Human Cognition and the Image of God

Many contemporary theologians seem to think that identifying the image of God in humans with certain psychological or metaphysical structures has to be abandoned. Not only is the view that links human cognition and the *imago Dei* Biblically unwarranted, but it is also ethically problematic and empirically implausible; or so the argument goes. What I want to suggest in my paper is that such criticisms are far from conclusive. Indeed, it is difficult to formulate an account of the image of God without any reference to human cognitive uniqueness. Surprisingly, current cognitive sciences offer some support for this view as well.

In the first part, I will provide an outline of what I mean by the image of God. On this view, the image of God is identified with the potential to develop uniquely human cognitive mechanisms, mainly reason and will. I think that such a view can incorporate the best aspects of its competitors, namely, the relational, functional and Christological accounts. The second part will introduce recent work from the cognitive sciences that offer empirical and theoretical support for the uniqueness of human reason. Far from undermining human cognitive uniqueness, this work suggests that humans have many unique cognitive mechanisms. We have, for instance, unique capacities for representing complex mental states of others, adopting moral norms and controlling our actions.

STIG: The Structural/Substantial View of the Image of God

It is fair to say that the structural/substantial view of the image of God (henceforth, STIG) has been the default position among Christian theologians until the 20th century. It has not been, by any means, the only approach, but it seems clear that some reference to human cognitive uniqueness has generally been made. According to Augustine, for instance, the image of God in humans is to be identified with the rational soul. Humans are images of God insofar as the rational capacities of their souls mirror or reflect God’s rational (albeit perfect and infinite) capacities. So, central to STIG is an analogy between the capacities of God and human beings. This analogy is, of course, far from similarity or identity, but it is nevertheless meaningful to talk about God and humans having capacities that are on the same spectrum. Such capacities are most often identified with reason, intellect and will. Moreover, this analogy is supposed to be uniquely human: although non-human animals might enjoy some measure of reason and will, they nevertheless do not qualify as images

---

of God, because there is relevant difference between reason and will of humans and those of non-human animals. The nature of this difference is, of course, the key issue.

The extent to which sin blemishes or distorts the image of God is a controversial issue among defenders of STIG. All agree that sin has corrupted some of the capacities of the soul, usually will and desire, but this does not mean that the imago Dei has been completely lost. The operations of human cognition might very well be impaired, because of the disordering of desires, for instance, but at least some core functions still remain operational. For the purposes of my argument, I will leave these debates aside. It is enough for me that the capacities for reason and will are not completely lost in the Fall and remain operational in our sinful state as well.

Consider the Roman Catholic Catechism that makes many of the convictions of STIG explicit. First of all, it affirms the uniqueness of God-human relationship that STIG entails:

1703 Endowed with "a spiritual and immortal" soul, the human person is "the only creature on earth that God has willed for its own sake." From his conception, he is destined for eternal beatitude.

Human are unique both in the sense of being spiritual beings with reason and freedom, but also in that they have been created for a special kind of communion with God. Humans, in this sense, are the only animals capable of responding to God's call and can therefore be called *homo religiosus*, religious beings.

Second, the Catechism also confirms that the image of God in humans is intimately interrelated to the kinds of cognitive capacities humans have:

1705 By virtue of his soul and his spiritual powers of intellect and will, man is endowed with freedom, an "outstanding manifestation of the divine image."

Third, by virtue of possessing a soul that provides the capacities of reason and will, the human being can discern or perceive moral, aesthetic and religious truths:

33 The human person: with his openness to truth and beauty, his sense of moral goodness, his freedom and the voice of his conscience, with his longings for the infinite and for happiness, man questions himself about God's existence. In all this he discerns signs of his spiritual soul. The soul, the "seed of eternity we bear in ourselves, irreducible to the merely material", can have its origin only in God.

Finally, the potential to develop reason and will that make humans moral, intellectual and religious *persons* (instead of just beings or things) confers upon them a special kind of objective dignity and value:

357 Being in the image of God the human individual possesses the dignity of a person, who is not just something, but someone. He is capable of self-knowledge, of self-possession and of freely giving himself and entering into communion with other persons. And he is called by grace to a covenant with his Creator, to offer him a response of faith and love that no other creature can give in his stead.

