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13 John Sergeant and Antoine Le Grand on the Occasional Cause of Cognition

Han Thomas Adriaenssen

1. Introduction

Though mostly known by specialists nowadays, John Sergeant and Antoine Le Grand were prominent philosophers in seventeenth-century England. Le Grand was the author of a Cartesian *Institutio Philosophiae*, and towards the end of the century published an *Entire Body of Philosophy*, which outlined the Cartesian system in the format of a scholastic handbook.¹ According to contemporary historian Anthony Wood, Le Grand's work was received particularly well at the university of Cambridge (Wood 1692, 620), and it seems no exaggeration to say that Le Grand "can lay claim to being the most productive and influential follower of Descartes in England during the second half of the seventeenth century" (Hatfield 2013, 252).

For the most part of his career, Sergeant was best known as a defender of Catholic oral tradition against the Protestant claim that only the Bible can serve as the true rule of faith. In the later stages of his career, however, philosophical questions about ontology, cognition, and the extent of our knowledge became increasingly prominent themes in Sergeant's writings.² In a series of books published towards the end of the seventeenth century, Sergeant argued that the theory of cognition developed by Cartesians such as Le Grand was deeply problematic, and that in spite of Cartesian claims to the contrary, a broadly Aristotelian theory of cognition remained the most plausible option on the table.³

A dispute between two major representatives of the Aristotelian and Cartesian traditions of the seventeenth century, the debate between Sergeant and Le Grand has received surprisingly little attention in the existing literature. In this chapter, I will explore Sergeant's criticism of Le Grand's account of the causation of cognition. As we will see, Le Grand claims that "nervous motions" provide an occasion for the soul to form relevant ideas. According to Sergeant, this claim either leaves unanswered the fundamental question of how cognitive states are caused, or leads to a kind of occasionalism where the ideas we have at any given moment of

time are the result of a divine intervention. In the latter case, Le Grand's theory of cognition is open to a plethora of further criticisms. Most of these criticisms are metaphysical in nature, but as I will argue, Sergeant also has religious reasons to be concerned about this kind of view. As we will see, Sergeant believes that if our ideas become the result of divine intervention, the door is open to a dangerous form of "enthusiasm" or fanaticism in matters of faith.

The chapter proceeds as follows. Section 2 introduces Le Grand and his views on the causation of ideas. Section 3 turns to Sergeant, and outlines his reading of Le Grand. Section 4 details some of the metaphysical objections Sergeant raises against his opponent, while Section 5 explores the charge of enthusiasm levelled against Le Grand. Section 6 sketches the alternative account of cognition Sergeant proposes, and points out some limitations of this account.

2. Le Grand on the Causation of Cognition

In spite of its title and organization, Le Grand's *Entire Body* of Cartesian philosophy is not *just* a handbook of Cartesianism. In many ways, the work also reads as a "summa" of early modern science or natural philosophy. Throughout the work, findings and experiments of contemporary scholars receive short summaries, and are then woven into the thread of the overall Cartesian narrative. In his defense of organic preformation, for example, Le Grand harks back, not only to Malebranche, but also to Dutch anatomists such as Johan De Graaf, the discoverer of the ovarian follicles; the Dane Nicolas Stensen; and the Irish physician Bernard Connor.⁴

For his account of sense perception, too, Le Grand gratefully draws on some of the most recent scientific findings in the field. Take, for instance, the sense of touch, which according to Le Grand is the most common sense of all, in that all other modes of cognition can be described as so many ways of our body to make contact with other bodies. The most important recent contribution to our understanding of this general sense, according to Le Grand, was by the Italian microscopist, Marcello Malpighi, in his 1665 treatise *De externo tactus organo*.

There, Malpighi summarized some of the earlier experiments he had carried out on the tongues and lips of animals. In these organs he had detected dark spots, which under a microscope revealed themselves as pyramidal structures of nervous tissue. He interpreted these pyramidal structures as nerve endings functioning much in the way of taste buds. Now, in some of the most sensitive parts of these animals, Malpighi reported, similar nervous pyramids could be found. Thus, the delicate material of a horse's foot contained a structure of nerve endings that, according to Malpighi, served as tactile receptors much in the way in which the similar nerve endings in the tongue had served as taste

receptors. It was this texture of nerve endings that, according to Malpighi, was the real organ of touch:

From these repeated experiments, I plausibly deduce that, just as the organ of taste is activated by the greater and wider buds observed in the tongue on another occasion . . . likewise from the rich texture of more and greater nerve endings, and the fact that they are found in those organs in which animals are most affected by tactile stimuli, but also in other regions where the sense of tact exercises its powers, it is sufficiently clear what the organ of touch consists in.⁵

As the nerve endings that constituted the organ of touch were stirred, this motion would be carried to the brain, which process Malpighi described by means of a Stoic analogy. According to the Stoics, the human soul was like an octopus, the principal part of which by means of its seven remaining arms reached out to the five external senses, the genital parts, and the vocal system. Malpighi denied that the soul was partitioned in this way, but did use the octopus image to describe how the brain was connected with the sensory organs by means of the nervous system:

We can more reasonably say that the brain has the nature of an octopus, as the nervous extensions that function as long and extended arms that make external itches and motions known to it via the stimuli that affect them.⁶

Le Grand knew Malpighi's work on the organ of touch, and summarized it in his *Entire Body*:

Our *Modern Anatomists* fix the Organ of *Feeling* either in the *Skin*, the whole *Substance* whereof is *Nervous*, or in some *Bodies* that lye between the *Skin* and the *Cuticle*, which with Malpighius they call the *Sinew*, or the *Nervous Nipples of the Skin*, which they take to be the primary and immediate *Organ* of the *Touch*, because these little *Nipples* or *Prominences* are found to be more in number, and larger in those parts of the *Body* that are endued with the most exquisite *Touch*, as the *Palm* of the *Hands*, and the *ends* of the *Fingers*, than in the other parts.

