

31 January 2012

**Christ and Evolution: A Drama of Wisdom? [[1]](#footnote-1)**

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Introduction

The mark of faith that most distinguishes Christian belief from other religious traditions is belief in the incarnation of Christ; the Word made *flesh,* belief that God in Christ becomes one with the human, material world. But ever since Darwin that flesh is also *evolved* flesh. In *what* sense can it *make* sense that God is present in Christ, but Christ as fully human is also part of the evolutionary world, along with the other billions of creatures on earth? It is therefore hardly surprising that many theologians prefer to envisage God’s action as virtually synonymous with evolutionary means. But if we follow this route, where does this leave the significance of the incarnation?

The new atheism, in more aggressive versions such as Richard Dawkins or Christopher Hitchins, or Sam Harris, seeks to explain reality while deliberately excluding God. [[2]](#footnote-2) The impression that is often left is that the God entertained by such writers is incredible, perhaps the result of wishful thinking or even one who acts against the grain of the universe in a way that immediately sets up a hostile relationship with more conservative religious believers. Is it not surprising, then, that evolutionary biology associated with this particular form of atheism, is also viewed with intense suspicion by such believers, tempted, as some of them are, especially in the USA, to opt for literal readings of the book of Genesis as a *scientific text*, a reading which prizes apart the story from its original context. Can we move on from this warfare and find ways of articulating a robust theology while engaging in a clear-sighted discussion with evolutionary theory? Indeed, the variety of that theory and the leading, cutting edge of its questions show that biologists take for granted basic aspects of Darwinian evolution. One of the reasons that Robert Boyle inaugurated these lectures was for the defence of Christianity in the wake of pressures from natural science. By this he was not wanting to *undermine s*cience, but develop a natural theology that could be more in tune with it, while holding to theological premises. By this he was defending the possibility of a genuine engagement between science and theology, so that, as John Hedley Brooke suggested, Boyle wanted to work against the premise of libertines, who thought a scientific virtuoso ought not to be a Christian and the others that he could not be a true one.[[3]](#footnote-3) I am not intending to engage with the new atheism directly, but take, as it were, a more *indirect* route by exploring ways of conceiving the incarnation in conversation with current evolutionary theories in a manner that I consider in tune with Boyle’s intention.

What I hope to do in this lecture, therefore, is to map out a possible ground for a more constructive conversation between how to think about Christ and evolutionary science. Of course, there will inevitably be areas where some tension remains, and this is more or less unavoidable. If all tensions go completely, then it is highly likely that either theology collapses *into* science, or theology turns its back on science, or imagines them in parallel but non-competing realms, none of which are very helpful or constructive.[[4]](#footnote-4) But at least, or as a bare minimum, I hope to show that it is possible to think in a creative way that is both theologically articulate and scientifically meaningful.

Classic Tradition and Modern Responses

A brief look at the way theologians traditionally have come to express belief in Christ is important as a first step in showing both the difficulties of any conversation, and what parameters might be important theologically. Right from the beginning of the early Church, classical debates on Christ’s humanity and personhood raged around the meaning of Christ’s human and divine nature. The framework eventually adopted was the Chalcedonian definition (451) affirming that Christ is one person, but having a divine and human nature. Even then it was difficult to understand how divinity could become en-fleshed in humanity without either destroying that humanity or weakening that divinity. Two compromises emerged, with the Alexandrian view stressing Christ’s divinity and the Antiochene tradition Christ’s humanity.[[5]](#footnote-5) Further theoretical discussion followed about how one might consider human nature assumed by Christ—is it an abstract universal that is somehow in God, or does it only make sense in the particular human person of Jesus Christ?—along with related technical discussion about an-hypostasia, human nature as an abstract universal and en-hypostasia, the particular human nature in Christ’s person.[[6]](#footnote-6) All these technical discussions are essentially *closed* insofar as they represent internal theological debates about what might be logically possible, given certain premises. They seem to bear little or no relationship to evolutionary biology except inasmuch as the concept of two natures and one person becomes incredible or difficult to understand.

It is hardly surprising, given such difficulties associated with classical definitions of Christ’s two natures, that there are prominent writers in the contemporary dialogue who lean towards a liberal Christology. Arthur Peacocke, for example, suggests that in his oneness to God, Jesus is an archetype, a chief exemplar of what it is for a human to be completely obedient to God. [[7]](#footnote-7) Jesus appears in the evolutionary story where perfect humanity is manifest. Jesus is therefore one whose deity *emerges* as a result of obedience to divine will. Jesus becomes ‘the manifestation of what, or rather of the One who, is already in the world though not recognised or known.’ [[8]](#footnote-8). Of course, the idea that Christ might become known as divine through his obedience and openness to God reflects a liberal tradition that goes as far back as Albert Ritschl. The point is that the first paradigm is the evolutionary story of humanity’s emergence and Christology then becomes compatible with this.[[9]](#footnote-9) Traditional belief in Christ as the Word of God incarnate in human flesh seems compromised. Put more bluntly, would I really be inclined to worship *as God* and name as *Kyrios*, Lord a man who merely expresses that divinity by being or becoming perfectly obedient to God?

Christ and Theo-drama as Divine Wisdom.

