hara. Freiburg: Herder and London: Burns & Oates.

Rahner, Karl. 1984. *Foundations of Christian Faith: An Introduction to the Idea of Christianity*. Translated by William v. Dych. London: Darton, Logman & Todd.

Redhead, Michael. 2001. “The Tangled Story of Nonlocality in Quantum Mechanics.” In *Quantum Mechanics: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Philip Clayton, Kirk Wegter-McNelly, and John Polkinghorne, 141-158. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Rock, John P. 1966. “Divine Providence in St. Thomas Aquinas.” In *The Quest for the Absolute*, edited by Frederick J. Adelmann, 67-103. Chestnut Hill: Boston College and The Hague: Martinus Nijhoff.

Ruse, Michael. 2016. “Darwinian Evolution and a Providential God.” In *Abraham’s Dice: Chance and Providence in the Monotheistic Traditions*, edited by Karl W. Giberson, 310-330. New York: Oxford University Press.

Russell, Robert John, Nancey Murphy, and William R. Stoeger (eds). 2008. *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress*. Vatican City State: Vatican Observation Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Russell, Robert John. 1993. “Introduction.” In *Quantum Cosmology and the Laws of Nature: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey

Murphy, and Christopher J. Isham, 1-32. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Russell, Robert John. 1995. "Theistic Evolution: Does God Really Act in Nature?" *CTNS Bulletin* 15:1,19-32

Russell, Robert John. 1997. "Does 'The God Who Acts' Really Act? New Approaches to Divine Action in Light of Science." *Theology Today* 54:1, 43-65.

Russell, Robert John. 1998a. "Introduction." In *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, edited by Robert John Russell, William R. Stoeger, and Francisco J. Ayala, i-xxxiv. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Russell, Robert John. 1998b. "Special Providence and Genetic Mutation: A New Defense of Theistic Evolution." In *Evolutionary and Molecular Biology: Scientific Perspectives on Divine Action*, edited by Robert John Russell, William R. Stoeger, and Francisco J. Ayala, 191-223. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Russell, Robert John. 2000. "Introduction." In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and Arthur Peacocke, 1-31. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Russell, Robert John. 2001a. "Divine Action and Quantum Mechanics: A Fresh Assessment." In *Quantum Mechanics: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Philip Clayton, Kirk Wegter-McNelly, and John Polkinghorne, 293-328. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Russell, Robert John. 2001b. "Introduction." In *Quantum Mechanics: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Philip Clayton, Kirk Wegter-McNelly, and John Polkinghorne, i-xxvi. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Russell, Robert John. 2003. “Special Providence and Genetic Mutation: A New Defense of Theistic Evolution.” In *Perspectives on an Evolving Creation*, edited by Keith B. Miller, 335-369. Grand Rapis, Michigan and Cambridge, UK: William B. Eerdmans.

Russell, Robert John. 2006. “Quantum Physics and the Theology of Non-Interventionist Objective Divine Action.” In *The Oxford Handbook of Religion and Science*, edited by Philip Clayton and Zachary Simpson, 579-595. Oxford: Oxford University Press.

Russell, Robert John. 2008a. “Challenge and Progress in ‘Theology and Science’: An Overview of the VO/CTNS Series.” In *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress*, edited by Robert John Russell, Nancey Murphy, and William R. Stoeger, 3-56. Vatican City State: Vatican Observation Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Russell, Robert John. 2008b. *Cosmology: From Alpha to Omega*. Minneapolis: Fortress Press.

Russell, Robert John. 2008c. “Introduction.” In *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress*, edited by Robert John Russell, Nancey Murphy, and William R. Stoeger, xiii-xxv. Vatican City State: Vatican Observation Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Russell, Robert John. 2011a. “An Appreciative Response to My Reviewers.” *Theology and Science* 9:2, 265-267.

Russell, Robert John. 2011b. “Divine Action.” In *The Cambridge Dictionary of Christian Theology*, edited by Ian A. McFarland et al., 142-144. Cambridge: Cambridge University Press.

Russell, Robert John. 2019. “What We’ve Learned from Quantum Mechanics about Noninterventionist Objective Divine Action in Nature – and its Remaining Challenges.” In *God’s Providence and Randomness in Nature: Scientific and Theological Perspectives*, edited by Robert John Russell and Joshua M. Moritz, 133-172. West Conshohocken: Templeton Press.

Sansbury, Timothy. 2007. “The False Promise of Quantum Mechanics.” *Zygon* 42:1, 111-121.

Saunders, Nicholas. 2000. “Does God Cheat at Dice? Divine Action and Quantum Possibilities.” *Zygon* 35:3, 517-544.

