Descartes' Imagination: Unifying Mind and Body in Sensory Representation

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Abstract

The aim of this thesis is to investigate the role that the imagination plays in the later philosophy of René Descartes. The thesis will look at two related questions: (i) the status of the imagination as a mode of thought dependent on the body; (ii) the role of the imagination in object-perception. Throughout, the traditional view of Descartes as a Cartesian Dualist is rejected and a more holistic approach is taken towards the relationship between mind and body, in which Descartes' claims that the two make up a "substantial union" are taken seriously.

Part One deals with the relationship between mind and body. I argue that Cartesian Dualism cannot account for the faculties of sensation and imagination, because they have a corporeal basis. However, the 'union of mind and body', Descartes' device for explaining their interaction, can. I end Part One by identifying a problem with the paradigm case of mind-body interaction, object-perception. To determine the object of an idea there needs to be a mechanism to marry the two ingredients of perception: the innate ideas of geometry in the intellect, and 'adventitious' ideas of the object delivered by the senses. Otherwise we have no explanation for how the essentially 'inward-looking' intellect can apply its ideas to the essentially passive sensations.

Part Two focuses on the imagination and the question of object-perception raised in Part One. I argue against the largely-held view in the secondary literature that, with the advent of the *cogito*, the imagination's cognitive profile declined sharply. I argue that, in fact, the corporeal basis of the imagination places it beautifully to bridge the gap in object-perception, and that this is part of its role in all Descartes' discussions on the topic. The other, related, role of the imagination is to conjure fictions and hypotheses, suiting it for scientific and epistemological endeavours. The fact that the imagination is not tied to what is present to the senses, even though it receives its original content from them, means that it can manipulate ideas of corporeal things; including the innate notions of extension, shape and motion so key to gaining a clear and distinct idea of matter.

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Abbreviations

AT	Descartes, R. (1964-74): *Oeuvres de Descartes, Vols. I-XI*. Ed. C. Adam & P. Tannery. (Paris, Libraire Philosophique, J. Vrin)
CB	Descartes, R. (1976): *Conversation with Burman* Translated with Introduction and Commentary J. Cottingham (Oxford: Clarendon Press)
CSM I CSM II	Descartes, R. (1984-5): *The Philosophical Writings of Descartes Vols. I & II*. Ed. and translated J. Cottingham, R. Stoothoff and D. Murdoch (Cambridge, Cambridge University Press)
CSMK	Descartes, R. (1991): *The Philosophical Writings of Descartes, The Correspondence, Vol. III*. Ed. and translated J. Cottingham, R. Stoothoff , D. Murdoch and A. Kenny (Cambridge, Cambridge University Press)

Where I have translated a text myself I have indicated the original in a footnote.

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I confirm that no part of the material contained in this thesis has previously been submitted for any degree in this or any other university. All the material is the author's own work, except for quotations and paraphrases which have been suitably indicated.

Introduction

I. Aims

The aim of this thesis is to investigate the role that the imagination plays in the later philosophy of René Descartes. I will look at two related issues: (i) the status of the imagination as a mode of thought dependent on the body; (ii) the role of the imagination in object-perception. This splits into two questions, the answers to which will build a case for the imagination as a central faculty in Descartes' philosophy. These are as follows:

(i) How does Descartes characterise the imagination in the earlier works such as the *Regulae* (c. 1628) and *Le Monde* (c. 1632)?
(ii) Does this change in the *Meditations,* and if so, how, and to what extent?

Running through the discussion is a concern to maintain fidelity to Descartes' notion of the union of mind with body; indeed, my research question stems from Cottingham's observation that the imagination seems to come about as a result of the mind's union with the body, for it seems to "belong to us not qua minds, but qua embodied beings." (1986, pp. 126-7) If Cottingham is correct, and imagination and sensation are brought about somehow by the mind's union with the body, then a major part of this investigation must be to reconstruct how this occurs. For that reason two further research questions under investigation are:

(iii) How do imagination and sensation differ, and how are they alike, given their reliance on the union of mind with body?
(iv) What is the relationship between imagination and the union of mind with body: how does the one enable the other?

Ultimately the answer to these questions will build an account of the imagination in Descartes' later works that observes its crucial role in bringing the external world to the mind, and the mind to the body in order to cognize the "subject matter of pure mathematics." (*Meditation V* (CSM II, p. 49))

II. Overview

I take as my starting point Cottingham's observation that Descartes' description of sensation and imagination in the *Meditations* only make sense if we view them as "hybrid" faculties (1986, p. 122), relying on the body for content while still being modes of the mind.

> ... the 'specialness' of both imagination and sense-perception consists in the fact that their exercise requires *physiological activity*.... The kind of physiological activity Descartes has in mind in this context is not activity of special organs or nerve-fibres, but brain activity – movements in the pineal gland at the centre of the brain. (1986, p. 124)

Cottingham takes this as proof that Cartesian Dualism is not an accurate presentation of Descartes' ideas, and that in fact a "Cartesian Trialism" would fit the bill more closely, because it would accommodate Descartes' description of sensation and imagination. He bases this proposal in Descartes' description of the 'primitive notions', mutually exclusive categories basic to our understanding of the world, of which there are three: mind, body and the union of the two. (*Letter to Princess Elizabeth, 21 May 1643*, AT III, p. 665; CSMK, p. 218) I agree that this analysis provides a much deeper and broader account of Descartes' thought that encompasses mind-body interaction, and as such it informs the key assumptions of this thesis.

My argument revolves around five interrelated claims. **First**, the presumption of Cartesian Dualism is a misrepresentation of Descartes' philosophy, and it stands in the way of an intelligible account of the union of mind and body and associated mental faculties. This theme recurs through the chapters, and culminates in an attack on the notion that the imagination is cognitively redundant in the *Meditations*.

My **second** claim is that imagination as Descartes describes it has two aspects: one 'fictive', one 'technical'. In its fictive, creative capacity imagination is responsible for thinking up fictions and hypotheses; and this is the definition with which we are most familiar. When we speak of imagination we mean the capacity to think counterfactually, to imagine scenarios or objects that do not correspond to reality; and it is to this that we attribute our ability to construct, among other things, scientific and philosophical hypotheses. Descartes acknowledges this side of the imagination, making good use of it throughout his work to persuade his readers of

various claims and theories. By contrast the 'technical' imagination is an artefact that reflects better the literal meaning of the word: the act of 'imaging'. In the twenty-first century we do not recognise this definition of imagination very readily, but in the seventeenth century it had been established for at least a hundred years.[1] In Descartes' case technical imagination manifests both as the facility to render figures for the apprehension of the mind, and as a specific area of the brain in which those figures are shaped. For this reason it plays a central role in the mind's apprehension of matter. Neither aspect of the imagination is exclusive of the other; fictive imagination uses figures in the brain to represent situations in the external world to the mind. Similarly, the corporeal basis of the imagination means that it relies on, and makes obvious, the mind-body union; it might be a faculty of the mind but it cannot operate without the body.

My **third** claim is that although imagination and sensation are closely related in both content and operation, insofar as both deal with ideas of corporeal things and, relatedly, operate via the body, where the two come apart is where imagination's utility shines through. The crucial difference between them consists in the rigidity of their application: sensation is fixed to whatever it is presented with, be it a passion, appetite or a perception of the external world; and it passively receives information for apprehension by the mind, which makes sense of it as far as it can. Sensation's passive character means that the information it provides regarding the external world must be corrected by another faculty, because the information is materially false. By that Descartes means that the sense modalities themselves interfere with the information to deliver a misleading idea to the mind. In contrast the imagination is not consigned simply to receive impressions and deliver them to the mind; instead it enjoys the freedom to create fictions based on information received in the past, and to actively play with the figures it receives. This freedom means that through imagination the mind can manipulate sense impressions when they end up in the brain, the upshot of which is that imagination facilitates the study of geometry.

My **fourth** claim concerns an alleged decline of imagination in the *Meditations* and beyond. Almost unanimously the secondary literature agrees that Descartes' opinion of imagination as a cognitive faculty declines sharply in the *Meditations*, owing, it seems, to the strict separation of mind from body. As the body

[1] Evidence of the technical conception of imagination can be found in the sketches of Leonardo da Vinci a century before Descartes.

is withdrawn from clear and distinct knowledge and sensation is criticised for its unreliability, imagination's corporeal basis earns it a similar demotion, not helped by its ability to create fictions. I contend that this view is a result of a tacit acceptance of Cartesian Dualism; to hold it means agreeing that Descartes is best represented by his substance dualism. If we broaden our view of Descartes' philosophy to include the union of mind and body it has very different implications for the imagination. Rather than being a victim of substance dualism it turns out to play a pivotal part in object-perception, the *bête noir* of mind-body interaction. My **final** claim, therefore, concerns the details of that role. I argue in the final chapter that imagination unifies our perception of external objects, where otherwise there would be a chasm between the innate ideas of the intellect and the adventitious ideas of sense-perception. In object-perception the materially false idea of the senses is modified and corrected by the clear and distinct, innate ideas of geometry, supplied by the intellect. I argue that the essentially introspective nature of the intellect renders it unable to apply its innate geometry to sense-perception; and the essentially passive nature of sensation is no help at all. It takes the imagination, whose content involves geometry *and* ideas of corporeal things, to bridge the gap.

III. Outline

In Part One I set up the issues to be considered in Part Two. In Chapter One I present Descartes' substance-mode metaphysics, in which thinking and extended substance are mutually exclusive and really distinct. I then present the 'traditional' interpretation of this system, Cartesian Dualism, according to which mind and body cannot interact because they have nothing in common. This is the 'Interaction Problem', and in the final section of Chapter One I concede that, no matter how we understand Descartes' notion of causation, it is extremely difficult to see how any causal exchange between mind and body could come about. I end by noting that Descartes himself never saw the mind-body relationship as a problem, stating that the two exist in a 'union' that seems to bypass all talk of causal interaction.

Chapter Two explores the union of mind and body. It seems that to ask about causal interaction is to begin from the wrong understanding and to go from there. This is because, rather than understanding mind and body as separate, when thinking about their relationship we should understand them as united and proceed

accordingly. However, despite Descartes insistence on the union as an explanatory device, it is not obvious how we should understand it. (Radner, 1985a, b) The rest of the chapter deals with different interpretations of the union; as a substance (Broughton and Mattern, 1978; Richardson, 1982); as a hylomorphic unity (Gilson, 1967; Hoffman, 1986); finally as a device to explain the faculties of sensation and imagination, which themselves seem to rely on the body (Cottingham, 1986; 2008).

In Chapter Three I discuss sensation, and its reliance on the body. I note that Descartes was primarily a natural philosopher; therefore questions of metaphysics are subordinate to questions of physics, mathematics and biology. As a result, the question of reliable sense-perception becomes extremely important, hence Descartes' extensive treatment of, in particular, vision in the *Optics* (1637). For this reason, I argue, sense-perception is the most significant instance of mind-body interaction for understanding Descartes' philosophy. I present the mechanics of sensation, and show how this led Descartes to conclude that our ideas about the external world, delivered in sense-perception but interfered with by the body, are inherently unreliable. This is the doctrine of 'material falsity', and, following De Rosa (2010), I explain how it leads him to posit two ingredients to all perception: innate geometrical content and adventitious phenomenal content. I end by drawing attention to a gap in this account, for which we require a mechanism to bridge the two.

Part Two explores Descartes' understanding of the imagination, which is as both a 'fictive' faculty and as a 'technical' ingredient in sense-perception. Chapter Four concerns the imagination in the early works, up to the *Meditations*, laying bare both aspects of the imagination; but ultimately focusing on its technical role in enabling the mind to cognize the external world, and its close relationship with sensation. I end the chapter by presenting a theme in the secondary literature, that Descartes' opinion of imagination as a cognitive force declined sharply in and after the *Meditations*; and that knowledge becomes the domain solely of the intellect. (Wilson, 1978; Fóti, 1986; Sepper, 1996) I spend the rest of the thesis arguing against this idea.

Chapter Five presents Descartes' understanding of the imagination in the *Meditations* and beyond. I show how both the 'fictive' and 'technical' imaginations allow the mind to manipulate the body, particularly in controlling the passions, and that this reveals the mind's union with the body. I suggest that the shift in Descartes' understanding of imagination, in which it appears not to have the same corporeal

foundation as previously, reveals a tension between understanding imagination as a mode of thought, and as based in the body. In Chapter Six I argue that the view that the imagination suffers at the hands of the intellect is a result of implicitly accepting Cartesian Dualism as a faithful interpretation of Descartes. I explore the idea that the *Meditations* relates the triumph of the intellect, before showing how this plays to Cartesian Dualism.

Chapter Seven draws everything together. In it I argue that, contrary to popular opinion, Descartes viewed the imagination as cognitively important as ever. I show how, without the imagination, it would be impossible for the mind ever to cognize the external world; for it is imagination that bridges the gap between the information of the senses, and the innate ideas of the intellect. The latter are required to correct the materially falsity of the former, to gain clear and distinct knowledge of material things. In this way, I conclude, the imagination demonstrates the union of mind and body; enabling the mind to grasp the external world in one direction, while allowing it to manipulate the body in the other.

Part One

The Mind-Body Relationship

Chapter One

Descartes' Metaphysics

I. Introduction

Any treatment of Cartesian Dualism, particularly one as heavily critical of it as this, requires that Descartes' metaphysics be clearly presented and distinctly understood. In this chapter I will lay out Descartes' substance-mode metaphysics, and the distinctions and hierarchy therein. Besides making Descartes' commitments clear, my aims are twofold. First, I wish to illustrate how Descartes' system might entail Cartesian Dualism; for it is a good idea to show how Descartes' critics arrive at the position they do, even if it is in the end to argue against them. My second aim is to highlight the hierarchy running through Descartes' metaphysics; how this begins with the notion of ontological dependence, then transforms into an 'operational' dependence when we unpick the different modes and their spheres of influence. Once I have presented Descartes' metaphysics I will show how maligned it has become, in the doctrine of 'Cartesian Dualism' and the notorious interaction problem. Finally I will explain how the ontological hierarchy in Descartes' scheme can lead to a misleading understanding of mind-body interaction.

Most of what follows is taken from the Principles (1644), which Descartes claims "encompasses everything which the human mind is capable of knowing." (AT IX, p. 3; CSM I, p. 180) It is one of the latest works, but the Principles' exposition of Descartes' metaphysics can be traced back through the Meditations. As such, the account given here is representative of the works with which this thesis is most concerned.

Descartes' scheme is straightforward enough to divine, at least in its most basic categories:

> [A]ll the objects of our perception we regard either as things, or affections of things, or as eternal truths, which have no existence outside our thought. (AT VIII, p. 23; CSM I, p. 208)

Three kinds of thing populate the world: 'things', 'affections' and 'eternal truths'; in other words, substances, properties and abstract entities. The last category is least important for our purposes. It includes such things as number, which is neither substance nor affection, but applies to both; similar to it is duration. The division between things and their affections is echoed in the Meditations, when Descartes investigates a piece of wax and decides that it is best known without its properties, "take the clothes off, as it were, and consider it naked". (AT VII, p. 32; CSM II, p. 22) For Descartes, affections divide into those without which a substance would not be what it is - its essential properties - and those without which the substance would rest easy - its accidents. Affections divide into 'attributes', the essential properties of a substance, and 'modes', its non-essential, impermanent accidents. Both inhere in substance, and as such rely on it for their existence. In this chapter I will present the main components of the substance-mode metaphysics to which Descartes adheres throughout his career, to make clear both his ontological commitments and, as the chapter progresses, how this gives rise to the notorious interaction problem. To do this I will need to explain Descartes' notions of substance, attribute and mode; make clear the hierarchies running through his scheme; and briefly present the idea of a 'distinction', from which so much can (and has been) inferred about the relationship between the substances.

