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# Descartes on Mind-Body Interaction: What's the Problem?

MARLEEN ROZEMOND

## 1. INTRODUCTION

FOR DESCARTES the mind is radically different from the body—it is an incorporeal, thinking thing. One of the most frequently raised questions about this view is: how can mind and body interact if they differ in this way? This question has troubled numerous philosophers, and Descartes himself addressed it on several occasions. Many have charged that his dualism is incompatible with mind-body interaction. Bernard Williams has used the phrase “the ‘Scandal’ of Cartesian Interactionism.”<sup>1</sup> In a more moderate vein, I will follow R. C. Richardson and speak of the Heterogeneity Problem.<sup>2</sup>

This problem is often treated as if it was new with Descartes’s dualism because his view that the mind is incorporeal is usually approached as if new. But the incorporeity of the mind or the soul was surely not a novelty introduced by Descartes. In the history of Western philosophy it is at least as old as Plato—a fact often ignored in discussions of Descartes’s dualism. More directly relevant to Descartes, the incorporeity of the mind was generally accepted by the Aristotelian scholastics, although their conceptions of mind and body were also different in important ways. And, what is particularly interesting for my purposes here, the scholastics saw serious obstacles to mind-body interaction.

In this paper I will focus on only one direction of interaction, the action of body on mind, which Descartes discusses most frequently in relation to sensation. I will focus in this paper on sensation. In discussions of the Heterogeneity Problem in Descartes it is usually assumed that there is just one question, which concerns interaction in both directions.<sup>3</sup> But we shall see that both

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<sup>1</sup> *Descartes* (New York: Penguin, 1978), 287.

<sup>2</sup> “The ‘Scandal’ of Cartesian Interactionism,” *Mind* 92 (1982): 20–37. To be precise, Richardson speaks of “the problem of heterogeneity.”

<sup>3</sup> One exception is Daniel Garber, *Descartes’s Metaphysical Physics* (University of Chicago Press, 1992), 73–75. Garber argues that at least late in his life, Descartes thought that the mind but not

Descartes and the scholastics treated the two directions of interaction in very different ways. Nevertheless for the sake of brevity I will sometimes speak of mind-body interaction where only the action of body on mind is at stake.

A question we must ask ourselves is: what exactly is the problem with mind-body interaction for the view that the mind is incorporeal? The first purpose of this paper is to examine what Descartes and the scholastics thought about this question. I will argue that neither saw the Heterogeneity Problem, the brute fact that mind and body are radically different, as a source of trouble. The scholastics thought that there is a very specific problem that affects the action of body on mind, but not the action of mind on body. Matters are more complicated in Descartes. He offered some rather dismissive remarks about the Heterogeneity Problem, but on the other hand, his descriptions of mind-body interaction have suggested to interpreters that he did worry about the Heterogeneity Problem. Thus he referred to bodily states as *occasions* for sensation, and he spoke of brain states giving *signs* to the mind to form ideas. The apparent tensions generate a confusing picture. I will contend that this confusion can be cleared up if we recognize that Descartes's talk of occasions and signs in his accounts of sensation is not at all motivated by a preoccupation with the Heterogeneity Problem, or, indeed, any kind of problem that arises from the difference between mind as thinking and body as extended. Descartes was concerned about a very different problem.

Although Descartes and the scholastics were preoccupied with different problems, we will see that there is overlap between the solutions they offer. I will focus on Descartes and argue that he offers a complex model of causation to explain the production of ideas in the mind in response to the occurrence of brain states. On this model the brain state does function as a cause, but the explanation of an occurrence of the corresponding idea includes a substantial causal role for the mind. I will argue that proper understanding of this model removes some of the tensions that seem to plague Descartes's account of sensation.

Before we start, it is helpful to remind ourselves that Descartes's conception of causation is pre-Humean: for him there are genuine causal powers and causation is not merely a matter of regularities or laws construed as correlations. The problems with interaction I discuss presuppose this pre-Humean conception of causation.<sup>4</sup>

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the body has causal powers and so there is interaction in one direction but not the other. See also n. 39 below.

<sup>4</sup>On the view that causation just is a matter of correlations or laws construed as regularities different problems arise for mind-body interaction, in particular problems that derive from conservation laws. Descartes's law of the conservation of motion has often been cited as inconsistent with mind-body interaction. These questions will not be the subject of this paper. Besides, they tend to concern the action of mind on body.

## 2. ACTION OF BODY ON MIND: THE SCHOLASTICS

For the Aristotelian scholastics the soul was the form of the body, and in this regard they differed sharply from Descartes.<sup>5</sup> Indeed, the differences between them on the nature of the soul, body and human being are very deep. But what is interesting in the context of this paper is something the majority of the scholastics had in common with Descartes. For they generally regarded the soul as an incorporeal entity that can exist without the body, a spiritual substance.<sup>6</sup> Scholastics like Aquinas held that intellectual acts belong to the soul alone and do not take place in the body and they defended the incorporeity and separability of the soul on the basis of the nature of the intellect.<sup>7</sup> In Aquinas' words:

The intellectual principle which is called the mind or intellect has an operation through itself [*per se*] in which the body does not participate. Nothing, however, can operate

<sup>5</sup>But for the view that Descartes also regarded the soul as the form of the body see Paul Hoffman, "The Unity of Descartes's Man," *Philosophical Review* 95 (1986): 339–370. I argue against Hoffman's interpretation in chapter 5 of my *Descartes's Dualism* (Cambridge: Harvard University Press, 1998).

<sup>6</sup>Albeit an incomplete one, an important qualification in view of questions about the unity of the human being. See the discussions mentioned in the previous footnote. For statements of the incorporeity of the human soul see Aquinas ST 1. 75.2, *Quaestiones de anima* 2, Eustachius, SP III, 413–414; Coimbra Commentators, *De anima* 2, 1, 1, 6 and 2, 1, 2, 2 and *De anima separata*, Disp. I Art. 3. Suárez DA I, IX. Medieval Aristotelians attributed the idea that intellection is not an operation of the body to Aristotle. Relevant texts are Aristotle's *De Anima* III, 4, 429a 18–28, 5, 430a 10–25. Of course, the incorporeity of the soul was used to support its immortality. See Suárez, DA I, X; Eustachius SP II 413–4, Coimbra Commentators, *De anima separata*, Disp. I Art. 3. Aquinas argues that the soul is incorruptible (ST 1.75, 6).

For references to scholastic sources I use the following abbreviations:

DA: Francisco Suárez, *De anima, Opera omnia*, vol. 3 (Paris: Vivès, 1856, 26 vols.), referred to by book, chapter, section.

DM: Francisco Suárez, *Disputationes metaphysicae, Opera omnia* vols. 25–26, referred to by disputation, section and article.

SP: Eustachius of St. Paul, *Summa philosophica quadripartita* (Paris: Carolus Chastellain, 1609, in 4 vols.), referred to by part and page number.

ST: Thomas Aquinas, *Summa theologiae* (Blackfriars and New York: McGraw-Hill, 1964– ) I have used the standard practice of referring to part, question, article, and where appropriate, the number of an objection or a reply.

Finally, I refer to *De anima* and *De anima separata* by the Coimbra Commentators, both in *Commentarii Collegii Conimbricensis in tres libros de Anima Aristotelis Stagiritae* (Lyons: Horatius Cardon, 1604).

<sup>7</sup>The scholastics disagreed among themselves on scores of issues, and among them is the nature of the intellectual soul. According to the scholastics I will be discussing, and I will focus on Aquinas and Suárez, intellectual activity is just one among many manifestations of life of which one single human soul is the principle. This soul is the one substantial form a human being has and it is also the principle of nutritive and sensory operations. But others thought there was a real distinction between the intellectual soul and other substantial forms to be found in the human being, which forms (such as a sensitive and nutritive soul) accounted for non-intellectual activities. For discussion, see Marilyn Adams, *William Ockham* (University of Notre Dame Press, 1987), ch. 15.

through itself unless it subsists through itself; for activity only belongs to a being in act, and hence something operates in the same way in which it is. For this reason we do not say that heat heats, but that something hot heats. Consequently, the human soul, which is called intellect or mind, is something incorporeal and subsisting. (ST 1. 75.2)

Intellectual activity on the scholastic conception is much like Cartesian thought in this sense: each belongs to the mind alone. This view gave rise for them to a problem about mind-body interaction. But the Aristotelian scholastics differed from Descartes in that they believed that only intellectual states and volition belong to just the soul or mind. They held that all other types of thoughts in Descartes's sense, such as sensations, occur in the body, albeit the ensouled body, or body-soul composite.<sup>8</sup> So for them the interaction problem arose in a different place. For Descartes, action of body on mind happens in sensation, imagination and the passions, all of which for him are, or involve, modes of the mind which in some way occur as a result of states of the body. But within Aristotelian scholasticism the question of action of body on mind concerns the causal role of the body in the production of intellectual states.

Here's how they saw the problem. The scholastics were empiricists, and for them the representations contained in intellectual acts, which they called intelligible species, are derived from sense experience in roughly the following manner. The objects of sense perception produce sensible species in the medium, usually the air, which in turn produce sensible species in the sensing body. These sensible species are stored in the imagination, where they are called phantasms. The phantasms play an immediate role in the production of intelligible species and this is where the problem arises. The scholastics were troubled by the question how the phantasms fulfill this role. There is the epistemological question how a conception of say, bovinity, is abstracted from particular experiences of individual cows. But what concerns us here is the metaphysical problem they saw, which Aquinas formulated as follows:

Aristotle claimed that the intellect has an operation in which the body does not communicate. But nothing corporeal can make an impression on an incorporeal thing. And therefore in order to cause an intellectual operation, according to Aristotle, an impres-

<sup>8</sup>See Aquinas, ST 1a, 77.8, Coimbra Commentators, *De anima separata*, Disp. III Art. I, 545. Suárez, *De anima* VI, III, 3, Eustachius SP III, 286–287. Aquinas also mentions the will as an operation of just the mind or soul. Much of what I will say about the intellect is also true of the will, but the discussions both in scholasticism and in Descartes focus on the intellect.

Unlike the scholastics just mentioned, Ockham held that the sensitive soul alone is the subject of sense-perception. Cf. *Reportatio* IV qu. 9, (*Opera Theologica*, Francis E. Kelley and Girard I. Etzkorn, eds. [St. Bonaventure, NY: St. Bonaventure University, 1982], vol. VII, 162.) But for him the sensitive soul is really distinct from the intellectual soul. For discussion of the question of the subject of intellect and sense perception in Descartes and the scholastics see also my *Descartes's Dualism*, ch. 2, 5, and 6.

sion of sensible bodies is not enough, but something more noble is required, because what acts is more noble than what is passive, as he himself says. (Aquinas, ST I. 84.6)

So the problem is that the corporeal cannot act on the incorporeal, and the reason is that the lower cannot act on the higher, and that the corporeal is inferior to the incorporeal. Specifically, the scholastics saw problems for the idea that corporeal phantasms produce incorporeal states by exercising *efficient causality* on the incorporeal mind. Obviously, this hierarchical problem does not arise for the reverse direction of interaction, the action of mind on body, and so it is clear that mind-body interaction was a different matter for the scholastics depending on which direction was at stake. In a sense this is a more specific version of the Heterogeneity Problem, but I will reserve that term for the idea that the brute fact that mind and body are different types of substances—as opposed to some specific feature of the difference—constitutes an obstacle to interaction.