Part of the problem in such accounts of Christ is that an evolutionary, emergent view of history has taken over a more theological future orientated view of history. This is exasperated further by cosmological evolution, so that the whole sweep of human history becomes aligned with an unfolding emergent cosmological narrative. But what if a theology of history becomes much more vivid, and perhaps truer to itself as theology, through a *different* reading of history, one that draws specifically on *drama*, rather than a narrative account? [[10]](#footnote-10) In this case theo-drama takes as its starting point theological categories prior to turning to evolution.[[11]](#footnote-11) Theo-dramatics is a way of thinking about eschatology and history together in their relationship with each other. Drama, as commonly understood, is about human actions and particular events in particular contexts, and theo-drama is how those actions are connected to God’s purpose. Drama pays attention to the specific significance of human agency, the particular context, but also the wider plot. Dramatic consideration will therefore include *subjects*, the acting area, or the *stage*, and the movement of the play or *action*. Another key issue that arises here is that of *freedom,* and what this means in the Christian life. If we perceive God as one who is in possession of divine freedom, this means that history is not just an inevitable chain of events. The advantage of theo-drama is that it envisages an *encounter* between the freedom of God and that of God’s creatures, but the two freedoms are not in competition.

Evolutionary history, with its tremendously long time scale almost always becomes epic. Theology suffers from this tendency as well. What do I mean by epic? In the second of his trilogy, *Theo-Drama*, Roman Catholic theologian Hans Urs von Balthasar considers whether there is some standpoint from which we can be merely observers to a sequence of event, including the events of Christ’s death and resurrection.[[12]](#footnote-12) At its worse, epic becomes deterministic and creates the wrong impression of being objective. [[13]](#footnote-13) Evolution as incorporating some sort of *necessity* is a typical reading of evolutionary history. Christian spirituality, by contrast, finds expression in what Balthasar terms the ‘lyric’ mode, leaving aside any thoughts of universal significance. Theo-drama avoids epic and equally problematic mystical “lyric” accounts and finds its significance *between* lyric and epic. [[14]](#footnote-14)

In the sweep of history, some moments are termed *kyrios*, and in theo-dramatic perspective the particular coming of Christ and his death and resurrection are pivotal. One could even say that the particular theo-drama of Christ’s coming shows up a *pattern of divine Wisdom* that then provides clues to understanding the dramatic relationship between God and creatures. The difference between the emergent divine Christ and the one I am suggesting is that now the divinity of Christ is present from the beginning. It is a profoundly *Trinitarian* drama that involves the cooperation of all three persons of the Trinity, but only the Logos/Wisdom is fully incarnate *in the flesh* in human history. The reception of divine Wisdom/Logos by the Virgin Mary is the first stage of the mysterious drama of the economic Trinity that unfolds to reveal that the very human son born to her is also the Son of God. But at this stage the divinity of Christ is almost completely veiled from view, God appears in the form of a very vulnerable, human baby. Jesus’ divinity only becomes obvious in his obedience to the Father through the power of the Holy Spirit. Christology in this conception is a *kenotic* Christology, where the eternal God freely and out of love for the world in the Son chooses to become one with human flesh, to become fully human, but without loss of divinity.[[15]](#footnote-15) Further, the power of that divinity is in a paradoxical way found in the powerlessness of the man hanging from the cross; this is what Paul envisaged in 1 Cor.1.18-26 when he spoke of the divine Wisdom of the cross. But for bystanders Christ’s divinity only becomes visible in the next scene, in the light of the dramatic event of the resurrection.

There is one sense in which, therefore, I heartily agree with Arthur Peacocke that Christ’s obedience is very important as a way of understanding the meaning of Christ in today’s world. Christ’s perfect obedience is one that reveals God most fully. We can envisage, therefore, God as the playwright, where the plot and the script are known in a very general way, but the details are yet to be worked out, improvised according to the particular circumstances. Christ’s death was the result of the specific free action of human players in the drama. Once the drama becomes too controlled, too subject to a fixed or even necessary account of God’s action in history, or perhaps the result of an inevitable emergence from selfish tendencies in human beings, then drama gives way to epic narrative.

What is the Place of Evolution in Theo-Drama?

But what if we allow theo-drama to include not just human history, but evolutionary history as well? Such an expansion has the advantage of viewing other evolved creatures *as more than* simply the stage for human action. The ability to read evolution not just as science, but also as *history* means that through evolutionary accounts, nature as such becomes historical, a perspective that is arguably one of the most significant discoveries of science.[[16]](#footnote-16)[[17]](#footnote-17)

This evolutionary drama will be judged in the light of what happens in the main act, namely, the act of Christ’s coming, but that does not mean that earlier or later players are insignificant. The scientific account, for example, of the emergence of *Homo sapiens* and its evolutionary relationship with hominid species makes for fascinating reading. Unraveling this particular act in the particular drama of human history would take another lecture; but all I want to point to here is the contested manner in which evolutionary biologists are engaged in heated debates about when and why religion has appeared in human societies. [[18]](#footnote-18) While the biological basis for religious belief is still a matter of intense research, even if evidence proves eventually that there are biological characteristics that make human beings more likely to be religious, that does not undermine theological discussion, any more than knowing that there are biological aspects of attachment to my child undermines genuinely felt commitment to that child and its articulation in poetic language. The point is that religion is about intense *relationship* and our perception of how to live in that relationship, in the Christian case, an understanding of a relationship with God in Christ. Balthasar made the mistake of assuming that because different evolutionary accounts were philosophically materialistic they could not be taken seriously. While he had a wider cosmic vision of creation, he did not give creatures other than humans any significant role in his theology.

