EMERGENCE AND DIVINE ACTION:
EXPLORING THE DISPOSITIONAL VIEW OF CAUSATION
AS A NEW PHILOSOPHICAL FOUNDATION

A dissertation by
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This dissertation shows that dispositional metaphysics and its corresponding view of causation can serve as a new philosophical foundation for the dynamic model of emergence developed by Terrence Deacon and reconcile it with Aristotelianism. Moreover, it also demonstrates that Deacon’s view of emergence, understood in terms of formal and final causation, supports, in turn, a retrieval of Aquinas’ view of divine action, and its application in theological reflection inspired by the theory of emergence.

Such a theological model becomes an important alternative to the emergentist panentheism developed by Arthur Peacocke, and supported by Philip Clayton and Niels Henrik Gregersen. It no longer conceives God’s action panentheistically as an influence on the totality of the world, which metaphysically assumes that the causation of God and creatures is of the same kind (univocal predication) and so runs the risk of collapsing into pantheism. Rather—recapturing the classical Thomistic understanding of divine action through all four Aristotelian causes—the proposed model sees God as the ultimate source of forms, and the ultimate aim of all teleology in nature. With regard to efficient causation, God’s
transcendence is protected by Aquinas’ distinction between the primary and principal causation of the Creator and the secondary and instrumental causation of creatures. Therefore, God’s immutability, omniscience, omnipotence, infinity, eternity, and impassibility are not challenged, while his immanent and constant presence in all worldly events is by no means undermined.

The argumentation leading to these conclusions includes: 1) a historical overview of causation in philosophy and scientific explanation; 2) an exposition and critical analysis of the metaphysical aspects of both the classical top-down mereological view of emergence and the alternative dynamical model of emergence offered by Deacon; 3) an exposition of dispositional metaphysics and an investigation of its Aristotelian legacy, followed by its application in Deacon’s view of emergence; 4) a historical overview and critique of philosophical panentheism, as well as an analysis of its use in contemporary science/theology dialogue; and 5) a critical analysis of the variety of theological responses to the theory of emergence, especially panentheistic emergentism, followed by the constructive proposal of a new theological understanding of emergence.
To Michael J. Dodds, O.P.

for all he has taught me
Table of Contents

Acknowledgements x
Abbreviations xi
Introduction xiii

Part I: History of Causation in Philosophy and Scientific Explanation 1
Chapter 1: From Antiquity to the Middle Ages 4
1. Ancient Greece before Aristotle 4
   1.1. Early Milesians 4
   1.2. The School of Pythagoras and Plato 6
2. Aristotle: Causality and Scientific Knowledge 8
   2.1. Textual Analysis of Causation in Aristotle 10
   2.2. Material Cause 16
   2.3. Formal Cause 19
   2.4. Efficient and Final Causes 21
   2.5. Necessity, Contingency, and Chance 24
3. Causality in the Middle Ages 29
   3.1. Medieval Philosophy and Science at Oxford 29
   3.2. Medieval Philosophy and Science at Paris 31
      3.2.1. Aquinas on Material and Formal Causation 32
      3.2.2. Aquinas on Efficient and Final Causation 35
      3.2.3. Aquinas on Necessity, Contingency, and Chance 38
      3.2.4. Principle of Causality 42
      3.2.5. Principle of Proportionate Causation 47
   3.3. Medieval Science and Dynamics of Motion 48
   3.4. Medieval Occasionalism 50
Notes to Chapter 1 51

Chapter 2: From Modernity to the Twentieth Century 63
1. Early Development of Classical Science 63
   1.1. William Gilbert 64
   1.2. Johannes Kepler 65
   1.3. Galileo Galilei 66
   1.4. William Harvey 67
Chapter 4: Characteristics of Emergence

2. Characteristics of Emergence
   2.1. Nonadditivity of Causes
   2.2. Novelty of Complex Processes, Entities, and Properties
   2.3. Ontology of Levels
   2.4. Emergent Laws
   2.5. Nondeducibility, Nonpredictability and Irreducibility of Emergents
   2.6. Emergence and Downward Causation