As we can see from these passages, STIG highlights the fact the human cognition has a crucial place in our moral, rational and spiritual life. Interpersonal relationships characterized by faith,
trust and love require some level of reason and freedom to begin with. This applies both to human-human and God-human relationships. Similarly, human beings can only respond to God’s revelation only insofar as they have some basic capacities for reason and will: animals, rocks and plants cannot discern God in nature (beauty, morality) or in revelation.

STIG: Challenges and Modifications

Despite the prevalence of STIG in the theological tradition, most contemporary theologians have moved away from it. Other accounts of the image of God have been developed in its place. The functional account emphasises the mission and task of humans in creation. The relational theory locates the image in interpersonal relationships. The Christological account identifies Christ as the only image of God. In this section, I will address some criticisms that have been offered against STIG and suggest STIG can not only respond to these criticisms, but also incorporate into itself the best parts of its competitors.

In recent theological anthropology, there has been a strong push to recover the link between the image of God and Christology. It is Christ who is the perfect image of God and humans are images of God only insofar as they have been incorporated into Christ or participate in Christ. John Kilner, Ian McFarland and Oliver Crisp, just to mention a few, have developed the doctrine of the image of God in a Christological context. They maintain that STIG is mistaken in assuming that the image of God can be identified without any reference to Christ. Both Kilner and McFarland maintain that God has chosen to relate to humans through Christ and that all other aspects of humanity, like their function in creation, their ability to reason and form loving relationships, are grounded in Christ.

It has also been argued that STIG has problems with another Biblical issue, namely, that in Genesis the image of God is not identified with human cognitive capacities, but instead with the God-given mission of humans in creation. Human are not images of God by virtue of having certain kinds of minds, but because God has chosen them as stewards and caretakers of creation. STIG’s focus on rationality is thought to have arisen more from the Greco-Roman philosophical context rather than the older, Jewish tradition exemplified by the Genesis.

Matthew Levering develops a novel version of STIG that takes these worries into account. I am convinced that Levering is on the right track, so let me follow his argument here. Levering takes the criticism seriously. The Scriptures indeed teach, at least in part, that the image of God in humans have to with certain functions. Similarly, the New Testament as well as the theological tradition link the image of God closely to Christ. Finally, the image of God is intimately intertwined with our ability to form and maintain loving relationships. Granting these points, Levering argues that not only is STIG not undermined by them, but it makes sense of them better than the alternative accounts:

It seems to me that the best way to locate the image of God in each human, while retaining the royal rule emphasized by biblical exegetes and while insisting upon the relationality of the image, is to defend the view that the image of God is in the soul’s powers of knowing and loving, and thus fully manifested in Jesus Christ.⁵

Regarding the Christological issue, Levering points out that in addition to being the redeemer, Christ is also Logos, the Word of God. Following Athanasius, he develops the idea that the Word, essentially God’s reason and wisdom, is present and structures the created world. He writes:

If the Son is the Word, and humans are the image of the Word, then why should not this human image be associated uniquely with reason/word? As Athanasius points out, this association belongs to the New Testament’s canonical testimony to the Word (John 1) as Image of God (Col. 1:15). I agree with Athanasius that if the human image of God is connected uniquely with the Word, then it is connected with reason and freedom, intellect and will.⁶

Levering suggests that Christological accounts of the image of God that reject all image-bearing from human individuals without any connection to Christ suffer from a basic problem. How can non-Christians be images of God, if participation in Christ comes through only via the church? If humans are images of God only insofar as they participate in Christ and they explicitly reject Christ, it seems that such people do not reflect God at all. To solve this problem Levering argues that we should see humans bearing the image of God by virtue of having Christ-like cognitive capacities, like reason and will, that make love and moral life possible. Levering claims that, following Aquinas, humans and Christ are both images of God. In Christ, the image is perfectly present in his divine nature and expressed in his human nature. Christ exhibits perfect wisdom and love. He also exhibits the regal/functional role in his compassion and finally ascending to heavens and assuming an authoritative place in the cosmos. Human beings bear the image to a much lesser extent, but they are nevertheless called to participate and imitate Christ. Through this process they may become more Christ-like, more like God’s image.⁷ In this way, STIG can incorporate the Christological emphasis of so many contemporary accounts of the image of God without giving up its distinctive emphasis on analogy between God’s mind and human mind.