Evolutionary biologist Jeffrey Schloss has described evolution in terms of a play on an “ecological stage.” He suggests, “The lines, the players and even the plot may change over evolutionary time, though they are ever constrained by the props and setting and choreographic syntax of the ecological moment.”[[19]](#footnote-19) While I agree with the analogy, I suggest that we can go even further than this, in that ecology is rather more dynamic than this view might imply. Of course, the degree of awareness of divine action will be different according to different levels of consciousness and cognitive capacity, but by placing creatures in kinship with humanity the evolution of life is perceived as integral to the theo-drama. Here I am envisaging the workings of evolution as discovered in biological science more in classical terms like a *secondary cause*. That secondary cause and its gradual unfolding are still under scientific discussion. What becomes much more problematic is if evolutionary explanations become epistemologically *all* that can be said without remainder.

The difficulty of course, when it comes to the millions of years of evolutionary history, is that human imagination finds it hard to appreciate the dynamics of the particular in any ‘scene’. Also, given that evolution takes place over a long period of time, the ‘play’, if it is to do justice to the individual characters concerned, will find itself dealing with long epochs of history where some characters disappear. Sometimes it may prove preferable, therefore, to use a close examination of those creatures that we know, in order to provide an analogy of earlier epochs. A good example of this is the study of primates in order to give clues as to the life of early hominids.[[20]](#footnote-20) Yet such study also helps open up the realisation of human ignorance, by focusing on the rapid shifts in evolutionary change where improbable events came together in a way that meant only one lineage survived and not others. Such events, such as the increasing aridity in Africa in the early history of the hominid line, *Homo erectus*, which may have been related to an increase in brain size, but at a cost of the loss of other species or variants, means that the tragic nature of the evolutionary drama comes into view.[[21]](#footnote-21) Rather more complex and fascinating is the specific complexity associated with symbolic thinking in different archaic hominids that could be related to brain size and what is known as Dunbar’s levels of intention. [[22]](#footnote-22)

A theo-dramatic approach therefore takes proper account of the tragic, one that is intensely vivid in terms of the evolutionary history of the earth, but now brings this into juxtaposition with an understanding of how God works in human history. It therefore will resist any generalisation of evil or attempt to wash over the contingency of events. In theo-drama, in as much as it takes its cues from the death of Christ, the tragic comes to the surface, rather than being absorbed or neutralized. The tragic has been the pattern for the drama of evolutionary history for millennia, as witnessed in the paleontological record, but it might be more appropriate to suggest that a theo-drama is characterized as a comedy in that its ultimate vision is a hopeful one.

In theological terms theo-drama forces us to acknowledge humanity’s role as *subjects*, a pattern of thinking that scientific methodology deliberately tries to resist.[[23]](#footnote-23)

One of the key differences, therefore, between a theological and scientific approach to evolutionary history is that in theological terms human beings deliberately and self-consciously *enter into that history*. On the other hand, while evolutionary science attempts to be objective, there are subjective elements in the myths that shape the way that evolutionary science is presented. [[24]](#footnote-24) This is part of the fascination with evolutionary science, different elements provide competing narratives that try to capture our attention, imagination and perhaps even our commitment. The crucial difference in epic accounts is that we are not necessarily aware of any subjective elements. This may also be the power of the new evolutionary atheism in that it wears a mask of objectivity in rejecting religion but moves its subjects so that they feel part of a grand, or even noble, scientific enterprise.

Theo-Dramatics and Contemporary Evolutionary Debates

We can now ask more specifically if this theo-dramatic account of God is ever going to be compatible with contemporary debates in evolutionary science? Just to recap, I am arguing here for a *theological* starting point, then making sense of evolution, rather than the other way round. I am not expecting those who have no experience of religion to find such a metaphysical starting point acceptable. Rather, given certain premises, belief in God and the incarnation, in what way can we understand that belief and still make sense of evolution? Is religious belief still possible in such a scenario? This is surely the spirit behind the inauguration of Boyle’s lectures: a defence of the reasonableness of religious belief as defined in its own terms in the face of pressures from modern science.

If I restrict discussion to microevolution, where biologists are more in agreement, there are still heated debates about the way in which natural selection works. Although Stephen Jay Gould is often known best for his stress on evolutionary contingency, he also argued for constraints in evolution, both as a consequence of particular histories, and as result of physical properties. [[25]](#footnote-25) The evolutionary consequence of a particular history in effect locks organisms to particular specialist modes in a way that reduces the capability of those organisms to evolve. But the manner in which such species end up arriving at such a constrained position is, for Gould, fortuitous and as a result of the random walk of evolution through natural selection.

Simon Conway-Morris, on the other hand, is much bolder in his interpretation of constraints in evolution, pointing to the numerous examples of evolutionary convergence, understood broadly as similarities in form and function, from molecular biology through to physical characteristics, when faced with similar environmental conditions. Conway-Morris goes further than Gould in arguing for a *directional signal* in evolution. He therefore believes that human beings are inevitable, so that if the tape of history were to be played again and again, human beings would turn up *again and again*. Gould, on the other hand, while he recognises constraint, resists the idea that there is an inbuilt evolutionary flow towards human beings, rather, for him constraints flow from random narrowing of evolutionary flexibility concurrent with specialisation to a specific ecological niche. Would either view make sense in theo-dramatic terms? My answer is yes, for whereas Gould’s position would amount to pure divinely dramatic improvisation, Conway Morris’s view allows for a specific divinely directed plot, even if details are flexible. Of course, I should stress once again that neither *needs* a theological explanation, but both are entirely compatible with such an account.