Saunders, Nicholas. 2002. *Divine Action and Modern Science*. Cambridge: Cambridge University Press.

Schärtl, Thomas. 2015. “Divine Activity.” *European Journal for Philosophy of Religion* 7:3, 79-103.

Scheffczyk, Leo. 1970. *Creation and Providence*. Translated by Richard Strachan. New York: Herder and Herder and London: Burns & Oates.

Schmid, Stephan. 2011a. *Finalursachen in der frühen Neuzeit: Eine Untersuchung der Transformation teleologischer Erklärungen*. Berlin: De Gruyter.

Schmid, Stephan. 2011b. “Teleology and the Dispositional Theory of Causation in Thomas Aquinas.” In *Final Causes and Teleological Explanations*, edited by Dominik Perler and Stephan Schmid, 21-39. Paderborn: Mentis.

Shapcote, Laurence (trans.). 2012. *Saint Thomas Aquinas: Summa Theologiae: Prima Pars, 50-119*, edited by John Mortensen and Enrique Alarcón. Lander, Wyoming: The Aquinas Institute for the Study of Sacred Doctrine.

Sharples, Robert. 2009. “Fate, prescience and free will.” In *The Cambridge Companion to Boethius*, edited by John Marenbon, 207-227. Cambridge: Cambridge University Press.

Sherwin, Michael S. 2005. *By Knowledge and By Love: Charity and Knowledge in the Moral Theology of St. Thomas Aquinas*. Washington, DC: The Catholic University of America Press.

Shimony, Abner. 2001. “The Reality of the Quantum World.” In *Quantum Mechanics: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Philip Clayton, Kirk Wegter-McNelly, and John Polkinghorne, 3-16. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Siebenrock, Roman, and Christoph Amor. 2014. *Handeln Gottes: Beiträge zur aktuellen Debatte*. Freiburg im Breisgau: Herder.

Silva, Ignacio. 2009. "Divine Action in Nature: Thomas Aquinas and the Contemporary Debate." DPhil thesis, University of Oxford.

Silva, Ignacio. 2012. "John Polkinghorne on Divine Action: a Coherent Theological Evolution." *Science and Christian Belief* 24:1, 19-30.

Silva, Ignacio. 2013. "Thomas Aquinas Holds Fast: Objections to Aquinas within Today's Debate on Divine Action." *The Heythrop Journal* 54:4, 658-667.

Silva, Ignacio. 2014. "Revisiting Aquinas on Providence and Rising to the Challenge of Divine Action in Nature." *The Journal of Religion* 94:3, 277-291.

Silva, Ignacio. 2015a. "A Cause Among Causes? God Acting in the Natural World." *European Journal for Philosophy of Religion* 7:4, 99-114.

Silva, Ignacio. 2015b. "Providence, Contingency, and the Perfection of the Universe." *Philosophy, Theology and the Sciences* 2:2, 137-157.

Silva, Ignacio. 2016a. "Divine Action and Thomism: Why Thomas Aquinas's Thought is Attractive Today." *Acta Philosophica* 25:1, 65-84.

Silva, Ignacio. 2016b. "Thomas Aquinas on Natural Contingency and Providence." In *Abraham's Dice: Chance and Providence in the Monotheistic Traditions*, edited by Karl W. Giberson, 158-174. New York: Oxford University Press.

Smedes, Taede. 2004. *Chaos, Complexity, and God: Divine Action and Scientism*. Leuven: Peeters.

Smedes, Taede. 2007. "Social and Ideological Roots of 'Science and Religion': A Social-Historical Exploration of a Recent Phenomenon." *Theology and Science* 5:2, 185-201.

Smedes, Taede. 2008. "Beyond Barbour or Back to Basics? The Future of Science-and-Religion and the Question for Unity." *Zygon* 43:1, 235-258.

Southgate, Christopher. 2005. “A test case: divine action.” In *God, Humanity and the Cosmos: A Companion to the Science-Religion Debate*, edited by Christopher Southgate et al., 260-299. London and New York: T&T Clark.

Spaemann, Robert, and Reinhard Löw. 2005. *Natürliche Ziele: Geschichte und Wiederentdeckung des teleologischen Denkens*. Stuttgart: Klett-Cotta.

Stoeger, William R. 2000. “Describing God’s Action in the World in Light of Scientific Knowledge of Reality.” In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and Arthur Peacocke, 239-261. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Stoeger, William R. 2004. “The Divine Action Project: Reflections on the Compatibilism/Incompatibilism Divide.” *Theology and Science* 2:2, 192-196.

Stump, Eleonore, and Norman Kretzmann. 1981. “Eternity.” *The Journal of Philosophy* 78:8, 429-458.

