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WHY METAPHYSICS MATTERS FOR THE SCIENCE-THEOLOGY DEBATE – AN INCARNATIONAL CASE STUDY

Abstract. This article examines the relationship between science and theology within a critical realist framework. Focusing on the role of metaphysics as a unifying starting point, especially in consideration of theological issues that are concerned with corporeality and temporality (such as in the incarnation). Some metaphysical challenges that lead to the appearance of “paradox” in the incarnation are highlighted, and the implications of two forms of holistic scientific ontology on the appearance of a paradox in the incarnation are explored. It is concluded that ultimately both science and theology are concerned with the nature of reality, and the search for coherent models that can describe the unseen. Whilst one should maintain a criticality to any realist conception of theological and scientific theories, a shared metaphysics ensures theological doctrine can continue to be interpreted with relevance in a world in which scientific thought is increasingly stretching into the meta-scientific.

Keywords: critical realism; holism; incarnation; Christology; paradox

1. Introduction. 2. Opening comments and theoretical framework. 3. The place of metaphysics in theology and contemporary physics. 4. Metaphysical paradox in theology. 5. Holistic ontology and the “paradox” of Christ. 6. Metaphysics as a dialogic foundation for the science-theology relationship. 7. Conclusion.

1. INTRODUCTION

If one accepts the premise that science and theology are both engaging with a reality that can be referred to, but which is beyond the range of a literal description, then one has to acknowledge the crucial role metaphysics plays in providing a foundation stone for an applied dialogue. This paper examines the potential impact of

scientific ontology¹ (as metaphysics) on our theological discussion of the nature of persons using the incarnation as a “case study”. It can be argued that the paradox narrative of the incarnation is, in part, fuelled by metaphysical assumptions, and these assumptions may be challenged by an examination of the scientific ontology associated with contemporary physics. Classical physics seemed to force a choice between the adoption of (1) an “enchanted” cartesian ontology or (2) the acceptance of a scientific reductionist ontology. The ontological and theological issues raised by this apparent dichotomy have led to the claim that the incarnation is paradoxical² in a manner that challenges the logical consistency of Christian doctrine.³

2. OPENING COMMENTS AND THEORETICAL FRAMEWORK

There are perhaps as many definitions of metaphysics as there are metaphysicians. After cautioning against the assumption that *metaphysics* relates to that which is “beyond” physics, in *Relation of Metaphysics and Theology* Tillich offers a clear definition that will

1 Whilst it may be possible to argue that all of the natural sciences can be conceived of having their own implicit metaphysics. The focus of physics is into the nature of the natural world and its governing laws. This article focuses on the ontology (worldview/metaphysics depending on one’s preferred terminology) associated with physics.

2 There is a related issue associated with the conflation of paradox and mystery; however, to examine this would go too far beyond the scope of this paper. For this discussion it is enough to note that a paradox arises when two components are held in tension that only appears to be able to be resolved by prioritising one side of the dichotomy over the other; whereas mystery is best understood as “those concepts that are not (and may never be) open totally to human explanation” (see D. Basinger, *Biblical Paradox: Does Revelation Challenge Logic?*, *Bulletin of the Evangelical Theological Society* 30(1987)2, 205-213). Therefore, it is possible to challenge the claim of paradox without asserting the removal of theological mystery or the epistemic distance between ourselves and God.

3 See Anderson for a detailed discussion of the challenge of logical paradox for Christian belief, cf. J. Anderson, *Paradox in Christian Theology: An Analysis of Its Presence, Character, and Epistemic Status*, (Series: Paternoster Theological Monographs), Paternoster, Milton Keynes 2007.

provide the starting point for this paper: “metaphysics should be defined as the analysis of those elements of the encountered reality which make experience universally possible. Metaphysics then is the rational enquiry into the structure of being, its polarities and categories as they appear in man’s [*sic*] encounter with reality.”⁴ When this is viewed alongside the challenge to reductionism that complex physical systems cannot be *exhaustively* explained by their component parts,⁵ and the difficulty of describing the world in either/or dichotomies (rather than both/and), I side with Barbour in his exhortation that “we must seek a *unitary view of man* [*sic*] which admits *many-levelled complexity*.”⁶ For any such theological account to be taken seriously it must be seen, at the very least, to not stand in direct opposition to the current scientific account of the world. Furthermore, when discussing that which is unobservable both science and theology must take account of the inadequacies/challenges of reductionist interpretations and recognise the complex relationship between models (in science and theology) and the reality they describe.

The focus of this paper lies in highlighting the importance of a coherent account of metaphysics to creating a meaningful dialogue between science and religion. However, as it is written from within a critical realist framework which informs the approach to the role of metaphysics it is necessary to first include a brief note on the assumptions that are made.

Losch argues that it is Barbour’s *Issues in Science and Religion* that brought critical realism into the science and religion (or at least science-Christianity) debate, where it has since been taken up by others such as John Polkinghorne, Arthur Peacocke, and Alister McGrath. Perhaps the name most unanimously associated with

4 P. Tillich, *Relation of Metaphysics and Theology*, *The Review of Metaphysics* 10(1956)1, 57.

5 I.G. Barbour, *Issues in Science and Religion*, Harper Collins, London 1971, 6-7.

6 *Ibid.*, (emphasis in original).

critical realism is that of Roy Bhaskar (although it was only later that he adopted the expression “critical realism” over “transcendental realism” and “critical naturalism”). However, in relation to the science–religion discussion, and despite recent efforts to relate the two, “Bhaskar’s critical realism and the critical realism of the science and theology debate... arrived at the term on independent routes.”⁷ What then is meant by critical realism and how might it relate to the science–religion debate?