Discussion of this issue was routine among the scholastics. I will focus on Aquinas and Suárez who offered different accounts that are of significant interest in relation to Descartes.<sup>9</sup> To solve the problem, Aquinas relies on a distinction between two intellectual faculties. The first is the passive intellect, which is the faculty that performs the act of understanding. The second one we need to solve the problem at hand: the agent intellect, which “makes phantasms accepted from the senses actually intelligible by some kind of abstraction.” The agent intellect forms intelligible species and imprints them on the passive intellect. So Aquinas’ solution is to give the intellect itself a substantial role in the formation of the intelligible species. This appeal to the agent intellect was standard in scholastic accounts of the production of the intelligible species.<sup>10</sup> How exactly the activity of the agent intellect should be understood is a complex matter which I will not be able to explore here. Most important for our purposes is that this is not the whole story. It left open the precise role of the phantasm in the production of the intelligible species, and on that issue the scholastics offered a variety of views.

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<sup>9</sup>Aquinas’ discussion is clearly relevant to Descartes as his writings were central to the teaching of the Jesuits who educated him. Suárez was enormously influential in the seventeenth century. I occasionally refer to Eustachius of St Paul and the Coimbra Commentators. Descartes considered writing a commentary on Eustachius’ *Summa philosophica quadrupartita* and the commentaries on Aristotle by the Coimbrians were widely used in Jesuit education in the early seventeenth century.

<sup>10</sup>Aquinas ST I.84.6, Coimbra Commentators, *De anima* III.V.I.II 372. Suárez, *De anima* IV.II.1–4. Eustachius SP III 431–432.

Aquinas first discusses Plato’s view of the action of body on mind. The account he gives of this view is very interesting because of the similarity to Descartes’s views. Much of what Aquinas says about Plato is also part of his own view. But in addition he writes that for Plato the problem of corporeal action on the mind arises for sensation, and that by changes in the body “the soul is in some manner excited to form species of sensible things in itself.”

According to Aquinas, "It cannot be said that sensible cognition is the total and perfect cause of intellectual cognition, but rather that it is the matter of the cause."<sup>11</sup> He does not explain what he means by the "total and perfect cause," but no doubt he meant that the sensible cognition is not the entire cause. What is more important, he does not explain what he means by the "matter of the cause." This latter phrase does not seem to mean for him that the phantasm is the material cause. He makes the same claim in *De veritate*,<sup>12</sup> but in that work he explains his position in more detail. In qu. 10.6 ad 7 he writes that the phantasm and the agent intellect are both causes of intellectual knowledge that each account for a different aspect of the intelligible species. The phantasm determines the content of the intelligible species, while the agent intellect makes the phantasm actually intelligible. Aquinas further specifies that the agent intellect is the principal and first cause, and that the phantasms are secondary and instrumental causes. Various questions and problems can be raised for Aquinas' account, but mostly they need not concern us here. The same account can be found much later in the Coimbra Commentary on *De anima*; indeed, they refer to Aquinas' account in *De veritate* when supporting their position. In particular, they assign the same two causal roles to the phantasm and the agent intellect.<sup>13</sup>

Suárez states the issue quite neatly. The role of the phantasm, he explains, lies in the fact that it needs to determine the agent intellect to produce one particular intelligible species rather than another. Suárez uses language that we find again in Descartes, and describes the phantasm as "the *occasion that excites* [the intellect], or that exemplifies, or that is elevated to the highest level, as instrument through the spiritual light of the same soul" (emphasis added).<sup>14</sup> But he rejects the idea that the phantasm is an efficient cause, or, for that matter, a formal, material, or final cause.<sup>15</sup> As was common among philosophers who nevertheless offered different accounts, Suárez quotes with approval Aquinas' claim that the phantasm is "in some manner the matter of the cause." Then he adopts the following opinion as more probable than other accounts: the phantasm is "as it were the matter or what excites the soul or an

<sup>11</sup> ST I. 84.6.

<sup>12</sup> Qu. 18.8 ad 3.

<sup>13</sup> Their discussion is very long. But see in particular *De anima* III.V.I.I 371, and III.V VI.II 407.

<sup>14</sup> The term *ocasio*, which Suárez employs here, was much used by the scholastics. For extensive discussion see Rainer Specht, *Commercium mentis et corporis* (Stuttgart-Bad Cannstatt. Friedrich Frommann Verlag, 1966).

<sup>15</sup> Suárez rejects the idea that the phantasm can function as efficient cause on the usual ground that the lower can't act on the higher. The solution proposed by the Coimbra Commentators he finds unacceptable. See DA IV.II 9.

exemplar.” These remarks are not very clear and full of qualifications (“as it were,” “in some manner”). But there is more:

The aforesaid determination does not come about by way of any influx of the phantasm itself, but by providing matter and as it were an exemplar to the agent intellect in virtue of the union that they both have in the same soul. . . . For it must be noted that the phantasm and the intellect of a human being are rooted in one and the same soul. Whence it happens that they have a wonderful ordering and harmony [*mirum ordinem et consonantiam*] in their operation, so that (as will become clear below) in virtue of the very fact that the intellect operates, the imagination also senses. (*De anima* IV.II.12)

So Suárez ascribes the role of the imagination to the fact that imagination and intellect are faculties of the same soul. This explains, he thinks, that they operate in harmony.<sup>16</sup> The connection between phantasm and intelligible species is not the only problem for which he offers this solution: he uses the same model for the relationship between the species in the external and internal senses and for the relationship between an appetitive act, a desire, and a cognition of the object of desire.<sup>17</sup> When he addresses this last issue the model becomes clearer. The appetite presupposes the cognition, he writes; without it, the appetitive act cannot occur. But nevertheless *the appetitive power is the entire cause of its act*. He claims that the act of one vital power does not contribute efficient causality to the act of another vital power.

How should this explanation in terms of harmony between the faculties be understood, and how does it come about? In the discussion of the harmony between faculties in *De anima* Suárez does not provide an answer to these questions. But he does say more in the *Disputationes metaphysicae*. He is now concerned not just with the cooperation of faculties, but also with the fact that the faculties sometimes impede each other; he mentions the example of someone who is looking at something, and fails to hear someone else speaking. The connection between vital faculties, he argues, must be explained by the soul itself contributing efficient causality to their operation. If each faculty operated entirely on its own, the fact that they cooperate or impede each other would be inexplicable.<sup>18</sup> The interaction of two faculties requires “that there is some common principle actually using those two faculties, and ordering the act of the one to the act of the other from a natural inclination or sympathy.”<sup>19</sup>

Although Suárez cites Aquinas for support, his own position is clearly significantly different. Aquinas does accept the phantasm as a cause of the

<sup>16</sup>The Coimbra Commentators (*De anima* III.8.8.2, 454) and Eustachius (SP III 440) speak of a natural connection between intellect and imagination while the soul is in the body.

<sup>17</sup>DA III.9.10, V.3.6.

<sup>18</sup>DM XVIII.V.3.

<sup>19</sup>DM XVIII.V.2.



intelligible species. He merely writes that the phantasm is not the entire cause.<sup>20</sup> But for Suárez the phantasm is not a cause of the intelligible species at all. This is clear from several considerations. First, when he explains the model of harmony in relation to the cooperation between appetite and cognition, he makes clear that the 'receiving' faculty, the appetite, is the entire cause of its act. Second, he explains the harmony itself by referring to *the soul* as efficient cause. Finally, he denies that there is "any influx of the phantasm itself." But in the *Disputationes metaphysicae* he writes that causation is "nothing other than that influx, or [*seu*] concurrence by which each cause in its kind actually flows into being in the effect."<sup>21</sup> And in *De anima* he eliminated every one of the four types of Aristotelian causes as an explanation of the role of the phantasm.

Suárez' account is very intriguing and certainly worth more examination than I can provide here. For instance, in virtue of his appeal to the soul itself as a cause that coordinates the activity of various faculties it is evocative of later appeals to the unity of consciousness.<sup>22</sup> But while Suárez' solution is remarkable, it is clearly not available to Descartes, whose dualism entails that he needs to explain the correlation of modes of two entirely distinct entities: modes of body and modes of mind. There is no sense in which the relevant sets of events belong to faculties of a single soul, and so Descartes cannot adopt Suárez' solution in terms of one entity, the soul, underlying two types of activity.<sup>23</sup> Nevertheless we will see that there is an interesting similarity between the accounts offered by Descartes and Suárez in regard to the causal role of the mind.

The difference between Suárez' account and the one offered by Aquinas—

<sup>20</sup>ST I 84.6.

<sup>21</sup>DM XII.II.13. Similarly, Eustachius writes that the formal definition (*ratio*) of cause "is placed in a real *influx* of the cause into the effect: so that to cause an effect is nothing other than to really flow into this effect by communicating being to it." (SP III 52, emphasis added). Both are speaking of causation in general in these passages, not just about efficient causation. But see n. 25 below on Eustachius.

<sup>22</sup>It is also interesting to note the similarity between Suárez' account of the relationship between imagination and intellect on one hand, and Leibniz' account of mind-body interaction on the other hand. Both appeal to notions like harmony and concomitance. Leibniz also denies causal interaction and appeals to a notion of concomitance or harmony. But there are also some important differences, and I do not wish to suggest that Leibniz' notion of pre-established harmony derives from Suárez. For a discussion of the origin of this notion in Leibniz, see Donald Rutherford, *Leibniz and the Rational Order of Nature* (Cambridge: Cambridge University Press, 1995) 36–40. In correspondence Rutherford has suggested that the similarity between Suárez and Leibniz is more likely due to harmony models being fairly widely available.

<sup>23</sup>It is relevant in this context that on Descartes's view it is not the case that the soul is the form of the body. As I mentioned before (see n. 5), some have argued that for Descartes the soul is the form of the body. But even if this interpretation were right, the sense in which the soul could be the form of the body for Descartes clearly does not include the idea that the soul is the principle of faculties of the body since for him the body is just a machine.

as well as the Coimbra commentators—is philosophically very interesting and important. Ostensibly, both accounts address the problem that the lower can't act on the higher. Suárez completely rejects the idea that the phantasm acts on the intellect as an efficient cause: for him the mind is just not the sort of thing that can be acted upon by the body. For Aquinas and the Coimbra Commentators, however, the phantasm is a partial cause and the Coimbra Commentators explicitly call it an efficient cause. But note that in effect, this difference in their solutions suggest different *problems*, or at least, different versions of the problem. One problem is that a corporeal entity cannot act on an incorporeal entity: this problem concerns the difference between the cause and the entity acted upon, *the patient*. The other worry is that the phantasm, being a corporeal entity, *does not have what it takes to produce an intelligible species*—which is a problem about the difference between the cause and *the effect*.