Regarding the imago Dei in Genesis, Levering discusses the work of Richard Middleton. According to Middleton, Genesis attempts to democratize the Mesopotamian idea that kings are images of God. King is the person through whom God’s will becomes manifest and is acted out in this world. An individual king is the image of God insofar as the king performs his role, fulfils his function. In addition, this role is partly cultic or priestly in the sense that the king is also a central figure in the worship of the gods. It is the king that represent humanity in the eyes of the gods. Genesis takes on this view of the regal/cultic role of kings but includes every human being in the image. Not only do all humans have this role of manifesting and representing God in creation, but all humans can also be considered priests in the sense that they too have access to God. Thus, all

⁶ Ibid., 153.
⁷ Ibid., 176-177.
humans are representatives of God in Creation and should take on the role of being functional middlemen between God and the rest of Creation.\(^8\)

Levering points out that the functional view has a problem, if no unique cognitive capacities are posited. If we associate image-bearing with royal rule, then those who rule or have the ability to rule are more in God’s image than those who have not. If we want the image of God to have a democratizing effect, we will have to admit that it is not the actual stewardship and rule that constitutes the image of God, but the capacity or ability to do so. Communities and individuals can choose not to accept the God-given mission to rule and become evil or there might be some other reasons, such as illness, that stops these abilities from actualizing. This interpretation, according to Levering, is supported by other parts of Genesis. In the story of Cain and Abel, for instance, Cain himself is neither wise nor loving, but the text makes clear that he is still an image of God. So, to bear the image of God it is enough to have the capacity to function as a steward of creation, not to actualize it.\(^9\)

Second, the regal/functional view sees human stewardship as mirroring God’s wise and loving dominion. God’s dominion is wise and loving, not coercing or violent in the sense that it calls its subjects to cooperation. Here we see how the regal/functional view ultimately rests on an analogy between human cognitive capacities and God’s capacities, just like STIG has maintained all along. Levering writes that “it is logically necessary that human nature possess intellect and will in order for humans to image God’s royal rule”\(^10\). The cognitive capacities for God-like dominion, thus, include reason, freedom and morality that make loving and caring stewardship possible.

STIG has also been subjected to moral and ethical criticism. Take, for instance, J. Wentzel van Huyssteen who writes:

An anthropology that finds the imaging of God only in the mental aspects of the human person inevitably denigrates the physical and directly implies that God, and the image of God, can be related only to theoretical analysis and control (cf. 19). Identifying a specific disembodied capacity like reason or rationality as the image of God by definition implies a negative, detrimental view of the human body – a move that inevitably leads to abstract, remote notions of imago Dei. In this sense substantive definitions of the image of God can rightly be seen as too individualistic and static.\(^11\)

Here we have a barrage of moral criticisms. First, there is the suggestion that if the image of God is identified with reason and will, this inevitably denigrates the non-mental aspects of our existence. Second, if imago Dei consists of having the ability to reason, this seems to suggest our primary relationship to the world and others is that of theoretical analysis and control. Finally, van Huyssteen echoes the sentiments of many contemporary theologians in suggesting that when STIG identifies the image of God with individual cognitive capacities, it fails to take into account the communal and political nature of humans. In other words, STIG entails an objectionable individualistic and atomistic view of humans.

Defenders of STIG have much to say as a response to such worries. First, there is no reason to think that STIG would somehow denigrate or give less value to our physical existence, because its emphasis on cognitive capacities. Even if we adopt mind-body dualism, there is no reason to

---

\(^8\) Ibid., 164-166.
\(^9\) Ibid., 172.
\(^10\) Ibid., 175.
deny that the soul is closely associated with our bodily existence. As I have argued elsewhere, various forms of contemporary dualism also converge on this point (as do the cognitive sciences, as we will soon see).\textsuperscript{12} Embodied reason, according to Levering, is affirmed by Thomas as well. Reason is not a disembodied capacity in the morally problematic sense. Instead, it is closely tied to the workings of our brain, bodies, environments and social contexts.

The second moral worry concerning STIG has to do with the claim that associating the image of God with reason makes our primary way of relating to the world a form of abstraction and control. Here again we see how the critics of STIG fail to take into account the ways in which reason is connected with freedom, morality and love. Following Aquinas, Levering claims that wisdom and love are not opposite to reason but in fact require it. The capacity to grasp moral truths and principles, to identify and pursue goodness and guide one’s behaviour accordingly (freedom and will) are intertwined with reason.\textsuperscript{13} As will become clear in the following sections, we can arrive at this view of reason through empirical means as well. If this view of reason is plausible, it is unwarranted to claim that our primary relationship to the world would be analysis and control. Indeed, even the most basic moral actions and loving relationships requires some form of reason and action control.