Barbour introduces critical realism through his discussion of the scientific method – which presupposes a correspondence between the structure of the world, the data and the corresponding theories. This assumption of realism and “interest in unifying the concepts of the separate sciences, seem to presuppose... some reference to a world under investigation”⁸ (i.e. a correspondence theory of truth, associated with realism). However, this realism needs to be qualified or “critical”. “Critical realism” in this sense recognises that whilst the intent of a scientific description of the world is realist, our language and models of the world offer only an indirect account as “no theory is an exact description of the world, *and* that the world is such as to bear interpretation in some ways and not in others.”⁹ In this understanding there is nothing more challenging espoused in critical realism than the recognition of the limitations of our language and knowledge, as well as the roles of creativity and imagination in the construction of our scientific theories about the nature of the world (scientific ontology). As it is used in this article therefore, critical realism requires the scientist, philosopher or theologian to recognise that reality is always mediated through our experience of it, and that there are aspects of reality that cannot be fully known in and of themselves (thus falling short of a Kantian position, but not

7 A. Losch, *On the Origins of Critical Realism*, *Theology and Science* 7(2009)1, 96.

8 I.G. Barbour, *Issues in Science and Religion*, op. cit., 172.

9 *Ibid.*, 171, (emphasis in original).

reverting to a naïve realism). To return to Barbour: “Yes, science is trying to describe reality, but it does so only very indirectly in highly symbolic and abstractive language. One has to use models, but one has to recognize their limitations, one has to realize that they are partial and limited... that none corresponds exactly in a simple way to reality.”¹⁰

Alongside this understanding of critical realism in relation to religion and science, Bhaskar’s account provides a helpful model for conceptualising how science and religion may be understood in a productive relationship, in so far as it states that whilst “there is (or can be) an essential unity between the natural and the social sciences”¹¹ there are also “significant differences in these methods, grounded in real difference in their subject matters.”¹² This may not seem to be particularly supportive to understanding the unity between science and religion, however as McGrath notes in *The Territories of Human Reason* what this in fact means is that the world can be understood as existing in strata: individual disciplines inform our thinking about each stratum, but unlike a reductionist account these are not to be set up in a hierarchy. Rather “each stratum of reality – whether physical, biological or social – is to be seen as ‘real’ and capable of investigation using means appropriate to its distinctive reality.”¹³ This echoes Torrance in *Theological Science*, where he argues “the theologian and the scientist are at work not only in the same room, so to speak, but often at the same bench, yet in such a way that each acknowledges the distinctive nature of the other’s subject-matter.”¹⁴

10 I.G. Barbour, *Commentary on Theological Resources from the Physical Sciences*, Zygon 1(1966)1, 30.

11 R. Bhaskar, *The Possibility of Naturalism: A Philosophical Critique of the Contemporary Human Science*, Harvester Wheatsheaf, New York 1989, 2.

12 *Ibid.*, 3.

13 A.E. McGrath, *The Territories of Human Reason: Science and Theology in an Age of Multiple Rationalities*, OUP Oxford, New York 2019, 69.

14 T.F. Torrance, *Theological Science*, Vol. 1, Clark, Edinburgh 1996, xii.

What does this mean for the possibility of a critical realist framework of the science-theology debate? It necessitates a recognition of a quasi-integration model (in relation to Barbour's four-fold typology),¹⁵ held with Bhaskar's recognition of a stratified ontology, where different methods are appropriate to the investigation of different aspects of our world (but they are needed in unity, rather than either/or in order to give a full picture of the world and our place in it). In summary, as understood in this article a critical realist framework adopts the following assumptions:

1. Natural science aims to describe the nature of the world, using symbolic and abstract language (that may require interpretation);
2. Christian theology aims to account for the nature of a triune God, including the nature of the second person as an incarnate being, using symbolic and abstract language (that may require interpretation);
3. Critical realism recognises the distinctive contribution each makes to our understanding of the world;
4. When providing an account of the nature of God's interaction with the world (especially in relation to the incarnation) it is necessary to take into account the knowledge and ontological (metaphysical) framework(s) provided by the natural sciences.

The use of critical realism in science and theology is not without its critics. Particularly notable is Nancey Murphy's argument that "critical realism is a problematic philosophical doctrine that unnecessarily complicates attempts to relate theology and science."¹⁶ Whilst recognising that Bhaskar's account of transcendental realism (and later critical realism) is philosophically loaded, this was not the use of critical realism that Barbour, or Polkinghorne had in mind.

15 I.G. Barbour, *Religion in an Age of Science*, SCM Press, London 1990, chapter 1.

16 N.C. Murphy, *From Critical Realism to a Methodological Approach: Response to Robbins, Van Huyssteen, and Hefner*, *Zygon* 23(1988)3, 287.

For both scholars, the notion of critical realism is set in contrast with a naive “scientific realism” and is intended to highlight the roles of uncertainty, the unseen, and models in scientific progress. I don’t believe that such an account of critical realism is philosophically problematic, but rather highlights a recognition of the limits of our ontology, and that theological accounts of the nature of persons and reality should at the very least not dismiss the realism of scientific ontology.¹⁷ Thus, to quote Torrance: “each seeks to establish the same kind of relation with the real..., they cannot but interact with one another and learn from one another, if only in learning how to be religiously faithful to the nature of reality into which they inquire and so be real in their thinking.”¹⁸

A final note on terminology. Scientific ontology is taken to mean a natural scientific account of what exists and what these things are like – this work focuses on scientific ontology in relation to contemporary physics. This implicitly includes questions about reductionism in particular: whether reductionism is simply a useful method that enabled scientific progress and explanation, or if reductionism is understood to relate to fundamental ontology (i.e. that all higher properties can be fully explained by the properties of the constituent parts, and that “emergence” of new properties are the result of new or unexpected relationships between the parts). Yet it is important to note that “there is often significant underdetermination of ontology by the sciences”,¹⁹ i.e. the accounts are open to multiple (contrary)

17 The extent to which our understanding of the mundane world can (and should) inform our thinking about the nature of the divine is an extensive debate that goes far beyond the scope of this article. However, at the very least (as I shall argue) with respect to the incarnation, where God is embodied and temporally limited on earth, our understanding of the nature of that world should not be diametrically opposed to our theological account of the nature of Christ.