Interestingly enough, Aquinas mentions both. When discussing the role of the phantasm in the production of intellectual knowledge in the *Summa*, one of the objections to such a role is this:

Augustine said, we must not think that any body can act on a spirit, as if the spirit was subject like matter to the acting body: for what acts is in every way more excellent than that on which it acts. Hence he concludes that the body does not produce the image in the spirit, but that the spirit itself makes it in itself.

The next one is:

Moreover, the effect does not go beyond the power of its cause. But intellectual cognition goes beyond sensible things: for we understand things that cannot be perceived by the senses.<sup>24</sup>

Now in his treatment of the problem at hand, for instance in the body of this question in the *Summa*, Aquinas focuses on the first of these problems. But in effect his solution addresses the worry that the phantasm is not enough to produce the intelligible species. On the view he proposes the phantasm is a cause (the secondary and instrumental cause) but not the complete cause.<sup>25</sup>

<sup>24</sup> See also the formulation of the problem by the Coimbra Commentators. They write that the phantasm cannot produce intelligible species because these species are more perfect and the effect cannot be more noble than the cause (*De anima* III V I I, 371).

<sup>25</sup> An account different from both Aquinas' and Suárez' can be found in Eustachius of St Paul. He writes that the most probable view is that the phantasm is a material cause because "corporeal things cannot attain efficiently to the production of a spiritual thing, but can only relate dispositively to their production" (SP III 432–433). For Eustachius that means in fact that strictly speaking, the phantasm is not a real cause of the intelligible species. For he also writes that in the strict sense only an efficient principle is a cause (*Causa vero strictè accipitur pro solo efficiente principio*, SP III 51).

Eustachius' view is puzzling, since on the standard Aristotelian view, the material cause is an internal principle constitutive of the effect, such as a composite substance, or that in which the

So the difference of these two problems is significant as they require different solutions. We shall see, furthermore, that the distinction between these two types of issues is quite useful for making sense of Descartes's account of sensation.

What have we learned from this discussion of scholastic treatments of action of body on mind? In the first place, we have seen that for the scholastics also the mind was incorporeal, and that the action of body on mind was a problem: this difficulty was not new with Descartes's dualism. But unlike many of Descartes's critics, they did not say the problem arises simply because of the general difference in nature between mind and body. They provided a specific reason grounded in those natures: body is inferior to mind and the lower can't act on the higher. We also saw that the problem takes two different forms, one of which concerns the nature of the patient, the other the nature of the effect. Furthermore, as we shall see, the structure of their treatment of the problem involves interesting similarities with that of Descartes. Their solutions involved in the first place the view that a faculty of the mind, the agent intellect, contributes substantially to the production of the intelligible species. But that still leaves the scholastics with the question of the role of the body, in their case, the corporeal phantasm. On Aquinas' view the phantasm is a partial efficient cause of the intelligible species: it is responsible for its content whereas the agent intellect is responsible for its intelligibility. But Suárez does not regard the phantasm as a cause of the intelligible species at all.

### 3. DESCARTES: WHAT'S THE PROBLEM?

Interestingly enough, the hierarchical problem that kept the scholastics busy never arises in the various exchanges between Descartes and his contemporaries. But several of his contemporaries and many later readers have raised the Heterogeneity Problem, and suggested that the brute difference between mind and body creates a serious obstacle for their interaction. And the discussion has covered Cartesian forms of both problems we saw in the scholastic context. That is to say, sometimes the question is how one substance can act on another one if they are so different in nature. At other times the question is raised whether the effect, a mode of the mind, could be produced by something corporeal given the radical difference in nature.<sup>26</sup> The distinction be-

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effect, a form, inheres. For this objection, see Suárez DA IV.II 10. (Suárez does not mention Eustachius, but refers to "Thomists.")

<sup>26</sup> Some scholars have raised this second question in connection with Descartes's causal principles. They have argued that his view that the cause must contain at least as much reality as the effect poses problems for interaction. Much hangs on whether one takes Descartes to hold that the cause must resemble the effect. If he does, there would seem to be a problem for the body producing modes of the mind. For the view that Descartes's causal principles do pose problems,

tween these two types of problems is never noticed, but we will see that it helps us understand Descartes's account of the action of body on mind.

What did Descartes himself have to say about the Heterogeneity Problem? When confronted with the problem by his contemporaries, he does not seem particularly worried about it. Descartes certainly never rejects the possibility of such interaction.<sup>27</sup> Indeed, in a letter to Clerselier he famously denies that interaction is a problem:

I will tell you that the whole difficulty that they [objections regarding mind-body interaction] contain proceeds from a supposition that is false and that cannot be proved, namely that if body and soul are two substances with different natures, that prevents them from being able to act on one another. (Letter to Clerselier, January 12, 1646, AT IX-1 213, CSM II 275. See also AT VII 390, CSM II 266–267)

Various of Descartes's remarks strongly suggest that he thought mind-body interaction needs no explanation or even that it is not possible to provide one. In letters both to Elizabeth and Arnauld he claims that it is obvious that there is interaction.<sup>28</sup> And to Elizabeth he writes that

... the things that pertain to the union of soul and body are only known obscurely by the understanding alone, or even by the understanding assisted by the imagination; but they are known very clearly by the senses. That is why those who never philosophize and use only their senses have no doubt that the soul moves the body and the body acts on the soul. (AT III 691–692, CSM III 227)

Given that Descartes thought that interaction is sensed rather than known by the intellect, it is not surprising that his responses to his contemporaries do not contain an explicit philosophical account of interaction. His position is in principle coherent: surely it seems possible that some things are simply not

see Daisie Radner, "Descartes' Notion of the Union of Mind and Body," *Journal of the History of Philosophy* 9 (1971): 159–170, especially 161, and also her "Is There a Problem of Cartesian Interaction?" and "Rejoinder to Professors Richardson and Loeb," *Journal of the History of Philosophy* 23 (1985): 35–49, 232–236. Janet Broughton argues that Descartes holds that the body can't act on the mind in "Adequate Causes and Natural Change in Descartes's Philosophy," in Alan Donagan, Anthony N. Perovich Jr., and Michael V. Wedin, eds., *Human Nature and Natural Knowledge: Essays Presented to Marjorie Grene on the Occasion of Her Seventy-Fifth Birthday* (Dordrecht: Reidel, 1986), 107–127. On the other hand, Eileen O'Neill argues that Descartes's causal principles pose no problems for mind-body interaction in "Mind-Body Interaction and Metaphysical Consistency: A Defense of Descartes," *Journal of the History of Philosophy* 25 (1987): 227–245. Margaret Wilson sides with O'Neill. See her "Descartes on the Origin of Sensation," *Philosophical Topics* 19 (1991): 293–323. For this view see also Tad Schmaltz, "Sensation, Occasionalism, and Descartes' Causal Principles," in Philip D. Cummins and Guenther Zoeller, eds., *Minds, Ideas and Objects: Essays on the Theory of Representation in Modern Philosophy* (Ridgeview Publishing Company, 1992), 38–55. I myself am in the camp that thinks that Descartes's causal principles do not pose a problem for mind-body interaction and I will not discuss these principles.

<sup>27</sup> Contrary to, for instance, S.V. Keeling, *Descartes* (Oxford: Oxford University Press, 1968).

<sup>28</sup> AT III 692, CSM III 227; AT V 222, CSM III 358.

accessible to the human intellect. And generally his critics fail to explain what exactly the obstacle to interaction is supposed to be. Still, Descartes's position is frustrating from a philosophical point of view, and, as Elizabeth commented, it seems most plausible that we know by means of the senses *that* mind and body interact, but less so that we know *how* this happens—especially on Descartes's view that interaction takes place at the pineal gland.<sup>29</sup> But for present purposes the most important features of Descartes's responses are that they contain no trace of the idea that mind-body interaction was impossible, and that several of his remarks suggest that he regarded such interaction as relatively unproblematic.

Descartes does sometimes invoke a comparison with heaviness to illuminate how interaction works. This comparison is meant to illustrate the puzzling idea that the soul is whole in the whole body and whole in its parts—what Henry More called *holenmerism*.<sup>30</sup> But he applies this analogy *only* to action of mind on body, never to the action of body on mind. Indeed, it is hard to see how the analogy would apply to the action of body on mind. Descartes proposes that we think of the action of mind on body as we think of heaviness impelling a body towards the earth. But using the analogy for the action of body on mind would involve thinking about a body acting on its heaviness in some way, which makes little sense.<sup>31</sup>

<sup>29</sup>Elizabeth's letter to Descartes of July 1, 1643, AT IV I. The absence of a real account of mind-body interaction leaves Descartes with an unanswered question, but it does not follow that such interaction is impossible: that stronger claim would require an argument. Interpreters disagree about the question how satisfying Descartes's responses to the Heterogeneity Problem are. For a positive assessment, see Richardson, "The 'Scandal' of Cartesian Interactionism," and also Louis E. Loeb, *From Descartes to Hume* (Ithaca: Cornell University Press, 1981), 134–156. Wilson is more critical ("Descartes on the Origin of Sensation," 312–313). See also the references in n. 26 above.

<sup>30</sup>Sixth Replies, AT VII 441–442, CSM II 297–298, and in letters to Elizabeth, May 21, 1643 AT III 667–8, CSM III 219, and Arnauld, July 29, 1648, AT V 222–223, CSM III 358.

<sup>31</sup>This asymmetry does not necessarily pertain to what the analogy with heaviness is meant to illustrate: the idea that the mind is whole in the whole body, whole in each of its parts. Conceivably one could detach *holenmerism* from the analogy and apply it to both directions of interaction. But this Descartes does not do.

There are other indications that Descartes treated voluntary action and sensation differently. Sensation, but not voluntary action is supposed to be an indication of a *close* and *intimate* union of mind and body. Thus in the *Discourse* he writes: "... it does not suffice that the [rational soul] is lodged in the human body as a pilot in his ship, *unless perhaps in order to move its limbs*, but it must be joined and united to it more closely in order to have, in addition, sensations and appetites like ours, and thus compose a real man" (AT VI 59, CSM I 141, emphasis added).