Contrary to van Huyssteen’s critique, STIG does not entail that the image of God in humans is somehow static and unchanging. Quite the opposite: Levering maintains that God calls and transforms humans in different ways at different times and places. So not only is the human cognition in a constant process of spiritual and moral development (acquiring virtues, for instance), it also develops biologically and psychologically over an individual’s lifetime. Furthermore, the individual herself can and should be active in this process God-given development towards reflecting the image of Christ more fully. Free, reasonable and conscious decisions are required that in turn form virtues and habits that have effects on behaviour as well as the functioning of the intellect itself. This involvement of both divine and human agency in the process of reflecting God more fully guarantees that the image in humans does not remain “static”, but is very dynamic.\textsuperscript{14}

Finally, I want to briefly address a worry that van Huyssteen does not explicitly mention but features prominently in many other critiques of STIG. Kilner, for instance, suggests that associating the image of God with certain cognitive capacities is problematic, because such capacities come in degrees. So, if someone has her cognitive functions impaired, she is not to be regarded as God’s image like someone whose reason is normally functioning. For this reason, we should not see the image of God as coming in degrees at all, but instead it should be all or nothing.

One way to respond to this is to point out that it is not just a problem for STIG, but it also besets both functional and relational views as well. People with disabilities might be completely unable to function as stewards and caretakers. They might be unable to form the kind of loving and wise relationships that the relational view requires. Such individuals would be much less images of God than those who can actually rule and engage in diverse relationships. In this sense, STIG is no worse off than its main competitors.

However, STIG might have a number of resources in its disposal to respond to this worry better than its competitors. First, Levering follows Aquinas and argues that even those individuals that suffer from significant bodily and mental disabilities can still be images of God in a very strong sense. This is possible, because even though such individuals might be unable to actualize their

\textsuperscript{12} A. Visala, “Imago Dei, Dualism and Evolutionary Psychology,” Zygon 49 (2014): 101-120.

\textsuperscript{13} See, e.g., O-P. Vainio, “Imago Dei and Human Rationality” Zygon 49 (2014): 121-134.

\textsuperscript{14} Levering, Engaging the Doctrine of Creation, 183-184.
reason and love in interpersonal relationships, they can still be in loving communion with God. Through God’s actions in Holy Spirit the rational soul (no matter what its conditions) can acquire infused virtues that make it possible to participate in God’s rule.\textsuperscript{15} Second, the fact that the soul is (at least to some extent) distinct from the body also guarantees that the image of God is present even in individuals that suffer from mental and bodily disabilities. It is not the actualization of reason and will that constitute the image of God in humans, but the potential to actualize them. All humans have the same kind of rational soul even if its capacities cannot be actualized because of some defect.

The defender of STIG need not adopt the kind of dualism that Levering inherits from Aquinas. I think it is enough that STIG can maintain a reasonable distinction between actualizing the abilities that reason enables and having those abilities potentially without actualization. Here we might seek help from Nicholas Wolterstorff. Wolterstorff suggests that we should locate the image of God not with actualized capacities, but with human nature itself. What Wolterstorff means by this is that all humans share in the same design plan or overall design. We could also say that human biological nature gives all humans similar developmental pathways. Some individuals fail, without any fault of their own, to actualize these pathways. However, this does not make them less human: they still have the potential to develop the capacities of reason and will. This potential is why all humans, not just those whose cognition is properly functioning, can be images of God.\textsuperscript{16}

In sum, the defenders of STIG will insist that loving interpersonal relationships, stewardship of creation and our relationship to Christ require a certain kind of cognitive machinery. Given what Aquinas (and the cognitive sciences) say about reason, it becomes clear what the mistake of the critics of STIG is: they take reason as a disembodied, abstract, individualistic and distinct faculty. Contrary to this, the defender of STIG can (and should) maintain that reason is not disembodied (in the morally problematic way), it is not directed towards abstract truths only and its closely linked to the functioning of other faculties. Indeed, it is reason that makes loving relationships, moral actions and the understanding of moral norms possible in the first place. Without these capacities, humans could not be moral and free, discover truths about the world and respond to God’s call in their conscience and in Christ. Without them humans would be incapable of performing the royal/functional role that God has given human beings in Creation.