(i) Substance

The Principles offers a detailed description of the difference between substance and modes, and it also presents an ontological taxonomy. The original definition of a substance in the Principles is "nothing other than a thing which exists in such a way as to depend on no other thing for its existence" (AT VIII, p. 32; CSM I, p. 210). Strictly speaking this definition realises one instance, and that is God:

> Hence the terms 'substance' does not apply univocally, as they say in the Schools, to God and to other things; that is, there is no distinctly

> intelligible meaning of the term which is common to God and his creatures. (AT VIII, p. 32; CSM I, p. 210)

Descartes' God is crucial to his scheme: God is the original, uncreated substance, and without God there would be nothing at all. The arguments for God's existence in the Meditations, ridiculed though they are, are necessary not just to get the Doubter epistemically from the cogito to the external world; God is the basis for all existence and so requires an a priori proof. As such, God enjoys independent existence (AT VIII, p. 13; CSM I, p. 200), relying on nothing else for initial or continued being. The same cannot be said for Descartes' other category of substance, 'created' substance, which qualifies for the name 'substance' only relatively, insofar as it enjoys a degree of independent existence. This will become clearer as we progress, but the point is that Descartes' notion of substance – as, indeed, his notion of existence – admits of degrees, for while God is responsible for His own existence, created substance "can exist only with the help of God's concurrence." (AT VIII, p. 24; CSM I, p. 210)

> In the case of created things, some are of such a nature that they cannot exist without other things, while some need only the ordinary concurrence of God in order to exist. (AT VIII, p. 25; CSM I, p. 210)

This was not a novel idea; it had been a standard claim of the Platonists as early as the fifteenth century that the universe was ordered according to degrees of perfection. For example Marsilio Ficino's Platonism held that

> [t]he universe which emanates from God constitutes a hierarchy in which each being has its place according to its degree of perfection, a hierarchy descending through the orders of angelic minds and rational souls to corporeal forms and unformed matter. (Lohr 1990, p. 571)

The idea that the corporeal is among the lowest rungs of the ladder is echoed in Descartes' later work, where the intellect is vaunted as the faculty of mind most capable of recognising true and immutable natures; whereas "as long as we have our bodily existence, we are limited in our ability to know." (Popkin 1990, p. 674) In the

Meditations the body is held responsible for the "material falsity" of sensory ideas, and thus their inherent unreliability. I will explain presently why the notion of a hierarchy, and the material falsity of sensory ideas, have very interesting consequences for the matter of the mind's interaction with the body.

Descartes' metaphysics is structured very hierarchically right through. We have already seen that his definition of substance is not "univocal" (AT VIII, p. 24; CSM I, p. 210), and that there is a mitigated version of substance in the created realm. Whereas God needs no other thing to exist, so-called "created" substance does not enjoy such complete independence. There are, for Descartes, two kinds of created substance: material and immaterial. Both are capable of instantiating properties, and both are known through those properties, since "we cannot initially become aware of a substance merely through its being an existing thing, since this alone does not of itself have any effect on us" (AT VIII, p. 25; CSM I, p. 210). According to this definition, substance seems to be little more than a device for grouping together properties, but since Descartes has already defined the existence conditions for substance - particularly with God - as not requiring anything other than itself to exist, it is incorrect to claim this, because it would be tantamount to claiming that substance requires properties to exist. Still, it is fair to say that Descartes' substance is quite abstract in its presentation; without its properties substance is in practice neither perceivable, nor fully conceivable. Other than knowing that they instantiate properties, and that they require God to both create and sustain them both, we know only that there is a 'real distinction' between material and immaterial substance whereby neither depends – ontologically or otherwise – on the other, and neither shares its properties with its counterpart. Owing to our clear and distinct understanding of the distinction between the two we can rest assured, as ever, that we are not deceived in the matter and that the two do exist separately (AT VIII, CSM I, p. 213).[2]

[2] It is at this point that Descartes inserts the following caveat:

> And even if we suppose that God has joined some corporeal substance to a thinking substance so closely that they cannot be more closely conjoined, thus compounding them into a unity, they nonetheless remain really distinct. (AT VIII, CSM I, p. 213)

Descartes is reminding us, as per *Meditation VI*, that the mind and body are joined in a unity to form a human being, even though the two are, technically, distinct entities.

(ii) Attributes

Typically for Descartes, properties are defined three different ways. However, it is not immediately clear whether this corresponds to a difference in kind of property, or he has simply given three definitions according to the work done by the property in question:

> By mode, as used above, we understand exactly the same as what is elsewhere meant by an attribute or quality. (AT VIII, p. 26; CSM I, p. 211)

It seems straightforward, then, that the three ought to be equivalent, a rose by any other name; and it would make sense for this to be the case. At core, properties are modifications of a substance whose existence depends on the substance in which they inhere; redness cannot exist without red objects. On this reading, the difference between modes, qualities and attributes is defined by context, and Descartes' explanation ostensibly supports this conclusion.

> […] we employ the term mode when we are thinking of a substance as being affected or modified; when the modification enables the substance to be designated as a substance of such and such a kind, we use the term quality; and finally, when we are simply thinking in a more general way of what is in a substance, we use the term attribute. (AT VIII, p. 26; CSM I, p. 210)

The passage moves from the particular to more general identification of properties: when a substance undergoes a specific change, or a particular property is identified such as a specific motion or shade of colour, then we speak of modes; when the substance is identified as of a kind, presumably as thinking or extended, we use the term 'quality'; finally when we sort the properties of a substance, or if you prefer, when we determine to which side of the immaterial-material divide a mode belongs, we speak of attributes.

This approach makes sense according to a reading of substance metaphysics modelled around simple subject-predicate grammar, where substance is the subject, modified or qualified by the property. All properties act as predicates, and the

various terms are used simply in identifying either general or particular properties. They are linguistic tools and do not specify any real difference in the properties themselves. However, a deeper reading of the Principles shows that, satisfyingly simple as this reading is, it is not quite correct. Descartes is not as much describing the only way substance is modified, according to the three contexts in which modification arises, as enumerating three different properties per se. The most significant of the three are attributes and modes; qualities do not figure very much at all after 1:56. My own suspicion is that they are subsumed under the specific definition of an attribute, and I shall expand upon this presently.

My reason for asserting this more fundamental difference between attributes, qualities and modes rests on their relative significance in Descartes' overall scheme. Whatever is inseparable from the substance in which it inheres – Descartes gives the putative examples of existence and duration in 1:56 and 1:57 (AT VIII, p. 26; CSM I, pp. 211-2) – is an attribute, and is conceptually distinct from its substance.[3] However, each created substance has a principal attribute, which is that by which a substance is recognised and "without which the substance is unintelligible" (AT VIII, p. 30; CSM I, p. 214). Given that when we speak of an attribute we are identifying more generally "what is in a substance" (AT VIII, p. 26; CSM I, p. 211), what we are looking at are the kinds of properties that one finds in either of the two created substances. Or, to put it another way,

> [t]hought and extension can be regarded as constituting the nature of intelligent substance and corporeal substance (AT VIII, p. 30; CSM I, p. 215)

In the absence of their respective principal attributes, the two created substances are "unintelligible". It is the nature of the one to think, the other to be extended, and this is so important that. "they must then be considered as nothing else but thinking substance itself and extended substance itself – that is, as mind and body."[4] (AT VIII, pp. 30-1; CSM I, p. 215) Descartes affords unmistakeable priority to attributes

[3] In the Cartesian system existence must be a property, albeit one of the utmost import. The charge brought later by Kant, that existence is not a predicate, in response to Descartes' ontological argument is therefore an objection to a very fundamental part of Descartes' metaphysics.

[4] This distinction between activity and passivity is an interesting one, but is the subject of another discussion entirely.

here; not only are they of greater importance than modes in the identification of substance, they are all-but identified with substance. Their natures are different from modes, for attributes are unchanging and permanent. As long as there are thinking and extended substances there will be thought and extension. Existence and duration are also attributes insofar as a substance cannot be conceived without them (AT VIII, p. 27; CSM I, p. 212). As the essential properties of substance, thought and extension constitute the nature of each; at the same time it is important to note that, even though it is conceptually easier to view them as created substance itself, thought and extension should also be recognised as the modes of a substance,

> [...] in so far as one and the same mind is capable of having many different thoughts; and one and the same body, with its quantity unchanged, may be extended in many different ways. (AT VIII, p. 31; CSM I p. 215)

Hence Descartes' earlier definition of an attribute as revealing the kind of modes inherent in a substance; every modification of either substance will be a variety of thought or of extension. This is also the reason that I believe qualities are subsumed somewhat under the definition of an attribute, though I am the first to admit that Descartes is vague on this subject. If qualities are what allow us to identify a substance as of "such and such a kind" (AT VIII, p. 26; CSM I, p. 211), then that is allowed for amply in the definition of an attribute. A quality is simply anything that allows us to identify an object as belonging either to thinking or to extended substance; so qualities are not identical with attributes, they might be attributes or modes. Because attributes are essential to substance, they are distinguished from it 'conceptually'. The notion of a distinction is pivotal in Descartes' philosophy, both structurally and for how it has been perceived down the centuries. Before I move on to discuss modes, therefore, I will make a short detour to explain the notion of a metaphysical distinction, and how Descartes makes use of it.

(iii) Distinctions

There are three kinds of distinction in Descartes' philosophy, and 'distinction' is a technical term.[5] A caveat, though, before I launch into the discussion: Descartes often speaks of his epistemic standard, the 'clear and distinct' idea, as a way of differentiating between what is guaranteed in knowledge and what is simply a 'confused idea'. This appears to be a direct phenomenological experience of truth, and 'distinct' here seems to refer to the fact that one cannot confuse such an idea with anything else.[6] It is distinct insofar as it can be picked out immediately; it is clear insofar as it is immediately recognisable (AT VIII, p. 21; CSM I, p. 207). We are not dealing specifically with this kind of distinction here, although it is relevant in how we come to know the metaphysical distinctions. We are dealing with a standing technical term, not coined by Descartes but one of which he makes much use. The metaphysical distinctions used here refer to the differences between different entities of the same ontological level; their importance rests with the fact that they determine, to a large extent, how we know what an entity is and where it rests on the ontological scale, for they determine how easily we can abstract an entity from its superior and others of its kind. In other words, it is by virtue of the distinctions we draw between substances, attributes and modes that we understand their respective ontological (in)dependence; and this understanding comes from how clearly and, crucially, distinctly we can understand something in isolation. If that thing can be understood distinctly on its own then, with God's assent, we can confidently claim it to exist independently. In contrast, if the thing we are trying to conceive becomes obscure in isolation, or loses something essential to our understanding of it, we can state with equal confidence that it is not independent of whatever it has lost in our attempt to abstract it, and therefore is not ontologically independent.

The first kind of distinction exists between two substances, and is called a real distinction. If two substance are really distinct,

[5] Descartes did not make this up. Distinctions between entities, and their varying degrees of reality, were accepted philosophical doctrine in the seventeenth century (Cf. Goclenius, 1964).

[6] "Now some of these perceptions are so transparent clear and at the same time so simple [distinct] that we cannot ever think of them without believing them to be true." (*Second Replies* (AT VII, p. 145; CSM II, p. 104))

> [...] the power which he [God] had of separating them […] is something he could not lay aside; and things which God has the power to separate, or to keep in being separately, are really distinct. (AT VIII, p. 29; CSM I, p. 213)

The paradigm of a real distinction is between thinking and extended substance: because the two substances have mutually exclusive natures they cannot share any properties. This means that they are really distinct. Note how my clear and distinct understanding of the difference between the two substances leads me to understand, just as clearly and distinctly, that they are really distinct. Thanks to God's epistemic guarantee, everything we clearly and distinctly understand is really so, and since we clearly and distinctly understand ourselves as distinct from other thinking substances, and from corporeal substance, then that is how things are. Moreover, not only are the two kinds of substance really distinct; the separate instances of each are also really distinct. When speaking of corporeal substance Descartes baldly states that "each and every part of it, as delimited by us in our thought, is really distinct from the other parts of the same substance."[7] (AT VIII, p. 28; CSM I, p. 213) Similarly, every instance of thinking substance is distinct, a conclusion we reach when we realise that our thoughts are exclusive to ourselves, and we cannot reach the thoughts of others. (AT VIII, p. 28; CSM I, p. 213) The reality of the distinction stems from the reality of the entities involved: the ontological robustness of substances means that when we perceive them to be distinct, we can state that this is really so, for they depend on nothing else for their existence except God, who is outside the created realm.

Perhaps the point will be made more clearly as we move on to discuss 'modal' distinctions, which obtain either between a mode and its instantiating substance, or between two modes. For example, imagination is distinguished from the mind in which it exists: the mind can exist without imagination (what a mind it would be!), but imagination cannot exist without the mind. In this we gain a good idea of the ontological dependence of modes on substance. Both mind and imagination we can grasp apart, but while our grasp of the mind is perfect in the absence of imagination, our grasp of imagination is not complete without

[7] An interesting thought, for according to this statement all separate bits of matter are really distinct and so different substances!

understanding that it exists as a mode of thought.[8] Similarly, memory and imagination are modes differing in character but which have the same ontological status, rendering 'modal distinction' literally true in such cases. One exception to this rule is the distinction between the mode of one substance and that of another (as, for example, between shape and pain).

> It seems more appropriate to call this kind of distinction a real distinction, rather than a modal distinction, since the modes in question cannot be clearly understood apart from the really distinct substances of which they are modes. (AT VIII, p. 30; CSM I, p. 214)

In this kind of case the important distinction is between the two substances rather than the modes.

Finally, a conceptual distinction obtains "between a substance and some attribute of that substance without which the substance is unintelligible." (AT VIII, p. 30; CSM I, p. 214) This distinction is less clear than the others insofar as it is difficult to tell how we can distinguish between substance and attribute at all. An attribute is a substance's essential property, without which the substance would be unintelligible, and a conceptual distinction is just that - merely conceptual, never actual. The mere possibility that a substance can be conceived apart from its essential attribute, does not entail that it is possible in practice to separate the two. The difference between this and a modal distinction lies in the subject matter; modes are transitory, they come and go and are not essential in any way to the substance in which they exist, whereas attributes are as permanent – practically if not theoretically, as their substance.

(iv) Modes

On to the most interesting part of the Cartesian scheme, modes. Descartes deals with them briefly early in the Principles.

> How the modes of thought and extension are to be known

[8] See *Meditation VI* (AT VII, pp. 78ff; CSM II, p. 54) for Descartes' extended discussion of the ontological relationship between mind and imagination.

> There are various modes of thought such as understanding, imagination, memory, volition, and so on; and there are various modes of extension, or modes which belong to extension, such as all shapes, the positions of parts and the motions of the parts. And, just as before, we shall arrive at the best perception of all these items if we regard them simply as modes of the things in which they are located. (AT VIII, p. 32; CSM I, p. 216)

Modes are the transient properties of a substance; they are not as crucial to substance as attributes, which constitute its nature. However, they are important because they are crucial to our everyday knowledge of substance. Substance is not available to us except as conceptually distinct from its attributes; attributes are encountered through particular modes. In the passage above Descartes warns against regarding modes as things in their own right; in that case they would be substances. Rather, they are modifications of the substance upon which they are ontologically parasitic. That said, modes are certainly less abstract than either substance or attributes, for they constitute the phenomena of the mind and physical world; as I have said, they are what we encounter in our everyday dealings. For this reason they comprise the faculties and ideas of the mind, as well as the measurable properties of physical science; unsurprisingly given this, they are the category to which Descartes devotes the vast majority of his time and effort in the Principles. Substance and attribute are disposed within a few pages, while Parts One, Two and sections of Three deal with modes.

In Part Two of the Principles Descartes states that when we perceive the physical world we have a clear and distinct perception of

> [...] some kind of matter, which is extended in length, breadth and depth, and has variously different shaped and variously moving parts which give rise to our various sensations of colours, smells, pain and so on. (AT VIII, p. 40; CSM I, p. 223)

These "various sensations" are not modes of physical substance, but matter, quantity, size and shape are (AT VIII, p. 33; CSM I, p. 217), as is space (both internal and

external).[9] Of the modes of corporeal substance that Descartes stipulates, these five enjoy the purest existence; they number as their superiors only substance and attribute. The same cannot be said of solidity, position and motion. Solidity is dealt with in Part Three of the *Principles* and is there said to be determined by size and shape. (AT VIII, p. 172; CSM I, p. 264) Position and motion are referred to in the discussion of space, and are said to be determined only in reference to it (AT VIII, pp. 45-8; CSM I, p. 227-9). This dependence of some corporeal modes on others is the reason that I believe there to be a latent hierarchy in Descartes' account; for it is clear that some modes enjoy priority over others by virtue of existing in matter without reference to anything else, as I will discuss in the conclusion to this chapter. These are the properties of matter; the rest of the *Principles*' treatment of matter is dedicated to working out the laws of physics from them. In other words, from this short list and a knowledge of mathematics Descartes sets out to provide an account of the whole of physical science.

By contrast, immaterial substance is dealt with in the *Principles*, if not briefly, then certainly less expansively than material substance, where the aim is to give a comprehensive review of the whole of Descartes' philosophy.[10] Thinking substance is discussed much more minutely in the *Meditations*, and this is reflected in the detailed discussions in later chapters of this thesis. However, the pared-down version of the *Principles* leaves nothing out. There are many more modes of thought than of extension, and from the standpoint of metaphysics they are much messier in organisation.

Every mode of thought in Descartes' scheme is a form of either of two kinds of thinking.