And in the letter to More of April 15, 1649, he writes "Although I think that no mode of acting belongs univocally to both God and creatures, I think that I find in my mind no idea that represents the way in which God or an angel can move matter that is different from the idea that shows me the way in which I am conscious that I can move my body by means of my thought" (AT V 347, CSM III 375). So Descartes claims he understands the action of all three types of incorpo-

In discussions of the Heterogeneity Problem twentieth-century philosophers usually assume that the radical difference in nature between mind and body in Descartes results in just one problem of interaction. But in the seventeenth century the question how a spiritual substance acts on a body was treated quite differently from the question how a body could act on a spiritual substance. We already saw that this is the case for the Aristotelian scholastics. Particularly interesting in relation to Descartes's use of holenmerism is that holenmerism was used in accounts of action of a spiritual substance on the physical world, specifically in the case of God. On a different model God is present where he acts in the physical world simply in virtue of a presence of power. This model differs from holenmerism in that there is no sense in which God's substance is present where he acts. In letters to More late in his life Descartes uses this second model for the action of mind on body, thus earning from More the label "The Prince of Nullibilists."<sup>32</sup> Mere extension of power was rejected by some on the ground that it presents a spiritual substance as acting somewhere where it is not, which would imply action at a distance.<sup>33</sup> In the context of questions about human beings, holenmerism was frequently used in scholasticism to describe the union of soul and body, but to my knowledge it was never used to describe their interaction.<sup>34</sup>

So much of what Descartes says suggests that he is not very concerned about mind-body interaction. When we examine his accounts of action of body on mind in sensation, however, the language he uses would seem to suggest that things are not so straightforward. For instance, often instead of writing that bodily states *cause* ideas in the mind he describes such states as the *occasion* on which ideas are formed by the mind. Also he frequently speaks as if the body gives a sign to the mind to form an idea. These models might suggest

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real substance on body *in the same way* This is significant since he wanted to distinguish the union of the mind with the body from the relation of angels to bodies to which they are united (Letter to Regius of January 1643, AT III 493, CSM III 206). So he clearly cannot use the action of mind on body to defend a special, intimate union between them.

I used to think that these passages indicate that Descartes specifically treats the action of body on mind differently from the action of mind on body. But one can't be sure. The reason is that I think the difference in treatment between sensation and voluntary action might lie in Descartes's view that the *quality* of sensory states is due to the intimate union with the body, as opposed to the fact that their occurrence is caused by the body (for this distinction see my *Descartes's Dualism*, ch. 6). So the asymmetry indicated by these passages need not have anything to do with interaction, the causation of the occurrence of states in one substance by states in another one.

<sup>32</sup> Edward Grant, *Much Ado about Nothing* (Cambridge: Cambridge University Press 1981), 399, n. 238. Grant discusses these models of the presence of God and mind in the physical world in various philosophers (see 223–228, 350 n. 127). Whereas Descartes's talk of extension of power instantiates a different model from his talk of holenmerism, it is possible that he conflated the two.

<sup>33</sup> *Much Ado about Nothing*, 146, 153ff., 253–254.

<sup>34</sup> For a particularly clear example see Aquinas, ST 1 76.8.

that Descartes did, after all, struggle with the Heterogeneity Problem. At the same time, they do not seem to constitute an account of the *union* of mind and body, an explanation of which is helpful in view of their interaction, as Descartes wrote to Clerselier.<sup>35</sup> And they certainly don't seem to have anything to do with the heaviness analogy he offered to illuminate the union. So what is the meaning of Descartes offering these models?

Interpreters have often concluded that Descartes was worried about the Heterogeneity Problem after all, in spite of his various expressions of unconcern. Some have concluded that he was an occasionalist on account of the Heterogeneity Problem.<sup>36</sup> Steven Nadler argues that the problem motivates Descartes to adopt what he calls "occasional causation" for the action of body on mind.<sup>37</sup> Noting the complexity of Descartes's remarks on sensation Margaret Wilson has argued that he is inconsistent in various ways on interaction.<sup>38</sup> In particular, she contrasts his claim to Elizabeth that union and interaction are simply sensed in everyday life with the complex models he offers elsewhere. Daniel Garber takes a very different approach. He notes the use of "on the occasion of" in the argument for the existence of body in the French *Principles* II.1. But he proposes that this expression indicates an unwillingness in Descartes to see a bodily state as a cause of an idea because Descartes does not think—at that point in his life—that bodies have causal powers.<sup>39</sup>

<sup>35</sup> Letter to Clerselier, January 12, 1646, AT IXA 213, CSM II 275. He makes this point in the same breath as his famous dismissive comment on objections to mind-body interaction quoted above (12). The remark would seem to be in tension also with his comments to Elizabeth, quoted above, that the union is a primitive notion and that union and interaction are sensed rather than understood. But perhaps the explanation would consist in the use of the analogy with heaviness.

<sup>36</sup> See, for instance, John W. Yolton, *Perceptual Acquaintance from Descartes to Reid* (Minneapolis: University of Minnesota Press, 1984), 22. For arguments against the view that Descartes was an occasionalist see Henri Gouhier, *La vocation de Malebranche* (Paris: Vrin, 1926), 83–88; Jean Laporte, *Le rationalisme de Descartes* (Paris: Presses Universitaires de France, 1950), 225–226. For more references see Steven Nadler, "Descartes and Occasional Causation," *British Journal for the History of Philosophy* 2 (1994): 35–54, esp. 46–47 n.27.

<sup>37</sup> "Descartes and Occasional Causation," 49. Nadler writes that Descartes adopts occasional causation in view of the "radical substantial dissimilarity between body and mind in Descartes' dualism." In their recent book *Descartes' Dualism* ([London: Routledge and Kegan Paul, 1996], 138–162). Gordon Baker and Katherine J. Morris also assume Descartes's talk of bodily states as occasions for sensory ideas is due to the Heterogeneity Problem. Like Nadler, they use the notion of "occasional causation."

<sup>38</sup> "Descartes on the Origin of Sensation," especially 301–306, 312.

<sup>39</sup> *Descartes's Metaphysical Physics* (University of Chicago Press, 1992), 73–75. Garber suggests that there is a development over time in regard to Descartes's willingness to use causal language to describe the role of the body in the production of ideas. He believes that Descartes developed reservations about bodies having causal efficacy at all. On his view, there is a tendency in the *Principles*, especially the French version, to avoid such language. The Latin version, and especially the *Meditations*, he argues, sound more causal.

But Descartes's use of the phrase "occasion" could not indicate a change of view as described by Garber. Descartes frequently uses the expression "occasion" to describe the role of the body in

I will argue, however, that Descartes offers these models to address a problem that is very different from both the Heterogeneity Problem and the issue that interests Garber.<sup>40</sup> Recognition of Descartes's concern for that problem and a proper understanding of the models he offers to solve it, remove, I believe, much of the tension that seems to plague his treatment of sensation. In particular, we will be able to leave behind the impression that Descartes offers complicated models to deal with the Heterogeneity Problem in spite of his numerous remarks to the effect that interaction is not a problem or that interaction could simply be sensed.

One passage where Descartes addresses the problem in question quite clearly is in the *Comments on a Certain Broadsheet*:

... anyone who pays proper attention must believe that however far our senses extend and whatever it is exactly that can reach our faculty of thought from them, it is never the case that the ideas of things as we form them in our thought, are exhibited to us by them [the senses]. Therefore there is nothing in our ideas which is not innate in the mind or faculty of thinking, except only for the circumstances that concern experience. For this reason we judge that certain ideas that we now have present in our thought are referred to certain things placed outside us. We do not do so because those things sent the ideas themselves to our mind through the organs of the senses, but because they sent something, which gave occasion to our mind to form these ideas by means of a faculty innate to it at this time rather than another time. Nothing arrived at our mind from external objects through the organs of sense except for certain corporeal motions, as our author himself affirms in article 19 on the basis of my principles. But not even those motions themselves and the shapes that arise from them are conceived by us as they come to be in the organs of the senses, as I have explained at length in the *Optics*. Hence it follows that the ideas themselves of motions and shapes are innate to us. And it must be even more the case that the ideas of pain, colors, sounds and the like are innate, so that our mind can display them to itself on the occasion of certain corporeal motions. For they have no similarity with corporeal motions. (AT VIII-2, 358–359, CSM I 304)

So in this passage Descartes argues that our ideas of sense are not sent into the mind. Instead all such ideas, whether of sensible or mechanistic qualities, are

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the production of sensations much earlier in his life, for instance in *The Treatise on Man* (AT XI 144, 149, 151, 158). In addition, in the French version of the *Principles* itself we do still find causal language. For instance, in Part IV art. 197 of the French version Descartes speaks of a movement that causes an idea of pain in us, and in art. 198 he writes that the nerves *cause* sensations in the mind. Both are texts where the relationship between motions and ideas is very much in focus, and so one would expect Descartes to be careful.

<sup>40</sup>In his extensive survey of occurrences of the term "*occasio*" in Descartes, Specht reports a total of 299 occurrences of which only 19 concern the mind-body relation. See his *Commercium mentis et corporis*, 43, n. 53. This observation suggests that the problem the term "*occasio*" is meant to address is not restricted to the context of the action of mind on body. Nevertheless I will confine myself to that context. I take it that in the other contexts problems with the same structure are at stake: roughly, a dissimilarity between apparent cause and effect that requires a more complex causal model.



innate and motions in the brain “give occasion to the mind” to form the ideas in question. But the difficulty that concerns Descartes here is clearly not the Heterogeneity Problem: it clearly does not arise from the essential difference between mind and body themselves. He never refers to this difference in this passage. Instead he talks about the dissimilarity between motions in the body and the corresponding ideas in the mind. Ideas of pain, colors, sound and the like, do not resemble these motions *at all*, he argues; and even motions and shapes are conceived differently from the corresponding motions and shapes in the brain. For instance, as he writes in the *Optics*, ideas of circles occur in response to oval shapes in the body.<sup>41</sup>

Now one might think that this dissimilarity is really due to the essential difference between mind and body, and so that the concern he does bring up reduces to the Heterogeneity Problem. But Descartes is clearly not worried about the fact that the causes are motions and shapes, corporeal modes, and the effects ideas, mental states. Although he speaks of the dissimilarity between *ideas* and the bodily states that cause them, he is not concerned with the fact that they are ideas. Rather he is concerned with the representational content of sensory ideas: such ideas appear to represent things that do not resemble their bodily causes.<sup>42</sup>

Insofar as Descartes is concerned with ideas of sensible qualities (colors, sounds) and ideas involved in internal sensations (pains, tickles) one might think that the issue at hand reduces to the Heterogeneity Problem given his mechanistic conception of body. That is, one might think, the problem arises not so much from the mind being a thinking thing, but from Descartes’s view that body only has mechanistic modes, and for this reason he regards ideas of anything other than mechanistic modes as innate. But this can’t be what Descartes has in mind, because he also claims that ideas of mechanistic qualities must be innate. For, he argues, the motions and shapes as they exist in our body are different from how we conceive of them. And this argument shows that the mind being a thinking thing and the body being a mechanistic thing is not in the least the source of his worry. Rather this argument suggests that if the motions in the body resembled the ideas they bring about—in the sense in

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<sup>41</sup> AT VI 141, CSM I 172. It is hard to imagine how Descartes could have evidence for an example like this one. But his claims make more sense when one takes into consideration that he is concerned to deny about the entire process of sense perception, starting with the objects we perceive, that it is a matter of similarity being transmitted. I turn to this point briefly below.