Other aspects of evolutionary research are still unfolding. Recent research on evolution and development by David Stern on fruit flies tends to support the idea of restraint at the level of molecular genetics. He has found that evolutionarily significant mutations accumulate at certain hotspot genes and even specific portions within those genes. [[26]](#footnote-26) This goes some way to explaining examples of parallel evolution between different populations of the same species. The remarkable fact is that even though other genes are also involved in the regulation of specific characteristics, only some of them are active in evolutionary terms. For example, hundreds of genes regulate the pattern of fine epidermal projections or trichomes on *Drosophila melanogaster* larvae, but only *one* of these genes, *shavenbaby*, has evolved variants which alter that pattern of trichomes. The reason for this seems to be that this particular gene plays an integral role in the development of trichomes, so that patterning genes marking out spatiotemporal information regulate the expression of the gene *shavenbaby*, which then in turn regulates the development of trichomes.[[27]](#footnote-27) These finding show not only the incredible complexity of gene regulation in a relatively simple organism, a fruit fly larva, but also the crucial evolutionary importance of constraints. Further, and significantly, these constraints seem to have a molecular basis.[[28]](#footnote-28) Gene expression is also known to vary depending on genetic background, a phenomenon known as *epistasis.* [[29]](#footnote-29)

The above demonstrates the interplay of contingency and constraint in evolutionary theory in a way that is at least compatible with a theo-dramatic interpretation of events. In the dramatic emergence of species the contingency of external conditions are in dynamic interaction with historically evolved constraints. The pattern of contingency and constraint is not yet properly understood, but provisionally can be thought of integral to a *drama of life*, but where full awareness of that drama only finally becomes explicit and self-conscious in the human species, *Homo sapiens,* or perhaps in some other earlier hominid lines.[[30]](#footnote-30) The possibility of sharing in a *performance*, it seems to me, makes for a more readily accommodated perception of inclusiveness with other finite creatures, compared with, for example, a simple portrayal of evolution in terms of a rational system of truth claims.

It is also worth dwelling for a moment on what might be termed *cooperative* theories of evolution. Martin Nowak is an evolutionary biologist from Harvard University well known for mathematical modeling of human behavior based on what might be broadly termed the prisoner’s dilemma. This states, in simple terms, that it is more effective for social groups to cooperate, but it is always tempting for individuals to seek the benefits of the social group, without contributing to the cost of such cooperation. In other words, to cheat or defect. Nowak goes further in his claim that cooperation is *built into* the process of evolution from the beginning, from the first fragile life forms through to the most neurologically advanced species. [[31]](#footnote-31) Nowak identifies five different mathematically consistent ‘rules’ for the evolution and maintenance of cooperation, operating in different ways to enhance the likelihood of cooperation conferring a fitness advantage. [[32]](#footnote-32) In the long term, defection or refusal to cooperate does not seem to be favored in evolutionary terms.

At this juncture it is important to distinguish between the evolution of biological cooperation, that can be found in, for example, social insects, and what might be termed deliberative moral capacities. While the two are certainly not the same, they are not likely to be completely disconnected either. There is a strong tendency for biologists to elide both types of behavior, which is clearly mistaken, or for philosophers to assume that *only* sophisticated linguistic humans can exhibit genuinely moral behavior. Precisely how the human cognitive power of moral abstraction is related to more innate tendencies to cooperate is unclear, but the former does depend on what might be termed higher cognitive and symbolic capabilities. Claims that human societies operate just through absolute abstraction either in the moral sphere or the scientific one should be met with a certain amount of skepticism. The dynamic drama of contingency and constraint expressed eventually either as cooperation or selfishness is also likely to be operative at different levels, but that drama becomes self-conscious only in human beings.

Evidence for genuine cooperative tendencies also comes from a close study of the behavior of captive primates by Frans de Waal.[[33]](#footnote-33) “Morality” here, like cooperation, is a biological term and means that judgment has taken place within group standard norms. It also serves to distinguish between more sophisticated cooperative social action, and innate automated cooperative behavior, as in insects. What may be selected for in evolutionary terms is a *general* capacity to be cooperative and learn in social groups. Some evolutionary psychologists want to go further than this and claim that *specific* human relational skills reflect evolved discrete modular components of brain function.[[34]](#footnote-34) While I agree that the social skills set of the primate mind may well be distinct from the skill set for tool making[[35]](#footnote-35), claims that individual human behaviors are *tied* to specific and evolved modular elements in the brain operating rather like an advanced computer seem to me to go beyond the available evidence. [[36]](#footnote-36)

From the account so far we can say, perhaps, in a qualified way that cooperation has appeared in evolutionary history on a number of occasions, that it is *convergent* – and it is this cooperation perhaps that leads eventually to the emergence of wisdom. I would also concede that there could be specific forms of natural wisdom in other social species, just as ‘wild justice’ is identified in social animals.[[37]](#footnote-37) How far and to what extent any traits representing wisdom shows convergence, that is, similar phenotype or behavior due to similar external pressures, or parallelism, that is, having a similar genetic lineage, is impossible to discern, as this is largely speculative.