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[9] "There is no difference between space, or internal place, and the corporeal substance contained in it… in the case of a body, we regard the extension as something particular and thus think of it as changing whenever there is a new body; but in the case of space, we attribute to the extension only a generic unity, so that when a new body comes to occupy the space, the extension of the space is reckoned not to change…." (AT VIII, p.45; CSM I, p. 227)
[On 'external place'] "The terms 'place' and 'space', then, do not signify anything different from the body which is said to be in a place; they merely refer to its size, shape and position relative to other bodies… if we suppose that there are no such genuinely fixed points to be found in the universe… we shall conclude that nothing has a permanent place, except as determined by our thought." (AT VIII, p. 47; CSM I, p. 228)

[10] "In this way I consider myself to have embarked on an explanation of the whole of philosophy in an orderly way [...]." (*The Principles of Philosophy: Preface to the French Edition* (AT VII, p. 16; CSM I, p. 187))

> All the modes of thinking that we experience within ourselves can be brought under two general headings: perception, or the operation of the intellect, and volition, or the operation of the will. (AT VIII, p. 17; CSM I, p. 204)

In effect this creates a clear and rigid hierarchy in the Cartesian system, in which the attribute of thought is split into volition and perception, which in turn are divided into the different faculties.

> Sensory perception, imagination and pure understanding are simply various modes of perception; desire, aversion, assertion, denial and doubt are various modes of willing. (AT VIII, p. 17; CSM I, p. 204)

There is an exception to this rule. The faculty of judgement is exercised when the will and perception work together, "so that, once something is perceived in some manner, our assent may then be given." (AT VIII, p. 18; CSM I, p. 204) In effect we perceive via the intellect, will that something be the case or pass judgment on a perception or state of affairs. Error comes about when the infinite will surpasses the finite intellect, and we make judgments that we are not strictly warranted in making. (AT VIII, p. 21; CSM I, p. 207)

While the will is infinite in scope it operates as desire, aversion, assertion, denial and doubt – all faculties that express an attitude towards something. Of the varieties of the intellect, pure understanding is the faculty wherein Descartes' criteria of clarity and distinctness are relevant, and the understanding extends no further than that which is present before the mind and that which can be understood mathematically, such as "the size of the bodies we see, their shape, motion, position, duration, number and so on."[11] (AT VIII, p. 33; CSM I, p. 217) The operation and scope of the intellect will be discussed in Chapters Five, Six and Seven, particularly with reference to the external world, which is also the remit of both imagination and sensation. Sensation can be further divided into three categories:

[11] 'Pure understanding' or 'the understanding' are used synonymously with 'intellect' in Descartes' writings.

> This list includes, first, appetites like hunger and thirst; secondly, the emotions or passions of the mind which so not consist of thought alone, such as the emotions of anger, joy, sadness and love; and finally, all the sensations, such as those of pain, pleasure, light, colours, sounds, smells, tastes, heat, hardness and the other tactile qualities. (AT VIII, p. 23; CSM I, p. 209)

The first two categories, appetites and passions, refer to the human body "and do not, except occasionally, show us what external bodies are like in themselves." (AT VIII, pp. 41-2; CSM I, p. 224) Appetites and passions are significant insofar as they demonstrate the union of the mind with the body, and I will turn to this in the next chapter. The third category alone refers us to external objects – though this is not enough to show us the properties of external objects in themselves. Indeed, it appears from this list that sense-perception has as its objects only those things that are in some doubt, for "our knowledge of what it is for the body to have a shape is much clearer than our knowledge of what it is for it to be coloured." (AT VIII, p. 34; CSM I, p. 218) Questions of object-perception occupy a lot of the following chapters, so I will leave it alone for now. All we need note is that it comes under perception which, according to the taxonomy of the *Principles*, is a species of the intellect. Finally, the imagination concerns itself with "motion, extension and shape" (AT VIII, p. 37; CSM I, p. 220), that is, the corporeal.

(v) Hierarchies

Descartes' metaphysics is arranged hierarchically, from God as the *ens realissimum* right down to the modes of a substance. For the higher-order entities – substance, attribute and modes in general – Descartes adheres to orthodoxy and orders them according to their respective ontological (in)dependence, where the lower orders depend on their immediate and distant superiors for existence. For example, without a substance in which to inhere there would be no properties; or without a self-creating God there would be no created substance. I call this

'orthodox' because the notion of an ontological hierarchy was staple metaphysical doctrine in the seventeenth century, and had been for centuries.[12]

As we progress down the scale, however, a distinct ordering principle emerges among the modes, which ranks them in terms of 'operational' (in)dependence. Some modes, such as the intellect or the will in thinking substance, or quantity in extended substance, operate 'purely' – that is, they are not a function of any other property of that substance; while other modes operate under the aegis of one or the other. Similarly, in extended substance solidity is defined as a function of size and shape. (AT VIII, p.172; CSM I, p. 264) Tellingly, this order is more prominent in thinking substance, where faculties of thought are clearly and strictly divided as either species of perception or volition; that is, as either operations of the intellect or as operations of the will. Under the perceptions of the intellect fall the imagination, pure understanding, sensation and somatic responses such as appetites and passions; in other words all those faculties of thought involved in perception. Under the volitions of the will fall assent, denial, desire, aversion and doubt; in other words anything that might qualify as an attitude towards the perceptions of the intellect. Put the two together and naturally we have an opinion on a perception, or in Descartes' words, a judgement (AT VIII, p. 18; CSM I, p. 204), which means that without the intellect or the will there is no judgement.

Descartes' ranking of modes is important for this thesis because it betrays a special attitude towards modes in general, in which they are placed according to how important they are to the substance in which they inhere, determined by their intentional content. The primary example of this is the notion of thought as both the essence of thinking substance, and as a mode in its own right (AT VIII, pp. 30-1; CSM I, p. 215). In the *Meditations* Descartes makes this very clear when he describes the imagination as not necessary to myself as a thinking thing, while in the same breath implying that the pure understanding – the intellect – is.

> Besides this, I consider that this power of imagining which is in me, differing as it does from the power of understanding, is not a necessary

[12] Arthur O. Lovejoy (1965): *The Great Chain of Being: A Study of the History of an Idea* (New York: Harper and Row); Roger Woolhouse (1993): *Descartes, Spinoza, Leibniz: The Concept of Substance in Seventeenth-Century Metaphysics* (London: Routledge).

> constituent of my own essence, that is, of the essence of my mind. (*Meditation VI* (AT VII, p. 73; CSM II, p. 51))

Those modes of thought that are 'pure', such as the will or the understanding, are considered by Descartes to be crucial to the operation of the mind. Other modes of thought are not as crucial to the mind's operation, and in the cases of the imagination and sensation, the reason is that they rely on the body for their content. By contrast the intellect, or pure understanding, relies on nothing but the mind for its content; its reflexivity ensures that, as the faculty concerned with the mind and its contents, it is more obviously pertinent to the mind than the imagination or sensation, who are concerned with ideas of corporeal objects. Because they are externally determined, imagination and sensation are not central to the operation of the mind, which can be conceived happily without them (*Meditation VI* (AT VII, p. 81-2; CSM II, p. 56)). For this reason we find the faculties of imagination and sensation at the bottom of the hierarchy.

It is a central tenet of this thesis that the ranking of faculties and modes according to both provenance and ontological status is a result of the question of mind-body interaction. The ontological structure of Descartes' metaphysics has implications for his argument for the existence of God in the Third Meditation, where in arguing for God Descartes relies on the notion of an ontological hierarchy to explain his innate idea of God as a form of object-perception. In turn this has had perceived implications for ordinary object-perception, where the perception of a physical object is assumed to be analogous to the intellectual perception of God. However, his argument transfers very badly to ordinary object-perception, and the reason is that Descartes does not rely on *ontological* rank to explain ordinary object-perception. Rather, his understanding of it rests on the *operational* status of sensations and sense-perceptions which, as I have mentioned, are considered less important operationally because they rely on the body for their intentional content.[13] For Descartes the relative purity of the modes of thought is determined by their reflexivity; the more they 'look outward', as it were, the less pure they are, and the lower down the scale they reside.

[13] See Section III for the argument against using the Causal Adequacy Principle to explain ordinary object-perception.

II. The Myth of Cartesian Dualism

Historically the view of this scheme, and the rationale behind this thesis, has been the abiding myth of Cartesian Dualism. According to this view Descartes was unable to account for mind-body interaction, because his own characterisation of them precluded any common ground upon which interaction could be premised.

> The problems that face Descartes' interactionistic dualism, with its systematically inexplicable traffic between the realm of the material and the postulated realm of the immaterial, were already well appreciated in Descartes' own day, and centuries of reconsideration have only hardened the verdict. (Dennett and Kinsbourne 1992, p. 185)

Examples of the myth abound in C20th discussions in the Philosophy of Mind, most famously in Ryle's doctrine of 'the ghost in the machine' but elsewhere, too. For example in *The Cambridge Companion to Descartes* John Cottingham describes it thus:

> The thesis of the incorporeality of the mind seems, from first to last, a fixed point in Descartes' thinking. Indeed the now widespread adoption of the label 'Cartesian dualism' to refer to the incorporeality thesis has had the effect of making that thesis the very hallmark of Descartes' philosophy. (Cottingham 2006, p. 236)[14]

Cottingham is referring to the incorporeality of the mind, contrasted with the corporeal body (and external world). The separation of mind and body, while not original to Descartes has become so familiar that until the mid-C20th it remained more-or-less unchallenged, until Ryle attacked what he called "the official doctrine" according to which

> [...] every human being has both a body and a mind. Some would prefer to say that every human being is both a body and a mind. His body and

[14] John Cottingham (2006): 'Cartesian dualism: theology, metaphysics, and science' in *The Cambridge Companion to Descartes* (Cambridge: CUP), pp. 236-257.

> his mind are ordinarily harnessed together, but after the death of the body his mind may continue to exist and function. (1975, p. 13)

Ryle attributes this view "chiefly" to Descartes' handiwork and sets out to attack it on the grounds that it is so wrong as to be harmful to the discipline in general. Ryle laid the harm at Descartes' door, arguing that the idea pervaded all the sciences, to great detriment. Similarly, Antonio Damasio argued that the abiding dualist view of a human being led to the neglect of the mind as a function of the body.

> Medical schools do offer studies of the sick mind encountered in mental diseases, but it is indeed astonishing to realize that students learn about psychopathology without ever being taught normal psychology. There are several reasons behind this state of affairs, and I submit that most of them derive from a Cartesian view of humanity. (2000, p. 255)

The "Cartesian view of humanity" to which Damasio refers is the separation of mind from the body, and its enormous influence through the development of psychopathology and psychology.

The roots of the "official doctrine", according to Ryle, lie in Descartes' insistence that the universe is made up of two substances with mutually exclusive properties. Material substance is the stuff of physics, extended in length, breadth and depth, either in motion or at rest, and includes the human body. Immaterial substance comprises both God and human minds. It is identified with thought, and while God is immutable human minds are modified by the various faculties and their attendant (changing) ideas. For instance, and we will revisit this in the course of this thesis, the faculty of sensation is responsible for fleeting ideas of pain, or colour. Pivotal to the argument is Descartes' insistence that mind and matter are mutually exclusive; therefore it seems that there is no scope to even discuss them on more meaningful terms than the abstract language of substance and modes, let alone any scope to understand how they might interact. For, the argument goes, if the two have nothing in common then their interaction seems inconceivable on any account. Furthermore, since Descartes' own notion of causation is firmly bedded in physics it cannot apply to immaterial substance, since the laws of physics are not included there. Cartesian

Dualism, then, refers to the view that mind and body are distinct entities, and it is understood to fall at the hurdle of interaction.

This characterisation of Descartes' philosophy is taken chiefly from the arguments of the *Meditations*, which is easily the best-known and most widely-read of his works. It is a fairly nuanced position and stems from two arguments therein: the realisation that the *cogito* is the first truth free from scepticism, and the subsequent argument for the distinction between mind and body. These arguments will be considered in more detail in Chapter Six but it will be worthwhile briefly rehearsing them to illustrate how Cartesian Dualism came about. The *cogito* arises from the abyss of scepticism, and is immediately recognised as the first item of knowledge immune from it: as long as I am doubting something then I can be assured that I am thinking, and as long as I am thinking then I can be assured that I exist. Speculation on the source of the certainty aside the fact that only my ideas are guaranteed means that anything beyond the mind's own contents is still in doubt. [15] In discovering the self, the Doubter discovers the mind; and further inspection reveals its exclusivity: nothing of the mind is of the body. From this stems Descartes' famous metaphysical dualism, according to which matter and mind are mutually exclusive, sharing no qualities save the ubiquitous, and abstract, duration and number. As well as substance dualism the *cogito* entails the dominance of the rational intellect in knowledge, which also features heavily in the ideal of the Cartesian Dualist. Since knowledge of the external (physical) world is not guaranteed with the same immediate clarity and distinctness as knowledge of the mind, any faculty of mind that deals with the external world – i.e. sensation and the imagination – instantly loses epistemic credibility.

The Cartesian Dualist, therefore, believes both that mind and body are metaphysically distinct, and that the rational intellect is the only faculty of mind capable of true knowledge; all other faculties are superfluous. Readers with a knowledge of the narrative surrounding modern Philosophy will recognise this story, and the Rationalist tradition that is said to have grown from it, embodied in, among others, the philosophies of Spinoza and Leibniz. Cottingham has noted the limits of this kind of interpretation, which tends to put an anachronistic bias on matters (1988, p. 10), not least because it presents a jaundiced view of the philosophers involved,

[15] See Jaakko Hintikka: 'Cogito, Ergo Sum: Inference or Performance?' in Doney (1968), pp. 108-139.

and this is certainly true of Descartes. Nonetheless, the cult of Cartesian Dualism persists, allowing its antagonists to present their most effective objection: the interaction problem. I will deal with the details of the interaction problem, as they arise from Descartes' writings, in the next section. First I will present it from the point-of-view of twentieth century philosophy of mind.

Ryle's argument against Cartesian Dualism is well-known in Cartesian scholarship. According to Ryle, the attribution of mental processes to an immaterial mind is a category mistake, it assumes that thoughts and emotions point to something over and above matter, because they cannot be explained in material terms (or could not in the seventeenth century), but must be explained quasi-mechanically in the language of causation.

> Now the dogma of the Ghost in the Machine... maintains that there exist both bodies and minds; that there occur physical processes and mental processes; that there are mechanical causes of corporeal movements and mental causes of corporeal movements. (1975, p. 23)

Unfortunately, Ryle points out, the allegedly parallel causation of physical and mental processes does nothing to explain inter-substantial causation.

> How can a mental process, such as willing, cause spatial movements like the movements of the tongue? How can a physical change in the optic nerve have among its effects a mind's perception of a flash of light? (p. 21)

Here lies the major source of ridicule for the Cartesian project, that it cannot tell us how mind and body interact. It is not a case of the theory missing something; if all it required were a story about how mind and body enjoy mutual influence, the problem could be solved relatively easily by introducing a mechanism to bridge the gap. No, on the Cartesian account it is *impossible* for mind and body to interact, making the theory not just ideologically misconceived in separating mind and body, but factually incorrect and ultimately untenable. Ryle argues that Descartes' project was to describe the mind in para-mechanical terms, but the mutual exclusivity of mind and body meant that he painted himself into a corner where their interaction was

concerned. Churchland's description of Cartesian Dualism, shot-through with negative press, claims it arose as a result of Descartes' inability to account for consciousness on a mechanical model.[16]

> This was his motive for proposing a second and radically different kind of substance... a substance whose essential feature is the activity of *thinking*. This view is known as *Cartesian dualism*. (1999, p. 8)

Churchland then poses, briefly, the question of causal interaction.

> If 'mind-stuff' is so utterly different from 'matter-stuff' in its nature.... then how is it possible for my mind to have any causal influence on my body at all? (p. 9)

This is the crux of the Cartesian Dualist caricature: mind and body are separated by a gulf so wide that they cannot possibly interact. This gulf consists in the mutual exclusivity of their properties, and the fact that causal interaction is an irredeemably physical process, unavailable to the mind. It is the dominant narrative regarding both Cartesian philosophy and the paradigm of mind-body relations in the philosophy of mind. Therefore, in the wake of the real distinction between mind and body the question of determining the content of ideas of object-perception becomes very difficult. When thinking and extended modes are mutually exclusive and really distinct, getting to the bottom of how object-perception works becomes a pressing and difficult enterprise, and it is to this problem that we now turn.