<sup>42</sup> One might find it odd that Descartes speaks of the lack of similarity between *ideas* and their bodily causes. But the resemblance at issue is of the kind that pertains to a representation and that which is represented: it’s the sort of resemblance we speak of in regard to a picture and what’s depicted. Also it is relevant that for Descartes when one thinks of an object, that object “exists objectively in the intellect by way of the idea” (AT VII 41, CSM II 29), in particular, if this means for Descartes that the idea *just is* the object existing in the mind objectively.

which an idea of an oval resembles an oval shape in the physical world—the problem at hand would not arise.

So the reason why Descartes thinks that ideas of sense do not simply come from bodies has nothing to do with the Heterogeneity Problem. I will call the problem that does concern him the Dissimilarity Problem. It has sometimes been noted (for instance by Margaret Wilson and Tad Schmaltz) that this problem is at stake rather than the Heterogeneity Problem in this particular passage from the *Comments*.<sup>43</sup> But the importance of the Dissimilarity Problem in Descartes's thought has been seriously underestimated. Indeed, his concern with this problem is crucial for understanding much of what he says about sensation: it is what explains his reference to brain states as signs and occasions for sensation rather than the Heterogeneity Problem. Failure to see this is what leads to the impression that Descartes is inconsistent in describing mind-body interaction as unproblematic or simply sensed while offering rather complex analyses of the action of body on mind.

Descartes's attitude towards the Dissimilarity Problem is very different from his attitude towards the Heterogeneity Problem, which, we saw, he sometimes dismisses. Besides, he discusses the latter problem only in response to questions from his contemporaries. The Dissimilarity Problem, on the other hand, he clearly regarded as very important. He broached it himself frequently, not only in the rather late *Comments*, but in several of his works throughout the 1630s and 1640s. It is at issue in the first chapter of *The World*, which is entitled "Of the difference between our sensations and the things that cause them." In this chapter he offers the sign model clearly in response to the Dissimilarity Problem. He is much concerned with this problem in the *Optics*, and it is addressed in the Sixth Meditation as well as the *Principles*.<sup>44</sup> There are

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<sup>43</sup> Wilson, "Descartes on the Origin of Sensation," 304, and Schmaltz, "Descartes on Innate Ideas, Sensation, and Scholasticism: the Response to Regius," in M.A. Stuart, ed., *Oxford Studies in the History of Philosophy*, vol. II (Oxford University Press, 1996), n. 93. Wilson also discusses the issue of resemblance in regard to sensation in "Descartes on Sense and 'Resemblance'," in John Cottingham, ed., *Reason, Will and Sensation* (Oxford: Clarendon Press, 1994), 209–228.

For some ideas Descartes claims there is no resemblance at all, in particular, ideas of sensible qualities and sensations like pain. For others there is merely a limit to the resemblance, namely in the case of ideas of mechanistic qualities. I mean the Dissimilarity Problem to cover both: the problem is to explain the occurrence of sensory ideas given the difference between their representational contents and the relevant bodily states.

<sup>44</sup> See AT XI 3–6, AT VI 85, 112–114, 130–131, CSM I 81–82, 153–154, 165–166, 167–168; AT VII 87–88, CSM II 60–61, and *Principles* IV 197–198. I will be concerned with Descartes's position that there is dissimilarity between brain states and ideas we have in sense perception. But sometimes he argues that the things we perceive, rather than the motions in the brain, need not resemble our sensations of them. The two claims are part of his general view that sense perception is not a matter of species, which are likenesses, being conveyed from the object of perception to the mind.

many texts where he presents the bodily state as an occasion or a sign for the mind to have a sensation and where the Dissimilarity Problem is clearly what is at stake. And so it is far more plausible that it motivates Descartes's use of these models rather than the Heterogeneity Problem.

Why is Descartes concerned with the Dissimilarity Problem? A prime target of Descartes's denial of resemblance between sensory ideas and corporeal states is the scholastic Aristotelian view of sense perception. On that view, sensory representations, the sensible 'species,' such as of colors, resemble the qualities of bodies. Descartes mentions the Aristotelian theory of sense perception, which is sometimes referred to as the species theory, on various occasions.<sup>45</sup> As he sees it, on this view sense perception comes about as a result of physical objects sending images, likenesses of themselves—the sensible 'species'—to the perceiving subject. My perceiving a red vase, for instance, is the result of such species being sent to my eyes. In vision, and other forms of sense perception, the representation in me of an object perceived resembles the object. Descartes's representation of the species theory is not accurate in various ways, but many of the details of this theory are not important for our purposes.<sup>46</sup> What is important is the fact that the theory relies on the idea that the representational content of our sensory representations is explained by the resemblance with the bodies that cause them. On this theory, a sensation of something red is caused by a red object producing a red image in the sensing subject: redness comes to exist in the sensory organ, albeit "immaterially."<sup>47</sup> This is a view Descartes has to reject, because he believes that bodies only have mechanistic qualities: so neither in the vase nor in my eyes can any redness be found, be it material or "immaterial." Rather, on his view, motion of matter that reaches the brain causes our sensation as of something red in the mind.

Insofar as this problem about sensible qualities is Descartes's concern, the

<sup>45</sup> See *Optics* AT VI 85, 112, 134, 137, CSM I 153–154, 165, 169, 170; Sixth Replies, AT VII 437, CSM II 295.

<sup>46</sup> For instance, Descartes to the contrary, the Aristotelians did not believe that a single entity was transmitted from the object of perception to the subject. For discussion of the discrepancy between the species theory and Descartes's representation of it see Tad Schmaltz "Descartes on Innate Ideas, Sensation, and scholasticism: the Response to Regius." For an illuminating discussion of relevant features of scholastic theories of qualities and sense perception see Maier, "Die Mechanisierung des Weltbilds im 17. Jahrhundert," *Zwei Untersuchungen zur nachscholastischen Philosophie: Die Mechanisierung des Weltbilds im 17. Jahrhundert, Kant's Qualitetskategorien* (Rome: Edizioni di Storia e Letteratura, 1968), 16–26. Not all Aristotelians believed in the species theory. Most famously, Ockham rejected it ("Die Mechanisierung . . .," 20.) As Maier points out, however, unlike the mechanists, Ockham did not banish sensible qualities from the physical world.

<sup>47</sup> See, for instance, Aquinas, ST I 78.3, and his commentary on Aristotle's *De anima* (*In Aristotelis librum de anima commentarium*, Angeli M. Pirota, ed. [Turin: Marietti, 1948], Bk II n. 418). For discussion of this issue in Aquinas, see Paul Hoffman, "St. Thomas Aquinas on the Halfway State of Sensible Being," *Philosophical Review* 99 (1990): 73–92.

Dissimilarity Problem does have a connection with the essential difference between mind and body, although it arises not from the mere fact that body and mind are different types of substances. It arises from Descartes's mechanistic conception of *body*. He thinks bodies don't have sensible qualities, only mechanistic ones, and he reduces sensible qualities to sensations in the mind. By contrast, for the scholastics this problem did not arise, because they did not hold a mechanistic conception of body.

Although it is tempting to focus on this disagreement with the scholastics, it is clearly not Descartes's *only* concern in labeling sensory ideas "innate" and for speaking of brain states as occasions and signs in relation to the corresponding ideas. For, as we saw, he also denies resemblance between ideas of mechanistic qualities and the motions in the brain which are presumed to cause them. An oval brain image can be the occasion for a sensation of something round. As I pointed out, this problem clearly has nothing to do with Descartes's mechanistic conception of body. Rather it arises from his views about the physiology of sense perception, which he discusses at length in the *Optics*. But with regard to both sensible and mechanistic qualities, Descartes's concern is to reject an idea he regards as fundamental to the Aristotelian theory of sense perception; the idea that perception comes about by way of likenesses being transmitted to the sensing subject by the object of perception. That picture, Descartes believes, is fundamentally incorrect. For instance, the Fourth Discourse of the *Optics* is devoted to refuting that picture. Sometimes Descartes focuses on the dissimilarity between the object of perception and our ideas, sometimes on the dissimilarity between the brain state, the last physical stage of sense perception, and the idea. But he is concerned to deny about the whole process that it is based on a resemblance being transmitted.

That leaves us with one final question about the Dissimilarity Problem: why *does* Descartes worry about this problem, given that he is not worried about the Heterogeneity Problem? Aren't they both problems about dissimilarity?

At this point the distinction between the two types of problems for interaction is helpful: one concerned the difference between cause and patient, the other between the cause and the effect.<sup>48</sup> Descartes makes quite clear that he thinks that there is no problem with one substance acting on another substance that is different in nature—this is the version of the Heterogeneity

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<sup>48</sup>The distinction between the two problems concerns the distinction between the patient and the effect, in Descartes the mind and the mode that is produced in the mind, and for the scholastics between the incorporeal mind and the intelligible species. But there is a corresponding distinction between the agent and (in Descartes) its mode that functions as cause. This distinction is not always particularly important. But it is important for Descartes's Dissimilarity Problem where it concerns the correlation between a particular type of brain state (in Descartes's own example an oval shape) and an idea of a mechanistic quality it produces (the idea of a circle).

Problem that concerns the difference between cause and patient, body and mind. The Dissimilarity Problem is more like the second version of the Heterogeneity Problem: in both cases the effect rather than the patient is the source of the problem. So why is it that Descartes is not worried about the effect being an idea, but is worried about the representational content of the idea?

First, I think we can see a good reason why someone who does not object to interaction between different types of substances would also not be concerned with the second version of the Heterogeneity Problem, that is, the production of a mental item by the body or a mode of the body. For consider the following principle: the effect produced depends not only on the nature of the cause but also on the nature of the patient. This is quite an intuitive principle, but generally ignored in discussions of interaction in Descartes. Consider a simple example. A billiard ball hits another billiard ball, and as a result the second ball moves. Next the first ball moves in the same way but now it hits a soft pillow; the pillow does not move. The explanation of the difference in effects lies in the differences between the second ball and the pillow, the patients. Surely we implicitly rely on something like this principle quite commonly. Aquinas explicitly appealed to such a principle in explaining Aristotle's idea that in sensation the sense organs receive the forms "without matter." He wrote that patients receive forms from agents in different ways; "For whatever is received in another thing is received according to the mode of the recipient."<sup>49</sup>

The principle that the patient is part of the explanation of an effect is an important one, and it can help explain an otherwise rather puzzling passage in Descartes. At *Principles* IV 198 Descartes rejects sensible qualities and substantial forms on the ground that interaction between them and mechanistic qualities is not intelligible: the reason he gives is that they are entirely different:

We understand very well in what way the various local motions of one body are brought about [*excitentur*] by the different size, shape and motion of the particles of another body; we can not at all understand, however, in what way those very same things (namely size, shape and motion) can produce something else, that is entirely different from them in nature, as are those substantial forms and real qualities, which many suppose to be in things; nor in what way those qualities or forms then have the power to excite [*excitandi*] local motions in other bodies.