Szathmáry, Eörs. 2002. “The gospel of inevitability: Was the Universe destined to lead to the evolution of humans?” *Nature* 419:6909, 779-780.

Tabaczek, Mariusz. 2015. “Thomistic Response to the Theory of Evolution: Aquinas on Natural Selection and the Perfection of the Universe.” *Theology and Science* 13:3, 325-344.

Takacs, Peter, and Michael Ruse. 2013. “The Current Status of the Philosophy of Biology.” *Science and Education* 22:1, 5-48.

Tanner, Kathryn. 1988. *God and Creation in Christianity: Tyranny or Empowerment?* Oxford: Basil Blackwell.

Te Velde, Rudi A. 1995. *Participation and Substantiality in Thomas Aquinas*. Leiden: Brill.

Thomas, Owen (ed). 1983. *God’s Activity in the World: The Contemporary Problem*. Chico, California: Scholars Press.

Thomas, Owen. 1983a. “Introduction.” In *God’s Activity in the World: The Contemporary Problem*, edited by Thomas Owen, 1-14. Chico, California: Scholars Press.

Thomas, Owen. 1983b. “Summary Analysis.” In *God’s Activity in the World: The Contemporary Problem*, edited by Thomas Owen, 231-240. Chico, California: Scholars Press.

Thomas, Owen. 1990. “Recent Thought on Divine Agency.” In *Divine Action: Studies Inspired by the Philosophical Theology of Austin Farrer*, edited by Brian Hebblethwaite and Edward Henderson, 35-50. Edinburgh: T&T Clark.

Thomas, Owen. 1997. “Chaos, Complexity, and God: A Review Essay.” *Theology Today* 54:1, 66-76.

Torrell, Jean-Pierre. 2002. “‘Dieu conduit toutes choses vers leur fin’: Providence et gouvernement divin chez Thomas d’Aquin.” In *Ende und Vollendung: Eschatologische Perspektiven im Mittelalter*, edited by Jan A. Aertsen and Martin Pickavé, 561-594. Berlin and New York: Walter de Gruyter.

Tracy, Thomas F. 1994. “Divine Action, Created Causes, and Human Freedom.” In *The God Who Acts: Philosophical and Theological Explorations*, edited by Thomas F. Tracy, 77-102. University Park, Pennsylvania: The Pennsylvania State University Press.

Tracy, Thomas F. 2000. “Particular Providence and the God of the Gaps.” In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and Arthur Peacocke, 289-324. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Tracy, Thomas F. 2001. “Creation, Providence, and Quantum Chance.” In *Quantum Mechanics: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Philip Clayton, Kirk Wegter-McNelly, and John Polkinghorne, 235-258. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Tracy, Thomas F. 2003. Review of *Divine Action and Modern Science*, by Nicholas Saunders. *Notre Dame Philosophical Reviews*, October 9, 2003.

Tracy, Thomas F. 2004. “Scientific Perspectives on Divine Action? Mapping the Options.” *Theology and Science* 2:2, 196-201.

Tracy, Thomas F. 2006. “Theologies of Divine Action.” In *The Oxford Handbook of Religion and Science*, edited by Philip Clayton and Zachary Simpson, 596-661. Oxford: Oxford University Press.

Tracy, Thomas F. 2008. “Special Divine Action and the Laws of Nature.” In *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress,* edited by Robert John Russell, Nancey Murphy, and William R. Stoeger, 249-283. Vatican City State: Vatican Observation Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Tracy, Thomas F. 2011. “Special Divine Action and the Problem of Evil in *Cosmology – from Alpha to Omega*.” *Theology and Science* 9:2, 257-259.

Tracy, Thomas F. 2012. “Scientific Vetoes and Hands-Off God: Can We Say that God Acts in History?” *Theology and Science* 10:1, 55-80.

Tracy, Thomas F. 2015. “Special Divine Action and Natural Science.” *European Journal of Philosophy of Religion* 7:3, 131-149.

Tugwell, Simon. 1988. *Albert & Thomas: Selected Writings*. New York: Paulist Press.

Von Stosch, Klaus. 2005. “Gottes Handeln denken: Ein Literaturbericht zur Debatte der letzten 15 Jahre.” *Theologische Revue* 101:2, 89-108.

Von Wachter, Daniel. 2015. “Miracles are not Violations of the Laws of Nature because the Laws do not entail Regularities.” *European Journal for Philosophy of Religion* 7:4, 37-60.

Walsh, Denis M. 2008. “Teleology.” In *The Oxford Handbook of Philosophy of Biology*, edited by Michael Ruse, 113-137. Oxford: Oxford University Press.