III. The Interaction Problem

I have outlined already Descartes' ontology and the metaphysical system that springs from it. The outcome is an ontology cloven in two; the real distinction between mind and body is premised on conceivability – two substances are really distinct if one can be understood clearly and distinctly in isolation from the other – which amounts to thinking and extended substance enjoying mutually independent

[16] Paul M. Churchland (1999): *Matter and Consciousness: A Contemporary Introduction to the Philosophy of Mind* (Cambridge, MA.: MIT Press)

existence. At the same time, the modal distinction between a mode and the substance in which it inheres means that modes must be either thinking or extended in nature, never neither and never both. Thus a gulf separating the two substances is created; on this model the question arises to how mind and body can causally interact, how a thought can bring about a movement of the arm or, more interestingly, how we can conceptualise and physically shape words in response to intellectual stimuli.[17] In his discussion of the interaction problem in *Descartes* (1986) John Cottingham characterises the problem as follows:

> Normally Descartes holds that causal transactions require some relationship of similarity between effect and cause; but in the case of mind and body this is quite impossible given the logical gulf between them (defined as they are by Descartes in terms of logically incompatible attributes). (p.119)

Similarly Louis E. Loeb (1981) regards the distinction between thinking and extended substance as one of the major reasons for "The Alleged Incoherence of Descartes' Interactionism".

> I believe that most philosophers and commentators who have held that there is an incoherence in Descartes' position have been principally troubled by the feeling that it was inconsistent for him to hold both that mind and body causally interact and that mind and body are essentially/entirely/absolutely [really] distinct substances, i.e., that the essences of mind and body have nothing in common (since a mind's whole essence is to think, a body's whole essence to be extended)… The general point behind these passages, I take it, is that the immense or radical qualitative difference between mind and body is such as to render interaction impossible – mind and body have too little in common for interaction to take place. (pp.136-7)

[17] Speech seems to be the most obviously non-automatic example of intelligent manipulation of the body. Cf. Descartes' letter to the Marquess of Newcastle, 23rd November 1646 (AT IV, p. 569-76; CSMK pp. 302-4).

Loeb's summary unfortunately conflates the real distinction between, and mutual exclusivity of, mind and matter and this is an oversight in his account. The real distinction between mind and body is not the same as their mutual exclusivity, which is not to say that the two are unrelated; if there were no such substantial distinction between mind and body there would be much less of a problem with the mutual exclusivity of both, for the chasm separating thought and extension would still be no more than conceptual, and there would be no reason to assert more than one substance.[18] Yet this could never happen in Descartes' system precisely because the distinction is premised on the mutual exclusivity of thought and extension, which in turn is premised on the grounds of conceivability: because the two are conceptually exclusive they have nothing in common, so they must be really distinct. It is not the real distinction which means that the two are mutually exclusive. Rather, their mutual exclusivity means that the two are really distinct. Loeb *is* correct in identifying the source of the unease with which philosophers regard the Cartesian account as the inconsistency between the distinction and difference between mind and body, and the likelihood of their interaction.

Yet the problem of interaction so-called is not without its own controversy. Although Loeb's diagnosis of the problem agrees with Cottingham's insofar as both query causal interaction, each represents one side of a debate on Cartesian causation. This debate turns on the question of what Descartes took to be the nature of the similarity between cause and effect, and goes back to the text of the Third Meditation. In discussing the sources of his ideas Descartes states that as modes of thought his ideas are equal, but

> [...] in so far as different ideas are considered as images which represent different things, it is clear that they differ widely. Undoubtedly, the ideas which represent substances to me amount to something more and, so to speak, contain within themselves more objective reality than the ideas which merely represent modes or accidents. (AT VII, p.40; CSM II, p.28)

[18] In other words we would end up with a Spinozist system.

Descartes' idea of God is treated like an instance of ordinary object-perception. Since it is the focus of much of the debate on mind-body interaction it is to object perception that I shall turn. According to the Scholastic notions of formal and objective realities, the formal reality of an idea (or for that matter of any created thing) is its 'intrinsic' reality. Depending on the object this reality will be either greater or lesser.[19] Objective reality applies to ideas only; the objective reality of an idea is a function of the object of the idea, and of that object's formal reality: the greater the formal reality of the object, the greater the objective reality of the idea. As he reflects upon the origin of his idea of God Descartes states that "it is manifest by the natural light that there must be at least as much reality in the efficient and total cause as in the effect of that cause" (AT VII, p.40; CSM II, p. 28), and how one interprets this maxim determines one's understanding of the interaction problem.

Interpretation one is the Causal Similarity Principle, held most prominently by Cottingham (2008), and expressed in the maxim "Nothing in the effect which was not in the cause". According to this reading, a strong qualitative similarity obtains between cause and effect insofar as Descartes held that there must be some kind of "bestowing or handing on of features from cause to effect" (Cottingham, 2008, p.152). From the text of the Meditations the Causal Similarity Principle is not the obvious interpretation, but there is evidence elsewhere to support it: the Conversation with Burman puts a gloss on the Third Meditation that seems to uphold this reading.

> It is a common axiom and a true one that the effect is like the cause. (CB, p.17)

If cause and effect are so alike, it seems that what was in one must be found in the other. Yet given that the two realms are both really distinct and mutually exclusive, no causal exchange is possible, if the causal mechanism is defined in terms of a qualitative similarity of the kind Cottingham has Descartes uphold. Thinking and extended substance are wholly dissimilar, therefore there can be no causal exchange between the two.

[19] The notion of an ontological hierarchy is dealt with in the section concerning Descartes' metaphysics. Cf. Arthur O. Lovejoy (1965): The Great Chain of Being: A Study of the History of an Idea (New York: Harper & Row).

Cottingham's discussion of the Similarity Principle occurs in the context of mental representation and Descartes' rejection of the inherence of qualities in the objects themselves (1986, pp. 135-143; 2008 ch.7 pp. 148-162). I am not convinced by this version of Meditation Three. The very stipulation that 'what was in the effect must be in the cause' is vague and the textual evidence for Cottingham's version, at least, is sketchy. The passage from the Conversation with Burman seems on first reading to support the Causal Similarity reading:

> O. [...] Surely God could have created you without creating you in his image?
> R. No. It is a common axiom and a true one that the effect is like the cause. Now God is the cause of me, and I am an effect of him, so it follows that I am like him.
> O. But a builder is the cause of a house, yet for all that the house is not like him.
> R. He is not the cause of the house, in the sense in which we are taking the word here. He merely applies active forces to what is passive, and so there is no need for the product to be like the man. (CB, pp. 16-17)

Yet the discussion does not end there. Descartes goes on to say that he refers not to a particular cause of a particular effect, like the builder and the house, but to "the total cause, the cause of being itself."

> Anything produced by this cause must necessarily be like it. For since the cause is itself being and substance, and it brings something into being, i.e. out of nothing (a method of production which is the prerogative of God), what is produced must at the very least be being and substance. To this extent at least, it will be like God and bear his image. (CB, p.17; emphasis added)

This puts a different gloss on the maxim 'the effect is like the cause', for it appears that such rigid "bestowing of features" is not precisely what Descartes is getting at. There is a difference in kind between such features or modifications ('modes') and "being and substance". To impart being to something – the act of creation – is only

available to God, yet the imparted being is not of the same measure as God's own so this kind of causation cannot involve a literal passing of features from cause to effect, and since Descartes regarded this is a paradigm example of a causal transaction I suggest we take it seriously. In any case, Cottingham's version does not hold up. An alternative interpretation of the passages of Meditation Three puts a different spin on the relationship between cause and effect, and sheds better light on the passage from the Conversation with Burman. According to this reading Descartes did not hold a Causal Similarity Principle but a Causal Adequacy Principle, in which the cause must possess as much perfection or reality as the effect, if not more. Loeb (1981) ascribes this view to Descartes and I think he is correct; the textual evidence for the causal adequacy principle is both more robust and plentiful.

At this point it is useful to indicate another distinction in Meditation III relevant to this debate: the distinction between the 'formal' and 'eminent' containment of a feature in a cause or an object. According to this definition, a cause must contain what is in the effect either formally (literally) or eminently, i.e. in a higher form. Obviously the context for these remarks is the Third Meditation's quest for God, of whom the idea "turns out to be so great that I am sure the same reality does not reside in me, either formally or eminently." (AT VII, p. 42; CSM II, p. 29) I have neither the intrinsic reality nor the wherewithal to bring about the kind of objective reality that the idea of God possesses; by contrast, despite being immaterial God created (caused) matter, proving that matter is contained in God 'eminently'. There is an obvious alliance between the formal reality of something (its intrinsic reality) and the formal containment of a feature, which must likewise literally be possessed by the object. It is admissible to assume that any eminently contained feature or cause would be of a higher degree of perfection or reality than any effect it would bring about.

To return to Meditation Three, the French version of the text adds "reality" to the stipulation that there must be as much in the cause as in the effect. Cottingham's Causal Similarity relies on metaphors of transfer running through what follows this statement, but if taken to follow Descartes' ontological hierarchy a more literal reading of his discussion yields a Causal Adequacy Principle. "For where, I ask, could the effect get its reality from, if not from the cause? And how could the cause give it to the effect unless it possessed it?" (AT VII, p.40; CSM II, p.28; emphasis

added) This interpretation is borne out in what Descartes says a few sentences later regarding heat:

> Heat cannot be produced in an object which was not previously hot, except by something of at least the same degree or kind of perfection as heat, and so on. But it is also true that the idea of heat... cannot exist in me unless it is put there by some cause which contains at least as much reality as I conceive to be in the heat[...]. (AT VII, p.41; CSM II, p. 28.)

Cause and effect are not modelled on the bestowing or handing over of features from one to the other but on the notion of reality or perfection, which are synonymous for Descartes (AT VII, pp. 42-3; CSM II, p.29). The objective reality of my ideas must have been caused by something of at least as much formal reality, if not greater, which goes for all causal transactions.

On this interpretation the interaction problem does not come about because there is a strict difference and metaphysical distinction between cause and effect; Descartes' Causal Adequacy Principle says nothing about there being any literal similarity between mind and body. Indeed, he cannot hold a Causal Similarity Principle because on that reading the notion of materially false ideas makes no sense. If ideas of the material world are similar to the causes of those ideas in the way proposed by the Similarity Principle then his position that the ideas of 'secondary' qualities misrepresent the objects – insofar as there is nothing in the object resembling our ideas of, say, colours – becomes very difficult to understand.[20] Interaction between mind and body is founded instead on the notion of proportionality, that is, the idea that the cause must be of the same degree of reality as the effect, or higher; so strictly speaking there is no problem with a substance of one kind causing a change (mode) in a substance of another. And indeed this seems to be Descartes' position:

> This view does not involve us in any difficulties. The mind, though really distinct from the body, is none the less joined to it, and is affected

[20] The notion of material falsity and the difficult in squaring it with Descartes' general theory of ideas is dealt with in De Rosa (2010). I do not mean to imply that embracing the Causal Adequacy Principle interpretation solves the puzzles De Rosa discusses, only that the Causal Similarity Principlemakes life much more difficult.

> by traces impressed on it, and is able to impress new traces on its own account. (*Letter to Hyperaspistes, August 1641*, AT III, p.424; CSMK III, p.190)

The question is, for what reason does Descartes think that this is the case? Even on a Causal Adequacy Principle model it is not immediately clear how interaction might work.

IV. A Battle in the Literature

Daisie Radner argues that while Cartesian causation certainly involves the notion of degrees of reality,

> [T]he reason why the cause must have at least as much reality as the effect is that the reality of the effect must pre-exist in the cause. And the reason why the effect's reality must pre-exist in the cause is that the cause communicates this reality to the effect. The communication principle puts a much stronger restriction on the causal relation than the "at least as much" principle. (1985a, p.41)

Where Loeb's account allows the exchange of modes between substances on the grounds that Descartes' system is based on degrees of reality, Radner holds a variant of the Causal Similarity Principle, although precisely what her 'pre-existence' principle amounts to in detail is not spelled out. Loeb does not rule out modes moving from one substance to the other (1981, pp. 140-141), but I suspect that this is ruled out by the mutual exclusivity of modes. If the two substances are identified as really distinct because they have nothing in common then a shifting of any mode from one to the other seems impossible, perhaps inconceivable. Radner agrees, maintaining that the claim that in causal transactions a substance communicates a perfection that it possesses to another substance is at best extremely obscure, at worst meaningless, and that involving the formal/eminent distinction is to

add to its opacity. There is no way, for Radner, that Descartes can reconcile his views on causation with mind-body interaction.[21]

Loeb rejects Radner's charge. In fact, her objections have proven unpopular with more than one person. As Loeb points out, Descartes does not subscribe, or at least Radner fails to show that Descartes subscribes, to the "communication principle", i.e. that the cause communicates (transfers) what reality it has to the effect (p.227). Besides, Radner's "pre-existence" principle is found to reduce to the "at least as much principle", i.e. that "the reality in the effect pre-exist in the cause qua degree of perfection" (p.228), which does not boil down to the kind of likeness principle Radner wants to ascribe to Descartes. Similarly, R.C. Richardson complains that Radner's analysis "ignores the possibility that, though something may exist in the cause as in the effect, it need not have the same mode of existence." (1985, p.224) So for example, motion can exist in an object formally and in the idea of it objectively, with the objective reality of the idea explained in terms of the formal reality of the object; likewise extended substance is created (i.e. given formal reality) by God, even though it exists eminently in God. On pain of forbidding ideas of extended things without being extended themselves (thus no longer *cogitatio*), Radner's 'pre-existence' condition fails.

Yet Radner persists, and objects (1985b) that Richardson is uncomfortable with 'eminent' reality, and does not explicate it sufficiently; the same goes for how the problem is deemed to have been dissolved by the formal/objective distinction.

> "The problem in the Third Meditation is not to find a cause great enough to account for the idea "taken only as a certain mode of thought." The mind itself is great enough for that. What is needed is a cause great enough to account for the objective reality of the idea." (1985b, p.232)

She counters that if the notion of eminent containment meant that "the degree of perfection of X is greater than that of Y" then "every case in which X is more perfect

[21] "A stone, for example, which previously did not exist, cannot begin to exist unless it is produced by something which contains, either formally or eminently everything to be found in the stone; i.e. it will contain in itself the same things as are in the stone or other more excellent things."(*Meditation III*, French version, AT VII, p. 41; CSM II, p. 28n) In other words, a cause need not contain specifically everything to be found in the effect mode-for-mode, but may contain it in a higher manner. Radner objects that eminent reality "is far from clear when applied to God, and it becomes even more obscure when applied to creatures." (1985a, p.43)

than Y is a case in which X contains eminently what Y contains." (p.233) Clearly this is not the case.

Radner is correct in maintaining that Cartesian causation, even on a Causal Adequacy Principle reading, is obscure. The introduction of the 'formal/objective' distinction in object-perception and the 'formal/eminent containment' distinction in causation certainly support the proportionality reading of the Third Meditation but at some cost, for it is simply not clear what it means to say that an effect is contained 'eminently' in a cause. Descartes' explanation of eminent containment concerns God, who is all cause and no effect. When applied in its proper sphere, divine creation, eminent containment is obscure enough but at least it is relatively clear how the cause is 'in a higher form' than the effect: anything God creates is of a lower order of reality than God anyway. Because God created matter, in this case there is precedent for a cause to be of a different kind from its effect.

The question is how this is to translate to the created world, and I am not convinced that it can be. The fundamental flaw in trying to apply this account of causation to the created world is that we are not, in Meditation III, talking about that order of reality. My idea of God and the cause thereof is a completely different issue from basic inter-substantial causation in the created order, and the metaphysical implications are likewise different. In the next chapter I will show how applying causal principles to the relationship between mind and body is so mistaken and potentially misleading that Descartes himself chose a different route.

Chapter Two

The Union of Mind and Body

I. The Wrong Question

To ask about mind-body causal interaction is, it seems, to ask the wrong question. Consider Descartes' advice to Princess Elizabeth on the cause of her concern about mind-body interaction. Here he invokes 'primitive notions', "patterns on the basis of which we form all our other conceptions." (*21 May 1643*, AT III, p. 665; CSMK p. 218) Pertinent to our purposes are those notions of extension (pertaining to body; entailing shape and motion), thought (pertaining to the soul; involving the intellect and the will), and the union of soul and body, from which we understand their mutual influence. The most general notions of "being, number, duration, etc." (AT III, p. 665; CSMK p. 218) give a useful clarification, for these really are the most fundamental categories through which we make sense of and negotiate this life. By throwing the former set in with the latter, Descartes is articulating the importance of the primitive notions concerning mind and body. These epistemic categories encompass all that we can know about the world – the limits of our understanding, if you like. But further than that, they seem to include everything that is to be known about the world: if we apply them correctly there is no reason why we cannot go forth and learn whatever pertains to each. "I observe next that all human knowledge consists solely in clearly distinguishing these notions and attaching each of them only to the things to which it pertains." (AT III, p. 665; CSMK p. 218) Here is an implicit warning: misapply the primitive notions at your peril, to do so is to preclude knowing anything at all, which is the reason people become so confused and worried about mind-body interaction. "[T]he main cause of our errors is that we commonly want to use these notions to explain matters to which they do not pertain. For instance... we try to conceive the way in which the soul moves the body by conceiving the way in which one body is moved by another." (AT III, p. 666; CSMK p. 218) In committing such an error anyone trying to understand the mutual influence of mind and body will go wrong from the start.