There are of course rather too many occasions where human beings are free to conduct what society judges as evil acts according to their own selfish desires. Aquinas long ago recognized that a person commits what they see as a good for themselves, even if others will recognize this as an evil act.[[38]](#footnote-38) Even Hitler thought (wrongly of course) that what he planned was a good for that society. Sin could be thought of as an inability to see the good for all, understood in its most extensive sense, balanced in relation to the good for each. Sin at its most pervasive and deceptive is evil wrought in the name of a supposed good. According to the theo-dramatic metaphor that I have been postulating this makes sense, for in any good drama there will be scenes where cooperation allows breakthroughs in the unfolding drama towards God-given ends, but where the possibility of what might be termed tragic cooperation working for horrendously evil ends disguised as a good also hovers in the background.

Christ as the Theo-Dramatic Way, the Truth and the Life.

As well as expressing the dramatic ontological act of God in history, the coming of Christ can be thought of as one who came to show in his person the manner in which human beings are to live out their human and social life. His own human capacity for self-sacrifice and obedience to God was partly shaped by naturally defined characteristics that he inherited from his human mother, Mary. But he also learnt to express his religious belief through an educative process at home and in the social and political life of his generation. These capacities were, of course, imbibed with God’s graceful action working through his dedication to prayer and communion with God, so that according to the early Church’s tradition his own humanity was gradually divinized (or deified) during his lifetime.[[39]](#footnote-39)

If other human beings choose to follow this pattern, then they would try and perceive goodness through the crystal lens of truth set forth by the purity of Christ’s manner of living and dying and rising again. The specific possibility of what might be termed *absolute cooperation* in relation to goodness and truth is only possible for human beings, which may be one reason for the affirmation of Romans 8, that all creation waits in expectant and eager longing for human beings to act. When we reflect on the tremendous practical ecological and social problems facing our own generation, many of these have tragically been of our own human making. However, the hope that Christian faith in Christ can inspire is one that affirms that self-destruction and that of our world need not be the final act in the theo-drama of human and creaturely life.