Walsh, Denis M. 2014. “Function and teleology.” In *Evolutionary Biology: Conceptual, Ethical, and Religious Issues*, edited by R. Paul Thompson and Denis M. Walsh, 193-216. Cambridge: Cambridge University Press.

Walsh, Denis M. 2015. *Organisms, Agency, and Evolution*. Cambridge: Cambridge University Press.

Walsh, P.G. 1999. *Boethius: The Consolation of Philosophy*. Translated with Introduction and Explanatory Notes by P.G. Walsh. Oxford: Clarendon Press.

Ward, Keith. 1990. *Divine Action*. London: Collins.

Ward, Keith. 2008. "Divine Action in an Emergent Cosmos." In *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress*, edited by Robert John Russell, Nancey Murphy, and William R. Stoeger, 286-298. Vatican City State: Vatican Observation Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Wegter-McNelly, Kirk. 2006. "Atoms May Be Small, But They're Everywhere: Robert Russell's Theological Engagement with the Quantum Revolution." In *God's Action in Nature's World: Essays in Honour of Robert John Russell*, edited by Ted Peters and Nathan Hallanger, 93-111. Aldershot: Ashgate.

Wegter-McNelly, Kirk. 2008. "Does God Need Room to Act? Theo-Physical In/Compatibilism in Noninterventionist Theories of Objectively Special Divine Action." In *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress*, edited by Robert John Russell, Nancey Murphy, and William R. Stoeger, 299-314. Vatican City State: Vatican Observation Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Weissmahr, Béla. 1973. *Gottes Wirken in der Welt: ein Diskussionsbeitrag zur Frage der Evolution und des Wunders*. Frankfurt am Main: Josef Knecht.

White, Vernon. 1980. "The Concept of Special Divine Action." MLitt thesis, University of Oxford.

White, Vernon. 1985. *The Fall of a Sparrow: A Concept of Special Divine Action*. Exeter: The Paternoster Press.

Whitehead, Alfred North. 1969. *Process and Reality*. New York: Free Press.

Wildman, Wesley J. 2008. “The Divine Action Project, 1988-2003.” In *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress*, edited by Robert John Russell, Nancey Murphy, and William R. Stoeger, 133-176. Vatican City State: Vatican Observation Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Wildman, Wesley J., and Robert John Russell. 2000. “Chaos: A Mathematical Introduction with Philosophical Reflections.” In *Chaos and Complexity: Scientific Perspectives on Divine Action*, edited by Robert John Russell, Nancey Murphy, and Arthur Peacocke, 49-90. Vatican City State: Vatican Observatory Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Wiles, Maurice. 1971. “Religious Authority and Divine Action.” *Religious Studies* 7:1, 1-12.

Wiles, Maurice. 1981. “Farrer’s Concept of Double Agency.” *Theology* 84:700, 243-249.

Wiles, Maurice. 1986. *God’s Action in the World: The Bampton Lectures for 1986*. London: SCM Press.

Wippel, John F. 2000a. *The Metaphysical Thought of Thomas Aquinas: From Finite Being to Uncreated Being*. Washington, DC: The Catholic University of America Press.

Wippel, John F. 2000b. “Thomas Aquinas on Creatures as Causes of *Esse*.” *International Philosophical Quarterly* 40:2, 197-213.

Wolff, Christian. 1732. *Philosophia rationalis sive logica, methodo scientifica pertractata et ad usum scietiarum atque vitae aptata: Praemittitur discursus praeliminaris de philosophia in genere*. Francofurti et Lipsiae: prostat in Officina libraria Rengeriana.

Worthing, Mark. 2008. “Reflections on the VO/CTNS Series on Divine Action from the Perspective of Theology and Science.” In *Scientific Perspectives on Divine Action: Twenty Years of Challenge and Progress*, edited by Robert John Russell, Nancey Murphy, and William R. Stoeger, 315-329. Vatican City State: Vatican Observation Publications and Berkeley, California: The Center for Theology and the Natural Sciences.

Wright, George Ernest, and Reginald H. Fuller. 1965. *The Book of the Acts of God: Modern Christian Scholarship Interprets the Bible*. Harmondsworth: Penguin Books.

Wright, George Ernest. 1960. *God Who Acts: Biblical Theology as Recital*. London: SCM Press.

Wright, John H. 1957. *The Order of the Universe in the Theology of St. Thomas Aquinas*. Romae: Typis Pontificae Universitatis Gregorianae.

Wright, John H. 1966. "The Eternal Plan of Divine Providence." *Theological Studies* 27:1, 27-57.

Ysaac, Walter L. 1961. "The Certitude of Providence in St. Thomas." *The Modern Schoolman* 38:4, 305-321.