

The Image of God and Human Uniqueness: Challenges from the Biological and Information Sciences

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The image of God is the doctrinal *Sitz im leben* of human uniqueness. Despite the relatively meagre collection of scriptural passages that explicitly mention the image of God in the biblical text, the doctrine itself has had a substantial role in influencing Christian theological anthropology and even the rest of the doctrine of creation. Indeed, the Genesis text indicates that the image of God is decisively what separates out human beings from the rest of creation and, precisely in this distinguishing, helps to define human being as a special creature in the order of creation. In this way, humans are often referred to as the ‘crown of creation’ and their apparent uniqueness was largely unchallenged for millennia. Yet, recent work in the biological and information sciences is eroding the centuries-old conviction that we are distinct and special as creatures. How does this affect how we understand the image of God?

This paper seeks to address these questions. I aim to do this by first calling attention to the various ways the image of God and corresponding views of human uniqueness have been interpreted throughout Christian history. Then I will address the two dominant areas that have threatened human uniqueness in the past two centuries: the biological and information sciences. In conclusion, I argue that this loss of human uniqueness need not threaten the image of God but instead can provide clarity to the doctrine itself.

The Image of God and Human Uniqueness

Stanley Grenz¹ and J. Wentzel van Huyssteen,² among others,³ have identified four ways the image of God has been interpreted through the ages. These models are labelled the

¹ Stanley Grenz, *The Social God and the Relational Self: A Trinitarian Theology of the Imago Dei* (Louisville: Westminster John Knox Press, 2001).

² J. Wentzel Van Huyssteen, *Alone in the World?: Human Uniqueness in Science and Theology* (Grand Rapids: Eerdmans, 2006).

functional, substantive, relational and dynamic accounts of the image of God. I will explicate each of these and explain how each locates human uniqueness within that model. This will help prepare for the next section on the challenges set to human uniqueness originating from the biological and information sciences and lay the groundwork for assessing the potential dangers to the doctrine of the image of God.

The first interpretation of the image of God arises out of modern biblical scholarship and focuses on the seminal image of God passage in Genesis 1:26-8. The ‘royal-functional’ model claims that the image of God is to be found in reference to the surrounding Ancient Near Eastern traditions (Egypt and Mesopotamia) and in Genesis 1:26, 28. Here biblical scholars note it was common for kings and royalty in the Ancient Near East to reflect the divine presence on earth. In a sense, they acted as the proxy to the divine and embodied and represented the divinity to the rest of creation and society. In this way, the image of God passages in Genesis 1 recall to the original readership the royal, divine representation and then apply it to all of humanity—every human being represents and is in the image of God.⁴

The functional model, however, extends this representational image and connects rulership over creation in Genesis 1:26, 28 to creation in the image of God. Just as Ancient Near East kings and royalty ruled over their respective societies and represented God to them, so all of humanity has dominion over creation and represents God to the rest of creation. The image of God entails that humankind functions as ‘God’s vice-regent on earth’⁵. This is not to say the image of God is to be found precisely in dominion but rather it is the consequence of being in the image of God.

³ Noreen L. Herzfeld, *In Our Image: Artificial Intelligence and the Human Spirit* (Minneapolis: Fortress Press, 2002). & F. LeRon Shults, *Reforming Theological Anthropology: After the Philosophical Turn to Relationality* (Grand Rapids: Eerdmans, 2003).

⁴ For more on this model see J. Richard Middleton, *The Liberating Image: The Imago Dei in Genesis 1* (Grand Rapids: Brazos Press, 2005).

⁵ Grenz, 198.

Despite critical voices to the contrary,⁶ theologically, the functional model has most recently been taught to convey an element of ecological cultivation. Dominion ought not be one of a harsh king who plunders his subjects, but rather guides the flourishing of his kingdom. Likewise, we ought not devastate creation and subject it for our own ends. Rather, we have been entrusted by God with His valuable creation and have been charged with its cultivation and ushering it to glory and completion.