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1. While to some extent this lecture draws on my book, *Christ and Evolution: Wonder and Wisdom* (Minneapolis: Fortress, 2009; London: SCM Press, 2009), it tackles the question from some very different angles and brings in many new elements to the discussion in the light of further reflection and in the light of the particular context relevant for this occasion. [↑](#footnote-ref-1)
2. See, for example, the recent work of Sam Harris, *The Moral Landscape: How Science can Determine Human Values* (New York: Free Press, 2010); Richard Dawkins, *The God Delusion* (London: Bantam, 2006), Christopher Hitchens *God is Not Great: How Religion Poisons Everything* (New York: Twelve, 2007). Perhaps one of the most vocal Christian voices against new atheism is Alister McGrath, who is as prolific as he is sharp in taking on these arguments. See for example, A. McGrath, *Why God Won’t Go Away: Is the New Atheism Running on Empty?* (Nashville: Thomas Nelson, 2010); R.B. Stewart, ed., *The Future of Atheism: Alister McGrath and Daniel Dennett in Dialogue* (Minneapolis: Fortress Press, 2008). [↑](#footnote-ref-2)
3. http://www.gresham.ac.uk/lectures-and-events/the-boyle-lecture-the-legacy-of-robert-boyle-then-and-now, accessed September 14th, 2011. Brooke comments that the endowment of the Boyle was such that ‘The lecturers would have as their brief: to prove the Christian religion “against notorious Infidels, viz. Atheists, Theists, Pagans, Jews, and Mahometans.” And as a rider, to which we shall return, he added that they were not to descend to “any controversies … among Christians themselves.”’. [↑](#footnote-ref-3)
4. I have commented on this in more detail in other papers, such as ‘Beyond Separation or Synthesis: Christ and Evolution as Theodrama’, in *Darwin in the 21st Century: Nature, God and Humanity*, edited by Phillip R. Sloan, Gerald McKenny, and Kathleen Eggleson, University of Notre Dame Press, 2012, *in press*. [↑](#footnote-ref-4)
5. . If the first view tended to squeeze out the possibility of a human soul, the second ended up with two persons in Christ, the divine indwelling the human. Historically, the story was likely to have been even more complicated than this account implies, with authors such as Cyril of Alexandria adopting some ideas on Christ’s rational soul that seem closer to the Antiochene tradition. For discussion, see Oliver Crisp, *Divinity and Humanity* (Cambridge: Cambridge University Press, 2007), 38–40. [↑](#footnote-ref-5)
6. . An *anhypostatos physis* is a human nature that exists independently from an individual or person. In this scenario, Christ’s personhood requires the assumption of human nature by the Word. From the moment of incarnation, there is *enhypostatos*, that is, human nature in a particular person. In some discussions, the human nature of Christ is seen as being taken up into the Word. See, in particular, Crisp, *Divinity*, 72–89. Other ways through the problem of relating the divine and human natures in Christ posit that the two are related through mutual indwelling, that is, *perichoresis*, so that each indwells the other in a manner analogous to the relationships of the Trinity. Crisp also devotes a whole chapter to considering this issue. Crisp, *Divinity*, 2–33. [↑](#footnote-ref-6)
7. A.R. Peacocke, *Creation and the World of Science* (Clarendon Press, Oxford, 1979) p. 248. Space does not permit a full discussion of how far liberal Christology influences debates in science and religion, but Ian Barbour, for example, shares Peacocke’s stance. The point is that such a view makes reconciliation easier with science, but it is not convincing for those who do not hold such liberal starting points. [↑](#footnote-ref-7)
8. A.R. Peacocke, *All That Is: A Naturalistic faith for the Twenty-First Century*, ed. Philip Clayton (Minneapolis: Fortress Press, 2007), p. 37. [↑](#footnote-ref-8)
9. Jesus’ humanity that has evolved into a form of ‘transcendence’ is recognised by others as having some sort of divine cogency, though precisely why this is the case is not entirely clear, given that, in theory at least, other humans could also follow this path towards divinization. Peacocke’s understanding of the relationship between God and the world is a ‘top-down’ approach, by analogy with evolutionary emergence of ‘higher’ levels of interaction. However, his perception of Christ is ‘bottom up’, in as much as Jesus seems to *become* a fully God-informed subject, rather than being endowed with divine subjectivity from the beginning. Other prominent authors in the science and religion discussion, such as Ian Barbour, adopt much the same position, where Christ appears as a new stage in the evolutionary process. Ian Barbour, *Religion in an Age of Science* (London; SCM Press, 1990), 210. [↑](#footnote-ref-9)
10. John Haught is a prolific writer whose main intent is to make sense of evolution in theological terms. The framing for his understanding of drama is the biological drama of life. Christ is identified with that process so that he claims, following that palaeontologist and priest of the last century, Pierre Teilhard de Chardin, that ‘what is really going on in evolution, therefore, is God becoming increasing incarnate in the world’. Evolution and theology are seamless, so that ‘Beneath the surface of nature, about which science speaks analytically and reductively, what is really going on is the eternal drama of God’s creativity, descent into the world and promise of final renewal’. The difficulty here is that God’s action equates with evolutionary emergence, even if now it becomes understood in dramatic language. But what does the God-drama really *mean* if it is just identical to the drama of life and how are we to understand renewal? John Haught, *Making Sense of Evolution: Darwin, God and the Drama of Life* (Louiseville: Westminster, John Knox Press, 2010), p. 146 [↑](#footnote-ref-10)
11. Theologians are, with Ben Quash, people prepared ‘to see the dense, historical world as having an origin and an end in the creative purposing of God, a God who can relate personally to his creatures”. They are “People ready to acknowledge the idea that there can be revelation: a prevenient ground for our knowledge and perception that is not the product of our knowledge and perception, which is neither accidental or impersonal but which freely, and even lovingly, communicates itself”, Ben Quash, *Theology and the Drama of History* (Cambridge: Cambridge University Press, 2005), 2. [↑](#footnote-ref-11)
12. In such a view he suggests we ‘smooth out the folds and say that Jesus’ suffering is past history; we can only speak of his continued suffering in an indirect sense, in so far as those who believe in him are referred to, metaphorically, as his members’. Hans Urs von Balthasar, *Theodrama, Volume 11, Dramatis Personae: Man in God*, tr. Graham Harrison (San Francisco: Ignatius Press, 1990) TD 2, 54. [↑](#footnote-ref-12)
13. Quash, *Theology,* p. 42. [↑](#footnote-ref-13)
14. . Lyric is where “the whole substance of an action is transposed into a highly volatile, highly individual; immediate and emotionally coloured mode of response and expression.” Quash, *Theology*, p. 42. [↑](#footnote-ref-14)