18 T.F. Torrance, *Theological Science*, op. cit., xiii.

19 A. Chakravarty, *Scientific Ontology*, Oxford University Press 2020, 5.

ontological interpretations.²⁰ Given the progress of modern science and the continued strength of its explanatory power, the dominant (folk) narrative of materialist reductionism appears to stand in stark juxtaposition to the theological account that requires the existence of some form of immaterial entities.²¹ Because of the apparent disjunction between the scientific and the theological accounts of ontology it can seem that one is faced with a stark contrast – maintain that we live in an “enchanted world”, that “is the world of spirits, demons and moral forces which our ancestors lived in”²² (which may be the only way to allow for a Cartesian or similar ontology with room for the immaterial). The alternative is to accept the reductionist ontology of common science that leaves no room for non-material entities (whether divine beings or souls). The premise of this article is that this perceived dichotomy is false and that there is a third way. The above dichotomy (dualism vs. reductionism) rests on a refusal to acknowledge the fact that “more than eight decades after the downfall of classical physics, the idea that the physicalist conception of nature, based on the invalidated theory classical physical theory, might be profoundly wrong in way highly relevant”²³ to the current discussion. If both science and theology are seeking to describe the same objective reality with similar limitations concerning language and that which is unseen (a critical realist view), and one holds that the second person of the Trinity was genuinely and meaningfully incarnate on Earth (within time and space and with corporeality), then there is a marked

20 This is particularly true concerning the ontology associated with quantum theory. Here there is an empirical way to test between the different ontological descriptions.

21 This is without considering mounting weight of contemporary philosophical accounts against materialism, such as the rich scholarship found in *The Waning of Materialism*, eds. R.C. Koons, G. Bealer, Oxford University Press, New York 2010.

22 Ch. Taylor, *A Secular Age*, Harvard University Press, Cambridge 2007, 26.

23 H.P. Stapp, *Quantum Reality and Mind*, in: *Quantum Physics of Consciousness*, eds. S. Kak, R. Penrose, S. Hameroff, Cosmology Science Publishers, Cambridge 2011, 341.

overlap in enquiry when it comes to understanding the “structure of being”.

In what follows I will briefly expand on the place of metaphysics (as ontology) in both theology (in relation to the incarnation) and contemporary physics, before discussing some of the metaphysical challenges associated with a Chalcedon account of the incarnation. This discussion of the incarnation provides a “case study” for the final section that examines how, within this critical realist framework, metaphysics provides a crucial dialogic foundation for the science-theology relationship.

3. THE PLACE OF METAPHYSICS IN THEOLOGY AND CONTEMPORARY PHYSICS

Metaphysics and theology have often been associated through a (potentially) problematic assumption that *metaphysics* refers to that which is above/beyond physics (courtesy of Aristotle). Tillich argues that the connotation of metaphysics as that which is beyond the physical was compounded by the “»supranatural« which designated the realm of divine above nature.”²⁴ However, when understood as a rational investigation into the nature of being (or an account of ontology that also includes “structures of less universality like nature, man [sic], history”²⁵) it seems neither unsurprising nor problematic that metaphysics has an important role to play in our theological conversation. When one moves beyond the task of theology more generally, to consider the Christian doctrine of the incarnation it becomes even more clear how questions of persistence, constitution, and mind-body (amongst others) should come to the fore in light of the 20th century “resurgence in realism... [and how] realist inquiry... might inform our understanding of this most central of Christian

²⁴ P. Tillich, *Relation of Metaphysics and Theology*, op. cit., 57.

²⁵ Ibid., 58.

beliefs.”²⁶ As Cross notes in *The Metaphysics of the Incarnation*, “as soon as we adopt any sort of realist stance (whether moderate or extreme) on the status of the sorts of entity that we presuppose in our ordinary language we are likely to want to talk about an ontological content to the Chalcedonian formula.”²⁷ He goes on to say that such ontological grounding will be driven partly by a philosophical analysis of reality and partly by theological concerns to “remain faithful to the basic Chalcedonian claim”²⁸ regarding Christ’s humanity and divinity.

The role of metaphysics in scientific enquiry may appear less obvious on initial inspection. However, the foundation role of metaphysics in the scientific enterprise is highlighted by scholars such as M. Leidenhag when he states that “scientific realism seems more like a metaphysical presupposition than a derivable truth... we have no naturalistic reason for adopting a realist interpretation of scientific theories.”²⁹ Whilst providing a slightly different perspective on whether scientific practice is predicated on metaphysical assumptions or vice versa, Maudlin writes extensively on the interaction, for example in his exhortation that: “Physical theories provide us with the best handle we have on what there is... In particular, when choosing the fundamental posits of one’s ontology, one must look to scientific practice rather than to philosophical prejudice.”³⁰

Even though Chakravartty argues against a unified or distinct “scientific ontology”, he does describe “scientific ontology as inherently *meta*-scientific. That is, it involves criteria for ontological commitment that are not themselves constitutive... of the relevant scientific

26 R. Le Poidevin, *Incarnation: Metaphysical Issues*, *Philosophy Compass* 4(2009)4, 703.

27 R. Cross, *The Metaphysics of the Incarnation: Thomas Aquinas to Duns Scotus*, Oxford University Press, New York 2002, 3.

28 *Ibid.*

29 M. Leidenhag, *Emergence, Realism and the Good Life*, in: *Issues in Science and Theology: What Is Life?*, eds. D. Evers et al., Springer, Cham – Heidelberg – New York – Dordrecht – London 2015, 95.

30 T. Maudlin, *The Metaphysics within Physics*, Oxford University Press, Oxford 2009, 1.

practice.”³¹ In other words, the diverse scientific ontologies that may inform our thinking about and understanding of the fundamental nature of the world are themselves based in commitment to different philosophical positions.³² Therefore, just as our response to the claim that there is a theological paradox in the person of Christ is going to be informed by our philosophical and ontological commitments, when this is being examined at the boundary of scientific understanding and theology, it is necessary to recognise that the scientific worldview is itself framed through a variety of ontological positions. Both the scientific ontology and the (theological) metaphysical assumptions regarding persistence, personhood etc, need to be understood and interrogated.