Problems with Cognitive Uniqueness

I have now briefly outlined a contemporary form of STIG and suggested why it is very difficult to formulate the doctrine of the image of God without some reference to uniquely human cognitive mechanisms that make the relational, functional and Christological aspects of humanity possible.

Many theologians still seem to think that it is scientifically unwarranted to posit any kind of human uniqueness or distinctiveness, especially at the mental level. This is one reason for the widespread rejection of STIG: non-human animals and hominids preceding our species seem to be much smarter and able than we previously assumed. This seems to cast doubt upon all attempts to find cognitive distinctiveness or uniqueness in Homo sapiens. Psychologists Justin Barrett and Tyler Greenway put the worry like this:

\textsuperscript{15} Ibid., 174.
If homo sapiens are descended from other species that were not _imago Dei_ through a series of tiny, incremental steps, then it is reasonable to suppose that modern human population overlaps importantly with earlier species on any number of dimensions that one may want to identify with the _imago Dei_.

So, either the bar for human uniqueness is set so high that at least some currently alive modern humans fail to reach it or it is set so low as to include many non-human animals or at least a number of (now extinct) hominid species.

In order for STIG to be plausible, this worry has to be addressed. Traditionally, candidates for unique capacities have included at least one or more of the following: reason, intellect, freedom, morality and language. Levering himself discusses mainly symbolic language and what he calls “rational consciousness”. He locates their emergence in the explosion of symbolic cultural variation that occurred around 40,000 or 50,000 years ago. Apart from some general remarks about consciousness, Levering does not really tell us what reason is and what makes it unique.

What I want to do next is introduce some results and theories from the cognitive sciences that support the thesis of human cognitive uniqueness.

Before we go any further, we should examine the notion of “human uniqueness” a bit more carefully. As I have argued elsewhere, it is useful to distinguish at least three different types of uniqueness. First, we can take uniqueness mean the _uniqueness of abilities or the range of behaviours_. In this sense, we can say that humans are unique insofar as they can do things that no other species can do. I take this form of uniqueness is rather uncontroversial: humans can dance the tango, speak Klingon and play chess. As far as we know, none other being engages in such behaviours or is even capable of engaging in them. This form of uniqueness is uncontroversial also in the sense that most non-human species have a range of their very own unique behaviours. Some can fly, others can live under water, and so on.

The uniqueness of abilities or behaviours, however, is not really what STIG is after. Instead, STIG entails a commitment to _the uniqueness of cognitive mechanisms_ that make uniquely human behaviours possible. This form of uniqueness would entail that our abilities and behaviours are grounded or made possible by cognitive capacities and mechanisms that no other species has. Here the central question is whether humans might have unique cognitive mechanisms even though our cognition has incrementally developed non-human cognition. In what follows, I will mainly focus on this kind of uniqueness.

However, I want to mention a third form of uniqueness that has to with how cognitive mechanisms come about. We could call this _the uniqueness of origin_. One way to secure absolute uniqueness of origin would be to claim that human reason does not come about through biological evolution at all. Traditionally, some theologians have maintained that God specially creates each and every human soul through supernatural means. At conception, God adds souls to biological organisms to make them personal beings.

---

18 Levering, Engaging the Doctrine of Creation, 155-162.
I do not want to say that such a view would be in a necessary conflict with the cognitive sciences and the archeological record of our species. Nevertheless, the view I want to develop in this article assumes no supernatural, direct interventions in human cognitive evolution or cognitive development. For the purposes of this article, whatever rational souls are, they do not have supernatural origins, they are not in this sense unique. Rather, they emerge and develop in the same way as all our other features develop: through the interaction of our biology and physical, social and cultural environment.²⁰

It does not follow from this that uniqueness of origins should now be completely rejected. Quite the opposite: there are some reasons to think that the evolution of our species and the whole homo lineage has been driven by evolutionary forces that have had only a minor or non-existent role in the evolution of other species. Indeed, a number of contemporary scholars argue that the evolution of our lineage indeed exhibits some unique characteristics that mostly have to do with the extensive interactions between genes and culture and well as the cultural niche-construction. In this sense, human cognitive evolution has taken place in the context of culture and technology: our species responds to pressures not by developing biological adaptations, but by cultural and technological innovation.²¹

Culture and Relational Reason

Levering draws mainly from Aquinas in his account of human reason and its deep connections with other capacities, such as will and emotion. I will not rehash these arguments here. Instead, I will suggest that contemporary cognitive and evolutionary sciences point towards a certain kind of human cognitive uniqueness. This uniqueness has mostly to with the social and cultural nature of our reasoning mechanisms. It seems that the beneficial effects of ever-increasing group size and social diversity have been the main drivers of human cognitive evolution. Thus, it is no big leap posit that humans have unique cognitive mechanisms that prepare us for culture, flexible behaviour and the use of language. These are enormous topics, of course, and I will not be able to say anything sufficiently detailed. Nevertheless, I will provide some examples of the uniqueness of our reason.