Descartes gives an example of such confused thinking when he describes the real quality of gravity as a conceptual mistake, in the Sixth Set of Replies.[22] Once upon a time, in understanding gravity to be "scattered throughout the whole body that is heavy" (not extended but coextensive with that body) Descartes was making exactly the kind of mistake he warns against later in correspondence. For instead of understanding gravity physically, as he ought to have done, "my idea of gravity was taken largely from the idea I had of the mind", while the relationship between gravity and a body "is exactly the way in which I now understand the mind to be coextensive with the body" (AT VII, p. 442; CSM II, p. 298). The major point is to discredit real qualities and substantial forms, but it illustrates Descartes' position on conceptual misunderstandings nicely. In order to move forward on the path to knowledge we must learn to apply correctly these basic concepts/primitive notions. Now, neither notion concerning mind or body involves anything about their interaction or mutual influence: for that we need the primitive notion concerning the *union* of mind and body, a totally separate conceptual category. No wonder, when questioned about the possibility of causal interaction, Descartes dismissed the problem.

> "This view does not involve us in any difficulties. The mind, though really distinct from the body, is none the less joined to it, and is affected by traces impressed on it, and is able to impress new traces on its own account." (*Letter to Hyperaspistes, August 1641,* AT III, p. 424; CSMK, p. 190)

Descartes is adamant that the mind and body are able to interact, that is, are able to 'impress traces' the one on the other, and he repeats himself time and again:

> There is nothing that my own nature teaches me more vividly than that I have a body, and that when I feel pain there is something wrong with the body [...]. (*Meditation VI* [1642], AT VII, p. 80; CSM II p.56)

[22] AT VII, pp. 414-6; CSM II, pp. 297f.

> There are two facts about the human soul on which depend all the knowledge we have of its nature. The first is that it thinks, the second is that, being united to the body, it can act and be acted upon. (*Letter to Princess Elizabeth, 21st May 1643*, AT III, p. 664; CSMK III p.217/8)

Mind and body "united" – this is how Descartes characterises the relationship between the two, as two parts of one whole. L. J. Beck (1967) notes that Descartes' attitude to mind-body dualism was very different from those in late C20th scientific circles, "who, without philosophical bias, find themselves unwilling and mystified dualists" (1967, p. 269). Beck argues that Descartes began from the "undoubtable fact" (p. 270) that mind and body interact as a "datum of experience" (p. 271) and finished up with the union of mind and body as constitutive of a human being, and this is an important insight. Descartes' discovery of the union of mind and body proceeds very differently from his discovery of the *cogito*, or any other metaphysical or logical truth; it is known *a posteriori*, his own nature teaches him by experience – and as a basic component of that experience – that his mind and body are united, that the one can influence the other.

Unfortunately the mind-body union throws up more questions than it answers. What is the nature of this 'union'? In what way, and under what circumstances, do two strongly incompatible things come together to form it? Finally, allowing that this union can come about, how does it account for, or allow, mutual exchange between mind and body?

II. What is the Union?

There are those who consider the mind-body union a poor solution to the interaction problem. To quote Daisie Radner,

> the question of whether the notion of mind-body union is intelligible is quite distinct from that of whether it has an important role to play in Descartes' philosophy. A positive answer to the latter question by no means implies a positive answer to the former. (1985a, p.40)

The intelligibility of the union is in question because it does not give a sound answer to the question 'how do mind and body causally interact?' But that surely depends on whether the union is *designed* to answer that question. If not there is little force in Radner's charge. There is an alternative view on the union, according to which it "is not intended to explain interaction or its possibility." (Richardson 1985, p. 226) Richardson regards the union as neither capable of nor warranting further analysis meaning, I assume, that analysing the union in terms of any parts it is supposed to have is to break a unity into two, which would be a mistake. On the other hand, the union is definitely capable of and warranting further analysis in terms of its role in and compatibility with Cartesian philosophy. As Radner says, "[t]he issue is whether moving one's arm can coherently be described as mental substance causing a change in material substance, given what Descartes says about substance and causation." (1985a, p. 38) While Radner puts a good question I do not share her general pessimism about the union's potential to account for the mutual *influence*, if not causal interaction, of mind and body, for much the same reason that Richardson gives, "what the Cartesian doctrine would require of us is to acknowledge the essential difference and the distinctness of mind and body, and while we remain fixed on that fact we cannot simultaneously think of the person as unified in the way Descartes requires." (1985 p.226) In this he echoes Descartes' remark that the human mind is incapable of conceiving of mind and body as both united and distinct; "for to do this it is necessary to conceive them as a single thing and at the same time to conceive them as two things; and this is absurd." (*Letter to Princess Elizabeth* 28 June 1643, AT III, p. 693; CSMK, p. 227) More than a version of the law of non-contradiction, Descartes is expressing the same problem that he brings up in the previous discussions, that to think of mind and body as at once distinct and united is analogous to trying to see both duck and rabbit at once; it is simply not possible. It would mean understanding the world according to two different, incompatible concepts.

Radner makes precisely this mistake. She starts from the distinctness of mind and body and from there investigates their alleged unity, judging the success of the union by how well it explains the ability of mind to act causally on body and vice versa. In this analysis the union is an explanatory device, judged on its epistemic usefulness and found wanting. I disagree that the union is explanatorily vacant, and I suspect that this is for the same reason that Radner and Richardson disagree: I do not

think that the purpose Radner ascribes to the mind-body union scans with Descartes' own reasons for positing it. Like Richardson, I think Radner's approach amounts to attempting to conceive of mind and body at once as separate and distinct; but the union was not designed to 'solve' the question of mind-body interaction. As a phenomenological fact, a separate entity in its own right it is instead meant to account for the coming together of mind and body in a human being.

To ask how the mind-body union enables causal interaction between the two is to begin from the real distinction and proceed from there. It is also, I contend, to assume the position of the Cartesian Dualist, and to bring to the debate all the baggage of twentieth century philosophy of mind. For within that august tradition the relationship between mind and world begins from Cartesian Dualism and works from there; either to refute the dichotomy or to incorporate it, forsaking other possible interpretations in favour of Ryle's famous caricature. True, Descartes' contemporaries also asked searching questions about the mutual interaction of the substances, but it was there that the sin was born, not in the original. The efforts of Spinoza and Malebranche, Locke and Berkeley to reconcile mind and body set the course run by investigators ever since, but arguably the fault was not Descartes'.

Still, a great deal of work is yet to be done to reconstruct the union of mind and body to make it feasible, both as a Cartesian doctrine and at all: the real distinction between mind and body and the mutual exclusivity of the substances still lie in the path to understanding their union. My ain here is to reconstruct the mind-body union as Descartes saw it in the period between publication of the *Meditations, Objections and Replies* and *The Principles of Philosophy* (roughly 1642-45), including contemporaneous correspondence. The reason being that these are the most obviously metaphysical works, concerned more noticeably with the distinction between, and mutual exclusivity of mind and body; and yet the union features prominently as an indisputable – if underdeveloped – part of the Cartesian worldview. To avoid anachronism I will consult *The Passions of the Soul* for clarification only.

III. The Union as a Substance?

Several commentators have characterised the union of mind and body as a substance, seduced, no doubt, by the label "substantial union".[23] (*Letter to Regius*, 31st January 1642, AT III, p. 508; CSMK p. 209) Janet Broughton and Ruth Mattern (1978) have argued that the most plausible interpretation of Descartes is "to suppose that substantial union is [a] union resulting in a compound substance: the whole is a substance. In other words, only a composite entity whose parts are substantially united is a compound substance." (1978, p.27) Broughton and Mattern reach this conclusion by considering the existence conditions for a substance and finding that these are the same as for the composite of mind and body. As far as I can tell, the argument in support of this assertion is as follows (p.28):

(i) All non-abstract created things are either substances or properties (*Principles 1:48*, AT VIII, p. 22; CSM I, p.208)[24]
(ii) Created substances (res cogitans and res extensa) rely on God alone for their existence
(iii) A property is that which relies on something else (i.e. a substance) for its existence
(iv) The substantially united compound of mind and body relies on God for its internal unity, that is, for its existence
(v) Therefore [(i) to (iv)] the union of mind and body is not a property
(vi) Therefore [(i) to (v)] the union of mind and body is a substance

In arguing this way Broughton and Mattern want to bring to the fore a particular feature of Descartes' account: that a human being is dependent on God alone for its internal unity, which is certainly true. Broughton and Mattern stay faithful to Descartes' primitive notions by keeping 'substantial unions' conceptually independent of the primitive notions of mind and body, and thus conceptually simple. The difference between Broughton and Mattern's compound and a mind-body union amounts to a type/token distinction, insofar as the latter is an example of

[23] In some cases 'characterised' is a charitable description; occasionally the union is presumed to be a substance.
[24] Technically properties are defined as either 'attributes', 'qualities' or 'modes' depending on their function. Here 'properties' are simply modifications of a substance, so encompassing all three.

the former. Their purpose in all this is to extricate Descartes from some of the charges laid against him by Daisie Radner (1971) and to rescue the conceptual independence of the union from its dependence on mind and body.

Sharing a dependence on God for their existence does not make the mind-body union and created substances the same – it simply means that they both depend on God. Moreover, a primitive notion is not the same as a substance; conceptual simplicity does not mean ontological simplicity. Even if substantial unions are separable from the mind-body union – and this is surely a moot point, for it would be a conceptual distinction anyway – nevertheless they would depend on their constituent substances for existence. By Broughton and Mattern's own criteria, substantial unions are not substances. At the same time, the notion of a substantial union does not, in Descartes' metaphysics, make up an extra kind of thing in the way that would make it a 'type' of which the mind-body union would be a token. To say so is to multiply Descartes' ontology beyond its remit to include God, created substances, substantially united compounds, of which the mind-body union is one (the only?) example, and then attributes and modes. Nowhere in Descartes' work does he give the impression that there are more than two kinds of created substance; and it is also clear that the only kinds of created substance are thinking and extended. If God had wanted to create different kinds of created substance he would have done, but the fact is that there are two, identified by their principal attributes of thought and extension. Furthermore, the distinction between created substances and their principal attributes is purely conceptual, which Broughton and Mattern ought to take as a lesson. In distinguishing the notion of a substantial union from that of the mind-body union they have reified this distinction. A human being is not an example of a substantial union; it is the substantial union, that is, the only union of substances available.

IV. Richardson's Account

On slightly firmer ground R.C. Richardson (1982) has argued that to understand the union of mind and body "demands that we think of the composite as a subject" (1982, p.35). In this way, Richardson argues we can understand the passions and sensation much better than if they were regarded as modes of thought because categorising the passions simply as species of cogitatio wilfully ignores their somatic

aspect, rendering the human being a "pilot in a ship" (p.30). Instead Richardson classifies the passions as "attributes of a composite" (p. 32), arguing that they are "attributes not of the mind, nor yet of the body, but of the embodied mind – the mind-body complex" (p.34). Faculties such as the imagination, sensation and the passions, for Richardson, need not be attributed to a simple entity even if they "cannot be attributed to anything lacking the attribute of thought" (p.33), paving the way for the mind-body complex.

So far so good. Richardson holds that to consider the mind and body as distinct is to attribute thought – and so the imagination, sensation and passions – to one side or the other, which precludes considering them as arising from a union of the two, and this is precisely what Descartes is getting at in his remarks to Princess Elizabeth. I am sympathetic to a lot of what Richardson has to say about the mind-body union, particularly that understanding the aetiology of the sensations requires positing a body:

> "The passions are attributes not of the mind, nor yet of the body, but of the embodied mind – the mind-body complex. Pure spirits can have neither images nor sensations. Images and sensations we do have. Thus we are not pure spirits." (1982, p.34)

Where I depart from Richardson is as he goes on to argue that, because the union of mind and body constitutes a thing with its own nature, this means treating it as a substance. For Richardson, "[t]he operative concept of a substance... is that of the subject of attributes, or that of something which requires nothing else for its existence" (1982, p.35n). Presumably this means that those properties predicated of an embodied mind can be said to be modes of a new, separate substance. Richardson's definition is correct but the way he uses it is not; he assumes that because certain faculties of the mind arise because of the mind-body union, this means that they are to be ascribed to the union in the same way that they are ascribed, by Descartes, to the mind alone. Descartes' substance-mode scheme is much stricter than this: a mode belongs to – 'inheres' in – a (created) substance, of which there are two kinds and two alone. So all instances of thought, be they faculties, ideas or whatever, are referred to only thinking substance. This does not preclude the imagination, passions and sensations arising from the union of mind and

body; there is no inconsistency in saying that the union has a specific nature produced by the coming together of its parts, as long as the strict substance-mode metaphysics of the Cartesian scheme are observed. Daisie Radner (1985a) makes a similar objection. "Richardson's mind-body complex would have two principal attributes – thought and extension – neither of which depends on the other. [...] Sensations should not be attributed to the mind alone in the sense that they should not be attributed to the mind separate from the body... Nevertheless, it is the soul that has them, not the union of soul and body." (1985a, pp. 38-9)

Anyone who tries to claim that the union of mind and body is a substance of a new kind wilfully ignores Descartes' own understanding and use of substance and mode according to the definitions of the *Principles*. It is necessary to take a more nuanced view of the situation. In the *Sixth Set of Replies* Descartes, in trying to better articulate the union, explains that while mind and body are complete substances considered *per se*, that are "incomplete" when referred to the union. It is not a union of "nature" but one of "composition". (AT VII, pp. 424-5; CSM II, pp. 285-6) What I take this to mean is that it is composed of two 'natural unities', created by God as capable of independent existence but mutually enabling when they come together. Whatever the union of mind and body is, it is not a substance.

In the letter to Regius of July 1645 Descartes complains about Regius' version of Cartesian philosophy.

> [W]hen you observe that the mind and the body are closely united in the same man, you take the former to be only a *mode of the body*. The latter error is far worse [...]. (AT IV, p. 250; CSMK, p. 255)

It seems that to regard the mind as a mode of the body is as much of a mistake as claiming the union as a substance. That said, there are passages in the *Sixth Replies* in which Descartes seems to be suggesting that when mind and body are united the former can be said to be a quality of the latter.

> I do admit that one substance can be attributed to another substance; yet when this happens it is not the substance itself which has the form of an accident, but only the mode of attribution. (AT VII, p. 435; CSM II, 293)

On the face of things it is difficult to make sense of Descartes' claims that the mind can be a quality of the body, or that one substance can be attributed to another. But that does not need to be the case. Descartes is clearly saying that the mind, as substance, does not modify the body as substance; rather, it is the attribution of the mind to the body that modifies the body. In other words, the body is changed for being united to the mind – which is true insofar as appetites, corporeal imagination, etc. are enabled. Conversely, the mind is modified for being united to the body, insofar as the apprehension of appetites, etc., is allowed. I shall go into this in more detail below.

At the same time there is something of the substantial form about the notion of the mind inhering in the body. Descartes' explanation of gravity – above – in the *Sixth Replies* draws telling comparisons between the two, even if he wants to discredit his Scholastic predecessors. In this case Descartes is equating the notion of a real quality inhering in a body, with the notion of one substance inhering in another substance, before pointing out that this equation is deceptive. It is no more correct to say that a quality can be real than it is to say that one substance can inhere in another. In reality the mind-body union, of which I seem to be aware already, provides the model upon which gravity is to be *truly* understood; but conceivably it might work the other way around: that Descartes' notion of the mind-body union is based on his idea of the substantial form. More than one commentator has viewed the union this way (Clarke, 2005; Hattab, 2009; Hoffman, 1986). I shall concentrate on Hoffman's more extensive treatment of the subject.[25]

V. Cartesian Hylomorphism?

Descartes is well-known for his rejection of Scholastic real qualities and substantial forms, criticising them on the general grounds that because substances and qualities are by definition exclusive, the one cannot act like the other. Real qualities are too substance-like, substantial forms too quality-like for Descartes' strict metaphysical sensibility. Moreover, as Clarke (2005) makes abundantly clear Descartes was very frustrated with the sheer want of explanatory power of the existing scheme, branding it both occult and explanatorily void.

[25] Hattab concentrates on Descartes' rejection of *material* substantial forms, all the while claiming the mind as an immaterial, neo-substantial form.