It is interesting therefore that, in exhorting us to understand the influence of worldviews (ontology) on our understanding of Biblical texts, Nürnberger assumes a single or more “reliable” ontology can be gained through science: “We must do for our times what the biblical authors did for theirs. Although the Israelite set of assumptions was pre-scientific, it is based on interpreted experience, rather than metaphysical speculation. As such it is more amenable to being updated, enriched, and empowered by modern science than a doctrinal theology based in Hellenistic metaphysics.”³³

Thus, whether a certain metaphysical approach is taken as a presupposition to scientific enquiry, or one simply wants to recognise the relationship scientific theories can/should have to our ontological commitments, it is necessary to recognise that just as the Incarnation raises a range of metaphysical issues, “debates in contemporary

31 A. Chakravartty, *Scientific Ontology*, op. cit., 6-7.

32 Ibid., 31.

33 K. Nürnberger, *Dust of the Ground and Breath of Life (Gen2:7): The Notion of “life” in Ancient Israel and Emergence Theory*, in: *Issues in Science and Theology: What Is Life?*, op. cit., 102.

metaphysics are likely to have a bearing on our understanding”³⁴ of the incarnation.

Further understanding the debates regarding realism (critical or not) and ontology in both metaphysics and science has the potential to navigate and/or respond to contradictions and paradoxes that seem bound with a realist view of the incarnation.³⁵ Therefore, it is the metaphysics (or ontology, or scientific theory) that provides the foundation to a constructive relationship between science and religion.

Next, I shall outline some of the metaphysical issues (that have often been classed as paradox) associated with the incarnation. The aim is not to provide an exhaustive account of the issues (or solutions), but instead offer some key examples of where the appearance of a contradiction rests in metaphysics. After examining these issues, the final section of this paper will examine how the future direction of these discussions can become more profitable through recognising the implications of the scientific shift away from Newtonian metaphysics.

4. METAPHYSICAL PARADOX IN THEOLOGY

“To say that Christ is a single hypostasis who joins together two wholly distinct and unequal natures – the transcendent, infinite, foundational reality of God and the limited reality of a historical human being – in a »mode of union« which constitutes his present personal reality is to say that he is a living paradox.”³⁶ Whilst paradox and mystery are often used interchangeably, in fact they point to very different theological challenges – mystery can be best understood

³⁴ R. Le Poidevin, *Incarnation: Metaphysical Issues*, op. cit., 712.

³⁵ Ibid.

³⁶ B.E. Daley, *Nature and the “Mode of Union”: Late Patristic Models for the Personal Unity of Christ*, in: *The Incarnation: An Interdisciplinary Symposium on the Incarnation of the Son of God*, eds. S.T. Davis, D. Kendall, G. O’Collins, Oxford University Press, Oxford 2004, 194-195.

as “those concepts that are not (and may never be) open totally to human explanation.”³⁷ Whereas paradox points to something that is (or appears to be) contradictory. In other words, there is a tension implicit in paradox that is not found within mystery. It could be argued that the paradox of Christ is caused by the limitations of our language and thus there is only an appearance of contradiction due to our own limitations.

Can a “living paradox” be resolved through an examination of logic? In *Biblical Paradox: Does Revelation Challenge Logic?* David Basinger examines whether the biblical revelation asks/requires us to hold in tension truths that are incompatible from a human perspective. However, whilst offering a clear account of some of the differences between paradox, mystery and contradiction, he doesn’t actually address the question of how one can deal with a paradoxical person, only how one should deal with self-contradictory “truths” within the bible. However, if we are to take paradox to refer to things that appear to be (self-) contradictory or exist in a state of irreconcilable tension, it should be clear how such terminology can come to be “appropriately” used to describe the person of Christ. After all what could be more contradictory than an eternal, transcendent God becoming embodied in a spatially and temporally limited human body?

The same is true of both the early work of Vernon C. Grounds in *The Postulate of Paradox*³⁸ and the contemporary work of James Anderson in *Paradox in Christian Theology*, in which paradox is seen as a logical contradiction that runs the risk of making Christian theology appear irrational and therefore a challenge to its rigour and relevance. Baugus takes an alternative approach in *Paradox and Mystery in Theology*,³⁹ arguing that whilst the paradox in theology

37 D. Basinger, *Biblical Paradox: Does Revelation Challenge Logic?*, op. cit., 105.

38 V.C. Grounds, *The Postulate of Paradox*, Bulletin of the Evangelical Theological Society 7(1964), 3-21.

39 B.P. Baugus, *Paradox and Mystery in Theology*, The Heythrop Journal 54(2013)2, 238-251.

involves contradiction, this does not necessitate a logical paradox, but rather a need to recognise the limitations of our finite (and fallen) knowledge. Yet, this still involves an assumed priority of epistemology in reconciling the tension. Whilst agreeing that these issues are important at the level of epistemology and linguistics, there is a more productive conversation to be had on the “living paradox” when it is examined in terms of metaphysics.

The influence of ontology/metaphysics on the development of theology can clearly be seen above and this leads into the questions of the role of scientific ontology in our theological discussion. John W Cooper⁴⁰ presents a clear, albeit brief, account of the development of a scientific-informed Christology. “Reversing the historic order of revelation and reason, [naturalist theologians] engaged in biblical interpretation and theological construction within the framework of the philosophy and science that developed after Galileo and Newton.”⁴¹

Adoption of a theistic naturalism in relation to understanding the body and soul has arisen from attempts to synthesise theological and scientific worldviews. Non-dualistic alternatives (such as emergentism and psychophysical monism) have been developed against the rise of a reductionist materialist (scientistic) stance to allow for genuine human agency and spirituality. Cooper highlights three key approaches to defending Christian concepts of the soul and free will:

1. Historic Christian dualism (-in-unity);
2. Modern theistic naturalist monism;
3. Historic Christian monism.

These three approaches model different responses to the interpretation of the Chalcedon definition on the grounds of their underlying ontology. The historic dualistic position supports the

⁴⁰ J.W. Cooper, *Body, Soul, and Life Everlasting: Biblical Anthropology and the Monism-Dualism Debate*, Eerdmans, Grand Rapids 2000.