Human cognitive evolution has been thoroughly cultural in nature. Levering suggests that culture cannot be part of what it means to be a God’s image, because primitive hunter-gatherers did not have culture.²² I think this is a mistake, because he raises the bar for culture very high. For Levering, culture comes into existence during the symbolic explosion circa 50,000 year ago when we begin to see the diversity of cultures and symbols typical of Homo sapiens. Contrary to this, many scholars think that culture goes much deeper in human history. Indeed, humans are the only species for whom hypersociality through culture has become the first and foremost survival strategy. Humans are the species that is characterised by their immense capacity to learn, to transmit the results of that learning and adjust their beliefs, behaviours and practices accordingly.


²¹For more on this, see A. Visala “Will the Structural Theory Survive Evolution?”. See also, J. Marks, Tales of the Ex-Apes: How We Think About Human Evolution (Oakland: University of California Press, 2015).

²²Levering, Engaging the Doctrine of Creation, 162.
This ability to learn and create cultural environments has fed back into our biological evolution itself so that it is appropriate to call humans the biocultural species.\textsuperscript{23}

Let me give a couple of examples of the ways in which human reason is social and cultural. First, a very general point. Evolutionary psychologists Dan Sperber and Hugo Mercier have recently argued human reason did not evolve for general-purpose problem-solving, but for social and cultural living.\textsuperscript{24} According to Sperber and Mercier, even logical inferences and other forms of abstract and conscious reasoning mainly take place in a social context. They write:

> Reason, we argue, has two main functions: that of producing reasons for justifying oneself, and that of producing arguments to convince others. These two functions rely on the same kind of reasons and are closely related.\textsuperscript{25}

The first of these functions is to facilitate the complex and varied social coordination and cooperation abilities that are the hallmark of our cultural species. Via the ability to recognise good reasons and providing reasons for one’s own action, individuals learn what to expect from one another. It is precisely this ability of giving of and expecting reasons that enables our varied practices of moral responsibility, blame and praise. The second function is that of argumentation. Argumentation and public reasoning are, for Sperber and Mercier, a way to create and foster trust and enhance communication. We have reason so as to convince and gain the benevolence of those who do not yet trust us.

Such a view of reason contrasts heavily with the more traditional view of reason as a general-purpose problem-solving mechanism aimed at finding out the truth in all domains of life. Sperber and Mercier call their alternative model of reason interactionism to highlight that human reason is, first and foremost, a form of social competence. Sperber and Mercier provide strong ammunition for defenders of STIG. Human reason is indeed special but not in the morally problematic way. Rather than being geared towards abstraction and control, it is mainly for forming and maintaining uniquely human relationships. It enables shared ideas, taking responsibility for one’s actions and the development of trust and cooperation.

In a recent article, psychologists Justin Barrett and Matthew Jarvinen offer a promising candidate for a uniquely human cognitive mechanism: the Higher-Order Theory of Mind (HO-ToM).\textsuperscript{26} Barrett and Jarvinen argue that modern humans have a unique cognitive mechanism that enables them to attribute complex mental states to themselves and other persons. It is this capacity, they maintain, that makes it possible to engage in uniquely complex social interactions. By enabling humans to understand and take into account the mental states of others, it also undergirds thinking about God’s intentions and, thus, making it possible for humans to acknowledge and respond to God’s revelation and love. Such a cognitive mechanism, for Barrett and Jarvinen, would be a good candidate for being part of the image of God.


\textsuperscript{25} Ibid., 8.