> In order to provide explanations easily of everything (if indeed an explanation of anything is provided when what is obscure is explained by what is more obscure), they have invented substantial forms and real qualities; in this enterprise their ignorance is not at all learned, but ought to be described as vain and pedantic. (AT III, pp.507, quoted in Clarke, 2005, p. 21)

It is curious, therefore, that the union of mind and body should read like a kind of hylomorphism; but the fact is that the mind does seem to act like a Scholastic substantial form. Indeed, certain commentators have taken it for granted that the union is hylomorphic; Helen Hattab, in her discussion of Descartes' rejection of material substantial forms, assumes that the soul acts as an immaterial substantial form and that this is the accepted version (Hattab, 2009, p.1). For reasons that will become clear, I take issue with this interpretation; but before I explain why it would do to clarify the hylomorphic version of the union.

(i) Hoffman

Putting his finger on the question exercising the debate on the mind-body union, Hoffman views it as designed

> to explain how two really distinct things, mind and body, can somehow generate another thing, the man or human being, which is itself a unity, that is, a genuine individual or an ens per se. (1986, p.341)

Drawing on Descartes' letter to Regius Hoffman points out that Descartes instructs Regius to say that the human being is an *ens per se* (AT III, pp. 492-4; CSMK p.206), taking this as proof that Descartes "does not call into question the Aristotelian and commonsense view that a human being is a genuine unity, that is, an individual," (1986, p.345) and this individual is itself a substance (p.346).[26] It is difficult, Hoffman admits, to understand how mind and matter can come together to form an individual proper in the "standard picture" (p. 347) of Cartesian philosophy,

[26] *Letter to Regius, January 1642* (AT III, pp. 491-509; CSMK, pp.205-209)

according to which the world is made up of lots of minds but only one extended substance. To get round the problem, Hoffman proposes a twofold Cartesian definition of created substance – as weak or strong – and claims that, for Descartes, the former includes individual bodies made up of parts (with the human body given as the paradigm); whereas substances in the strong sense are not composed of parts.[27] Hoffman goes on to explain that, in proposing the human body as a substance and the unity of mind and body as an *ens per se* made up of two parts, in fact Descartes is invoking the hylomorphic worldview of his Scholastic predecessors. On this model, the mind inheres in the body to create the mind-body union, in a manner comparable to form's inherence in matter to constitute an individual, a model Hoffman takes to be in line with work by Aquinas and Dun Scotus (pp.363f.). "Thus if [Descartes'] Aristotelian predecessors are permitted to allow as constituents of an ens per se actual things which can exist apart from each other, at least by divine power, then so should he." (p.370)

Of Hoffman's various responses to supposed objectors I will concentrate on one, against the protestation that "the Cartesian mind is not the right sort of entity to inhere in a substance" (1986, p.352). Hoffman dismisses this view, which he attributes rather convolutedly to Henri Gouhier, on the grounds that Descartes' definitions of a substance, both in the Second Replies and the Principles, do not preclude a substance existing as a quality itself.[28] Instead, Descartes' notion of a created substance "is sufficiently weak to require only that the thing be able to exist without existing in a subject and not that it never exist in a subject." (p.353) Coupling this with Descartes' analogy of mind-body unity as gravity's inherence in a body Hoffman's concludes that the union could be a substance in the weak sense that the mind can inhere in the body to create an hylomorphic *ens per se*.[29] The problem with this view is that it disregards the strict ontological hierarchy running through Descartes' metaphysics, such that substance and mode are different kinds of things. The definition of substance as enjoying ontological superiority over mode entails that one cannot be characterised as the other on pain of no longer being the same

[27] "It is clear that the issue as to whether Descartes' human being can claim to be a unity is not whether it satisfies the condition of the strong conception of created substance. Accordingly, I am not referring to the strong conception when I say that he uses the term 'substance' to mean a unity." Hoffman (1986, p. 349n)

[28] Cf. Henri Gouhier (1962): Le Pensée Métaphysique de Descartes (Paris: J. Vrin)

[29] Hoffman concedes that the unity and separability of mind and body in his account rely on divine power, and sees no problem with it. (1986, p.368)

thing. So for instance, if a mode were allowed to exist independently of anything else (besides God) it would no longer be a mode; similarly if a substance were made to inhere in anything else to create a different thing again we'd be faced with not a substance but a quality – Hoffman admits as much in his paper – but this means that the mind as a substance would be lower down the ontological scale, somehow, than the union of mind and body, since it is part of the definition of substance and quality that the former be ontologically prior to the latter. All this leads us to the bizarre position of the mind, defined as a substance, ontologically prior to itself defined as a quality. Hoffman cannot have things both ways; either the mind is a substance or the mind is a quality, but for sure the mind cannot be both.

Furthermore, the definition of a substance, as that which needs nothing else in order to exist, precludes the union as a substance because the union depends on its constituent parts. Whatever the gloss on this requirement it is irrefutably true that the union of mind and body depends for its existence on a mind and that particular configuration of matter making up a human body, and this is contrary to the definition of a substance given in *The Principles of Philosophy*.[30] For this reason it is impossible both to call the union a substance and remain consistent with Descartes' principles.

(ii) Gilson

A slightly less contentious argument for the hylomorphic view has been given by Étienne Gilson (1967). For Gilson it was inevitable that substantial forms would bleed into the union of mind and body, because the two are inferred in the same way. Descartes' criticism of real qualities and substantial forms is based on a 'pre-scientific' conception of reality which, according to Gilson, is known via the senses.[31]

> The major point of Cartesian criticism of substantial forms was... a psychological analysis of the Aristotelian error. The origin of notions

[30] "By substance we can understand nothing other than a thing which exists in such a way as to depend on no other thing for its existence... In the case of created things, some are of such a nature that they cannot exist without other things, while some need only the ordinary concurrence of God in order to exist. We make this distinction by calling the latter 'substances' and the former 'qualities' or attributes' of those substances." Principles *1:51*, French version (AT VIII, p. 24; CSM I, p.210)
[31] For serious want of a better word.

> such as *form* and *quality* are explained by a kind of contamination of physics by our experience of the union of soul and body... Since man invented substantial forms by stretching to the extended world his personal experience, it must be that this experience is one of a substantial form. (1967, p. 247)[32]

The point is that substantial forms were thought up because there was never any investigation beyond the observable phenomena; in a similar manner, the union of mind and body makes use of personal experience, illustrated in the gravity example of the *Sixth Replies*.

> We are forced to the conclusion that the real distinction between soul and body, with the destruction of the substantial form that it entails, is only possible if we admit at least one case of a substantial union, that of the soul and body, and consequently one substantial form, the human soul informing the human body. (1967, p. 245)[33]

Gilson thus identifies the *paradoxe cartésien* in this doctrine.

> The philosopher whose entire metaphysics is geared toward dissolving substantial forms because we have no real idea of them, leads us back to the very idea we do have of them when we ask him how to represent to ourselves the union of soul and body. (1967, p. 248)[34]

Without going as far as claiming substantial status for the mind-body union, Gilson nonetheless reintroduces the substantial form to Descartes' metaphysics.

[32] "Le point culminant de la critique cartésienne des formes substantielles était... l'analyse psychologique de l'erreur aristotélicienne. L'origine des notions de *forme* et de *qualité* se trouvait expliquée par une sorte de contamination de la nature physique par l'expérience humaine de l'union de l'âme et du corps. [...] Puisque l'homme a inventé les formes substantielles en étandant au monde de l'étendue son expérience personelle, il faut bien que cette expérience soit celle d'une forme substantielle."

[33] "Mais alors il faut en venir à cette conclusion, que la distinction réelle de l'âme et du corps, avec la destruction des formes substantielles qu'elle entraîne, n'est possible que si l'on admet au moins un cas d'union substantielle, celle de l'âme et du corps, et par conséquent une forme substantielle, l'âme humaine forme du corps humain."

[34] "Ce philosophe dont toute le métaphysique vise à dissoudre les formes substantielles, parce que nous n'en avons aucune idée, nous renvoie donc à l'idée que nous en avons lorsque nous lui demandons comment nous représenter l'union de l'âme et du corps."

Clearly Descartes would not have enjoyed seeing these Scholastic mechanisms, so vehemently rejected in physical phenomena, identified in his philosophy of mind, but I do think there is something in Gilson's characterisation. There is a curious asymmetry between Descartes' substances that allows for a 'neo-informing' of the human body by the mind; for while physical substance is homogeneous, encompassing all physical phenomena indiscriminately, mental substance acts in precisely the opposite manner. Because the *cogito* is the first identifying feature of the mind, and because self-consciousness is what guarantees the truth of the dualist insight, thinking substance is necessarily individual.[35] Whereas the physical world is all one substance variously modified, thinking substance is pluralist in the extreme, each mind an instance of a type. One peculiar entailment of all this is not only are there as many thinking substances as there are people, the immortality of the soul means that there are as many thinking substances as there are, have been or will be individual souls.[36] The principle of individuation, on this model, seems to be the human mind. However this is not quite correct.

When one of those souls is brought together with a certain configuration of matter, the result is a human being, but the conditions for this "intermingling" seem to be very specific. First and foremost, the matter needs a pineal gland in order that the soul has, as it were, somewhere to live. After that a nervous system and all those organs designed to prolong the mind-body union as long and as successfully as possible must be present; the rest, it seems, are mere details. All of which goes to explain what makes up a human being as a kind, while allowing for individual differences. The soul does not individuate, the body does. An odd result when you think about it: the ground for metaphysically distinguishing mind and body lies in the *cogito*, but the individual human being is distinguished by the configuration of its matter.

Where Gilson is correct is in identifying the epistemic basis of the union in experience. Our obsessions with sensation in childhood lead us implicitly to believe that soul and body are united. After all, the intellect alone is incapable of gaining an accurate idea of the mind-body union; to do so it needs the help of the imagination

[35] The *cogito* guarantees truth at all, and by inference guarantees the truth, for Descartes, of his dualistic metaphysics.
[36] It also raises questions about the generation and destruction of created substances that I do not have space to discuss here.

and sense-perception/sensation.[37] The fact that Descartes falls back on the substantial form to explicate the union tells us that he found it easier to use notions familiar to his correspondents to make it clear. It also tells us, I think, that he found it easier to use ready-made philosophical notions to make things clear for himself, but this does not mean that he held a faithfully Scholastic view of mind and matter. Neither Cartesian physics, nor Cartesian metaphysics, allows for the inherence of mind in matter to make up an *ens per se* in the traditional sense. Even if they did, Descartes' insistent rejection of substantial forms and real qualities as explanatory mechanisms and proto-substances is too strong to ignore. Anything vaguely hylomorphic about the union of mind and body must have come from the terms in which he described the best way to understand it, to interlocutors well-versed in Scholastic philosophy, but unfamiliar with the novelty of Cartesian explanations and their underlying metaphysics.

VI. Cartesian 'Trialism'

> Nature also teaches me, by these sensations of pain, hunger, thirst and so on, that I am not merely present in my body as a sailor is present in a ship, but that I am very closely joined and, as it were, intermingled with it, so that I and the body form a unit. If this were not so, I, who am nothing but a thinking thing, would not feel pain when the body was hurt, but would perceive the damage purely by the intellect, just as a sailor perceives by sight if anything in his ship is broken[...]. For these sensations of hunger, thirst, pain and so on are nothing but confused modes of thinking which arise from the union and, as it were, intermingling of the mind with the body. (*Meditation VI*, AT VII, p. 81; CSM II, p. 56)

In his essay 'Cartesian Trialism' (2008) John Cottingham argues that there is good reason to think that the characterisation of the mind and body in the Sixth Meditation as a unity marks a third category in Descartes' thought beside mind and body. Using passages from the *Meditations* and selections from the correspondence

[37] *Letter to Princess Elizabeth, 28 June 1643,*(AT III, p. 692; CSMK, p. 227)

with Princess Elizabeth of Bohemia, Cottingham argues for a change in popular apprehension of Cartesian mind/body dualism to mind/body 'trialism', as the mind-body union is referred to neither thinking nor extended substance alone, but both. Cottingham claims that certain "hybrid faculties" (p. 174), sensation and the imagination, require a body and that, properly speaking, these should be referred to the last of the primitive notions of Descartes' letter to Princess Elizabeth.[38] This is the notion of the union of mind and body, "on which depends our notion of the soul's power to move the body, and the body's power to act on the soul and cause its sensations and passions." (AT III, p. 666; CSMK p.218) On the strength of this Cottingham claims that "the attributes of sensation and feeling nonetheless fall into a distinct and irreducible category of their own" (2008, p. 181), in the same way that the second grade of sensation is referred to the 'intermingling' of mind and body.[39] If the union were not a separate, irreducible category of its own then passions, sensations and the imagination would fall completely out of the Cartesian picture; the human being truly would be a pilot in a ship or a ghost in the machine, noticing bodily events with intellectual disengagement. Nonetheless, Cottingham takes pains to make it clear that the mind-body union is not meant to be taken as a substance; rather, the union is to be taken "attributively rather than substantivally" (2008, p.186). Characterising Descartes in this way "may be regarded as a significant philosophical improvement on his approach when formulating his initial dualistic distinction" (p.187).

I find Cottingham's case a persuasive one. Appetites, passions and sensations seem to fall into a slightly different category from forms of 'pure' thought such as the understanding; insofar as their realisation requires the body, 'hybrid' is certainly their most apt description. I also agree that if we are to understand the union of mind and body as Descartes did, then our best guides seem to be these hybrid modes of thought.[40] It is also a point that Gilson (1967) makes in his discussion; that in coming to the real distinction between mind and body we make use of sensation, and in doing so sensation reveals the union. For we can only know of corporeal things by the "violence" they inflict on thought in the confused ideas that they cause, and it seems therefore that "the cartesian proof of the existence of the external world

[38] *Letter to Princess Elizabeth, 21 May 1643* (AT III, p. 665; CSMK p. 218)
[39] *Sixth Set of Replies* (AT VII, pp. 437-8; CSM II pp. 294-5)
[40] I will expand on this in the following chapters.

implicates, by way of its essential element, the union of soul and body." (1967, p. 245)[41]

However, questions arise from Cottingham's essay that are not addressed therein. First of all, assuming that the union is revealed to me in the exercise of these faculties, how does this come about? Does each hybrid faculty reveal the union in its own way? I will offer the tentative opinion that, certainly in the cases of the imagination and sensation the union is most definitely revealed differently, for in each it is approached from a different angle, as it were.[42] In this regard Cottingham's piece points to further investigation of the modes of thought he discusses in the revelation – and possibly realisation – of the mind-body union, and this will be the concern of the next chapter.

The second question concerns the ontological status of the union. What place does the union have in Descartes' substance-mode metaphysics? Cottingham's analysis makes few, if any, ontological commitments, but any account of the union is going to have to take these questions into consideration if it is to be afforded any serious place in the Cartesian universe. We can attempt to investigate the union in one of three ways: from the point of view of the mind (what is it for the mind to be united to a body?); from the point of view of the body (what does it mean for matter to be united to a mind?); or from the point of view of the union itself (what is the nature of the union of mind and body?). The first and second questions amount to regarding the union as two separate things brought together, which in turn amounts to viewing the mind and body at once as separate and united, something we know that Descartes explicitly warned against. Only the third option, investigating the nature of the union in itself can yield the kind of results that I think Descartes had in mind.

VII. Conclusion

The overview of secondary literature in this chapter has resolved itself into two questions, one concerning the job the union of mind and body is designed to do,

[41] "... la preuve cartésienne de l'existence du monde extérieure implique, à titre d'élément essentiel, l'union de l'âme et du corps."

[42] "The different between [sense-]perception and imagination is this really just this, that in perception the images are imprinted by external objects which are actually present, whilst in imagination the images are imprinted by the mind without any external objects, and with the windows shut, as it were." (*CB,* p. 27)

the other about the union's ontological status. The classic problem of interaction asks how two substances with, mutually exclusive attributes and modes, can causally interact when causal interaction is premised on the similarity of cause and effect. Even if Descartes' definition of causation rejects this hard similarity, preferring instead causation based on proportional reality, it still remains to be explained how events in one substance give rise to events in the other. The language of the *Third Meditation*, the way in which Descartes applies the causal adequacy principle to the objective reality of our ideas, leads one to thinking that a causal story is in fact possible. But the problem addressed there is not the interaction of mind and body, but the possibility and origin of our idea of God, a totally different topic with very different epistemic and metaphysical implications. Causal exchange between thinking and extended substance is a question that stands alone.

When Descartes is asked to explain intersubstantial causal interaction he trots out the union or "intermingling" of mind and body. Now, as a straightforward answer this is so obviously hopeless that it would be uncharitable to assume that Descartes meant it point blank. If he had wanted to explain the mind's influence on the body and vice versa we ought to assume that he would have done so in explicitly causal terms; that he didn't is strongly indicative that he didn't think it would suffice. If we had no other evidence I think this line of reasoning would be enough; but we see Descartes protesting against trying to understand the union according to the distinction between mind and body, which is what asking about causal interaction amounts to. Descartes' real aim is to illustrate the category mistake that his critics are making; to understand how mind and body influence one another a wholly different primitive notion is required, one that disregards the real distinction and comes at the question already understanding the two as related. One conclusion to draw from this is that Descartes regarded causal interaction as unsuited to explain the mutual influence of mind and body; another is to see that Descartes had a different story available about that mutual influence.