⁴¹ *Ibid.*, 37.

Chalcedon definition as theological anthropology (understanding of persons) with respect to “the image of God, freedom of the will, and the two natures of Christ.”⁴² However, as with substance dualism outside theology the historic position gives raise to other issues in relation to causality, interaction and understanding the self as a unified individual. Theistic naturalism and monistic anthropological models are not the mainstream approach currently adopted by the church, and they can be understood as providing a far more reductionist understanding of the nature of humanity. However, supporters argue that they will gain increasing support as the dualist position appears to become ever more detached from the scientific understanding of reality: “as scientific research and education progress. They wish to show that the Christian faith is not tied to an outdated philosophy and science.”⁴³ Under theistic naturalism the “two natures” of Christ and His death and resurrection are to be understood in a very different way. Without an immaterial soul the resurrection is either an “immediate resurrection followed by a series of appearances to his disciples, or... a temporary ethereal embodiment followed by resurrection”⁴⁴ and it is only the resurrection (if it indeed happened) that separates His divine and human natures. Finally, the historical monistic position offers and internally inconsistent understanding of the nature(s) of Christ. Due to the lack of a clear demonstration of monistic anthropology within scripture (or at the very least a clear defence that the Bible does not posit a dualist understanding of the person), Cooper argues that biblical monists “hold an anthropology which is at odds with their professed view of scripture and which sides with scientific naturalism.”⁴⁵ The monistic position appears to require the Christian who adopts it to also bring into question an orthodox

42 Ibid., 39.

43 Ibid., 40.

44 Ibid.

45 Ibid., 41.

interpretation of Chalcedon. This challenge is succinctly captured by Goetz: “God an immaterial being, resides in and causally acts upon a human with a material body... to reject interactionist substance dualism because the concept of causal interaction of an immaterial soul on a material body faces insurmountable philosophical and scientific objections, then one would be even more hard pressed not to reject the idea of the incarnation itself for the same reason or reasons.”⁴⁶

Therefore, the rise of scientific naturalism can also be understood as a move away from the “unscientific” concept of substance dualism. In the years since Descartes and with the (apparently) increasing materialistic understanding of the nature of the world, Christology, and the ability of an immaterial divine person to be causally and meaningfully engaged with the “physical” world, has led to theology appearing to be evermore out of step with our “disenchanted” understanding of the world. However, an increasing number of scholars are questioning such strictly materialist stances (whether through supporting emergent theories of the mind or more radical holistic approaches to the nature of reality) to protect an orthodox understanding of Chalcedon.

The challenge of defending an orthodox interpretation of Chalcedon means that Christian theology must engage in a meaningful way with questions of metaphysics and ontology and as such ensure that it does not limit itself to simply dealing “only or even primarily with manifestations and functions.”⁴⁷ If it fails to engage with questions of ontology, it also fails to ensure that it is tackling the correspondence between our expression (of faith or reality) and reality itself. Thus, the engagement of theology with scientific ontology becomes of

46 S. Goetz, *Substance Dualism*, in: *The Ashgate Research Companion to Theological Anthropology*, eds. J.R. Farris, Ch. Taliaferro, Ashgate, Burlington 2015, 135.

47 Y. Woodfin, *Ontological Thresholds and Christological Method*, *Religious Studies* 8(1972)2, 137.

central importance in ensuring that “metaphysical issues and the believer’s conviction regarding the nature of divine reality are at least analogically comparable.”⁴⁸ Torrance argued that such an engagement with metaphysics was necessary to even pose questions, as without ontological congruence between reality and experience our discourse is meaningless.

As noted, it is in this space that both classical scientific ontology (the strict, deterministic, materialism of Newton) and contemporary scientific ontology (that includes the non-deterministic, and possible holism of quantum accounts) come to bare on our understanding of the nature of the Son incarnate. Before examining this further it is important to note that this discussion will deal explicitly with how the shift from Newtonian to Non-Newtonian metaphysics has the potential to change the appearance of the incarnational paradox – therefore it will address cases where Newtonian metaphysical assumptions have caused the appearance of a paradox (often naturalistic accounts), over other theological solutions to those cases.⁴⁹

As noted by Stump, it is one thing to state the Chalcedon definition of the incarnation – Christ is one person with two natures, fully human and fully divine, and quite another to explain what this means. “Aquinas relies heavily on his general metaphysical theory to provide an interpretation... his interpretation is so thoroughly rooted in his general metaphysics that it is not possible to grasp this part of his philosophical theology without some understanding of his metaphysics.”⁵⁰

48 *Ibid.*, 138.

49 The focus of this article lies in highlighting the role of metaphysics as a foundation to a productive science-theology dialogue, and whilst alternative theological solutions have been posed, these often revolve around creating solutions to a naturalistic or dualistic account and/or dismissing an issue rooted in ontology as a purely linguistic/epistemological issue, thus not tackling the “paradox” caused by the ontological assumptions.

50 E. Stump, *Aquinas’ Metaphysics of the Incarnation*, in: *The Incarnation: An Interdisciplinary Symposium on the Incarnation of the Son of God*, op. cit., 197.

The rise of modern science and the Newtonian account of a deterministic, materialist world has often been cited as the point of movement towards Taylor's disenchanted ontology. However, as he notes whilst the folk account runs: "first science gave us »naturalistic« explanations of the worlds. And then people began to look for alternatives to God."⁵¹ The "new" science wasn't necessarily a threat to God, but "it was to the enchanted universe and magic."⁵² As such what Newtonian metaphysics challenged was an account of the world in which immaterial entities had a role or space within our ontology and in doing so the incarnation asked us to consider how something "relevantly like a soul become something relevantly like a stone."⁵³ However, in a world where it may be argued that strict materialism is under threat,⁵⁴ one must consider whether it is necessary to revisit the assumption that the incarnation is "paradoxical" at the level of metaphysics. I have previously discussed the challenges of a classical reductionist account to our understanding of the incarnation, and therefore will not repeat the arguments here.⁵⁵ It is enough to note at this stage that the challenge rests in developing a coherent account of natures (and/or substances) that can explain the relationship between complex wholes and their constituent parts. Whether or not one adopts a reductionist approach to metaphysics, the "complex whole"

51 Ch. Taylor, *A Secular Age*, op. cit., 26.

52 Ibid.

53 B. Leftow, *The Humanity of God*, in: *The Metaphysics of the Incarnation*, eds. A. Marimodoro, J. Hill, Oxford University Press, Oxford 2011, 21.