The basic idea behind the Theory of Mind system can be outlined as follows. Some non-human animals might have basic, first-order ToM, which is the ability to predict and explain the behaviour of others by positing basic internal states, such as intentions, beliefs and desires. These mental states have specific content that in turn explains the behaviour involved. In this sense, I can understand that Justin is moving towards the other side of the road, because he wants to get to the other side. Second-order ToM is the ability to attribute mental states, which content refers to the content of other mental states, first-order mental states. In this sense, I can say that Justin crossed the road, because he believed there to be seeds on the other side, but Justin was mistaken. It seems that adult humans also have also third (or perhaps even fourth) order ToM: I can understand that Justin believes that I falsely (in his mind) believe that there are no seeds on the other side of the road. The cognitive mechanisms that make the formation and processing of second and third order mental states are what we call higher order ToM.27

It is unclear to what extent non-human animals (and human babies) have first-order ToM. Michael Tomasello has provided some evidence that certain other species, such as chimps and bonobos, might have rudimentary first-order ToM.28 Nevertheless, there is no evidence that non-human animals would have second or third-order ToM. If this is true, it would explain why only homo sapiens are able to form the kinds of complex relationships that we do not see in non-human animals. Human interpersonal relationships include the identification and recognition of the mental states and emotions of others as well as the complex ways in which we respond to them.

Not only does HO-ToM allow for loving relationships, it also enables a wide range of moral and religious abilities. Without HO-ToM, we could not form and understand collective intentions, shared beliefs and shared attention. Barrett and Jarvinen refer again to the work of Tomasello, who has argued that human cognition exhibits very early on a distinct capacity for shared attention and collective intentionality. These capacities contribute crucially to the development of morality, reasoning and language.29 Without such mechanisms, I could not understand that your beliefs might refer to the same object as my beliefs. I could not even direct my attention to the same object as you do: I could not realize that I have a relationship with the same god as you do, if I am unable to represent the content of your beliefs and sharing attention with you.

Following recent developments in cognitive science of religion, Barrett and Jarvinen also suggest that without HO-ToM there could not be religion in the way we understand it. Religious life requires the ability to form collective intentions, shared attention and moral norms. Cognitive and evolutionary study of religion suggests that religion is not only natural for humans, but also uniquely human.30 Finally, as Tomasello has argued, HO-ToM is crucial for morality as well. Without the ability to understand and form collective intentions and shared attention, I cannot evaluate my beliefs and behaviours (as well as those of others) for their moral content. Indeed,

27 There is much work on ToM in cognitive science and evolutionary psychology. See, e.g., K. Andrews, Do Apes Read Minds: Towards a New Folk Psychology (Cambridge: The MIT Press, 2012).
28 Tomasello, A Natural History of Human Thinking.
Tomasello suggests that complex theory of mind is necessary for the formation and operation of shared moral norms and duties.\textsuperscript{31}

Reason and Freedom as Unique Adaptations for Cultural Life

The previous section briefly outlined some results and theories that point towards the uniqueness of our reason in its relational and social capacities. It seems that our reasoning mechanisms make it possible for us to form uniquely complex interpersonal relationships and complex sociality. What I want to suggest in this section is that in order for us to have such relationships our reason must be able to flexibly control our behaviour and respond to shared reasons, moral and legal norms as well as other shared expectations. This kind of reason-based action control is a set of mechanisms that enables us to act freely, morally and responsibly. Without such capacity for practical reasoning, we could not act freely and rationally.

Here I help myself to the work of psychologist Roy Baumeister and his research team.\textsuperscript{32} Baumeister is part of a larger trend, outline above, that locates human uniqueness in human cognitive capacities for complex culture and social life. He begins by pointing out that there is a clear difference between human behaviour and animal behaviour:

We assume that something about the way humans choose and act is different from what other animals do. Human’s greater flexibility and deliberate contemplation of alternatives make their behaviour arguably freer than the more rigid and short-term decision styles of other animals. This is the reality behind the idea of free will.\textsuperscript{33}

This difference is there because humans are cultural animals, culture is our survival strategy. From the differences between human and non-human animal behaviours (especially the diversity of behaviours), we can infer that there are differences in the underlying cognitive mechanisms as well.

Life in the cultural niche requires a significantly different and more complex cognition than that of other, non-cultural animals, even those who are capable of complex sociality. Our biocultural way of life is enabled by unique cognitive mechanisms. We are capable of taking into account the social, moral and legal expectations, norms and prescriptions that could be applied to our behaviours. We are capable of regulating our behaviour on the basis of such norms and expectations as well as taking responsibility for our actions.