15. If we envisage God has somehow literally ‘given up’ divine characteristics or powers, then Christ is no longer fully divine, and we arrive at weakened version of the Trinity. Some versions of kenotic Christology implied this, and are therefore less helpful. For further discussion see C.S. Evans, *Exploring Kenotic Christology: The Self-Emptying of God* (Oxford: Oxford University Press, 2006). [↑](#footnote-ref-15)
16. . J. F. Haught, “Ecology and Eschatology,” in *And God Says That It Was Good: Catholic Theology and* *the Environment*, ed. D. Christiansen and W. Grazen (Washington, D.C.: U.S. Catholic Conference, 1996), 57. [↑](#footnote-ref-16)
17. The most common way of reading human history is individual human subjects in genealogies or that according to the dynamics of a ‘grand narrative’. In evolutionary science we find similar trends toward either tracing genealogies or constructing grand narratives-witness Darwin’s theory of natural selection. I am certainly not suggesting that all these accounts are flatly wrong but that we need to be much more self-aware of what this kind of mapping does for our overall perception of history. Think of the power of the Darwinian perspective to capture the imagination of virtually all disciplines, and the reverberations of this view across a range of academic disciplines. Do we necessarily want to merge such views with the transcendent and claim that all such narratives are in effect theo-narratives? I have argued so far this would be a mistake. Instead we need to freeze, as it were, moments in the evolutionary narrative in order to pay special attention to the particular theo-drama that is going on at any given time. [↑](#footnote-ref-17)
18. For example, different possibilities include; religion is not biologically adaptive, so human nature is like a ‘blank slate’, or religion is an adaptation that has evolved under the selective pressure of the need to cooperate, either as an adaptation, that implies a link to genetic characteristics, or (more convincing in my view) as an adaptive phenomenon, that religious belief enhances cooperation and so religious communities survive better. In the former, adaptation scenario debates exist as to the timing of the appearance of this particular trait(s), was this prior to the emergence of the hominid line, or coincident with modernity or sometime in between? For a discussion of these and other important questions see especially Justin L. Barrett, ‘Metarepresentation, *Homo* *religiosus*, and *Homo symbolicus*’ inChristopher N. Henshilwood and Francesco D’Errico, eds, *Homo symbolicus: The Dawn of Language, Imagination and Spirituality* (Amsterdam: John Benjamins, 2011), pp. 205-224; David Sloan Wilson, ‘The Human Major Transition in Relation to Symbolic Behaviour, Including Language, Imagination and Spirituality’, Henshilwood and D’Errico, *Homo symbolicus,* pp. 133-139. . [↑](#footnote-ref-18)
19. J. Schloss takes this idea from Evelyn Hutchinson. See J. Schloss, “From Evolution to Eschatology,” 56–85 in *Resurrection: Theological and Scientific* *Assessments*, ed. T. Peter, R. J. Russell, and M. Welker(Grand Rapids: Eerdmans, 2002) 58. [↑](#footnote-ref-19)
20. There are, of course, disadvantages in such an approach, especially as much of the cultural history of early humans is heavily dependent on speculation about the particular social conditions of that history. For a discussion of current debates see J. Zilhao, ‘The Emergence of Language, Art and Symbolic Thinking: A Neandertal Test of Competing Hypotheses’, in Henshilwood and D’Errico, *Homo symbolicus*, pp. 111-131. [↑](#footnote-ref-20)
21. See Simon Conway Morris, *Life’s Solution: Inevitable Humans in a Lonely Universe* (Cambridge: Cambridge University Press, 2003), p.249, also reviewed in more detail in E.S. Vrba et al, *Paleoclimate and Evolution: With Emphasis on Human Origins* (Newhaven: Yale University Press, 1995). [↑](#footnote-ref-21)
22. Full discussion of this is of course outside the scope of this lecture, but see Paul Pettitt, ‘The Living as Symbols; the Dead as Symbols: Problematising the Scale and Pace of Hominin Symbolic Evolution’, in Henshilwood and D’Errico, *Homo symbolicus,* pp. 141-161. [↑](#footnote-ref-22)
23. Here I am not suggesting that science does not recognise the psychological phenomenon of subjectivity as that which can be analysed, but in order to practice science, the observer has to try and distance him/herself from what is under observation. Even where there are exceptions, such as participant observation in social science, or even the impact of the observer on results of physics, the results are by their nature considered as far as possible to be ‘objective’, rather than ‘subjective’, and admission of the latter would amount to ‘unscientific’ results. It is this kind of methodology that distorts the meaning of theodrama according to Balthasar’s argument, so that he can suggest that: ‘It [sic-theodrama] so overarches everything, from beginning to end, that there is no standpoint from which we could observe and portray events as if we were uninvolved narrators of an epic. By wanting to find such an external standpoint, allegedly because it will enable us to evaluate the events objectively (*sine ira et studio*), we put ourselves outside the drama, which has already drawn all truth and all objectivity into itself. In this play, all the spectators must eventually become fellow actors, whether they wish to or not’. Balthasar, TD 2, 58. [↑](#footnote-ref-23)
24. At the moment I am going to leave to one side the reception or otherwise of Stephen Jay Gould’s theory of punctuated evolution. This is because macro-evolutionary processes are operative at species level, rather than operating at the level of the organism. Many biologists are not yet convinced that this theory is necessary in order to account for observed changes. If we do allow for such changes, then punctuated evolution would be the time of intense drama for that species at a given geological time, where, like Gould, species stands in for individuals, though of course not in any self-conscious way. Even here what is witnessed is the emergence of a new species over many thousands of years in a species lifetime of around four million years. I have discussed this in more detail in Deane-Drummond, *Christ and Evolution,* pp. 12-22. [↑](#footnote-ref-24)
25. Stephen Jay Gould, *The Structure of Evolutionary Theory* (Belnap/Cambridge(Mass): Harvard University Press, 2002), p. 49. [↑](#footnote-ref-25)
26. David L. Stern and Virginie Orgogozo, ‘Is Genetic Evolution Predictable’, *Science*, February 2009, 323: 746-751. See also David Stern, *Evolution, Development and the Predictable Genome* (Greenwood Village: Roberts and Company, 2010), pp. 149-74. [↑](#footnote-ref-26)
27. Other genes that also regulate trichome formation are either also involved in other crucial functions, so are not favoured in evolutionary terms, or they still allow for some trichome development, and so would not be visible in evolutionary terms. Variants in *shavenbaby* are also related to variants in the regulation of that gene, rather than the gene itself, known as *cis-*regulatory elements (CREs). The crucial evolutionary role of CREs across a range of species suggests that it is far too simple to think of evolution just in terms of evolution of protein products. Stern and Orgogozo, ‘Is Genetic Evolution Predictable?’. [↑](#footnote-ref-27)