54 See for example the edited volume by Koons and Bealer.

55 F. Lawson, 'He Who Descended Is Himself Also He Who Ascended' – Exploring the Identity of the Son of God in Light of Quantum Holism, in: *Forty Years of Science and Religion*, eds. N. Spurway, L. Hickman, Cambridge Scholars Publishing 2016, 179-186; F. Lawson, 'Complete in Manhood' – Understanding Christ's Humanity in Light of Quantum Holism, in: *Studies in Science and Theology: Yearbook of the European Society for the Study of Science and Theology*, eds. D. Evers et. al., Martin Luther University Halle-Wittenberg 2018, xvi, 127-142; F. Lawson, 'Not Three Gods but One' – Why Reductionism Doesn't Serve Our Theological Discourse, *Athens Journal of Humanities and Arts* 6(2019)1, 85-106.

of the Incarnate Son requires a clear account of “the foundational or fundamental entities of reality”⁵⁶ if one is to avoid claiming “mystery” as an intellectual fig leaf to protect from intellectual embarrassment.

It is this question of “substance” that lies at the heart of claims that the incarnation is paradoxical (at a metaphysical level). The issues raised by a dualistic account of the incarnation (or personhood in general) are well documented and have not changed significantly since Descartes’ initial detractors. Fundamentally, the objection rests on the fact that the soul is conceived as an immaterial substance “that has mental properties but no physical properties”⁵⁷ and the union between body and soul is (significantly) constituted by the soul’s ability to control bodily actions. These issues are normally considered commensurate between mortal souls and their bodies and the union of divine and human in Christ. The familiar objection to this understanding of personhood rests in the challenge that, if the body and soul are fundamentally distinct and different substances, how are they to interact when our classical scientific metaphysics states that only physical objects can cause physical objects to move (although it would seem pertinent to add a caveat that only physical objects, or the forces associated with the interaction between physical objects can cause a physical object to move).⁵⁸ This criticism does not bear the same weight within the theistic (and to an extent deistic) theological discussion of causation and/or divine action in the world. This is because, particularly in the context of Christianity, it is necessary for an immaterial (however that is understood) God to be

56 H. Robinson, *Substance*, in: *The Stanford Encyclopedia of Philosophy*, ed. E.N. Zalta, Spring 2020 (<https://plato.stanford.edu/archives/spr2020/entries/substance/>), [accessed 09/2020].

57 T. Merricks, *The Word Made Flesh: Dualism, Physicalism, and the Incarnation*, in: *Persons: Human and Divine*, eds. P. van Inwagen, D. Zimmerman, Oxford University Press, New York 2007, 282.

58 This relates to Dodds’ examination of the move away from understanding God’s causality univocally as only being able to act as a divine force. See M.J. Dodds, *Science, Causality, and God: Divine Action and Thomas Aquinas*, *Angelicum* 91(2014)1, 13-36.

able to causally influence the physical world. The incarnation therefore provides “a decisive reason to reject the premise that the physical and the non-physical cannot causally interact.”⁵⁹ However, whilst theology may allow a compelling reason this does not counteract the challenge that dualistic metaphysics still appears to place Christianity at odds with current scientific accounts of the world.

5. HOLISTIC ONTOLOGY AND THE “PARADOX” OF CHRIST

In adopting a realist interpretation of Chalcedon, the fundamental metaphysical question raised is how Christ’s humanity and divinity can be joined coherently within a single person and without falling afoul of the many and varied heretical “solutions”. At the outset I stated that answers may lie in contemporary scientific ontologies, and that the metaphysics inherent in such accounts may provide a fruitful point of engagement for theology and science. In the foregoing section I have noted some of the issues associated with trying to bring the incarnation in line with scientific thinking, including the challenge of maintaining relevance and theological coherence in light of the move away from dualism, and the central role of “substance” in incarnational accounts. This section will highlight how a holistic scientific ontology may provide an account that preserves the spirit of Chalcedon in a meaningful and orthodox way, whilst removing the appearance of a paradox and maintaining coherence with current scientific ontologies.

As noted above, if the question of “substance” lies at the heart of our understanding of the incarnation then we must consider what we mean by substance and the kinds of substance(s) that exist – ergo, the questions at the very heart of metaphysics. Likewise, the common understanding of the scientific account of the world is that it proceeds by reductionism, which is not simply a convenient method,

59 T. Merricks, *The Word Made Flesh*, op. cit., 284.

but an accurate way to understand the nature of the world and its constituent parts. In many senses this also encapsulates a common approach to understanding the incarnation – there is a tendency to examine the constituent parts of the Son (as divine) and Jesus (as human) to understand and negate the conflict between the two natures. For example, the kenotic approach “empties” the Son of the divine characteristics that are incompatible with human personhood.

An implicit assumption within incarnational theology, that is rarely articulated, is that Christ (as fully human and fully divine) is more than each of those parts understood individually – that the incarnate Son is more than its constituent parts in a meaningful way, which allows the two natures to cohere. If one acknowledges, that it is not possible for (some) complex entities to be fully explained through an account of their physical parts and the relationships between them (the starting point for both Maudlin⁶⁰ and Esfeld’s⁶¹ accounts of quantum holism) this metaphysical foundation provides a rich opportunity to re-interpret and re-conceptualise our understanding of theology and science.⁶² In what follows I will provide two brief examples of how different scientific ontologies (both based in holistic understandings of quantum theory) challenge the classical interpretation of the incarnation. The accounts differ in whether they maintain the existence of fundamental “parts” within holism.