Where does human uniqueness fit into the functional model of the image of God? While there is an argument that many who would hold to this model would not locate the image of God itself in being given dominion over creation but rather a connected secondary result, it is still definitive. Humanity, hence, is unique because it has been tasked with ruling over, caring for and shepherding the rest of creation. For the functional model, it is humanity's special task as 'vice-regent' and in representing God that makes it unique amidst the rest of creation. In other words, one could say it is humanity's agency in the world that is distinctive.⁷

The substantive view of the image of God has arguably been the most dominant in Christian history. The substantive model claims the image of God refers to some quality or faculty that is inherent in the human being. It is something in its nature, something it possesses that makes it an image-bearer. Historically, this quality has most often been located in humanity's capacity to reason. Aristotle's famous maxim, in agreement with other Greek philosophers of the day, was that human beings were the 'rational animal'. This philosophical contention fused with early theological interpretations of the doctrine which held it is our intellectual prowess that makes us divine image bearers.⁸

The substantive view of the image of God locates human uniqueness in the very capacity that makes human beings image bearers. It is precisely the presence of or degree to which the faculty exists in human beings that makes them unique amongst the other creatures. So, this has

⁶ See Lynn White, "The Historical Roots of Our Ecologic Crisis," *Science* 155, no. 3767 (1967).

⁷ See Middleton, 27n39.

⁸ See Shults, 220-226. & Grenz, 142-162.

often meant that humans are unique because they are either rational when others are not or that their intellectual powers are unique to such a degree that they are qualitatively distinct amongst the rest of creation.

The third interpretation of the image of God, the relational view, has had a strong heritage in the 20th century and is rooted in the divine address, in the very relationship God has to humanity. In other words, what makes humanity in the image of God is primarily the unique relationship humanity has with God and this relationship is defined as an I-Thou relation.⁹ Secondly, this view might assert that it is our ability to have robust relationships with other persons that makes us in the divine image. Human uniqueness, then, is rooted in this special relationship with God and/or human beings unique relational abilities with other humans and creatures.

The final view, the dynamic model, holds that the image of God is not something completely given to humanity at the beginning of creation but is instead completely gained through history and in conformity to Christ. It draws upon those significant New Testament passages (e.g. Colossians 1:15 or 2 Corinthians 4:4) that clearly state that Jesus Christ is the full measure of the image of God. A dynamic account of the image of God stresses that insofar as human beings reflect and follow their true anthropological source in Christ they too are to be in the image of God.¹⁰

A dynamic account of the image of God seems to be more flexible in terms of human uniqueness than the others. Of course, it does acknowledge that the image is fixed and manifest in Christ but because we have not yet attained it in full it takes on a thoroughly eschatological dimension to be completed at the end of all things when Christ has come in His fullness. Human uniqueness in this model relates to Christ and in our sanctification/transformation towards Him.

⁹ See Van Huyssteen, 136-139. & Shults, 117-139, 233ff.

¹⁰ See Grenz, 177ff. & Shults, 235ff.

We could say that human uniqueness is related to our special ability to transform and grow, often in distinctly moral and spiritual ways, towards Christ who is Himself the full image of God.¹¹

Before assessing the merits of each model relative to the recent challenges to human uniqueness, we turn to the challenges themselves as they arise from the biological and information sciences.

The Challenge to Human Uniqueness From Biology

Our understanding of humankind *qua* biological entity has radically changed since the 19th century. The rise of Darwinian evolution in the 19th century could be felt beyond just the academic fields of biology and anthropology. Instead, it captured the imagination of Victorian Britain and blazed through society's *psyche*, causing the inhabitants of the parlour and the parsonage to reflect upon their relation to the rest of the animal kingdom.

This is reflected in unique cultural artefacts that express the pervasiveness of Darwin's idea. For instance, Janet Brown claims 'Individuals could...acquire a pottery statuette of a monkey contemplating a human skull...They could sing a duet at the piano on the "Darwinian Theory," read edifying popular romances such as *Survival of the Fittest*, or give their children nursery primers called *Daddy Darwin's Dovecot*.'¹² The most striking examples are to be found in certain seminal political cartoons and caricatures. These drawings of Darwin and his theory reveal the incessant Victorian preoccupation with evolution, highlight the impact of Darwinian evolution on the general populace and disseminated Darwin's theory. A notable instance is to be found in *Punch's Almanack* of 1882, 11 years after Darwin wrote *The Descent of Man*.