(Le Grand 1694, 287)

Like Malpighi, Le Grand believes that the motion that stimulates the nerve endings at any given moment are communicated to the sense of touch. The Stoic imagery is replaced by the perhaps more familiar Cartesian image of the nervous system as a system of cords with a kind of cerebral bells attached to them, but the overall point remains the same:

Which *nerves*, whenever they are somewhat forcefully shaken, immediately draw the parts of the *Brain*, as when a *rope* is pull'd, the *Bell* which is at the end of it *sounds* immediately.

(Le Grand 1694, 287)

The sounding of these bells functions as a signal to the soul, which resides in the brain, and “receives a *sense* of the thing which hath moved the *Nerves*” (Le Grand 1694, 287).

With this last sentence—“the soul receives a sense of the thing which hath moved the nerves”—Le Grand passes over what certainly is one of the most intricate parts of the puzzle of perception. How is that nervous stimuli lead to conscious states in the immaterial soul? According to one of the opening chapters of the *Entire Body*, motion in the nervous system serves as an “occasion” for the production of a relevant idea by the soul itself:

It is certain that no Representations of Material things come to our *Mind*, save only occasionally; that is, forasmuch as the *Motions* made in our *Brains* (for nothing but *Motions* can affect our Senses) do give the *Soul* occasion of forming several Notions, which without them it would not do.

(Le Grand 1694, 7)

Whenever we engage in sensory representation, then, nervous stimuli occasion the soul to cause a relevant effect. But how does that work, and what does it mean for nervous stimuli to “occasion” the production of a mental state?

3. Sergeant on Le Grand as an Occasionalist

According to Sergeant, for nervous stimuli to occasion a mental state cannot be for the stimuli to cause the state in any way. For as Le Grand himself had claimed in his *Dissertatio de ratione cognoscendi*, “every effect is similar to its cause.”⁷ Now Le Grand himself had little to say in the *Dissertatio* about just what kind of similarity is at stake here. But for Sergeant, it is clear that if effects are to resemble their causes, bodily states cannot be causes of ideas. The ideas of secondary qualities, by the Cartesians’ own avowal, do not resemble anything in bodies, and in general, the ontological gap between states of the nervous system and states of the Cartesian soul is too deep for resemblance. Hence the question of what links a given pattern of motion in the nervous system to a certain state in the Cartesian mind remains open. As Sergeant puts it:

[The Cartesians] do not want this occasion to be a cause of the idea, because the two are not at all alike. But he asserts that every effect is

similar to its cause. Hence it remains to be found out what this occasion is, if not a kind of cause.⁸

So what is the relation between a certain pattern of motion in the nervous system A, and a given idea B? Sergeant briefly considers the possibility that the former might be a kind of “motivation” for the formation of the latter:

So that we need to assume that the soul reasons as follows: I observe that I am now being stimulated by motion in the nerves. So I must not forget to exercise the faculty I have to form ideas, and form this or that idea.⁹

On this view, the soul as it were “reads off” the states of the nervous system, and then goes through something like the following inferential process:

- i. The nervous system is in state A.
- ii. If the nervous system is in state A, idea B needs to be formed.
- iii. Idea B needs to be formed.

But Sergeant offers two objections to this view:

1. It is not at all clear why the mind would conclude that B needs to be formed given A. In the absence of any kind of similarity between A and B, it seems that any other idea could have been just as fitting a response to the occurrence of A.¹⁰
2. If the mind is to reason that B needs to be formed given the state the body is in, B features in its reasoning. Hence the soul must already possess B.¹¹

Now if the soul already possesses B, it does not acquire B when it proceeds to form B. Now all by itself, this need not be a problem for Le Grand. It need not be a problem, because like Descartes, he is not committed to the view that all ideas are indeed acquired. In fact, Le Grand seems to hold that most of our ideas are in some sense innate. The ideas of color and smell are innate, because distal bodies do not have colors and smells as perceived by us that we could receive from them. Perfect geometrical figures are not to be found in the external world either, so our ideas of them, too, must have been innate with us rather than received from without. The ideas of mind and body are innate as well, and the same goes for abstract ideas such as true and good, which could not have been imprinted upon us by the motion of external bodies (Le Grand 1694, 328).¹²

Again like Descartes, Le Grand does not believe that innate ideas are actually occurrent from early childhood onwards. To say that an idea

is innate for Le Grand simply is to say that the mind has a disposition to come to entertain that idea.¹³ And with this dispositional account of nativism in place, we can begin to see more clearly the force of the second line of criticism Sergeant levels against his opponent.

Suppose that B is not an innate idea. In that case, the soul does not possess B prior to forming B. Yet if the soul is to reason that forming B is fitting given the state the body is in, it needs to already possess B, and we have arrived at a contradiction with the initial assumption that B is not an innate idea. Now suppose that B is among the innate ideas. This means that, prior to the formation of B, the soul has a disposition, but not that B is in fact occurrent. Yet it seems that in order for the mind to reason that, given the state the body is in, B needs to be formed, it is not enough that B be dispositionally available to the soul. Indeed, if B is to feature in an inference like (i)–(iii) above, it seems that B would have to be occurrent, and thus we have arrived at a contradiction with the initial claim that B is innate in the innocent way in which Le Grand wants it to be innate. Whether or not B is among the innate ideas then, it seems that B needs to be occurrent even before it has been formed by the soul. And this indeed seems to put the cart in front of the horse.