He adds that we do see that motions in the body result in dissimilar sensations in the mind. Indeed, in the preceding article he had claimed that "our mind is of such a nature that from the fact alone that certain motions come to be in the

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<sup>49</sup> *In Aristotelis librum de anima commentarum*, Bk II n. 552. Steven Nadler tells me that later Cartesians, especially La Forge, explicitly use such a principle. I have not yet been able to explore his suggestion.

body, it can be impelled to any thought, without referring to an image of those motions.”

At first sight, article 198 seems inconsistent: in the same breath Descartes allows and disallows that effects are produced by radically different causes. His defense of the interaction between brain motions and sensations does not help: he simply says that we *find* that in sensation ideas are produced in the mind by physical states that do not at all resemble them. But this observation surely raises questions about his claim that we cannot understand how mechanistic qualities can interact with sensible qualities and substantial forms. Why should intelligibility problems rule out *that* kind of interaction, whereas such problems clearly must also arise for mind-body interaction?

We can make sense of Descartes’s reasoning, however, if he is assuming that the possibility of bodily states causing ideas can be explained in virtue of the difference between mind and body, and the view that the patient determines in part the nature of the effect. This is what explains that the effect is an idea. But this type of explanation cannot account for interaction between real qualities and substantial forms on one hand, and mechanistic qualities on the other hand: they are all entities that are all supposed to exist within the physical world.<sup>50</sup>

Application of the principle to the case of the action of body on mind can also help us see why Descartes did not worry about the effect produced in sensation being an idea but did worry about the Dissimilarity Problem, the question why an idea with a particular content is produced. The patient is a mind, and this explains why the effect produced by the bodily state is not a mechanistic mode, but an idea. That is because the mind is a thinking thing. So much for the Heterogeneity Problem. But now what still puzzles Descartes is that a shape or motion in the brain causes an idea of, say, red. Or an oval shape causes an idea of round. This does not happen simply as a result of the mind being a thinking thing; it requires more explanation. Descartes himself speaks of a lack of similarity between bodily state and idea, but what is at the bottom of the problem is that the dissimilarity strikes him as *arbitrary*.

To see this point, it is useful to note that in ordinary mechanical interactions there is quite commonly a lack of resemblance as well. Consider the effect of pressing a cylinder on a piece of clay at an angle. The result is an oval impression. In this case the result does not seem arbitrary, since we can explain it in terms of the shape of the cylinder, the clay and the angle of the interaction. In the case of sense perception, however, the fact that the mind is a

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<sup>50</sup>For alternative solutions to the problem posed by *Principles* IV 198 see O’Neill “Mind-Body Interaction and Metaphysical Consistency: A Defense of Descartes,” 243–245, and Schmaltz, “Sensation, Occasionalism, and Descartes’ Causal Principles,” 42.

thinking thing cannot account for the connection between a particular type of brain state and the particular type of idea that it seems to produce. That is Descartes's worry.

#### 4. DESCARTES'S SOLUTION

To approach Descartes's solution to the Dissimilarity Problem we need to distinguish two questions. The first one is the heart of the problem: given the dissimilarity between sensory ideas and states of the brain that seem to cause them, what is the origin of the ideas in question? The second question is: just how should we understand the role of the body in the occurrence of sensory ideas?

In the *Comments* Descartes answers the first question by saying that sensory ideas are innate in the mind: our mind has an innate disposition to form sensory ideas on the occasion of a motion in the brain. It is tempting to think that Descartes proposes an occasionalist view of the action of body on mind in this passage. But as Steven Nadler has pointed out, there is a crucial difference between occasionalism and the view Descartes here proposes. For Descartes does not describe *God* but *the mind* as the agent who acts on the occasion of events in the body.<sup>51</sup> And right after the passage about innateness in the *Comments*, Descartes distinguishes between a primary and proximate cause, and a secondary and remote cause, where the latter "gives occasion to the primary cause to produce its effect at one time rather than another."<sup>52</sup> So Descartes's view is that the mind is the origin of the idea and it is its *cause*. That is, the fact that we have an idea of a particular type, with a particular representational content, on a particular occasion is explained by the mind's innate disposition to produce ideas under certain circumstances.<sup>53</sup>

One might well be very surprised that Descartes describes sensory ideas as innate. Didn't he distinguish them from innate ideas and fictitious ones in the

<sup>51</sup> See his "Descartes and Occasional Causation." I think Nadler's analysis is basically right, although he sees the Heterogeneity Problem, not the Dissimilarity Problem as the problem Descartes is addressing.

<sup>52</sup> AT VIII-2 360, GSM I 305.

<sup>53</sup> Broughton and Wilson foresee a causal role for the mind in producing sensory ideas. They envisage that the specifically *mental* nature of ideas is explained by the mind being part of the (efficient) cause of the idea. (See Wilson, "Descartes on the Origin of Sensation," 300; and Broughton, "Adequate Causes and Natural Change in Descartes' Philosophy," 112.) But in my view Descartes presents the mind as the cause not of the mental nature, but of the content of the sensory idea.

As I explained above, the mind does play a role in explaining the mental nature of ideas, but I don't think this role should be understood in terms of efficient causation. Speaking with the Aristotelians, the recipient of an activity functions rather as the matter, the material cause, of the resulting state. By being that in which the resulting mode inheres it determines in part the nature of that mode.

Third Meditation?<sup>54</sup> Innateness deserves more discussion than I can provide here, but the following observations should help. First, it is crucial to note that in the Third Meditation Descartes presents the tripartite distinction among ideas as provisional. He adds: “Perhaps I can think that they are all adventitious, or all innate, or all fictitious; for I have not yet clearly perceived their true origin.”<sup>55</sup>

Secondly, the *Comments* is quite a late work and so one might think that the innateness of sensory ideas features only in Descartes’s later thought. But he also describes sensory ideas as innate around the time of the *Meditations*, in a letter to Mersenne of 1641: “I hold that all those ideas that do not involve any affirmation or denial are innate in us; for the organs of the senses do not bring us anything that is like the idea that awakens in us on their occasion, and thus this idea must have been in us previously.”<sup>56</sup> Still, the explicit claim that sensory ideas are innate is unusual in Descartes’s writings. But there are numerous texts that in different terms also support the fundamental idea that for him the mind itself is their source in the sense of being the source of their representational content. Crucial features of the language of the *Comments* occur repeatedly in earlier writings. For instance, Descartes writes in the *Treatise on Man* that the brain movement is the “cause of the fact that *the mind will conceive the general idea of hunger*.”<sup>57</sup> And as I pointed out earlier, Descartes frequently describes the production of the sensory idea by saying that the state in the brain *gives the mind occasion* to have a sensation. He does so with particular frequency in the *Treatise on Man*.<sup>58</sup> Alternatively, he writes that the brain states make the mind have a sensation.<sup>59</sup> And in several texts he presents a sign

<sup>54</sup>AT VII 37–38, CSM II 26.

<sup>55</sup>It is worth noting that there are really two different types of innateness at stake in Descartes. When he writes in the *Comments* that all ideas of sense are innate the question at stake is whether the ideas we have in sense perception come into the mind from the external world. But once that question has been settled, there is a further one: is it the case that *all* the ideas we have, including for instance, the ideas of God or mathematics, derive from the ideas we have in sense perception? It is this second question that was debated between the rationalists and the empiricists, and that we usually have in mind when we consider Descartes’s innatism. The first question has received much less attention.

<sup>56</sup>AT III 418, CSM III 187. That is to say, no doubt, the content of *simple* ideas of sense. Complex ideas must come about because the mind is prompted by brain motions to form several simple ideas at once. For a good discussion of this and related issues, see Guerout, *Descartes’ Philosophy Interpreted According to the Order of Reasons*, 2 vols., Roger Ariew, trans., (Minneapolis: University of Minnesota Press, 1984–1985), II 78–79.

<sup>57</sup>AT XI 163, emphasis added. See also AT XI 149 and 151.

<sup>58</sup>See especially AT XI 144–149, 151, 158, CSM I 102–103. See also the *Optics*, where Descartes compares sense perception to the perception a blind man has by way of his stick. The movement of the stick “gives occasion to the mind to sense . . .” (AT VI 114, CSM I 166). And in the French version of *Principles* II.1.

<sup>59</sup>AT XI 4, 144–147, VI 130, 131, CSM I 81, 102–103, 167–168.



model of the relationship between the brain motion and the sensory idea: the mind gets a sign from the body in response to which it forms the sensory idea.<sup>60</sup> So the mind is the origin of the representational contents of sensory ideas. In response to bodily states it exercises its innate capacity to form particular types of ideas.

But what about the second question: exactly what role does Descartes assign to the body? In the *Comments* Descartes writes:

Therefore there is nothing in our ideas which was not innate in the mind or faculty of thinking, except for the circumstances that concern experience. For this reason we judge that certain ideas that we now have present in our thought are referred to certain things placed outside us. We do not do so because those things have sent the ideas themselves to our mind through the organs of the senses, but because they sent something, which gave occasion to our mind to form these ideas by means of a faculty innate to it at this time rather than another time. (AT VIII-2, 358–359, CSM I 304)

So the role of the body is to explain the *occurrence* of a particular sensory idea at a particular time. It explains why the mind's disposition to form a particular type of sensory idea is activated at one time rather than another. But just how does it do so? Is the body a *cause*? This question acquires urgency from the fact that Descartes seems to present the mind as the entire cause of the idea. The body merely triggers the mind's activity.

At this point we can see considerable similarity to the treatment of the action of body on mind in the scholastics. The source of the trouble for the scholastics lies in the hierarchy between body and mind, and it arises for the production of what Descartes would call purely intellectual ideas. The scholastics, like Descartes, gave a substantial role to the mind in producing a mental representation in response to bodily states. And they also faced the question what role the body, in their case the phantasm, plays in producing a representation in the mind.

Now some interpreters have argued that for Descartes the brain motion is not a cause. Sometimes they have done so inspired by his frequent use of the term 'occasion' for the role of the bodily state, sometimes on the basis of his speaking of the body as exhibiting something to the mind, and giving the mind *signs* for having sensations. John Yolton claims that this sign model constitutes an alternative to the view that the brain motions are causes.<sup>61</sup> Nevertheless, Descartes frequently uses causal language to describe the role of brain motions. So others have concluded that he was not consistent on the issue, or that his views changed over time.<sup>62</sup> What view should we take?

<sup>60</sup> AT VII 88, CSM II 60, *The World*, ch 1.

<sup>61</sup> Yolton, *Perceptual Acquaintance from Descartes to Reid*, 18, 30.