¹¹ See Van Huyssteen, 139-141. & Ted Peters, "Can We Enhance the Imago Dei?," in *Human Identity at the Intersection of Science, Technology and Religion*, ed. Nancey Murphy and Christopher Knight (Farnham: Ashgate, 2010). Also see Johan De Smedt and Helen De Cruz, "The Imago Dei as a Work in Progress: A Perspective from Paleoanthropology," *Zygon* 49, no. 1 (2014).

¹² Janet Browne, "Darwin in Caricature: A Study in the Popularisation and Dissemination of Evolution," *Proceedings of the American Philosophical Society* 145, no. 4 (2001): 497-498.

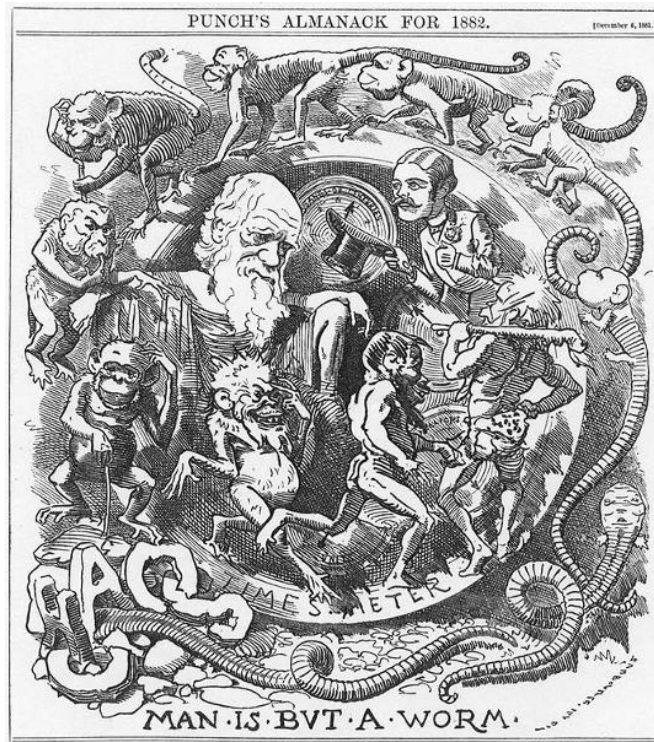


Figure 1: 'Man is But a Worm' by Linley Sambourne printed in *Punch's Almanack* (1882). Image courtesy of <https://www.flickr.com/photos/publicdomainreview/10559600145>

In this image, shown above in Figure 1, is written 'Man is But a Worm'. The picture depicts various stages of evolutionary development from the worm to the modern Englishmen. The Englishman tips his hat in thanks to an enthroned Darwin. In an alternative depiction of creation Darwin, a kind of pantocrator figure, looks down on the changing species that arise out of the words 'chaos'.¹³ It is clear that society not only learned of Darwin's significance through intellectual discourse but also through consumer products and other popularised media.

The average Victorian was well-acquainted with Darwin's theory, at least the basics of it. And where these images of evolution crop up, they invariably focus on the transition from ape to human being with an inordinate amount featuring Darwin himself as an ape—highlighting the central impact his theory of evolution had on these Victorians: what it means for us as human beings.

We still feel this Darwinian challenge in the 21st century. Indeed, the scientifically thin separation of human beings from the higher apes is probed with great precision today. Phrases

¹³ Jonathan Smith, *Charles Darwin and Victorian Visual Culture* (Cambridge: Cambridge University Press, 2006), 275.

like ‘human beings are 98% genetically similar to chimpanzees’ can be found emblazoned on the front cover of top scientific magazines such as *National Geographic* or *Science*. And, entire fields of study such as anthropology, comparative psychology and primatology all study, in some form or another, this porous boundary between the human being and the animal kingdom. It is not difficult to discern that much of these studies are motivated in part by that incessant existential question: ‘What makes me unique and different?’