Sergeant concludes that we still lack an account of how A leads to B. To speak of A as the “occasion” for the soul to form B simply is not enough:

I admit that I do not know what this occasion contributes, or what it means.¹⁴

But if we have not been able to identify a causal nexus between A and B so far, Sergeant argues, it seems Le Grand will have to take recourse to God to supply the missing link. According to Le Grand, that a given pattern of motion leads to a certain idea,

depends on the divine will only, just as it depends on the human will that this or that word signify this or that.¹⁵

God’s will, in other words, is what connects A to the occurrence of B. But this claim stands in need of further interpretation.

On one reading, it says that God has subjected the soul to a law such that, if A occurs, the soul forms B. I will call this the nomological reading of the claim that God provides the missing link between A and B. On this account, there no longer is a question as to how the soul decides to produce B. It does so because it is subject to a law, and not because it somehow sees that forming B is fitting given the state the body is in. Also, it seems that laws can be obeyed even by devices that cannot represent these laws. A balance is subject to laws of nature it does not represent. Hence it seems that, in order for the soul to be subject to a law commanding the formation of B given A, it need not be able to represent that

law, and hence to possess B before it is entertained. At any rate, there no longer seems to be a need to postulate B as an occurrent idea prior to the formation of B.

On a second reading of the claim that God provides the link between A and B, God wills that B occur whenever A does. Since God brings about whatever he wills, this second reading says that at the occasion of the presence of A, God with an act of his will brings about B. I will call this the occasionalist reading of the claim that God provides the missing link between A and B. This occasionalist reading has the same advantages as the nomological reading. If God brings about the occurrence of B, the soul does not need to decide to produce B, and the question of how it would do this accordingly vanishes. Again, because the soul need not decide that producing B is fitting given the state the body is in, there is no need to postulate that B is somehow occurrent even before it is entertained.

Note that, as stated here, the two readings are not mutually exclusive. Indeed as stated above, the nomological reading leaves open what is perhaps the most important question, namely the question of just how the law that connects A and B is enacted. Now it seems that one answer here could be that, every time A occurs, God wills that B occurs. On this view, B is brought about by the will of God every time A occurs, which brings us back to what I have termed the occasionalist reading of the general claim that divine volition provides the missing link between A and B.

For Sergeant, it is clear that, if it is to do any work for Le Grand, this general claim needs to be read in an occasionalist key. For given an occasionalist reading, the general claim that divine volition provides the missing link between A and B identifies a causal agent that guarantees that B occurs whenever A does. Given an occasionalist reading, in other words, the general claim provides just what had been missing from Le Grand's account so far:

Because the Cartesians say that these motions are entirely dissimilar to the resulting mental states, these motions are mere occasions rather than causes, so that we cannot perceive or cognize anything in particular . . . unless God steps in and repairs this interrupted chain of natural causes . . . , and does so each time we engage in any kind of cognition.¹⁶

Sergeant believes that there are many things wrong with this view, but before we look at what these things are, it is good first to ask whether Sergeant is being fair to Le Grand in reading him the way he does. In other words, are there good reasons to believe that, according to Le Grand, divine intervention is needed each time we get from nervous stimuli to entertaining an idea?

In his *Censura*, a reply to Sergeant, Le Grand has rather little to say on the issue, and limits himself to the following:

It is the will of God that has connected body and soul in such a way that, on the occasion of the species . . . that are formed in the brain, the soul forms ideas.¹⁷

The language here, as in the *Dissertatio*, suggests that it is the soul that forms ideas in itself at the relevant moments, not the divine will. Even so, there are reasons to think Sergeant had a point when he held Le Grand to be committed to a structural divine intervention in the causation of our ideas.

To see this, it will be useful to briefly return to a discussion early on in the *Entire Body*. There, Le Grand offers what has come to be known as a “Continuous Creation Argument.” On this argument, for God to conserve the things he has created, is for him to recreate them at each moment of time. Here is how Le Grand presents that argument:

Besides, because the Parts of *time* have no necessary dependence on each other, neither doth it follow that because a *thing* is now, it will be the next Moment: Therefore to the end it may continue to *exist*, there must be some *Power*, which may each Moment reproduce it: but no such *Power* is in the *Creature*, and therefore there must be some *Being*, whose *Nature* includes *Existence*, and which is the *Cause* why the thing that hath existed hitherto, doth continue to do so.

(Le Grand 1694, 73)

For my body to continue to exist between t_1 and t_2 , an external power is needed to conserve it. But for that external power to conserve it, just is to recreate the body I had at t_1 at t_2 . The same goes for my soul. There is no reason intrinsic to it or to the two moments of time at which it exists in virtue of which my soul will continue to exist between t_1 and t_2 . Hence some external power is needed that conserves it, that is, reproduces my soul at t_2 .

Now there are at least two ways of understanding this continuous creation. On the first, God continuously recreates substances, but modes are products of substances and the interaction between them. On the second, God recreates substances, but this time with all the modes that belong to them at any given moment. There are reasons to believe that Le Grand was committed to this second view.¹⁸

When God first creates a substance, he creates it in a certain way. When God first creates a substance, in other words, he creates it with certain modes:

God is the Efficient Cause, not only of Substances, but also of their Modes.

(Le Grand 1694, 72)

But if to conserve a substance is to create it anew, it seems that whenever God reiterates the creation of a substance in order to conserve it, he will again create it with certain modes. Hence it seems that, at each moment of time, the way a substance is modified is the result of a divine act of creation.

Le Grand is explicit that this holds true for material and immaterial substances alike. Thus in the following passage, we are told that the cognitive states that modify the immaterial substance of our souls are the direct products of the divine will:

It is a mere prejudice of our Youth to imagine that the *Modes of Cogitation, Knowledge, Judgment, affections*, and other inward *Acts* of our *Mind* do less depend on the Divine Power, than the *Modes of Material and Bodily things*. Because whatever is not God, is of it self altogether nothing; neither can it exist but by his *will*.