It is not immediately obvious how thinking and extended substance, where substance is defined as conceptually self-contained, could possibly be united. It would be like trying to unify oil and water. Perhaps it is more informative to think of it as resembling the ying/yang symbol in which both elements form one circle, despite being independent and mutually exclusive. In any case a union is a technical term denoting something with no parts; so whatever this union is it is a novelty,

separate from and arguably greater than its components, and this is borne out if we bear in mind that the union gives rise to kinds of thought incomprehensible in the absence of the body. If we think of the union as novel in that sense – as giving rise to modes otherwise unrealisable – then it is easier to comprehend its nature and its novelty. As Cottingham shows, neither sensation nor imagination makes sense if mind and body are not united.[43]

As for the ontological status of the union, here we face another difficulty. We have already established that Descartes' universe is populated by substances and properties (*Principles 1:48,* AT VIII, pp. 22-3; CSM I, p. 208); we have also established that the union is not itself a substance. A substantial union is a union *of* substances, not a union *as* substance. To understand the union, as Cottingham says, "attributively" rather than "substantivally" looks like the only alternative open to us, but still this is opaque. Since only substances can have properties we would be forced to say that the union reduces to ascribing the property 'is united to a body' to the mind, and 'is united to a mind' to the body; but this analysis passes what is novel about the union, its uniqueness, by referring only to its parts. Once again we risk committing the conceptual error Descartes warns about. The lesson to learn here is that pure metaphysics will only take us as far as the distinction between mind and body; we need another arsenal to tackle the union. Étienne Gilson's is the kind of analysis we require. In viewing the union in context Gilson is able to make much better sense of its place in Descartes' scheme; he also throws light on the odd place it has in his ontology. As two substances bound together, the mind-body union serves as a reminder of Descartes' own philosophical education. For all his claims to have rejected the Scholastic notions of substantial forms the union is remarkably hylomorphic, even if the details are worked out, as far as possible, in accordance with Cartesian metaphysics. It seems that Descartes found something worthwhile in the Scholastic tradition of formal explanation, even if the use to which it had been put previously was misguided. Traditionally the combination of intellective soul and the body make up a human being, and this is precisely the cash value of Descartes' theory: when mind and body are united, there you will find a human being. So rather

[43] In fact we can expand the list of modes of thought unavailable to a disembodied mind to include appetites (bodily desires), sense-perceptions (information about the world around me), sensations (information about the state of my body) and the imagination.

than a substance or a property as such the union is simply a way of classifying a particular entity in the natural world.

Gilson's second insight is in recognising the manner in which we come to know the union (which is for him inextricably bound up with the soul as a kind of substantial form), that is, by experience. When we recognise the real distinction we use *a priori* reasoning. When we recognise the union we use our imagination and our sensations, where, as I hope I have shown, no amount of *a priori* reasoning will help. The next question is how experience allows us to know the union, how sensation and particularly imagination play out in its realisation. That will be the topic of the rest of this thesis.

Chapter Three

Sensation

The source of the difficulty in reconciling the union with the real distinction lies in the tension between *a priori* and *a posteriori* knowledge. The distinction we discover in the metaphysics of the *cogito*; whereas the union comes out in everyday unreflective experience. To understand the union means investigating the content of experience and the faculties implicated in that experience, for they are crucial to our knowledge of the external, physical world and, furthermore, they are enabled by the union of mind with body. In this chapter I will investigate the role of experience in Descartes' philosophy, and further to that, the mechanics of sensation. This will lead me to explore how sensation reveals the mind's union with the body. The best way to explain the content of sensation, according to *Meditation VI*, is if the mind were united with a body in such a way as to cause it, and as we have seen, this is precisely the conclusion Descartes arrived at. Our interaction with the world comes through the senses and is mediated by the body, and in order to maintain this state of affairs we experience pain when the body is harmed and specific appetites when it needs something. In this sense, the body accounts not just for the *how* and *why*, but also for the *what* of these 'adventitious' ideas. Since, with God's guarantee, I can believe the clear and distinct evidence of the senses, when my ideas tell me that I am united to a body I have no reason to doubt it; the unbidden ideas of sensation and imagination can only by explained by embodied experiences, when something in or around the body changes.

Towards the end of the chapter I will introduce the major problem with Descartes' account of sensation, the problem of material falsity. Sensory ideas, for Descartes, do not deliver trustworthy information about the external world, despite being our major reason for believing that there is an external world in the first place. The reason for this is that they arise out of the mind's union with the body, making them inherently confused and obscure; which raises the question of how we can gain knowledge of external objects via the senses, as Descartes claims that we do. Here I shall simply outline the problem and a proposed solution to it; my own interests lie in the gap between the clear and distinct, and the obscure and confused elements of sensation, to which I will return in the final chapter.

I. *Expériences*

Contemporary philosophers often manage to forget, in discussing Cartesian philosophy, that Descartes was primarily concerned with the physical world, how it works and how its properties could be reduced to the geometry and relative motion of its parts. Because the history of biology has refuted Descartes' substance dualism, he is taken to have committed a very basic misconception in his metaphysics; and yet, had Descartes wished to demonstrate no more than the conclusion of the standard picture surely he would have ceased discussion halfway through *Meditation VI*, in which he establishes the existence of matter. Once this is achieved there is nothing left to say about the nature of mind or of matter, everything we need we have. Even once the ideas of geometry have been ratified in *Meditation V*, any physical science is still, strictly speaking, impossible on Descartes' stringent criteria because all we are warranted in knowing are the hypothetical, geometric properties of matter, not the actual properties of the real world. But of course the actual properties of the real world are precisely what are under scrutiny in Descartes' work. For all his work in metaphysics it was to optics, human biology, astronomy and meteorology that Descartes devoted the vast majority of his time; observation, investigation based on experience, was what mattered to Descartes. Note that the French for 'experiment' is '*expériences*'. The professed aim of the *Meditations* is to establish "stable" foundations in epistemology to enable and secure the sciences, and this means establishing how we can know anything about the external, physical world, because the vast majority of work to be done is there.[44]

As Desmond Clarke (2005) points out, it was his dissatisfaction with the Scholastic mode of explanation for natural phenomena that drove Descartes to take up his own investigations. Convinced that there must be simpler and more transparent explanations than real qualities and substantial forms, Descartes began to develop his own method and style of explanation, with which he aimed, ultimately, to provide "a complete physics". (*Letter to Mersenne, 25 November 1630*, AT I, p. 179; CSM III, p. 28) Clarke's aim is to throw light on Descartes' philosophy when viewed as an exercise in natural philosophy, broadly construed, rather than as the

[44] It is always important to bear in mind that *scientia* refers to all legitimate, certain human knowledge, everything that it is possible to know.

arch-Rationalist scheme so fondly cherished – with intentions kind or antagonistic – by contemporary philosophy. I have a lot of time for this approach; Descartes spent much more time and energy on the mechanics of the natural world than on the underlying metaphysics of it all, even if that was part and parcel of the general enterprise. For example, the *Principles of Philosophy* (1644), written and published in Descartes' later years, was intended as a textbook on the whole of his philosophy, in which, as we have already noted, Descartes expected to have explained the foundations of all knowledge. (AT VIII, p. 18; CSM I, p. 188) Part One of the *Principles* deals with '*The Principles of Human Knowledge*', that is, man's place in the universe. One of the first conclusions to be drawn is the real distinction between mind and body – the *cogito*, in other words – which is a direct consequence of beginning from human knowledge and working from there. Descartes merrily draws metaphysical conclusions from epistemological premises because, as far as he is concerned, the two are aspects of the same question. An overview of his work reveals that his major interest lay in the physical world. *Le Monde* (c. 1633), the *Meteorology* and *Geometry* (1637) and the *Principles* all deal in the main with the physical world as it stands; while the *Optics* (1637) and *Passions* (1649) deal with man's (mechanical) interaction with that world. The *Meditations* (1642), the *Discourse* (1637) and the *Regulae* (1628) deal, finally, with how man may best gain knowledge of the world and his place therein, and follow the same basic method

Evidently, observation of the physical world requires an *a posteriori* approach, interacting with the external world in both scientific experiments and more mundane experiences. An acquaintance with the world, *pour le connaître*, means not simply interacting with it, but being intimately bound up with it; a fact Descartes knew with such confidence that he was positively surprised when questioned about the mind's relationship with matter.[45] Nonetheless, this interpretation simply is not permitted by the standard picture of a disembodied mind in isolation, distantly and mysteriously knowing the world. Taking into account Descartes' earlier works and acting out of charity, if nothing else, we are forced to conclude that the view that Descartes' philosophy amounts to the 'discovery' of the *cogito* and the problems associated with the real distinction between mind and body is short-sighted at best.

[45] *Letter to Hyperaspistes August 1641* (AT III, p. 424; CSMK III, p. 190).

In fact Descartes set great store by *expériences*, in both general and scientifically motivated dealings with the world.

Acting from first principles the intellect alone can deliver no more than the mutually exclusive properties of mind and body and, unwittingly, the interaction problem. Needless to say this is deeply unsatisfying when experience itself tells us that mind and body enjoy mutual influence in the most everyday life. Descartes was well aware of what experience had to say, and it forms the rational basis for the Sixth Meditation's lengthy discussion of 'adventitious' ideas, ideas that come to the mind unbidden, but which have objective reality or representational content. To use Descartes' terms, these are the ideas of sensation; failure to recognise either their content or their unsolicited nature would mean wilfully ignoring *a posteriori* knowledge. When he acknowledged that experience tells us that mind and body can interact, when he dismissed the worries of his critics, and assured them that the two are united, Descartes was going further than simply agreeing with them. Pure metaphysical speculation will get you so far, but the mind is only capable of taking to it for a short time before becoming exhausted and daily life interferes; sensory experience is by far the most prolific source of ideas and, for Descartes, of very great importance to his general project. In fairness pure metaphysical speculation will, and does, deliver the essential, immutable nature of the universe and of God, but it tells us very little about the existing properties and laws of that universe. The upshot is that the metaphysical, *a priori* approach of the first five Meditations will not furnish me with the kind of information I need to better know the relationship between mind and matter, for those faculties that allow me to cognize the union rely on ideas from something other than the mind itself. The content of those ideas, because it rests on the mind's 'looking outward', relies on bodily experience in the world, and so the epistemic basis for the union of mind and body is *a posteriori*.

II. Definition and Division

Sensations and sense-perceptions, of the body and those things around it, are what constitute experience, and so the union is known in that experience. However, to paraphrase Descartes the definition of this kind of sensation is not univocal, illustrated by what he calls the "three grades of sensory response":

> The first is limited to the immediate stimulation of the bodily organs by external objects; this can consist in nothing but the motion of the particles of the organs... The second grade comprises all the immediate effects produced in the mind as a result of its being united with a bodily organ which is affected in this way. Such effects include the perceptions of pain, pleasure, thirst, hunger, colours, sounds, taste, smell, heat, cold and the like, which arise from the union and as it were intermingling of mind and body, as explained in the Sixth Meditation. The third grade includes all the judgements about things outside us which we have been accustomed to make from our earliest years – judgements which are occasioned by the movements of these bodily organs. (AT VII, pp. 436-9; CSM II, 294f)

The 'three grades' doctrine echoes the pilot passage of the Sixth Meditation in which we link the motion of the nerves with the judgements of the intellect via the 'feel' of sensation, echoing the third category of John Cottingham's 'trialism' (2008). The first grade of sensation belongs to the body alone and is explicable solely in physical terms, while the third grade belongs to the mind alone, as a judgement about the contents of the second grade, which under classic Cartesian Dualism are mysterious.

In *The Principles of Philosophy* Descartes distinguishes between "internal" and "external" sensation. The former includes appetites, passions and bodily sensations such as hunger and pain, while the latter includes any stimulation of the body by external objects; for this reason I shall refer to internal sensation so-called, while external sensation shall be 'sense-perception'.[46] The whole gamut of these sentiments could perhaps be referred to as the 'adventitious faculties', to make formal their unbidden, experiential character; but unless this is explicitly called for I shall simply use 'sensation'.

To deal with internal sensation first, passions are brought about by the direction of spirits through certain channels in the body. For instance,

> when the blood has the right consistency so that it expands in the heart more readily than usual, it relaxes the nerves scattered around the

[46] Not forgetting their less vivid but much more attractive counterparts, satisfaction and pleasure.

> openings, and sets up a movement which leads to a subsequent movements in the brain producing a natural feeling of joy in the mind. (*Principles 4:190*, AT VIII, pp.316-7; CSM I, p. 280)

A more comprehensive aetiology of the passions is given in *The Passions of the Soul* (1649), but the general account retains these features: the passions arise as a result of the mind's apprehension of specific changes in homeostasis, when the motion of the spirits in the brain impinges on the pineal gland, and imparts sensations to the mind, all on a simple mechanical model. Similarly, appetites arise because the mind enjoys a privileged relationship with the body through the action of the animal spirits on the pineal gland, wherein want or need is *felt* rather than intellectually recognised.[47] Finally pain occurs when violence is done to the body in the form of excessive or contrary motion (*Principles 4:197*, AT VIII, p. 321; CSM I, p. 284), in which the nerves are put in motion as far as the brain.

Once the internal sensations are dealt with Descartes turns to the "external" sensations, "commonly listed corresponding to the five kinds of objects stimulating the sensory nerves" (*Principles 4:191*, AT VIII, p.318; CSM I, p. 281). Sense-perception has but one purpose: to show us "what is beneficial or harmful to man's composite nature" (*Principles 2:3*, AT VIII, p. 41; CSM I, p. 244). The sense of touch is stimulated when "the different nerves are moved, or have their normal motion checked," whence "various different sensations are produced in the mind" to correspond to these different motions (*Principles 4:191*, AT VIII, p. 318; CSM I, p. 282). In taste and smell particles stimulate the nerves in the mouth and nose, whose movements are transmitted to the brain. Hearing is nothing more than the vibrations of the inner ear, caused by motion in the surrounding air; here Descartes' anatomical interests are revealed when he describes the inner ear in detail. (*Principles 4:191-194*, AT VIII, pp. 318-9; CSM I, pp. 281-283) Finally vision is a result of the motion of the fluid in the eye upon the retina, motion caused by the impact of light particles from the surrounding air. Descartes devotes very little space to sight in the *Principles*, opting instead to divert his reader to his *Optics* and *Meteorology* for further information.

[47] See *Meditation VI*.

The key to Descartes' physiology, and indeed to all his physics, is motion. His conviction that the observable qualities of the world reduce to the motion of the parts of the object includes the human body as much as any other. All that marks the human body out from any other parcel of matter, is its union with the mind to make a human being, thus affording it the power of agency; in all other respects it is *l'homme machine*.[48] Since it is subject to the same regular laws as the rest of the physical realm, stimulating the body elicits regular ideas and somatic responses; and every explanation of those ideas and responses must concern the motion of its parts. Central to all of this is the role of the gland as the focal point for the animal spirits in sensation; all sensory impressions are transmitted here via the animal spirits, and perceived by the mind, which then makes intellectual judgements according to our innate abilities and inclinations.[49] The *Principles* lack detail but the *Treatise on Man* and the *Optics* (both c. 1637) provide an account of how the movement of the nerves causes the animal spirits to trace figures on the brain and pineal gland, although it is only via the gland, it seems, that the mind perceives at all:

> That is to say, it is only the latter figures [traced on the pineal gland] which should be taken to be the forms or images which the rational soul united to this machine will consider directly when it imagines some object or perceives it by the senses. (*Treatise on Man*, AT XI, p. 177; I, p. 106)

Fast-forward to the *Passions* and we are provided with some more detail. It seems that when we see an animal, for instance, the images from each of our eyes reach first the brain, from where the animal spirits allow the images to "radiate toward the little gland":

[48] While the intellect is confined by its own limits, the will is presupposed in all intellectual activity. For Descartes to say that it is rationality that marks us apart from beasts just is to recognise the pre-eminence of the will. I do not think it a coincidence, therefore, that Descartes identifies the will as man's most divine faculty; in the Christian tradition man is élu over all beasts, and in the Cartesian tradition the reason for this is man's agency, enabled by the will.

[49] Allowing, of course, that the mind must only assent to what it clearly and distinctly understands and must refrain from making unreasoned judgements.

> In this way, the two images in the brain form only one image on the gland, which acts directly upon the soul and makes it see the shape of the animal. (AT XI, p. 356; CSM I, p. 342)

The motion of the nerves and animal spirits ends in the pineal gland, where a figure is traced for the benefit of the mind, and the same goes for all duplicate senses from which a single idea is formed. What we end up with is a twofold understanding of sensation, as a faculty/mode of thought, and as the automatic process of the body, which is a direct consequence of the mind-body division.