Some scientists have sought to answer this question by appealing to language. Certain scientists and linguists such as Michael Tomasello, Steven Pinker and Noam Chomsky all claim in some form another that human language is unique. Whether it be because human language exhibits recursivity, productivity and/or displacement,¹⁴ our capacity for encoding our experiences and representing the world through symbol is unparalleled and garners significant attention from linguists and scientists alike.

Others have sought to locate human uniqueness in profound self-awareness. They claim that our capacities to think and reflect upon the conditions of our lives and to have a robust inner life are only found in our species. This self-awareness is not just physical, as if we are aware of only our bodies, but is multi-faceted including knowing one’s thoughts are distinct from others thoughts. Scientists often associate this with what is called ‘Theory of Mind’: the idea that certain agents have an internal mental world that can affect the external world. This internal life gets radicalised with certain forms of existentialism claiming humanity’s uniqueness is in the acknowledgement of a profound freedom, a flexible essence and an overwhelming anxiety in the face of death.

Some have even stated human uniqueness depends upon the complex cultural productions of humankind. Specifically, they seek to localise what is distinctively human in the social behaviour passed down to subsequent generations and/or humanities ability to improve

¹⁴ Definitions of each can be found in R. L. Trask, *Language: The Basics* (London: Routledge, 1999).

these learned capacities from one generation to the next.¹⁵ Human beings can actively reflect on what is taught them by their family and friends and improve those techniques to be passed along to others. As a corollary of cultural uniqueness, it is often alleged that human beings have a more advanced moral compass and exhibit pro-social behaviour unequalled in other species.¹⁶ For these scientists studying culture, it is nurture rather than nature that separates humankind from the rest of the animal kingdom.

Yet, scientists have also found rudimentary instances of each of these capacities in other species. For instance, apes have some capacity for language and often surprise scientists with their abilities. Nim and Coco are the most notable apes that have been trained with sign language.¹⁷ In relation to self-awareness, elephants, magpies and certain apes have passed an initial assessment for self-awareness.¹⁸ And, in response to cultural exceptionality, crows, apes and elephants have all been found to have robust cultures with some capacity for social learning.¹⁹ They have even observed elephants and primates aiding others of their species even when an individual reward is absent.²⁰ So, endeavours to clearly demarcate between humans and animals ironically find that line more difficult to establish than perhaps initially suspected.

The Challenge to Human Uniqueness from Information Science and Technology

Before turning to theological appropriations of this reduction of human uniqueness it is important to look at the other area seriously questioning human uniqueness today: information sciences and technology. Posthuman philosophy and certain artificial intelligence experts

¹⁵ On this idea of 'cumulative culture' see Mark Pagel, *Wired for Culture: The Natural History of Human Cooperation* (London: Penguin, 2012).

¹⁶ Kim Hill and others, "The Emergence of Human Uniqueness: Characters Underlying Behavioral Modernity," *Evolutionary Anthropology* 18, no. 5 (2009).

¹⁷ Michael Tomasello, *The Origins of Human Communication* (Boston: MIT Press).

¹⁸ See Sue Taylor Parker, Robert W. Mitchell, and Maria Boccia, eds., *Self-Awareness in Animals and Humans: Developmental Perspectives* (Cambridge: Cambridge University Press, 1994).

¹⁹ Eytan Avital and Eva Jablonka, *Animal Traditions Behavioural Inheritance in Evolution* (Cambridge: Cambridge University Press, 2000). & Hilary O. Box and Kathleen Rita Gibson, eds., *Mammalian Social Learning: Comparative and Ecological Perspectives* (Cambridge: Cambridge University Press, 1999).

²⁰ K. A. Cronin, "Prosocial Behaviour in Animals: The Influence of Social Relationships, Communication and Rewards," *Animal Behaviour* 84, no. 5 (2012).

question whether human individuals are anything more than the information captured in the neural networks of their brains. And, they say both the biological information of each human being along with the unique set of events which makeup the person's life might be enough to actually reproduce that person. If the major anthropological shift in the 19th and 20th century was a collapse of the human into the animal kingdom then the 21st century is a closing of the gap between everything else and the human.