(Le Grand 1694, 72)

This holds true for the soul at the first instance of its existence. But again, if to conserve a substance just is to create it anew, it seems that the cognitive states that modify the soul at any moment of its existence will be the products of divine creation.

This is a strong view to hold indeed. For if all the modes of the soul are products of the divine will, our volitions, too, will be products of divine action. But if that is the case, it becomes hard to see in what sense our will can still be said to be free or undetermined. Le Grand is aware of this outcome, but it does not lead him to soften his view. Thus he is not tempted to say that the volitional modes of the soul are somehow the joint product of the divine will and the activity of the mind, but instead emphasizes that it is not in our power “to Will or Act anything, which is not preordained by God,” and that “it is a difficult thing to reconcile the Divine Decree with the Liberty of Mans Will” (Le Grand 1694, 72).

In spite of Le Grand’s non-committing language in the *Censura* then, there is reason to believe he held, or was at least committed to, the stronger view Sergeant ascribes to him, and according to which ideas, and cognitive states in general, are produced by the will of God, and formed by the soul in a loose sense at best. But what is it that Sergeant finds so problematic about this position? In the next section, we will see that, according to Sergeant, the continuous creation doctrine with its concomitant account of the origin of ideas leads not only to a series of metaphysical problems, but opens the gates to religious enthusiasm as well.

4. Metaphysical Problems

According to Sergeant, Le Grand is committed to the general view that, at any moment of time, a substance is in the state it is in because God

willed that it was in that state. His first objection to this position is that it does not sit comfortably with the divine attribute of perfection. It does not sit easily with the divine attribute of perfection, because a perfect engineer would have made a world that can sustain itself, and the parts of which can bring one another from one state to another. An engineer whose continuous intervention is needed to keep his device going once it is built would be but a poor engineer indeed:

The Course of Nature is carry'd on by *Efficient Causes* and *Effects*, For since a First Cause being suppos'd who is *Infinitely Wise*, he Administers his Workmanship, the World, after *wisest* and *best* manner. . . . Nor can this be done, among an infinit variety of bodies, by any other means . . . but by making *Effects necessarily* follow from their *Causes*, since, if that were not, the Course of Nature would be at a stand, and need the Artificers hand at every turn to make it go on, which argues an Imperfection in the Workmanship it self.

(Sergeant 1696, 274–75)

The second objection Sergeant raises is that the continuous divine intervention he finds in Le Grand strips created substances of the very features that identify them as the kind of creatures they are.¹⁹ According to Sergeant, substances have causal powers to bring about effects proper to them. This is what identifies them as the kind of substances they are:

Every Body in Nature, is constituted such a Part of it, or such a *Body* by the Aptness it has to perform its *Proper* or *Primary Operation*.

(Sergeant 1700, 42)

Again, substances are distinct from one another to the extent that they are different agents, which play different causal roles. To make two substances distinct from one another, all that is needed is each of them be

a *Distinct Part* of the Universe. And what makes it a *Distinct Agent* in Nature, does also make it a *Distinct Part* of the Universe, and that which fits it for a *Distinct and Peculiar Operation*, makes it a *Distinct Natural Agent*.

(Sergeant 1700, 43–44)

On the view Sergeant finds in Le Grand, however, substances have no powers to bring about effects proper to them. They do not bring about effects in themselves, for at each moment of time, their being and the state they are in depends on the divine will. For the same reason, they do not bring about effects in other substances either. For their being and the state they are in, too, are the effect of the way God willed to intervene in the world.

But if substances are causal dummies that lack the power to bring about proper effects, they are deprived of the very features that, according to Sergeant, identify them and make them the sort of substances they are. Consider a fire, for instance.²⁰ According to Sergeant, fire brings about heat in other substances. This is in effect part of what makes it fire.²¹ On the view he finds in Le Grand, however, fire does no such thing. God may use the presence of a fire as an occasion to bring about heat in other substances if he so wills, but fire lacks the power to bring about heat in other substances, or even to sustain its own heat. On the view Sergeant finds in Le Grand then, the causal power to heat that made a fire the kind of thing it was is removed from it, and outsourced to God.

The human soul, too, would seem to be deprived of just those features that make it the kind of being it is. According to Sergeant, the human soul has three proper operations.²² The first is to form and entertain notions or concepts, the second is to combine these notions or concepts into judgments, and the third is to combine judgments into syllogisms. But on the view he finds in Le Grand, it does no such thing. The human soul does not go from entertaining a premise to entertaining a conclusion because it engages in an act of syllogizing. Rather, after it was in a state in which it represented a premise, God willed to recreate it in a state in which it represented a conclusion. The transition from entertaining a premise to entertaining a conclusion, then, is made by God, not by the soul. But if even the actions that would seem to be most proper to it are not actually carried out by the soul itself, it seems to end up deprived of the very features that identify it as a soul. In general, indeed, the account Sergeant finds in his opponent risks to make all created beings “good for nothing” and in doing so strips them of their identifying features. As Sergeant puts the point with regard to material substances in his *Metaphysics*:

Hence is seen in what consists the Metaphysical *Bonity* or *Goodness* of every Body . . . namely, That it is *Useful* for some Effect or other that proceeds from it as 'tis such an *Ens*; or for such an Operation as is Proper and Peculiar to it. Whence those *Cartesians* who deny Bodies to be *Causes* of any Effect in Nature . . . but only to be *Occasions*, which themselves say, are *No Causes*; and consequently do put them to have *No Operation*; do, by making them *Good for Nothing*; take away their Metaphysical *Bonity*; and *Bonum* being a Property of *Ens*, by consequence their *Entity* also.