<sup>62</sup> See the references in n. 26 and 39. I am not convinced by Garber's view that at least in the later years Descartes thought that all the motion in bodies is caused by God (*Descartes' Metaphysical*

We have *prima facie* reason to think Descartes did regard the brain motion as a cause given his frequent use of causal language and especially given his clear acceptance of mind-body interaction when asked about the Heterogeneity Problem. Moreover the texts where causal language occurs *include* ones where one might think he is offering an alternative view, such as passages where he offers the sign model or where he also calls the brain state an 'occasion' for the occurrence of sensation. For example, in the Sixth Meditation Descartes speaks of a brain state giving a signal to the mind for sensing something, but earlier in this same Meditation he writes that a motion in the brain "is instituted by nature to *affect* [*afficial*] the mind with the sensation of pain."<sup>63</sup> In the important passage from the *Comments*, Descartes refers to the brain motion as an occasion. But immediately after that passage he distinguishes between a primary and proximate cause, and a secondary and remote cause, where the latter "gives occasion to the primary cause to produce its effect at one time rather than another."<sup>64</sup> Much earlier, in the *Treatise on Man*, he presents essentially the same picture and writes that the brain motion "will be *the cause* of the fact that the soul, being united to this machine [the body], will conceive the general idea of hunger."<sup>65</sup> So here the mind is presented as the source of the idea of hunger, yet the brain motion functions as a cause.

Descartes's use of causal language could perhaps be dismissed if he ever denied that the body serves as a cause in sensation (or that it served as a cause under any circumstances). After all, Malebranche spoke of occasional causes in the created world but he argued that the creation has no genuine causal powers. But Descartes never does anything of the sort. Moreover, we saw that

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*Physics*, 273–280). For this view see also Gary Hatfield, "Force (god) in Descartes' Physics," *Studies in the History and Philosophy of Science* 10 (1979). 113–140. I certainly don't believe that texts that concern the action of body on mind can be used to support their position for the reasons just given (See n. 38 above). In this paper I am not concerned with the question of the causal powers of bodies, but with the distribution of causal roles between body and mind in sensation. If Garber and Hatfield are right, then body does not exercise any causation on mind. The causal role which I ascribe here to brain motions would instead belong to God. But this change would leave intact my treatment of the *distribution* of causal roles between mind and body/God.

<sup>63</sup>AT VII 87–88, CSM II 60. See also Descartes's reference in this Meditation to an active faculty in bodies that corresponds to the passive faculty of sensation in the argument for the existence of body (AT VII 79, CSM II 55). The lack of resemblance is combined with causal claims in the *Optics*, AT VI 85, 131, CSM I 153, 167, and in the first chapter of *The World*. In *The Treatise on Man* Descartes often refers to the brain motion as an occasion for sensation, but also as a cause (AT XI 144–149, 151, 158, CSM I 102–103).

<sup>64</sup>AT VIII-2 360, CSM I 305. Focusing on the content of sensory ideas, Janet Broughton argues that in the passage in the *Comments* Descartes presents the mind alone as the cause of such ideas. She describe the occurrence of language in the *Notes* that suggests that the body does cause ideas as sloppiness on Descartes's part. See "Adequate Causes and Natural Change in Descartes's Philosophy," 118.

<sup>65</sup>AT XI 163.

he claimed that mind-body interaction is not problematic, and he does so while discussing both directions of interaction. This surely suggests that the bodily state is a cause. So Yolton to the contrary, I think we should not see the sign model as an alternative to causation. And as Margaret Wilson points out, giving a sign to someone or something would rather seem to *require* causing an effect on that person or thing.<sup>66</sup>

Finally, at this point the Heterogeneity Problem enters into the picture. In the complex causal model Descartes offers to deal with the Dissimilarity Problem the question of the action of body on mind arises when the body acts on the mind to activate its innate dispositions. And this is where Descartes's relaxed attitude about mind-body interaction applies. While he is much concerned to explain why a brain state produces a *particular* effect in the mind, he sees no problem for the general possibility of a bodily state producing an effect in the mind.

I propose then that Descartes's purpose is not to offer an alternative to causation, but a model of causation that is compatible with the lack of resemblance, the seemingly arbitrary relation between the sensation and the corresponding brain motion. Descartes offers the sign model in response to the Dissimilarity Problem, as is quite clear, for instance, in *The World*, which devotes its first chapter to the Dissimilarity Problem. For instance, Descartes writes there that the sound the mind forms when someone speaks does not in the least resemble its cause, such as a man opening his mouth, moving his tongue, breathing out. He urges that one should not assume that our ideas of sense resemble their causes, and he writes that words can make us think of things despite their lack of resemblance. Then he asks rhetorically: "Why could not nature have established some sign which would make us have the sensation of light, even if the sign contained nothing in itself which is similar to this sensation?"<sup>67</sup> The same explanation applies to his referring to the brain state as an occasion. As is particularly clear in the *Comments*, it is on account of the Dissimilarity Problem that Descartes proposes that the brain motion is an occasion for, and serves as "the secondary and remote" cause of the sensory idea.<sup>68</sup> The brain motion gets the mind to exercise its causality and to produce

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<sup>66</sup> "Descartes on the Origin of Sensation," 298.

<sup>67</sup> AT XI 4, CSM I 81.

<sup>68</sup> As Nadler argues. He contends that the brain event is not an efficient cause. On his view, the model of efficient causation available in the seventeenth century was an influx model which requires substantial likeness between cause and effect. And the motion of the brain does not result in an influx in the mind, neither directly in regard to the idea produced nor as a stimulant to the mind's activity. As Nadler sees it, Descartes did not think the brain event was an efficient cause because of the dissimilarity between it and the idea in the mind (see "Descartes and Occasional Causation," 37–39, 47–49). I am not convinced that he is right, because I don't think Descartes accepts the causal likeness principle. And as my interpretation of his account of sensation should

the idea. In sum, the point of the model is not to deny the causality of the bodily state, but to introduce a complex model that includes a substantial causal role for the mind.

At this point the reader may well wonder about the following question: if Descartes was bothered by the dissimilarity between the brain state and the idea which it is supposed to cause, doesn't the same problem arise for the relationship between the brain state and the mental activity it is supposed to bring about?

But this question implies an improper understanding of the Dissimilarity Problem. It is not the case that the problem arises because Descartes assumes that cause and effect must resemble each other. Rather it arises because, as a result of the particular types of dissimilarity of brain state and idea (with respect to its representational content), their connection seems arbitrary and the brain state by itself can't account for the idea. Sometimes a dissimilarity between cause and effect can be accounted for in terms of features of the patient but the nature of the mind as simply a thinking thing doesn't help. This point strikes me as intuitively plausible: it is puzzling how a brain state can give rise to the corresponding ideas on the picture of the correlations Descartes offers in the *Comments*. So Descartes invokes a causal power in the mind, an innate capacity to produce a certain idea when prompted by a certain brain state. The correlations between brain states and these innate powers, furthermore, were established by God, as Descartes makes clear in the Sixth Meditation as well as the *Treatise on Man*.<sup>69</sup>

Second, we should not understand Descartes as proposing that the brain state produces something in the mind which in turn produces an idea. On that picture the brain state would explain something in its entirety, which then produced the idea. But on the scenario Descartes proposes the brain state triggers the activity of a causal power. The idea of a triggering cause is that such a cause does not account for an effect all by itself but instead sets in motion a preexisting causal mechanism. A triggering cause also does not by itself explain the activity of that mechanism because the mechanism itself contributes causal power: that's the point of speaking of a triggering cause. And for this reason the Dissimilarity Problem does not arise anew.

But now one might wonder about a different question: why did Descartes find it necessary to appeal to a causal power, a faculty or disposition in the mind? Why didn't he simply say that there is an association, established by God, between brain states and ideas, as one might think he is doing in the

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make clear, I do not think he works with an influx model of causation there. For relevant discussion of causal models, see also Specht, *Commercium mentis et corporis*. But more needs to be said on this issue.

<sup>69</sup>AT VII 87–88, CSM II 60; AT XI 143–144, CSM I 102–103.

*Treatise on Man* and in the Sixth Meditation? The problem with this alternative is that Descartes was committed to genuine causal powers—within the created world as well as in God—and so he could not be content with a simple association. He wanted a genuine causal explanation in terms of causal powers for the seemingly arbitrary correlation between sensory ideas and the corresponding bodily states. A brain state does not have the causal power to explain the occurrence of a corresponding idea, and so it can't be the entire cause. A further causal power must be in play. A mere association would leave the occurrence of the idea unexplained.<sup>70</sup>

##### 5. CONTEMPLATING THE BRAIN

So Descartes holds that the brain state plays a causal role in the production of sensory ideas by explaining their occurrence, but the mind is the source of

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<sup>70</sup>A problem for Descartes, but not specifically for my interpretation, arises from his argument for the existence of bodies in the Sixth Meditation and *Principles* II. 1. That argument seems to suggest that ideas literally come from bodies, not that bodies merely serve as occasions for the mind to produce ideas as the *Comments* suggest. Wilson notes this problem ("Descartes on the Origin of Sensation," 297, 305, and n. 17). I am not convinced, however, that the argument, when properly understood, has this implication. I cannot address this problem in sufficient depth here, but I hope the following considerations are helpful. One source of the impression that the argument does imply that ideas really come from bodies, derives from Descartes's speaking of ideas being sent [*emitti, emitterentur*], by bodies to the mind. Wilson offers a solution herself, suggesting that Descartes may be expressing himself loosely here; he may be "expressing in misleading terms the notion that bodily motions do play the role of *exciting* our minds to form these sensory ideas." This solution strikes me as quite plausible. Indeed, in a similar vein, in the *Comments* Descartes speaks of what "reaches [*pervenire*] our faculty of thinking" and then occasions the formation of ideas in the mind (AT VIII-2 358, CSM I 304).

Another important source of the impression that the argument requires that ideas are sent into the mind is Descartes's appeal in the *Meditations* to the different levels of reality, which suggests that he is relying on the causal principle that the cause must contain at least as much reality as the effect. But Descartes does not mention that principle in the argument, and reference to the levels of reality has disappeared in the *Principles*. Rather the argument seems to rely on God's non-deceptiveness, which really makes the causal principles superfluous. For discussion of this point, see Gueroult, *Descartes according to the Order of Reasons* II, 66–69. Gueroult argues, and I agree, that the levels of reality can't do any real work in the argument: they result in the conclusion that the level of reality of the cause of sensory ideas must be at least as high as that of bodies, but that is not a real restriction on this cause simply because this level of reality is so low. This is an important difference with the argument for God's existence in the Third Meditation.

Wilson also sees a problem in that in the *Comments* Descartes "does not deal with the issue of involuntariness at all" ("The Origin of Sensation," 305). This is a problem because the argument for the existence of body relies on the involuntary nature of sensation. I am not sure what she has in mind. Descartes makes quite clear in the *Comments* that the *occurrence* of sensation at one time rather than another is caused by bodies, and that this is why we refer them to external objects (AT VIII 358–359, CSM I 304). This seems to imply a clear reference to the independence from our will. The *Comments* would be consistent with the argument for the existence of body if that argument relies on the idea that the occurrence, albeit not the content, of sensory ideas must be caused by bodies because involuntary. Their involuntary nature strongly suggests to us that they are caused by bodies, and if not, God would be a deceiver.

their representational content. That is the point of the sign model. But the sign model generates awkward problems. For this model suggests that the mind *apprehends* images in the brain, in response to which it then forms ideas. This surely seems like a very strange view in its own right. But in addition it conflicts with Descartes's commitment to the view that we are aware of all our mental states: we certainly do not seem to be aware of perceptions of our brain states. Wilson points out the problematic nature of the sign model, and she argues that it results in serious inconsistencies in Descartes's account of sensation.<sup>71</sup> The crucial question is now: did Descartes mean to accept the apparent implication that the mind considers something in the brain?