Contemporary posthumanists aren't the first to understand human beings in terms of mechanics and information. The suggestion that human beings are nothing but material that is organised in very advanced and complex ways goes at least as far back as Julien Offray de La Mettrie in the 18th century. In his seminal work *L'homme Machine*, a paramount example of French materialism, La Mettrie contends that not only do human beings exhibit greater similarity to the rest of the animal kingdom than dissimilarity, but that human beings are nothing but fleshly machines that are governed by the inherent physical mechanics one might find in a clock.²¹

La Mettrie's contention that man was nothing more than a machine would find prominence in the mid-20th century with such figures as Alan Turing and in the rise of speculation on artificial intelligence.²² As Karl Popper has remarked, 'La Mettrie's doctrine that man is a machine has today perhaps more defenders than ever before among physicists, biologists, and philosophers; especially in the form of the thesis that man is a computer.'²³ Today this is made manifest through artificial intelligence experts' employment of the Turing Test. The Turing Test has a human being converse with either an artificial intelligence or a human being via text. The artificial intelligence is said to have passed the Turing Test, and hence should be called intelligent, if the human judge mistakes it for another human.²⁴

²¹ See Julien Offray de La Mettrie, *Machine Man and Other Writings*, trans., Ann Thomson (Cambridge: Cambridge University Press, 1996), 31.

²² Alan Mathison Turing, "Computing Machinery and Intelligence," *Mind* 49, no. 236 (1950).

²³ Karl R. Popper, *Objective Knowledge: An Evolutionary Approach* (Oxford: Oxford University Press, 1979), 224.

²⁴ For more information on the Turing Test and some philosophical and scientific reflections on it see Stuart M. Shieber, ed. *The Turing Test: Verbal Behavior as the Hallmark of Intelligence* (Cambridge: MIT Press, 2004).

Philosophical ruminations on identity aside, surely the technology just isn't possible today to create a synthetic intelligence that is an exact copy of a human being. But, as N. Katherine Hayles claims, the precise science and technology which make either artificial intelligence or mechanical humanoids possible is ancillary. Our present self-understanding of human beings as primarily information and the sole product of mechanics comprises the real Copernican shift. The real step towards posthumanity has already happened because our collective imagination has reduced the human to information.²⁵ So, while these musings of artificial intelligence experts might or might not be prophetically prescient of what may come, they already signal the tipping point of this radical change in our self-understanding. With it a further erosion of human uniqueness takes place for an ontology of information makes no qualitative distinction between artefact and living being. For anything can be reduced to information and mechanics—from tables and chairs to your mobile phone in your pocket to the person writing and reading this article. There is only a difference in complexity and configuration.

So, we might say, the underlying anthropological questions of the 21st century are: 'Is the human anything different from a complex set of organic information and hardware? Is it really different from complex machines and artefacts?' For the 21st century, humankind is not a worm but a binary system.

The Diminution of Human Uniqueness and the Image of God

We have seen that, through both biological and technological advance, the uniqueness of the human being has been strongly challenged in the last two centuries. The question remains whether religious people ought to fear this challenge and whether it puts significant pressure on the doctrine of the image of God. I contend that it does not pose a serious threat to the doctrine

²⁵ N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999), 4.

of the image of God. In the space remaining, I will assess how each model of the image of God fares in response to these challenges.

The functional account of the image of God is largely unscathed by recent challenges to human uniqueness. Of course, new scientific discoveries suggest that the animal kingdom and perhaps robust artificial intelligence show signs of agent-like qualities. As stated, human uniqueness for the functional model is located in humanity's specific action in the world in the broad sense as a robust and unique agent and in the narrow sense as a 'shepherd of creation'. In the broad sense of this uniqueness, then, these recent discoveries might challenge our pre-conceptions about the degree to which we are unique as agents in the world. Yes, the gap might be closing but it is clear we still hold a privileged position as a unique agent—no other creature exhibits self-directed and self-aware actions like human beings. In the more narrow sense as a 'shepherd of creation' we find something similar but the challenge is even more tenuous. One could argue that other creatures help develop their local environment in productive ways that is akin to the task given to human beings as stewards. For instance, earthworms exhibit significant abilities in their construction of environmental niches that make the soil more habitable not only for themselves but even for other creatures and plant-life. Even robots can be programmed to help aid the elderly, the sick and the young exhibiting similar qualities inherent in the 'shepherd of creation' image. However, all of these examples are either entirely local and limited, as with biological creatures that construct environmental niches, or dependent upon human initiation, as with helpful robots. The task of cultivation bestowed upon human beings is unique because it is universal (ie it encompasses all of creation) and divinely imparted. Human beings are still unique in the functional model of the image of God.