(Sergeant 1700, 42)

Finally, Sergeant objects to Le Grand that, if the divine will is responsible for the existence of all substances and the states they are in, the course of nature becomes exceedingly hard to predict. Claims to know how substances behave in the future are claims to know the divine will

and what it will want in the future. In one word, they are claims to divine revelation:

It is not given to us to know anything about the divine will before the event in question has happened, except through a revelation.²³

Now perhaps, Sergeant remarks, those Cartesians who claim the benefits of a vision in God that gives them access to the divine ideas would happily claim revelation in their prediction of natural events as well. But his own view is that this reliance on divine intervention and revelation is precisely what makes the Cartesian legacy such a dangerous thing.

5. The Charge of Enthusiasm

In his *Raillery Defeated by Calm Reason*, Sergeant tells us that he “writ Philosophy to maintain the Interest of the Christian Faith, and not out of the vain Motive of being held a meer Philosopher” (Sergeant 1699, 7). Apparently then, Sergeant believed that the Cartesian way of ideas amounted to a religious threat. Why?

As Dmitri Levitin (2010) has recently argued, part of what worried Sergeant, was the fact that deist thinkers such as Matthew Tindal were using the psychology of ideas in their arguments against tenets of faith such as the holy Trinity and the transubstantiation. Now it is true that Sergeant worried about the link between deism on the one hand and recent theories of ideas on the other. Indeed, he says as much in an autobiographical letter to the Duke of Perth (Sergeant 1816, 102–3). However, the theory of ideas that English deists such as Tindal were drawing on was Locke’s rather than Descartes’. So what risk did the Cartesian way of ideas pose to religion, according to Sergeant?

A recurrent theme in Sergeant’s anti-Cartesian writings is the worry that the Cartesian theory of ideas is conducive to “enthusiasm”. Enthusiasm, in the seventeenth-century context, was a pejorative term often used to describe the attitude of men who in a structural way take their personal ideas and beliefs for products of divine inspiration. This attitude was regarded as dangerous. To call someone an enthusiast was to describe him as a self-proclaimed but false prophet, likely to put others on a road to religious heterodoxy.²⁴ The worry that the Cartesian theory of ideas would lead to enthusiasm was a worry that Sergeant shared with a number of other seventeenth-century critics of Descartes, including the Groningen professor Martin Schoock. According to Schoock, the Cartesian meditator revealed himself as an enthusiast when, building on his own clear and distinct ideas, he came to the conclusion that God himself existed in his mind:

When the Cartesian discovers the God that exists in himself by means of an idea, why does he not also, like the Enthusiast, draw these

conclusions? God is in me, and therefore I am in God, and therefore it is through God existing in me that I do what I do.²⁵

In England, the same worry was voiced by the classical scholar Meric Casaubon. In 1654, Casaubon published an influential *Treatise Concerning Enthusiasme*, in which enthusiasm was defined as

an extraordinary, transcendent, but natural fervency, or pregnancy of the soul, spirits, or brain, producing strange effects, apt to be mistaken for supernaturall.

(Casaubon 1654, 17)

According to Casaubon, all men are vulnerable to this kind of fervency, but philosophers particularly so. The Cartesian meditator is a case in point here. According to Casaubon, the Cartesian truth rule, according to which clear and distinct ideas can be trusted, is just the kind of deep confidence in one's own ideas that is likely to produce unwarranted claims to revelation. And indeed, this is just what happens when the meditator reaches the conclusion that God himself has a special kind of being in his mind. This claim in the *Meditations* smacks of the kind of "mystical theology" that one often finds in enthusiasts.

Descartes' reputation as an enthusiast was further strengthened by the publication of Adrien Baillet's *Vie de Monsieur Descartes*. In this work, Baillet related the three dreams that Descartes reported to have had during his stay in Germany in 1619. Here is Baillet, in the English translation of 1693:

He [Descartes] acquaints us, That on the Tenth of November 1619, laying himself down Brimm-full of Enthusiasm, and wholly posses'd with the thought of having found that day the Foundations of the wonderful Science, he had Three Dreams one presently after another; yet so extraordinary, as to make him Fancy that they were sent him from above.

Indeed, Baillet tells us that Descartes was so "warmed" with his enthusiasm, that "a Man would have been apt to have believed that he had been a little Crack-brain'd, or that he might have drank a Cup too much that Evening before he went to Bed" (Baillet 1693, 35–36). In works such as the *Method to Science*, Sergeant gratefully drew on these and similar passages in Baillet to frame Descartes as a mentally unstable enthusiast.

But Sergeant built his case for Cartesian enthusiasm on more than just a few biographical anecdotes from Baillet. Among other things, he reiterated the point already made by Schoock and Casaubon that, when Descartes builds on his own clear and distinct idea to discover a God

with objective being in his mind, he behaves like a typical enthusiast. But what is more important in the present context, is that according to Sergeant, enthusiasm is inherent in the Cartesian account of the causation of cognition one finds in authors such as Le Grand. Here is his argument. The Cartesians deny that distal bodies can make impressions of the soul. Hence they will naturally be tempted to say that, on the occasion of certain bodily states and motions in the nervous system, the soul brings forth the relevant ideas from its own resources. As Sergeant puts it in an address to his own soul:

They will need endow thee with a Power to give *thy self* Knowledge, by thy producing *within* thy self, little Spiritual Mirrours, call'd *Ideas*.

(Sergeant 1700, 98)

Now according to Sergeant, this view naturally leads to the self-congratulatory attitude typical of enthusiasm. For combined with the Cartesian truth rule, the view that ideas originate from the soul itself will instil a fundamental trust in the products of one's own mind.