Now in fact, as Wilson points out, Descartes explicitly rejects the idea that the mind looks at images in the brain when forming sensory ideas. And it is important to note that Descartes does so on a number of occasions. In the *Optics* he writes that we must not believe that

... there are other eyes in the brain with which we can perceive [the images in the brain]: but rather that the movements that compose it acting immediately against our soul, since it is united to our body, are instituted by Nature to make it have such sensations. (AT VI 130, CSM I 165)

Earlier in the *Optics* he denies contemplation of images in the brain while accusing other philosophers, no doubt the scholastics, of thinking that the mind does engage in such contemplation.<sup>72</sup> But more importantly for my purposes, in *The World* Descartes implies a denial of contemplation of the brain *when introducing the sign model*. In chapter 1 of *The World*, he argues that nature "could have established a certain sign that makes us have the sensation of light although this sign has nothing in it that resembles this sensation."<sup>73</sup> He adds that words can evoke ideas that do not resemble them even though often "we do not pay attention to the sound of the words, or their syllables; so that it can happen that after having heard a discourse of which we have understood the meaning very well, we cannot say in what language it was pronounced." By analogy, this disclaimer suggests that the mind need not literally pay attention to motions in the brain. At *Principles* IV 197 Descartes again uses the compari-

<sup>71</sup> "Descartes on the Origin of Sensation," 306–310.

<sup>72</sup> AT VI 112, CSM I 165, and see also AT VI 114, CSM I 166. Schmalz criticizes Descartes for ridiculing the scholastics for thinking that images are contemplated in the brain. The reason for Schmalz' criticism is that, as I have mentioned, for the scholastics sensation did not include a mental (or as he says, intellectual) component ("Descartes on Innate Ideas, Sensation, and scholasticism: the Response to Regius," 14–15, 34). The scholastics did offer an appropriate target, however, insofar as they often wrote of the contemplation of phantasms in the context of intellectual activity. See for instance Aquinas, ST I 85.1 ad 3 and ad 5.

<sup>73</sup> AT XI 4, CSM I 81.

son with the way words can incite thought, and now he offers a specific disclaimer of an act of interpretation by the mind:

It is proved that the nature of our mind is such that from the fact alone that certain motions occur in the body, it can be impelled to any thoughts, which do not refer to any image of those motions; and especially to those confused thoughts that are called sense perceptions or sensations. For we see that words, whether uttered orally or only written down, excite any thoughts and passions in our minds. . . . Perhaps it will be replied that writing or speech excites no imaginations of things diverse from them in the mind immediately, but only certain acts of intellection; and that on their occasion the mind itself then forms images of various things in itself. But what will be said about the sensation of pain and pleasure? A sword is moved towards our body, it cuts it: from this alone pain follows, which is clearly no less different from the motion of the sword or of the body that is cut than color, sound, smell or flavor. Therefore, since we clearly see that the sensation of pain is excited in us by the fact alone that certain parts of our body undergo local motion by contact with some other body, it pertains to conclude that our mind is of such a nature that it can also undergo [*pati*] affections of all the other senses from certain motions.

So Descartes here rejects the idea that the mind has intellectual states that intervene between bodily states and the sensations that occur on their occasion. He contends that the connection between the bodily state and the sensation is immediate, and so he clearly means to claim that there is no intervening mental state at all. But then it would seem that he thinks there is no mental act of looking at the brain state or an act of interpretation of such a state.

I have cited several of Descartes's rejections of the view that the mind contemplates something in the body to indicate how serious he was about rejecting this view. And he denies the contemplation of the brain while explicitly concerned with the sign model. So Descartes himself clearly wished to use the sign model without the apparent implication that the mind contemplates something in the brain. Now one might well object that like it or not, the sign model commits Descartes to contemplation of brain states, because that is what the model requires. I don't think we need to draw this conclusion, however. Let me explain.

Descartes uses the sign model to accommodate the dissimilarity between sensory ideas and brain motions, because in the case of responses to signs, cause and effect are dissimilar. Indeed, their relation is in a sense arbitrary, as is often noted about the relationship between words and what they stand for, an example of the sign model we have seen Descartes use. But I think it makes most sense to see him as interested in *part* of the model, and as wishing to adopt it without accepting the idea that the sign is looked at by the mind. His point is twofold. First, there is a dissimilarity between cause and effect in the case of signs, as in the action of body on mind: their connection seems arbitrary, and so causal interaction is compatible with that phenomenon given that

signs work as causes. Second, the sign model introduces a solution to the problem that the brain state by itself can't account for the idea because it is a complex model of causation that includes a significant causal role for the mind. Now one could object that the dissimilarity between cause and effect in the sign model is possible precisely because of an intellectual act of interpretation by the mind. But it is not at all obvious to me that one has to draw this conclusion, and I think that doing so requires an argument.<sup>74</sup>

This understanding of the sign model goes some way towards solving the problems posed by the presence in Descartes of what Margaret Wilson calls the presentation model, the model according to which the mind contemplates something in the brain. Descartes seems to offer this model for sensation, as well as various other mental activities. I will confine my discussion to sensation. Wilson mentions Descartes's rejections of this model, but she is not willing to conclude that he did not accept the view at all. In particular, she rejects the view proposed by Loeb according to which Descartes's use of the sign model "is merely metaphorical—a harmless *façon de parler*."<sup>75</sup> Loeb favors an associationist interpretation, according to which there is a "mere brute conjunction"<sup>76</sup> between physical and mental states. Wilson points out that the presentation model is quite pervasive in Descartes's writing and concludes: "On balance, it seems more reasonable to believe that Descartes did not sharply or consistently distinguish a 'literal' associationist view of the body-mind relation in sensation from a 'metaphorical' presentation conception."

The associationist model and the presentation model are indeed very different models, and if they are both present in Descartes there is considerable tension in his account of sensation. But in my view there is much less tension for reasons that derive from considerations about the manifestations of both models in Descartes's writings. In the first place, I don't think that Descartes accepted the associationist model. The causal model he proposes is more complex, in particular because it ascribes a significant causal role to the mind. In fact, Wilson seems to agree: she expresses skepticism about the associationist interpretation even for passages that seem to support it.<sup>77</sup> As I noted before, Descartes would not be satisfied by the associationist model, because it does not do enough to explain the occurrence, of say, a sensation of red in response

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<sup>74</sup>Incidentally, at this point the Heterogeneity Problem enters into the situation. Descartes offers a complex causal model to deal with the Dissimilarity Problem. Within this model the question of the action of body on mind arises when the body acts on the mind to activate its innate dispositions. And this is where Descartes's relaxed attitude about mind-body interaction should apply.

<sup>75</sup>"Descartes on the Origin of Sensation," 308, and n. 58.

<sup>76</sup>Wilson, "The Origin of Sensation," 310.

<sup>77</sup>"The Origin of Sensation," 311–312, 313–314.



to a brain state. Descartes does not think of causation in terms of simple correlations but genuine causal powers. In my view Descartes's seemingly associationist statements should be understood as abbreviated versions of the account of sensation I have developed here. On the other hand, the problems of the presentation model in Descartes's account of sensation stem largely from his use of the sign model. In my view this model is definitely not a mere harmless *façon de parler*. Descartes uses it to explain his complex view of the production of sensations on which the arbitrariness of the connection between brain state and idea is explained by the mind playing a causal role. But I have argued that this model does not commit Descartes to contemplation of the brain. In sum, appearances of both the associationist model and of the sign model are in the end manifestations of the same causal model, according to which the brain does act as a cause, but takes part in a complex causal process in which the mind also plays a substantial causal role. And so in the end the tension between the associationist model and the presentation model is not a serious problem in Descartes's account of sensation.

This interpretation of Descartes's use of the sign model for sensation is not sufficient, however, to deal with all the evidence that he thought that the mind directly contemplates something in the brain and the problems such evidence poses. For the suggestion that the mind contemplates the brain does not only appear when Descartes discusses sense perception and the sign model is not its only instance in his writings. Different forms of the idea appear in his discussions of various other mental functions, most notably imagination. I am inclined to think that in the end Descartes did not accept the idea or at least that it was not a deep feature of his thinking. But a full treatment of this issue is no simple matter and falls well beyond the scope of this paper.<sup>78</sup>

## 6. CONCLUSION

Interpreters have often thought that Descartes or at least his successors the occasionalists abandoned a causal role for the body in sensation on account of the Heterogeneity Problem. Recently scholars have argued, successfully in my view, that broader concerns about causation were at the root of the relevant views in occasionalism.<sup>79</sup> But we have now seen a perspective on mind-body interaction in Descartes as well as some scholastics that should further alter our

<sup>78</sup> A full treatment of such passages will be fairly complicated. One reason is that Descartes's motives for speaking as if the mind contemplates brain states seem to vary in important ways. In particular, in the discussion of imagination in Meditation VI (AT VII 72–73, CSM II 50–51), he seems to introduce such talk to account for the *similarity* between mental images of geometrical figures and bodily states, whereas the sign model is introduced in view of *dissimilarity* between the two.

<sup>79</sup> See Nadler, "Descartes and Occasional Causation," 41 n. 14 for references.

understanding of the treatment of sensation and other processes that involve mind-body interaction in this period.

The problem of mind-body interaction is generally treated as if it arose for the first time with Descartes's dualism. But we saw that scholastic views about the mind already generated this problem, although there the problem arose for the production of intelligible species, intellectual representations, rather than sensations. Neither the scholastics nor Descartes were concerned about the Heterogeneity Problem: they did not regard the simple idea that mind is incorporeal and thus radically different from body as an obstacle to their interaction. The scholastics saw a more specific problem that arises specifically from the superiority of the incorporeal over the corporeal. This problem clearly affects only the action of body on mind, but not the action of mind on body, and indeed, the directions of interaction were treated differently by philosophers in this period, including Descartes. Various aspects of Descartes's account of sensation might suggest that he was worried about the Heterogeneity Problem, despite his expressions to the contrary. But I have argued that these features of his account are in fact motivated by a different problem, namely the seemingly arbitrary connection between particular types of brain states and the corresponding types of ideas in the mind.

Not only were Descartes and the scholastics concerned with questions different from the Heterogeneity Problem, the solutions they proposed for their worries about mind-body interaction did not generally consist in an abandonment of interaction. Whereas we saw Suárez deny a genuine causal role for the body, various other scholastics and Descartes did not do so. Instead what unified the philosophers we discussed is that they all proposed complex causal models that included a substantial causal role for the mind.<sup>80</sup>

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