28. How far this might work as an explanation of other ‘hotspot’ genes remains to be seen. Michael Shapiro, for example, who works with sticklebacks, has found other ‘hotspot’ genes that do not have the same crucial regulatory function as *shavenbaby.* Julie Kiefer, ‘Primer and Interviews: Molecular Mechanisms of Morphological Evolution’, *Developmental Dynamics*, 239 (2010), 3502 full article pp, 3497-3505. [↑](#footnote-ref-28)
29. This can impact on the rate of evolution in the short terms as more variability shows up with the presence of a given gene mutation. Contingency is therefore present along with constraints, and this contingency is not simply mapped directly onto variations of single gene expressions, but it is far more complicated. Precisely *how* constraints operate at a molecular level to produce *convergent* phenotypic characteristics between species for given environments is much harder to explain in molecular terms compared with the parallelism case, though *some* conservation of crucial gene regulating factors exists across species, such as the Pax 6 found to regulate vertebrate eyes in mice and compound eyes in fruit flies. [↑](#footnote-ref-29)
30. This topic is outside the scope of this lecture, but I am thinking here of Neanderthals, that have in popular culture received a bad press, but may have been cognitively and symbolically sophisticated and even disappeared not by conflict but through assimilation with *Homo sapiens*. For a fascinating discussion see Zilhao, ‘The Emergence of Language’, pp. 111-131. [↑](#footnote-ref-30)
31. Martin A. Nowak, *Evolutionary Dynamics: Exploring the Equations of Life* (Belknap Press: Cambridge (Mass): Harvard University Press, 2006). See also, M. Nowak, ‘Five Rules for the Evolution of Cooperation’, *Science*, 314 (8), 2006, pp. 1560-1563. [↑](#footnote-ref-31)
32. These are, briefly, Hamilton’s rule, related to ‘kin selection’; Trivers’ direct reciprocity rule based on expectation of later reward; thirdly an increase in ‘reputation’, fourthly, network reciprocity where the cooperators form alliances or clusters, and, more controversially, group cooperative selection, rather than group defection. [↑](#footnote-ref-32)
33. Frans de Waal, *The Age of Empathy: Nature’s Lessons for a Kinder Society* (London: Souvenir Press, 2009). While the discussion of the experimental basis for cooperative (pro-social) behaviour in primates is fascinating here, there are some philosophical gaffs, such as the implication that human morality can be shaped by primate behaviour. While such a naturalistic view of ethics is understandable, the case is not adequately presented. [↑](#footnote-ref-33)
34. Tooby *et al* present a model of cooperation according to a welfare/trade off ratio, where they present the case that the brain computes the relative welfare of self to another in a precise manner, according to specified brain functions. This ratio depends on genetic closeness, the kinship index, and varies according to key motivational factors such as sexual drive, altruism, and anger. The statistical correlations between welfare/trade off ratios and emotional states are claimed to support an evolutionary origin of specific computational processes in the human brain. John Tooby and Leda Cosmides, ‘The Evolutionary Psychology of the Emotions and Their Relationship to Internal Regulatory Variables’, in M. Lewis, J.M. Haviland-Jones and L. Feldman Barrett, eds, *Handbook of Emotions* (New York: Guilford, 2008), pp. 114-137. The evidence for the evolutionary origin of specified computational processes seems highly speculative, as is the concept that anger in men or sexual attractiveness in women actually orchestrates cooperation by resetting in the welfare/trade off index in the other party. Aaron Sell, John Tooby and Leda Cosmides, ‘Formidability and the Logic of Human Anger’, PNAS, 2009, 106 (35), pp. 15073-15078. [↑](#footnote-ref-34)
35. The specific emergence of social intelligence seems to operate in relation to cultural complexity in a positive feedback loop, so that intelligence is as much dependent on cultural factors as innately inherited characteristics. For an overview see Andrew Whiten and Carel P. van Schaik, ‘The Evolution of Animal ‘Cultures” and Social Intelligence’, in Nathan Emery, Nicola Clayton and Chris Firth, eds., *Social Intelligence: From Brain to Culture* (Oxford: Oxford University Press, 2008),189-216. A discussion of the basic evolutionary need for cooperation in early hominid societies is fairly well recognised. It seems likely that the external ecological environment as well as the social environment interacted with the way social intelligence emerged in these communities. The Machiavellian version of the social intelligence hypothesis in early human societies puts most emphasis on skills of deception and counter-deception. An alternative is to suggest a more positive feedback loops between social and ecological competence, thus cooperation is the default position, rather than calculated. Even if reciprocal calculation could be unconscious, rather than conscious, the point is that it may not be necessary if an alternative more positive model of cooperation is put in its place. While the ecological and social niche construction hypothesis is also speculative, it has the advantage of not making far-reaching claims about the precise architecture of the brain. See Kim Sterelny, ‘Social Intelligence, Human Intelligence and Niche Construction’, in Nathan Emery, Nicola Clayton and Chris Firth, eds., *Social Intelligence: From Brain to Culture* (Oxford: Oxford University Press, 2008), pp. 375-392 [↑](#footnote-ref-35)
36. See references in note 31. [↑](#footnote-ref-36)
37. Marc Bekoff and Jessica Pierce, *Wild Justice: The Moral Lives of Animals* (Chicago: University of Chicago Press, 2009). [↑](#footnote-ref-37)
38. Aquinas went as far as suggesting that evil is related to the good as a privation of what the good should be like, rather than simply the absence of the good. *Summa Theologiae*, *Vol. 8, Creation, Variety and Evil*, trans. Thomas Gilby (1963) (Cambridge: Cambridge University Press, 2006) 1a, Qu. 48.3. On the other hand, in human relationships sin is related to what might be termed a *distorted* good, so that it is in the will that Aquinas finds sin rooted, ‘the will, when lacking direction by rule of reason and the divine law, intending some transient good, directly causes the sinful action, and indirectly the disorder, which was not intended’, *Summa Theologiae*, *Vol. 25, Sin*, trans John Fearon (Cambridge: Cambridge University Press, 2006), 1a2ae, Qu. 75.1 More explicitly, ‘Every sin arises from an inordinate desire for something good or from an inordinate escape from evil. However, both of these presuppose love of the self’, *Summa Theologiae*, *Vol. 25, Sin*, trans John Fearon (Cambridge: Cambridge University Press, 2006), 1a2ae Qu. 77.4. [↑](#footnote-ref-38)
39. See Deane-Drummond, *Christ and Evolution*, p. 98. [↑](#footnote-ref-39)