But matters are even worse than this. For as we have seen above, the view that the soul will bring forth the relevant ideas on the occasion of certain bodily states, natural as it may come to the Cartesians, falters according to Sergeant. In the absence of a natural connection or resemblance between bodily states and ideas, the soul will not know which ideas to engender on which occasion. Moreover, there is no account of what natural *cause* leads the soul to produce an idea on the occasion of a given bodily state. As a result, Cartesians such as Le Grand resort to *supernatural* rather than natural causes. On the occasion of a given bodily state, that is, God intervenes to ensure the relevant idea is brought about. Thus God becomes the author of our cognitive lives. And it is precisely this attitude, Sergeant believes, that makes Cartesian psychology fundamentally akin to enthusiasm. The Cartesians, he writes in *Solid Philosophy*,

are connaturally disposed by their Principles to be *Fanaticks in Philosophy*; and to entertain as wild Fancies, as the Deepest *Enthusiasts*.

(Sergeant 1697, 378)

Indeed, exotic as Malebranche's Cartesianism may seem to many of us, according to Sergeant the vision in God did little more than unpack the enthusiasm that was inlaid in the Cartesian psychology, and its failure to explain how distal objects act on us to produce ideas that pertain to them. In Sergeant's own words: the Cartesian method leads to "*Enthusiasm*, and Enthusiasm to *Visions* and *Revelations*, so that *Malbranche* did but follow his Masters Example" (Sergeant 1697, preface).

6. Sergeant on the Mechanisms of Cognition

But if Cartesian accounts of the causation of cognition fail, what is the alternative? Sergeant develops his own position from within a hylomorphic framework. Bodies are compounds of matter and form, and for a subject to cognize a body, is for her soul to receive the form of that body without its matter. Just as a portion of matter becomes red when it receives the form redness, a subject becomes cognizant of redness when her soul receives this same form of redness.²⁶

But how does the soul receive the forms of distal bodies? Sergeant's answer to this question builds on the theory of cognition of his friend Kenelm Digby. In his *Two Treatises* of 1644, Digby had argued that distal bodies emit minute bits of matter he called atoms. The emission of such atoms is what allows bodies to interact with other bodies in their environment, including the bodies of human beings. Thus, when atoms coming from a distal body attain our sensory organs, they affect the nerves that end in those organs. For example, when atoms coming from a red body attain the eye, they affect the optic nerve.

Because the optic nerve runs from the eye to the brain, the affection of the optic nerve by a distal object causes an affection of the brain by that object. This invites comparison with Descartes, but Digby stresses that his account differs in an important way. According to Descartes, when a distal body affects the optic nerve, what gets carried to the brain is the motion caused by that body in the optic nerve. According to Digby, however, what gets carried to the brain, are the very atoms that came from the distal body and affected the optic nerve. As he explains in the *Two Treatises*, the nerves are hollow tubes, and when a nerve is affected by atoms coming from a distal body, the wind of animal spirits that flows through the nerves will carry these atoms with them, and transport them to the brain:

All which little bodies . . . when they are once gott in, must needs mingle themselves with the spirits they meet with in the nerve: and consequently, must goe along with them up to the braine.

(Digby 1644, 278)

This difference with Descartes is important, Digby claims. After all, atoms are the kind of things that, once they reach the brain, can be stored in its ventricles. Thus Digby thinks he can account for the way in which information coming from external objects is retained in our cognitive system. Motion, by contrast, does not seem to be the kind of thing that can be stored in the brain after the distal body that brings it about has receded (Digby 1644, 282). Thus Descartes lacks a good account of the memory functions exercised by the brain.

When Digby says that atoms coming from distal bodies affect the brain, he has in mind a very specific part of the brain. Indeed, when

atoms are carried to the brain via the nerves that end in our sensory organs, they affect the *septum lucidum*: the thin membrane that separates the two lateral ventricles of the brain. Situated in the middle of the brain, Digby takes this membrane to be the centre of its cognitive activity, and describes it as the “seat of knowledge.” Like Descartes’ pineal gland, the seat of knowledge in Digby serves as the principal point of connection between body and soul.²⁷ It mediates between body and soul, in the sense that, when the seat of knowledge is affected by a distal body, the form of that body comes to configure, and exist in, the soul.²⁸

Now, Digby was agnostic as to how exactly the seat of knowledge performed its function as an intermediary between body and soul. That is, he did not claim to know how an affection of the seat of knowledge by a distal body led to the reception of the form of that body by the soul:

If you aske me how this cometh to passe? And by what artifice, bodies are thus spiritualized? I confesse I shall not be able to satisfy you: but must answere, that it is done, I know not how.

(Digby 1644, 394)

Sergeant takes over the core of Digby’s account of cognition. Distal bodies emit atoms or effluvia, which affect our sense organs and are carried to the brain via the hollow tubes that form the nervous system. Once they reach the central location Digby had called the seat of knowledge, the form of the distal body is received by the soul.

But where Digby had remained agnostic about the mechanisms underlying this last step, Sergeant tries to say a bit more. According to Sergeant, body and soul form a close union, but the union is nowhere closer than in the part Digby had identified as the seat of knowledge. This part in fact combines the natures of body and soul, and as such is neither wholly corporeal nor wholly spiritual:

Therefore there must be some Chief *Corporeal* Part in Man, which is *immediately* united with the *Soul*, as the *Matter* with its *Form*, and, therefore, is Primarily *Corporeo-Spiritual*, and includes both Natures. Whence, when that Part is affected, after its peculiar Nature, *Corporeally*, the Soul is affected after *its* Nature, that is, *Spiritually*, or *Knowingly*.