3. Summary

Notes to Chapter 4

Chapter 5: Metaphysical Challenges for Emergence and Downward Causation

1. Insufficiency of the Negative Definition of EM
2. Ontological Status of Emergents
3. Problems of Nonreductionist Physicalism
4. Metaphysics of Downward Causation
   4.1. What is Causal in DC?
   4.2. What is Being Acted Upon in DC?
   4.3. The Nature of DC
5. Kim’s Argument from Circularity and Causal Exclusion
6. A Response to Kim
7. EM and DC Redefined
   7.1. Beyond Efficient Cause
   7.2. Aristotelianism and Emergentism
   7.3. In Search of Proper Metaphysics

Notes to Chapter 5

Chapter 6: Dynamical Depth and Causal Non-reductionism

1. Teleology Matters in Life Theories
2. Dynamical Depth – A True Face of Emergence?
   2.1. Homeodynamics
   2.2. Morphodynamics
   2.3. Teleodynamics
   2.4. Autogenesis
3. Causal Non-reductionism of Deacon’s Project
   3.1. Material Cause
   3.2. Formal and Efficient Causality
   3.3. Teleology and Causation of Absences
   3.4. Substances versus Processes
   3.5. How Aristotelian is Deacon?
4. Incompleteness of Deacon’s Model of Emergence

Notes to Chapter 6
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Introduction

In the beginning, God created the heavens and the earth. These first words of Genesis tell us two fundamental things about God: God is and God acts. If we believe in a God who acts, we can talk about God only if we speak about action, and to do that we need a language of causality.

Michael J. Dodds, Unlocking Divine Action

The scientific notion of irreducible, higher structures emerging from the lower levels of the complexity of matter and exercising downward (top-down) causation on their constituents, has recently inspired the development of a new model of divine action. It is presented by Arthur Peacocke and supported by Philip Clayton and Niels Henrik Gregersen. Defining emergentist panentheism Peacocke speaks about the top-down causal influence of God on the totality of the world, understood as a flow of information—a pattern-forming influence. He claims that this approach enables us to reconcile God’s action with the current paradigms of physical, biological, human, and social sciences. According to his proposition, God’s action on the world-as-a-whole does not abrogate the natural regularities of its processes, which are described by nonlinear non-equilibrium thermodynamics, the theory of chaos, relativity, and quantum mechanics.

Robert John Russell challenges this model scientifically, however, noting that in the Big Bang cosmology the universe does not have a boundary, as needed by the
concept of the “whole.” Moreover, because it is rooted in panentheism (which holds that the world is in God, who is, nevertheless, more than the totality of the world), this view of divine action assumes that the God/world relationship is real in both terms of the relation (i.e., both in the Creator and creation) and that both terms are therefore mutually affected by it. It thus draws into question the classical understanding of God as immutable, omniscient, omnipotent, infinite, eternal, and impassible.

The theory of emergence itself raises an important metaphysical question concerning the nature of downward causation. It seems that the reduction of causality in modernity from the Aristotelian four causes (material, formal, final, efficient) to merely physical interactions, has forced proponents of emergentism to think about top-down influence in terms of efficient causation alone, which tends to reduce it to efficient causes posited on higher levels and acting on lower levels of complexity. In view of the manifest inadequacy of this model (Jaegwon Kim, Menno Hulswit), it has therefore been suggested that emergence and downward causation can be saved only in the context of systemic causation which goes beyond efficient causation, reaching towards Aristotle’s ideas of formal and final causes (Claus Emmeche et al., Michael Silberstein, Charbel Niño El-Hani and Antonio Marcos Pereira, Alvaro Moreno and Jon Umerez).