60 T. Maudlin, *Part and Whole in Quantum Mechanics*, in: *Interpreting Bodies: Classical and Quantum Objects in Modern Physics*, ed. E. Castellani, Princeton University Press, Princeton 1998, 46-60.

61 M. Esfeld, *Philosophical Holism*, in: *UNESCO Encyclopedia of Life Support System, Social Sciences and Humanities*, 2013, (<http://www.unil.ch/files/live/sites/philofiles/shared/EOLSS-PhilHolism03.pdf>), [accessed 10/2015]; M. Esfeld, *Holism in Philosophy of Mind and Philosophy of Physics*, (Series: Synthese Library, Vol. 298), Kluwer Academic Publishers, Dordrecht – Boston 2001.

62 It is important to note that this is not to claim that science, or its methods, should fully drive our theological doctrine. Rather, where doctrine deals with matters of divine interaction with the world a joint metaphysics provides a strong foundation for interaction between the two.

Metaphysical holism states that “in the last analysis, there is only one independent thing. Everything that exists is a way of being that thing”,⁶³ when this is combined with the popular definition that a holistic object is “more than the sum of its parts”. A claim of holism is, in fact, the conjunction of two claims: “(a) that a whole in the sense of a holistic system has parts and that (b) what turns a whole into a holistic system is that it is more than the sum of its parts.”⁶⁴

Firstly, Primas examines the very holistic “system” itself, that is, how we are to understand objects that appear to be composed of many different parts. In *Non-Boolean Descriptions for Mind-Matter Problems*, Primas sets out a “framework for the mind-matter problem in a holistic universe which has no parts.”⁶⁵ He claims our current understanding of mind-matter is based on a tacit acceptance of classical atomism and this assumption of the correctness of a reductionist model of reality has serious knock-on implications. Primas bases his need for Non-Boolean descriptions in the fact that quantum mechanics has shown atomism to be incorrect, thus causing reductionism to fail. Therefore, instead of being the fundamental building blocks of reality, “elementary particles” should in fact be more correctly understood as secondary manifestations or ‘*patterns*’⁶⁶ in reality. These patterns are to be understood as arising from our contextually based decomposition of the “fundamentally holistic universe of discourse”, when we “isolate a phenomenon and assign individuality to it”⁶⁷ (creation of a pattern) and not from an underlying ontological atomism. It is this underlying holism that means “quantum mechanics is the paradigmatic example

63 M. Esfeld, *Philosophical Holism*, in: *Unity of Knowledge (in Transdisciplinary Research for Sustainability)*, Vol. 1, ed. G. Hirsch Hardon, Eolss Publishers, Oxford 2009, 120.

64 *Ibid.*, 10, sec. 5.1.

65 H. Primas, *Non-Boolean Descriptions for Mind-Matter Problems*, *Mind and Matter* 5(2007)1, 7.

66 *Ibid.*, 8.

67 *Ibid.*, 11-12.

of a theory which allows the description of a whole which does not consist of parts.”⁶⁸

Primas’ account of reality argues against descriptions of the world resting in duality, instead arguing that we should describe the world in terms of complementarity. When understood in terms of duality divine and human (or material and immaterial) fall in to two discrete categories, where an entity is either one or the other. Complementarity allows for descriptions of the world without “well defined” attributes. To say that the statement is complementary rather than dualistic is to claim that it describes a holistic situation “where Boolean fragmentation into parts is not possible.”⁶⁹ Complementarity allows us to describe a world in which Boolean classification does not work, at the ontological level. In the case of the incarnation this means that material and immaterial should not be placed as opposed categories, but instead understood as distinctions we have made due to our own epistemic limitations. If something that is relevantly “soul-like” is not made of a different substance to something relevantly “stone-like” then the incarnation does not require the transformation of substance.

Primas’ account protects against the challenge of meaningfully joining different substances within Christ. If the differences between material and immaterial are only matters of our convenience rather than ontology, then one is able to avoid the challenges of both materialist and dualistic accounts of the incarnation. However, perhaps one of the biggest problems that remains is not new – if we are dealing with a fundamentally monistic world then how are we to distinguish between God and the world, the human and divine (whether or not in Christ); and if this is not possible, do we then need to again re-imagine our theology to account for pan(en)theism?

68 *Ibid.*, 8.

69 *Ibid.*, 15.

In contrast, whilst Michael Esfeld allows parts within Holism he argues against an (atomistic) account of a metaphysics of individuals. A difficulty with both reductionism and naturalism is that they assume an underlying metaphysics of individuals, characterised by their individual properties. It is these independent individuals embedded in space-time that we study in the physical sciences and it is the relationship between two individuals that that we are asked to consider in the incarnation, even if one of them appears to be embedded in space-time at most temporarily. According to the majority view of a metaphysics of individuals, we know these embedded objects are individuals because (1) they are located in space-time, (2) properties can be attributed to them and (3) their qualitative properties can be used to distinguish them from other individuals.⁷⁰ When it comes to understanding the incarnate God on the basis of these properties it is easy to understand how the person of Jesus of Nazareth can be seen to exemplify all three, and indeed the same could be said for the embodied Son of God. However, the big issue this raises for the Son of God is how, as an individual, we are to relate His incarnate self with His pre-existent and post-ascension “selves”.

Within a metaphysics of individuals, some of an individual’s qualitative properties can be understood as basic or intrinsic properties, meaning that they are fundamental to that individual and unable to be reduced to other properties. An individual has intrinsic properties irrespective of the existence of other contingent beings, whereas “all other qualitative properties are extrinsic or relational”; thus, they are “independent of accompaniment or loneliness.”⁷¹ One of the reasons for arriving at a metaphysics of individuals (even if properties are fundamentally relational) rests in the fact that it would

⁷⁰ This includes, at the very least, its location in space-time.