(Sergeant 1697, 66)

Because the seat of knowledge in a way unites in one the natures of body and soul, a change in this part of the brain and a change in the soul are but two sides of the same coin. Hence the affection of the seat of knowledge by atoms coming from a distal object cannot but go hand in hand with a parallel change in the soul, which thereby takes on the distal object’s form.

Does this appeal to corporeo-spirituality suffice to explain how cerebral affections by a distal body lead to the reception of the form of that body by that soul? According to John Locke, the answer to that question is a firm no. Locke made detailed annotations in his personal copy of *Solid Philosophy*, and shortly after its account of how the seat of knowledge is supposed to mediate between body and soul, Locke wrote down the following remark:

And now let the reader consider whether by reading what he finds from §6 hither he has not got a perfect clear knowledg how material things get into the imateriall soule.

(in Sergeant 1697, 76)²⁹

Sergeant has claimed that an affection of the brain by atoms coming from a distal object will lead to a parallel change in the soul, but according to Locke, he has offered no real explanation of how this parallel change comes about. Earlier on, Locke had already wondered what it could mean for the seat of knowledge, a part of the brain, to be corporeal and spiritual at the same time (in Sergeant 1697, 66).

A strict dualist who admits of two kinds of being only will have a hard time making sense of the idea that any being could somehow combine the natures of body and soul. With his notion of a seat of knowledge, Sergeant seems to envision a third way that does not fit a strict dualism of body and soul. But even for an Aristotelian like Sergeant, who opposes a strict dualism of body and soul, the question of just what it could mean for a part of the brain to be corporeo-spiritual poses no less of a puzzle.

According to Sergeant, body and soul relate as matter and form, and we must not think of body and soul as two substances that each have their own identity apart from the other:³⁰

This Natural Compound called *Man*, is truly *One Thing*, and not aggregated of *more Things Actually Distinct*; since the *Form*, called the *Soul*.

(Sergeant 1697, 65)

It is wrong to think of body and soul as two substances each with an identity on their own apart from the other, because on the one hand, the soul is incomplete without the body, and on the other, the body would not be a human body were it not for its union with the soul. A body that is not united with a soul might look like a human body, but just like a statue, it would not be one.

Now perhaps an Aristotelian thinker who holds this view could say that, because body and soul relate as matter and form, and because the identity of the body as a human body is a function of its union with the soul, the human body is somehow corporeo-spiritual. But even if we were to grant the Aristotelian this way of speaking, being corporeo-spiritual,

on this construal of the notion, would be a characteristic of the human body as a whole, not a prerogative of one of its parts. The notion of corporeo-spirituality that Sergeant wants to reserve for a specific part of the brain, then, does not sit well with either a strict dualism of body and soul, or an Aristotelian hylomorphism where soul relates to body as the form that identifies it as the kind of thing it is.

7. Conclusion

Locke's dry irony is justified. With the central notion of corporeo-spirituality unexplained, it seems unlikely that any reader would have found in Sergeant a clear account of "how material things get into the immaterial soul." But even if Locke may have been rightly underwhelmed by the account he found in *Solid Philosophy* of how bodily stimuli lead to the reception of a form in the immaterial soul, it would be unfair to Sergeant to leave matters at that. For as we have seen, in works such as *Solid Philosophy* and the *Method to Science*, Sergeant offers a valid diagnosis of what is problematic about the Cartesian theories of thinkers such as Le Grand. Failing to identify a natural nexus between bodily changes and mental representations, they resort, or need to resort, to supernatural causes for our ideas. And in doing so, Sergeant fears, they open the doors to an enthusiasm according to which God is the direct author of our mental lives. In order to block this road to enthusiasm, Sergeant seeks to develop a naturalistic account of the causation of our cognitive acts. Developing such an account involves explaining how bodily states lead to cognitive states in the immaterial soul that pertain to distal objects.

And here Sergeant fails, like pretty much every one else before and after him who has chosen not to remain agnostic. And remaining agnostic about how bodily changes lead to parallel changes in the soul was not an option for Sergeant. For his friend, Kenelm Digby, remaining agnostic about the mechanisms of body-soul interaction in cognitive processes perhaps was a perfectly valid position to hold. But having just charged the Cartesians with a failure to provide a naturalistic account of the causation of ideas, Sergeant could not remain silent. He had to make an effort to show that there are ways to account for the causation of cognition without resorting to the kind of divine intervention he thinks Cartesians like Le Grand inevitably have to place at the centre of their cognitive theories. If he failed here, it is because the perhaps smoother path to agnosticism had been blocked off by the valid problems he himself had raised for Cartesian contemporaries such as Le Grand.

Notes

1. Cartesians such as Régis in France and Le Grand in England used the scholastic handbook format to facilitate the entrance of the Cartesian system in university curricula. On this strategy, see Ariew (2014), 201–10. For a brief overview of Le Grand's life and work, see Hutton (2015), 235, and also Easton (2016).