Such abilities are cognitively very demanding. They require at least three kinds of cognitive mechanisms. First of all, they require a number of capacities that have to with sharing norms and expectations and identifying and evaluating reasons for action. Some of the basic cognitive systems outlined in the previous section, HO-ToM and joint attention, for instance, are crucial for this kind of work. But these mechanisms are hardly enough: what one also needs are cognitive mechanisms that allow for the imaginative creation and assessment of alternative future scenarios, that is, counterfactual thinking. Without a highly flexible counterfactual cognition, it would be impossible create and execute long-term planning, which is crucial for the survival of the

\textsuperscript{31} Tomasello, A Natural History of Human Morality (Cambridge: Harvard University Press, 2017).
individual and the whole group. Finally, and most crucially, the individual must develop an ability to control one’s actions and regulate one’s desires and emotions.

There is a mass of evidence for the uniqueness of all three kinds of cognitive systems. Regarding counterfactual thinking and alternative futures, Baumeister and some others have recently argued that our whole cognition is future-oriented.34 Cognitive scientists and psychologists have too often looked at cognitive processing from the point of view of the past. Emotion, memory and perception, for instance, are often seen as driven by past experiences. Contrary to this, argues Baumeister, perception is more about anticipating possible future events than receiving present signals. Memory is more about the construction of future possibilities than just storing representations of past events. Similarly, emotion is more about guiding future actions than reacting to extant conditions determined by past experiences.

One central cognitive mechanism in anticipating the future is consciousness. According to Baumeister, conscious processes are crucial for both long-term planning and the formation of distal intentions. These abilities are needed, for example, when individuals must choose between alternative courses of actions. Consciousness seems to make this kind of cognitive operation possible by enabling the running of offline, complex mental simulations. Such simulations also bring a certain amount coherence to other mental functioning by stimulating, gathering and integrating information from different sub-systems of the brain.35

Finally, let me make some points about the last set of cognitive systems required for life in culture, namely, reason-based action control. I do this, because not only do such systems seem uniquely human, they also highlight the connection between reason and will, rationality and freedom.

Baumeister argues explicitly that humans have free will: they have a unique capacity for reason-based action control or executive control. Human actions do not simply follow automatically from internal mental states, like beliefs and desires. Instead, there is a form of executive control that regulates what mental states are accepted as reasons for actions and how actions are executed. Although we have good evidence that our cognitive systems function more automatically than previously thought, we do not have good reasons to think that executive control of the conscious kind is a complete illusion.36 Baumeister agrees:

Free will in the sense of self-control and rational, intelligent choice comprises an important set of psychological phenomena and is plausible in terms of the evolution and construction of the human psyche. Quite likely human conscious processing emerged as a way to facilitate this new form of action control.37

On Baumeister’s view, conscious, executive control is like a supervisor of a large collection of sub-systems, not wholly unlike a chief engineer, who supervises, say, a large engine room of a ship. It

---

oftentimes does not initiate actions directly but it can, in the long run, shape and rework the sub-systems and how they react to different circumstances.\textsuperscript{38}

One of Baumeister’s main finding has been that this kind of executive control is somewhat limited and its functioning is related to other, unconnected cognitive systems. The main idea behind this \textit{ego depletion effect} is that exerting conscious action control draws upon a limited resource.\textsuperscript{39} The lack of that resource will in turn impair a number of different cognitive processes, including logical reasoning, self-control, creativity, conformity and less effective decision-making strategies. Executive action control is, therefore, possible but also costly.

\section*{Conclusion}

I have now given some reasons why STIG is still a viable option in the theological debate about the image of God. I happily acknowledge that I am still far from showing that STIG is in fact true. I have merely wanted to point out that STIG cannot be completely brushed aside; it is still a contender. I think Levering has managed to develop a form of STIG that is able to withstand criticism and take on board the central strengths of its competitors, the functional, relational and Christological accounts. To support this, I also provided some examples of recent work in the cognitive-evolutionary sciences that not only support the idea that human reason is unique, but also suggest that human reason is inherently cultural and relational. It seems that our moral, religious and intellectual life indeed requires special cognitive mechanisms. Without reason, we would not be able act freely and rationally, engage in loving and meaningful interpersonal relationships, perform our God-given stewardship in creation and, finally, being formed increasingly like Christ, who is the perfect reason and wisdom of God.


\textsuperscript{39} R. Baumeister, C. Clark, J. Luguri, “Free Will: Belief and Reality” provides a short introduction to these studies.