This advice was followed by Terrence Deacon who—in a number of publications, among which Incomplete Nature remains the most influential—offers a new version of emergence theory, arguing in favor of a broader understanding of
causation. Interestingly, developing his model of emergence Deacon rejects top-down mereological (whole-part) reasoning and suggests rethinking emergence itself in dynamical terms. He introduces an intriguing notion of “constitutive absences” (constraints), understood as “possible features being excluded,” as the core of his process view of emergence, in which “what is absent is responsible for the causal power of organization and the asymmetric dynamics of a physical or living process.”

In other words, the reduction of possibilities and options brings an increase in complexity and specialization, leading to the emergence of the new features of inanimate and animate entities.

While fascinating and promising, Deacon’s project raises important metaphysical questions. Although he explicitly rejects eliminative reductionism (everything reduces to physical particles), Deacon does not side with the classical antireductionist positions. Nor does he follow contemporary proponents of top-down causation. Rather, he suggests reinterpreting formal cause as a function, and final cause as an emergent outcome of basic mechanical physico-dynamic processes—a position which is still compatible with some form of limited reductionism, and departs from the Aristotelian understanding of these types of causation. Moreover, his idea of the causality of absences seems to be philosophically counterintuitive, as it assumes that “what is not” can act on “what is.” Finally, following many proponents of the scientific notion of emergentism, Deacon rejects Aristotle's concept of hylomorphism (the view that things are composed of prime matter and substantial form). He is also critical about the
process metaphysic of Whitehead which he rejects as another version of panpsychism. But at the same time he does not offer a fully developed alternative ontology for biological emergentism.

In the context of difficulties challenging both the top-down mereological and the dynamical versions of emergence, we would like to propose dispositional metaphysics and the corresponding view of causation, as a possible solution to the ontological problems of emergentism. Formed within the analytic philosophical tradition, it defines dispositions in things and organisms as intrinsic properties characteristic for natural kinds, and explains causation as a manifestation of these dispositions (Alexander Bird, Stephen Mumford, David Oderberg, Brian Ellis, George Molnar, and others). We believe that dispositional metaphysics opens the way to a more robust view of causation, while being attentive to cases of polygenic causation, where more than one cause is responsible for an effect, and to the problem of the causation of absences. Thus, we contend, this theory can serve as a metaphysical ground for emergentism, both in the version that emphasizes the importance of the top-down causation, and in Deacon’s project, based on the idea of causality of “constitutive absences.”

Because it supports a new essentialism (the view that beings have essences decisive for their nature) and involves a retrieval of formal and final causation, dispositional metaphysics can be regarded as a neo-Aristotelian position. It shows that Aristotle’s explanation—employing scientific principles as well as the notion of causes that admittedly lie beyond the bounds of science (but are not facile
explanations [homunculi], but legitimate [natural] principles of a philosophy of nature)—is still valid and applicable in the context of contemporary science.

A theory of emergence based on dispositional metaphysics would show a new explanatory potential as well. It would not only reconcile Aristotelianism with emergentism, but also have a significant impact on the view of divine action developed in reference to the theory of emergence. God’s action would no longer be conceived panentheistically as an influence on the totality of the world, which metaphysically assumes that the causation of God and creatures is of the same kind (univocal predication) and so runs the risk of collapsing into pantheism. The recovery of the plural notion of causation allows for a recapturing of the classical understanding of divine action as proposed by Aquinas. God is regarded as the ultimate source of forms, and the ultimate aim of all teleology in nature. With regard to efficient causation, God’s transcendence is protected by Aquinas’ distinction between the primary and principal causation of the Creator and the secondary and instrumental character of the causation of creatures. Therefore, God’s immutability, omniscience, omnipotence, infinity, eternity, and impassibility are not challenged, while his immanent and constant presence in all worldly events is by no means undermined.

Development of such model of divine action—built in reference to Deacon’s dynamic view of emergence (reinterpreted in terms of the classical and new Aristotelianism) and the classical Aristotelian-Thomistic view of God/world relationship—is the main goal of the project pursued in our dissertation. We want
to propose it as an important alternative to the panentheistic emergentism promoted by Peacocke, and supported by Clayton and Gregersen.