2. The most detailed study of Sergeant's philosophical writings and their context remains Krook (1993).
3. On this shift in focus in Sergeant's writings, see Southgate (2000), Levitin (2010) and Adriaenssen (2017), ch. 6.
4. On Le Grand on animal generation, see Adriaenssen 2018.
5. "Haec repetitis sectionibus deprehendi, ex quibus non improbabiler deducam, sicuti ex grandioribus et elatioribus papillis alias a me in lingua observatis, gustus organum elicitor ex peculiari situ, et nervorum protractu, ita ex copiosa harum papillarum congerie et copiosiori, grandiorisque, earum proventu in organis, ubi maxime Animalia tactus motione afficiuntur, ex earundem etiam propagine in reliquo ambitu, ubi tactus vires etiam exerat, adequatum tactus organum sufficienter haberi." Malpighi 1665, 23–24.
6. "[S]tatis tamen, relicta animae divisione, cerebro polypi natura congruentius adaptare possumus, cum extremis nerveis propaginibus, veluti oblongis exporrectis brachiis, externorum ictus et concussionem . . . ex inducta titillatione noscere valeat." Malpighi 1665, 26.
7. "Omnis namque Effectus suae Causis similis est." Le Grand 1698a, 75.
8. "Quam tamen occasionem non esse causam ideae voluit, cum sit ipsi omnino dissimilis. Effectum autem simile esse causae suae asserit par. 100. Quare investigandum nobis est quid sit occasio illa quae sub nullo genere causarum comprehenditur." Sergeant 1698, 132.
9. "Existimare debemus Animam hoc modo secum discurrere. Jam a motu in nervum me excitari percipio; unde moneor ut *Facultatem* meam ideas elicendi exeram, atque idcirco Ideam hanc vel illiam *eliciam*." Sergeant 1698, 133.
10. See Sergeant 1698, 133–34.
11. "At hoc ponit Animam habere *jam* in antecessum Ideam Determinatam de idea *illa* quam . . . elicere intendit." Sergeant 1698, 133.
12. Descartes at times suggests that all of our ideas are in some sense innate. Le Grand does not clearly commit to this strong a view. Even though at one point in the *Entire Body* he writes that "there is nothing in our *Idea*'s which was not first inbred our *Mind*," on the same page he seems to allow that the idea of motion, or those ideas "which have affinity with *motion*' could be imprinted from without." Le Grand 1694, 328.
13. Le Grand 1698a, 26–27.
14. "Fateor me nescire prorsus quid *Occasio* illa conferat, vel quem Sensum habere possit." Sergeant 1698, 133.
15. "[E]x solo scilicet Dei beneplacito, quemadmodum ex beneplacito Humano sit, quod voces hae vel illae hoc vel illud significant." Le Grand 1698a, 31.
16. "[C]um ponant Cartesiani Motus istos *omnino* esse *Dissimilis* Affectioni illi quae gignitur in *Mente*; ac, proinde non *Causas ejus*, sed *Occasiones* tantum esse, sit, ut nihil *determinate*, seu ut ab alio *Diversum*, percipere aut cognoscere valeamus, aut *Diversam* Animae *Affectionem* vel Ideam *elicere* vel *habere*; nisi Beneplacitum Divinum, interruptum hunc Causarum Naturalium Cursum suppleat et resarciat, . . . idque toties quoties Cognitione aliqua opus habemus." Sergeant 1698, 141.
17. "Sed sola dei voluntate ita connecti animam ac corpus, ut ex occasione specierum, . . . anima ideas eliciat." Le Grand 1698b, 97.
18. See also Clatterbaugh 1998, 108 for discussion.
19. On the identity of material substances in Sergeant, see Adriaenssen and de Boer (2019).
20. In Sergeant 1696, 275.
21. At this point an occasionalist could perhaps object that fire is fire in virtue of its inner structure. Even if fire lacks the causal power to heat and God is the only causal agent, what makes it fire is the fact that it has a structure of a

- certain kind, which God uses to bring about heat. Sergeant does not consider this kind of view.
22. These three operations form the topics of the first three books of Sergeant 1696.
 23. “nihil de voluntate Dei nobis cognoscere datur (nisi per revelationem) antequam eventus positus fuerit.” Sergeant 1698, 137. The argument here assumes that the divine will might change, and that if God has so far willed that fire be a source of heat, he might will otherwise in the future. It seems unlikely that Le Grand would grant Sergeant this assumption.
 24. On the charge of enthusiasm in Sergeant against Cartesian theories of ideas, see also Heyd (1995) 120–21, 128–30. See also Adriaenssen (2017), ch. 6.
 25. “Deum sibi inexistentem Cartesianus quis deprehendit per ideam, cur non ergo instar Enthusiastae sic etiam concludat: Deus in me est, et ego in Deo, ergo per Deum inexistentem Omnia ago.” Schoock 1643, 258–59.
 26. A form as it exists in the soul is what Sergeant calls a notion. His theory of notions, he believes, has considerable advantages over the theories of ideas in modern authors such as Descartes and Locke, which he takes to lead to skepticism. For discussion, see Adriaenssen (2017), ch. 6.
 27. Digby’s account of the seat of knowledge is distributed over various chapters of the *Two Treatises*. Chapter 35 of the First Treatise describes the *septum lucidum* as the locus of the common sense, and compares it with Descartes’ pineal gland (Digby 1644, 296–97). The term “seat of knowledge” is first used in Chapter 32 of the First Treatise (Digby 1644, 275).
 28. Digby is committed to the Aristotelian account of cognition as a kind of assimilation, in which the subject of cognition somehow takes on the nature of its object: “What then can we imagine, but that the very nature of a thing apprehended, is truly in the man, who apprehend it . . . And that man, by apprehending, doth become the thing apprehended?” Digby 1644, 356.
 29. On Locke’s annotations to *Solid Philosophy*, see Yolton 1951.
 30. Although Sergeant with his account of cognition in terms of effluvia and a seat of knowledge in general hews closely to Digby, it is not clear that the two agree on mind–body union. In works such as his *Observations upon Religio Medici*, Digby described the soul as the “substantial forme” of the body (Digby 1661, 82). But in the *Two Treatises* he happily aligned himself with “Avicenna in his booke *De anima et Almahad*, and Monsieur des Cartes in his *Methode*” in claiming that “man is compounded of some other substance besides his body.” Digby 1644, 415–16. On Digby and dualism, see Garber and Wilson 1998, 839. Digby’s appeal to the seat of knowledge as a mediator between body and soul fits well with his dualist language in the *Two Treatise*, but does not sit as easily with the more Aristotelian view in the *Observations*.

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