The substantive model is the most at risk to these challenges. Because it focuses on a particular property inherent in the human being it makes empirical discoveries of these properties in other creatures a more serious threat. As we have seen, many of these capacities are challenged in the biological and information sciences: language, culture, self-awareness and

rationality. So much of the pressure felt on this doctrine today is a direct result of the ubiquity of the substantive model. Yet, even here scientists are discovering that human beings are still, on the whole, unique.²⁶ Each of these capacities might exist in other creatures and we are often finding they are more sophisticated than originally thought, but the relative human capacities are still superior and special. Once again a quantitative difference invites a qualitative distinction signalling that even substantive approaches hold up against modern challenges to human uniqueness.

We see many of the same issues with the relational model of the image of God. Primatologists and other animal scientists are discovering other animals have complex social networks and robust relational capacities; more so than commonly known. From the rigid social hierarchies of ant colonies and beehives to the intricate social relations within most primate groups, the survival and productivity of many species depends upon successful and robust relationships.²⁷ However, two items make human beings distinct relative to this model of the image of God. First, human societies and relationships are much more complex and harmonious than our nearest primate relatives. It is astounding how flexible, robust and orderly our social relations are; even in stressful situations with others we might never have met. Second, theologically, we are the only creatures to have a special relationship to God that is dictated by divine address. As Robert Jenson so aptly puts it, God does not just speak about us, but to us.²⁸ This relation to God is manifest in intricate religious rituals, prayers and liturgies. Indeed, many scholars are finding that human beings are distinct in that they are *homo religiosus*: the religious

²⁶ Even if certain capacities are better with other animals or artificial intelligence (e.g. working memory in chimpanzees or accuracy of recall with AI), on the whole, human beings perform superior. See Herzfeld, 33-52. & Sana Inoue and Tetsuro Matsuzawa, "Working Memory of Numerals in Chimpanzees," *Current Biology* 17, no. 23 (2007).

²⁷ See Robin Dunbar, *How Many Friends Does One Person Need?: Dunbar's Number and Other Evolutionary Quirks* (Cambridge: Harvard University Press, 2010).

²⁸ Robert W. Jenson, "The Praying Animal," *Zygon* 18, no. 3 (1983).

primate.²⁹ We praise, worship and speak to God as a creature bound for fellowship with Him. So, even here the relational model holds up to scrutiny.

The dynamic conception of the image of God is also the most flexible. Because the image of God is not something that is dictated by simple presence or absence within human beings today, it naturally allows for an openness to change and this, it could be argued, means human uniqueness is not as central to its claim. However, as indicated prior, if uniqueness is asserted in this model it is to be found in the degree to which transformation and transcendence are definitive for being human. It is humanity's ability to reach out beyond itself and grow that makes it distinct. What is more, it is specifically moral and spiritual transformation to Christ that makes it unique. Recent challenges to human uniqueness do not affect humanity's inherence in and conformity to Christ. Even if this transformation is separated from its Christological roots, human beings still exhibit greater moral and spiritual awareness and progress than any other creature in creation.

Conclusion

Christians need not worry that recent challenges to human uniqueness from the biological and information sciences degrade the doctrine of the image of God. Each model stands up to the test while still preserving some kind of human uniqueness. Therefore, recent threats to human uniqueness ought not be experienced as destructive to Christian doctrine. In fact, the sciences can often provide substantial relief and precision to what this human uniqueness looks like empirically and it can help clarify what we mean by human uniqueness in the image of God. Allowing these challenges to come into contact with the image of God can actually help hone our understanding of the doctrine itself.

²⁹ See, for example, Scott Atran, *In Gods We Trust: The Evolutionary Landscape of Religion* (Oxford: Oxford University Press, 2002).