Our project has an interdisciplinary character and contributes to the ongoing dialog between theology and the natural sciences. We believe, however, that our approach is distinct because of its strong emphasis on the role of metaphysics, philosophy of nature, philosophy of science (philosophy of biology in particular), and philosophy of God. We will refer to all these disciplines in our analysis and evaluation of the two models of emergence and apply the results of this inquiry to the theology of divine action.

Concerning the standard distinction between natural theology and theology of nature, we will use the latter approach to the theology/science dialogue, incorporating the theory of emergence into a theological reflection on the nature of divine action. We will also adopt the method of a realist critique of knowledge which acknowledges that concepts, models, and hypotheses in human cognition are never fully accurate, do not give us an exact picture of the reality they describe, and therefore need to be revised. Nevertheless, we want to emphasize, following Étienne Gilson, that realism, even when understood critically, allows that our cognition gives us access to the real world. This position—called “methodical” or “moderate” realism—prevents us from falling into the trap of Kantian epistemology in which we do not have access to noumena (things-in-themselves). For a true realist (accepting a relist theory of knowledge), being is always prior to knowing, and a condition of knowing (knowledge is derived from being, not vice versa). Therefore, what is real
is necessarily intelligible. Finally, one more methodological principle underlying our project states that any attempt thoroughly to describe the reality of the world has to take into account both its quantitative and qualitative aspects. The first group of properties belongs primarily to the domain of science, while the second opens the way to philosophical and theological investigation as well. Neglecting either one of them leads to reductionism or eliminativism.

The project is divided into four parts, each of them preceded by a short introduction. The first part concentrates on the history of causality in philosophical and scientific explanation, analyzed in reference to Aristotelian fourfold notion of causation. The story of its origin and development, its rejection, and the signs of its revival—related to the most important moments of the history of the development of the western thought—is covered in chapters 1-3.

The historical investigation of philosophical and scientific aspects of causation will be next applied in a critical analysis of the metaphysical aspects of the theory of emergence, which is the subject of the second part of the project. Beginning with the description of the basic postulates of emergence—in the historical context of their classical formulation (chapter 4)—our enquiry will concentrate next on the account of the metaphysical challenges and weaknesses of the mereological top-down version of emergence (chapter 5), to culminate in a critical investigation of Deacon’s new version of emergentism (chapter 6). Our examination of his dynamical model of emergence will concentrate on the question of its causal nonreductionism and its references to Aristotelian four causes.
As a remedy for the metaphysical shortcomings of both classical and Deacon’s concepts of emergence, the third component of the project will present dispositional metaphysics as a possible new ontological foundation of emergentism. The analysis of the main objectives of this metaphysics and its related view of causation (chapter 7), will be followed by an investigation of their Aristotelian legacy (chapter 8). The whole argument will find its conclusion in our constructive proposal of an application of this new ontology in Deacon’s dynamical depth model of emergence, grounding it in a more thorough metaphysical system (chapter 9).

Finally, in the last part of the project, we will turn to theology inspired by the theory of emergence. Because the position of its most prominent representative, Arthur Peacocke, is classified as panentheistic emergentism, we will begin with a historical analysis of the development of philosophical panentheism, and its influence on the thought of some important participants of the science/theology dialogue (chapter 10). Our account of the variety of theological responses to the theory of emergence will open the way to a critical analysis of panentheism and panentheistic emergentism (chapter 11). Finally, the whole project will conclude with our constructive proposal for a new theological understanding of emergence, which will be based on the neo-Aristotelian reinterpretation of Deacon’s concept of emergence, and entail Aquinas’ theology of divine action and God/world relationship, as well as a comparative analysis of Thomas’ and Deacon’s notions of the ontological nature and the role of nonbeing. A brief summary of advantages of
our proposal over Peacocke’s panentheistic emergentism will also be provided (chapter 12).