⁷¹ M. Esfeld, *Quantum Entanglement and a Metaphysics of Relations*, Studies in History and Philosophy of Science, Part B: Studies in History and Philosophy of Modern Physics 35(2004)4, 602.

seem that the relations require there to be things that are standing in those relations. In other words, it is necessary for there to be objects whose intrinsic properties are not relational (or least are not fundamentally relational). However, it is possible to argue that whilst relations require something to be standing in that relation, it is not necessary for those things to be something in and of themselves – they “do not have any intrinsic properties that underlie the relations in which they stand.”⁷²

Thus, there is a gap between our metaphysical theory (of individual things with intrinsic properties) and the apparent limitation that our fundamental physical theories provide only information regarding the relationships that physical things stand in. Faced with this gap between epistemology and metaphysics we have two options: (1) maintain a belief in a metaphysics of individuals, even if to accept this means we are unable to gain knowledge about the intrinsic properties of the individuals in so far as they are intrinsic; or (2) discard a metaphysics of individuals in favour of a metaphysics of relations according to which at the fundamental level only relations exist. “There is no a priori argument that excludes a metaphysics of relations.”⁷³

Esfeld’s relational approach opens space for immanence at the most fundamental level of nature. This is not to posit a God of the epistemological gap. Rather, if nature is more holistic than classical physics appears to allow we seem to arrive at a metaphysical foundation where our theological account of the world sits within (rather than being opposed to) a scientific understanding of the world. This may not provide greater clarity on the “how” of the incarnation (there is still a theological mystery), yet our theological and scientific conceptual frameworks are more closely aligned through a joint metaphysics.

72 Ibid.

73 Ibid.

For both accounts once we have stripped away the qualitative properties, and we have no access to intrinsic properties even if they were to exist, the question then becomes how do we distinguish between the divine and human? Does it come down to a matter of degree? Epistemic freedom? Contingency? The shared metaphysics removes some of the challenges associated with dualist and strictly materialist accounts of the incarnation. However, whilst holistic metaphysics provides “solutions” to these issues it also brings to bear new challenges.⁷⁴ There is much more that could be said in relation to the incarnation, but within this article the purpose of this discussion is solely to highlight the paradigm shift that can be caused in our understanding of theological issues by a critical re-evaluation of our metaphysical assumptions. Furthermore, due to the shared realms of enquiry, metaphysics provides a clear starting place for questions that sit at the boundary of science and theology (including those relating to personhood, whether divine or human).⁷⁵

6. METAPHYSICS AS A DIALOGIC FOUNDATION FOR THE SCIENCE-THEOLOGY RELATIONSHIP

This article does not offer an exhaustive account of the theological responses to the “living paradox” of Christ. Nor does it provide a full account of the impact of differing scientific ontologies on theological issues such as the incarnation. However, my hope is that the discussion has highlighted the role of ontology more generally, and metaphysics particularly, in both scientific and theological accounts of the nature of reality. Given the diversity of possible scientific

⁷⁴ See F. Lawson, ‘Not Three Gods but One’ – *Why Reductionism Doesn’t Serve Our Theological Discourse*, op. cit., for further discussion.

⁷⁵ For an example of the practical implications for human personhood see F. Lawson, *Denying the Binary: A Non-Boolean Approach to Queer Bodies in Theology*, in: *Reforming Practical Theology. The Politics of Body and Space*, (International Academy of Practical Theology Conference Series), Index Theologicus, Tübingen 2019), i, 45-52.

ontologies and the special case of the incarnation, it may be all too tempting to hide behind mystery and say that there is nothing to be offered by the naturalistic metaphysics of science. However, even if one disagrees with my assertion that there is much opportunity to be found in further examination of holistic ontology, metaphysics with its focus on constitution, identity, and the nature of what there is at a fundamental level, will inevitably influence the theological solutions one establishes. Whilst it is clear the metaphysics or ontology underpinning scientific theories is often implicit, it is all too easy to miss the influence that our metaphysical assumptions also have on one's approach to theological paradoxes and practical concerns. I stand with Maudlin's assertion that we are to begin with scientific practice (acknowledging the assumptions therein) and examine the implications these have for our theological understanding of the world (whichever ontology one chooses), rather than constraining our metaphysics to fit our theological desire. In starting with metaphysics, one is able to provide a coherent account across the disciplines and this enables a clearer examination of whether the appearance of a paradox/conflict between our theological and scientific accounts of the world is based in our linguistic or epistemological limitations, our metaphysical assumptions, or involves a genuine contradiction.⁷⁶ Metaphysics seeks to explain the foundational entities of the universe, and as such it would seem a fitting foundation for the science-theology relationship where both sides are equally concerned with understanding the nature of "that which is, seen and unseen".

76 In some instances, the appearance of a paradox can be removed through further examination of knowledge/language/metaphysics that reveals the contradictions as mere limitations/assumptions on our part. In other instances, it may be discovered that we do not have the epistemic capacity to fully explain the objects/terms. Therefore, as we cannot know whether there is a genuine contradiction in these instances it is more correct to speak of mystery over paradox.

7. CONCLUSION

In this article the relationship between science and theology has been examined within a critical realist framework (by which little more is meant than the need to recognise the limitations of our models and language in describing reality). The focus has been on the role of metaphysics as a unifying starting point, especially in the consideration of theological issues that are concerned with people and events bounded by corporeality and temporality (such as in the incarnation). Some of the metaphysical challenges that lead to the appearance of a “paradox” in the incarnation were highlighted, and in turn I examined how a radical shift in metaphysics (based in the findings of contemporary physics) provides a very different perspective on the “paradox”. The exploration of the impact of changing metaphysical assumptions on the incarnation provided a case study to highlight the importance of a shared foundation at the boundary of science and religion. Ultimately both science and theology are concerned with the nature of reality, and the search for coherent models that can describe the unseen. Whilst one should maintain a criticality to any realist conception of theological and scientific theories, a shared metaphysics ensures theological doctrine can continue to be interpreted with relevance in a world in which scientific thought is increasingly stretching into the meta-scientific.

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