And yet there is no reason, even here, to believe the evidence of sensation immediately; we learn as much from the girl with the phantom limb.[50] What the five external senses have in common is their basic mechanism: motion in the external world impinges on the senses; this motion is then transported to the brain via the nerves where it is perceived by the mind. Depending on the apparatus involved, the information of the senses (the motion) will manifest in one way or another in the mind – as a smell or a colour, for instance, but the fundamental properties of the external world always reduce to the relative motion of its parts; different configurations of matter will bring about different smells, tastes, sounds or visual or tactile sensations. We must always verify the information received, and if there is overwhelming evidence to contradict it then the conclusions of sensation will be overruled; the girl's 'pain' in her missing limb is nothing but a misdirection of the animal spirits and overstimulation of the nerves of the arm. Descartes explains phantom limb syndrome in such a way as to support his *homme machine*: to produce the relevant sensation, the nerves leading to the amputated limb must be stimulated in the same manner and order as they would have been had the limb been present. Nevertheless any variation will be consistent, because the motion of the parts is always consistent and is always present in sensation; furthermore, and crucially, it is measurable (in theory at least, if not always in practice). Hence Descartes' insistence on a fissure between that which is transmitted and that which is perceived. There is an obvious qualitative difference between the sense modalities, despite their common mechanism: the motion of the parts of the object.[51] That qualitative

[50] *Principles 4:196*, (AT VIII, p. 320; CSM I, pp. 283-4)
[51] Hence George Berkeley's fabulous turn of reasoning in his *Three Dialogues* [1713]:

difference plays out in various ways, either according to the sense modality in action, or according to the cause of the sensation as either internal or external to the body. That there is a difference of sensations in the mind must be down to the provenance of the idea, for the basic mechanism of sensation is the same regardless. It is to the mind's apprehension of sensation that I now turn.

III. The Mind's "Perception"

As well as noting the two causes of sensation – internal and external – Descartes's analysis brings out another twofold distinction in sensing, this time in the mind's apprehension of it: on the one hand the mind's sensation is a mode of thought, caused by, but not necessarily resembling, the body. On the other hand sensation is of the body, explicable in mechanical terms according to physical laws. This distinction runs along substantial lines: one kind of sensation is allied to the mind, the other to the body, and thus echoes the problems traditionally associated with substance dualism.

When the animal spirits imprint something onto the pineal gland the mind is said to *perceive* these impressions and form ideas accordingly. No matter what the sense modality the mechanism is the same. Consider Descartes' remarks in the *Conversation with Burman*. "When external objects act on my senses, they print on them an idea, or rather a *figure*, of themselves; and when the mind attends to these images imprinted on the gland in this way, it is said to have sensory perception." (AT V, p. 162; CSM III, p. 344, my emphasis.) The question then is how to understand the relationship between the two kinds of sensation, when one is apparently caused by the other. It is quite clear that the mind cannot perceive these impressions in the way that the body does, for it has no sensory apparatus to do so, the notion of the mind's perceiving must be understood differently from bodily sense-perception. For one thing, the figure traced by the animal spirits cannot

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> *Phil.* It seems then there are two sorts of sound, the one vulgar, or that which is heard, the other philosophical and real.
> *Hyl*. Even so.
> *Phil.* And the latter consists in motion. [...] Tell me, Hylas, to which of the senses, think you, the idea of motion belongs: to the hearing?
> *Hyl*. No certainly, but to the sight and touch.
> *Phil.* It should follow then, that according to you, real sounds may possibly be *seen* or *felt*, but never *heard*.
> (1979, p. 18)

impinge on the mind in the same way that the motion of the parts of the object impinge on the senses, for motion is not in the mind's repertoire. Once again we find ourselves faced with the problem of interaction, and yet we have already established that Descartes did not understand mind-body interaction along causal lines, opting instead to explain it in terms of their union. Nonetheless, Descartes employs visual imagery in his description of the relationship between the mind and the pineal gland in perception. It is possible that his work on optics biased his understanding, but in any case the quote from the *Conversation* above clearly states that the animal spirits trace a figure on the pineal gland, in all instances of sense-perception. The problem of interaction seems inescapable because Descartes understood perceptual ideas imagistically; the movements of the animal spirits trace patterns or figures on the gland that are perceived by the mind in a manner directly analogous to vision.

What this means is that in interacting with the pineal gland, "[t]he soul here seems to be reduced to a kind of homunculus", deciphering the figures traced on the gland (Cottingham 1986, p. 121), which portrays a most implausible distance between mind and body. Not only does this analysis play into the hands of Cartesian Dualism and Ryle's caricature, it also leads us to think that sensation in the body *causes* sensation in the mind, when we have dismissed the causal interpretation of mind-body interaction on the grounds that it starts from misleading premises and compounds its problems from there.[52] It cannot have been what Descartes had in mind when he spoke of the union of mind and body. Ultimately, the 'homunculus' version of mind-body interaction scans badly with Descartes' characterisation of mind and body as either united, or in an exceptionally close relationship, "intermingled". There is no room in there for the distance implied by the homunculus account. It seems, from the perspective of their union, to be a misleading way of looking at the situation, for assessing the interaction of the mind with the pineal gland is to ask how mind and body interact from the assumption of their division. As I argued in the last chapter, this is not the way to view the relationship between mind and body. United, mind and body make up a human being, whose business with the world is conducted via sense-perception and bodily sensation, which in turn reveal the union. That none of this is provided for in the traditional version is a good argument for questioning its authenticity.

[52] See Chapter Two.

For all that, we still need to confront the two categories of sensation – mental and physical – and the fact that Descartes clearly understood their relationship as metaphorically visual. Clearly the two kinds of sensation are not the same, if only for belonging to different substances, but just as clearly they must be closely related to reveal the mind-body union. Does the homunculus fallacy occur in Descartes' account, or is there an alternative to be found? It is possible, even easy, to view Descartes' account as inconsistent, for sensation is arguably equivocated in his analysis. In the three grades of sensory response, grades one and three (somatic and intellective) might be distinguished, but they are still referred to one phenomenon, in this case harm. In order to argue that the physical process of nerve-to-gland excitation is the *same* as the feeling and apprehension of pain Descartes would have to argue that mind and body were the same; in other words we'd have a mind-body identity thesis. But of course this is not the case, the intellectual apprehension of harm *follows* the violence done to the body, the one is prior to the other and they are linked by the second grade, the feeling of pain, itself a mental phenomenon. Descartes' philosophy is many things, but mind-body identity thesis it is not. Bodily sensation is prior to mental sensation and to the distant understanding of harm done; that they might be taken for the same is simply a mistake of common language. That they are different is simply a consequence of Descartes' metaphysics. Just as the real distinction between mind and body need not rule out their union, nor does the different meanings of sensation rule out their close relationship. The apparently causal link between stimulation of the pineal gland and mental sensation need be no more mysterious than a fundamental, divinely-ordained law of nature. Established by God, the mind-body union operates according to certain fundamental laws to ensure its longevity. The first of those laws, and the most important, is that whatever happens in or to the body is echoed in the mind, according to a consistent framework, a framework Descartes believed he had discerned in his physiologies. Then, when the body comes to harm, we can do something to mitigate it and prevent it in future.

IV. The Provenance of Sensation

There is an alternative to the homunculus version. Rather than ask endless questions about the mind's causal interaction with the pineal gland, we can view

sensation in terms of the union of mind and body. In every sensory idea the body is implicated, either directly in internal sensation, or indirectly, when it is included in the objective reality of the ideas of sense-perception. In internal sensation the body is obviously involved in the content of the idea; as long as I feel pain I have an idea which part of my body has been damaged, there are no such things as 'floating' pains, pains without provenance. The very content of these ideas is inexplicable, *unless* the mind is united to a body in such a way as to give rise to it, and so the union is revealed to the intellect.

In external sensation, or sense-perception, matters are a little more convoluted. Famously Descartes cast aspersions on the veracity of sense-perception, claiming that we have no reason to assume that our ideas of "colours, sounds, taste, smell, heat, cold and the like" resemble in any way the object of perception. The reason for this is that these ideas are mediated by the body and intrinsically involve the relevant sensory apparatus, which interferes with the information from the object. The motion of the parts of the object bring about these ideas on contact with, for instance, the eardrum or the retina, and the idea itself changes if the apparatus is interfered with. In the *Second Replies* Descartes notes that "we do not have the required kind of certainty with regard to matters which we perceive solely by means of the senses, however clear such perceptions might be." A jaundiced man "sees snow as yellow" just as clearly and distinctly as we see it as white because his eyes are yellow.[53] (AT VII, p. 145; CSM II, p. 104) Since the senses influence our ideas of the external world we cannot trust them to give us correct information. Descartes had developed this idea in more detail in the *Optics*, where he considered the interplay between the eye and the object.

> For example, if an object is composed of ten thousand parts capable of sending rays to a certain area at the back of the eye in ten thousand different ways, and consequently of making ten thousand colours simultaneously visible, these parts nonetheless will enable the soul to discriminate only at most a thousand colours, if we suppose that in this

[53] Unfortunately for Descartes this is not true; jaundice may turn the whites of the eyes a fetching shade of yellow but it does not affect vision. My regards to Dr Matthew Farr who put me straight on the matter.

> area there are only a thousand fibres of the optic nerve. (AT VII, p. ; AT VI, p. 134; CSM I, p. 168)

The upshot is that any such idea, since it is a result of the interaction of the sensory apparatus with the object, necessarily contains the idea of the relevant sense. Even ideas of sense-perception are, in this sense, ideas of the body. In this way the body, and its union with the mind, is revealed, and the ideas of the Sixth Meditation, those appetites, sensations, imaginings and sense-perceptions, all involve the body in their objective reality. The question of the truthfulness of sense-ideas – internal or external – is determined by the intellect when it reflects that the mechanics of sensation bear no resemblance to the ideas created. But that is not to deny the *content* of that experience as it stands; the only way in which those obscure and confused ideas could have arisen at all is if the mind were united to a body, given their objective reality. Indeed, it is the interference of the body that renders the ideas obscure and confused in the first place, for any idea borne of the intellect (or of God) is automatically recognised as clear and distinct.

It sounds facile to state that without the body there would be no sensation, but from the point of view of the "Cartesian ego" (Parfit, 1984) this is not obvious. Sensation is, at bottom, a mode of thought, but to say this is to say nothing about the *content* of sensation, and this is utterly mysterious in the absence of sensory apparatus. The objective reality of sensation, its representational content, can only be explained by the mind's union with the body, a rule that stretches to ideas of the external world insofar as they implicitly involve the relevant apparatus. In this way the union of mind and body accounts for sensation, just as much as sensation reveals the union to the mind.

V. Object-Perception

Descartes' account of object-perception is not simple, in the sense that it consists of more than one ingredient. It comprises two aspects: the apprehension of the nature of the corporeal, and the apprehension of the object's interaction with the senses; the former known as ideas of 'primary' qualities, the latter ideas of 'secondary' qualities. When I perceive an object it appears extended, in motion and of a certain duration; I also experience it as modified in certain, impermanent ways:

as having colour, sound, taste (were the fancy to take me to taste it), texture and smell. Of those two kinds of qualities, Descartes argues, the first can be said with certainty to be 'in' the object while the others cannot.

Opinion varies regarding the details of Descartes' understanding of object-perception and is generally divided along representationalist/non-representationalist lines.[54] Non-representationalists hold that Descartes did not commit himself to the intentionality of the idea, that any idea of the external world does not, in itself, represent the external world. Instead it is simply a *quale*, a modification of the mind which represents nothing beyond it. Any intentionality in the idea is supplied by an implicit judgement I make that the idea corresponds to something external. I have little faith in this view; if ideas of objects are not inherently representational – if they lack intentionality – then the causal argument for God's existence does not hold water. That argument depends on the inherent representationality of the idea; if it did not represent God then the proof of God would not work. It is a condition of the argument of the Third Meditation that the idea of God is *caused* by God, and thus ideas are intentional. I stand in the representationalist camp: in object-perception the idea inherently represents – though does not resemble – the object; I have also given away that I understand the idea to have been caused by the object in some way. In this I agree with De Rosa, although I depart from her in detail; where De Rosa attributes the causal part of the idea to ideas of the object's primary qualities I hold that, because those ideas are innate, that cannot be the case. Rather, it is the sensory content of the idea that refers to the external world. In what follows I shall present De Rosa's account and the problem of the material falsity of ideas, with which it is bound, before explaining briefly where I stand on the issue.

In the Fifth Meditation Descartes comes to the conclusion that, because God exists and is reliable, he can happily believe everything he clearly and distinctly understands, including those ideas of corporeal nature of which, when he thinks about it, he is "not so much learning something new as remembering what I knew before":

> I distinctly imagine the extension of the quantity (or rather of the thing which is quantified) in length, breadth and depth. I also enumerate

[54] This overview is based on De Rosa (2010).

> various parts of the thing, and to these parts I assign various sizes, shapes, positions and local motions; and to the motions I assign various durations. (AT VII, p. 63; CSM II, p. 44)

These are the properties of matter that have always been "the most certain truths of all" for being "the kind which I recognized clearly in connection with shapes, or numbers or other items relating to arithmetic or geometry, or in general to pure and abstract mathematics." (AT VII, p. 65; CSM II, 45) Their truth – that is, their clarity and distinctness – is guaranteed by the fact that I do not need the senses to understand them. I am quite capable of understanding them as general terms for they are "comprised within the subject-matter of pure mathematics" (*Meditation VI* , AT VII, p. 80; CSM II, 55). These mathematical properties of corporeal objects are what later philosophy dubbed primary qualities, ideas of which are said by Descartes to resemble the object itself because they are 'in' the object. Whether ideas of primary qualities are caused by the object itself is a different question, to which I shall return. At this stage it is enough to note that, for Descartes, they are epistemically genuine. The other aspect of the perception, ideas of secondary qualities, arise as a result of the body's interaction with the external world. Since their nature has been presented comprehensively in the discussion of the mechanics of sensation, it remains simply to note that as ideas they are not mathematically expressible, and thus lack the clarity and distinctness of their primary cousins. Our ideas of secondary qualities are, in fact, obscure and confused.[55]

Ideas of the external world, therefore, have two aspects. One is the clear and distinct understanding of mathematically expressible, primary properties; the other is a result of the mind's union with the body, secondary qualities arising from the object's interaction with the sensory apparatus. In Part Two of the *Principles* Descartes makes this point more clearly:

[55] In the *Regulae* Descartes abstracts all features from colour except figure and proposes that we represent the different colours as different figures/images expressed as shapes and patterns. "The same can be said about everything perceivable by the senses, since it is certain that the infinite multiplicity of figures is sufficient for the expression of all the differences in perceptible things." (*Rule Twelve*, AT X, p. 414; CSM I, p. 41) Sensory ideas can be *conceived* under primary qualities and expressed that way but this is merely a representation, an easy way to understand and present the differences between sensory ideas, not a literal presentation of them.

> But we have sensory awareness of, or rather as a result of sensory awareness we have a clear and distinct perception of, some kind of matter, which is extended in length, breadth and depth, and has various differently shaped and variously moving parts which give rise to our sensations of colours, smells, pains and so on. (AT VIII, p. 40; CSM I, p. 223)

The two aspects are part of one perception brought about by the interaction of the sensory apparatus with an external object. The argument for the existence of the external world rests on the "faculty for receiving and recognizing the ideas of sensible objects" (AT VII, p. 79; CSM II, p. 55) and the CAP, and turns on an ultimately dubious presumption:

> For God has given me no faculty at all for recognizing any such [false] source for these ideas; on the contrary, he has given me a great propensity to believe that they are produced by corporeal things. (AT VII, p. 79; CSM II, p. 55)

According to the *Meditations* sensory ideas give me a good enough reason to believe that the external world exists, because God would never allow me to go wrong when I am compelled so strongly.

At this point we encounter an interesting difficulty with Descartes' account of object-perception. The fact that Descartes *recognises* the mathematical properties of external objects in a very Platonic sense implies that he always knew them, that the geometric features of the material world come hardwired, as it were, in the intellect. Of course that is what makes these ideas clear and distinct, that they are innate and as such come from God. I need not rely on the senses to know the nature of the external world, because I was born knowing it. For that reason, and because God is no deceiver, I may rest perfectly assured that the material world is the way I understand it to be. However, given that these are properties of the material world their innate status is interesting, for it implies that to know the nature of the corporeal I require no contact with it. This point is driven home as early as the Second Meditation when Descartes draws the conclusion that perception of material objects,

> derives not from their being touched or seen but from their being understood; and in view of this I know plainly that I can achieve an easier and more evident perception of my own mind than of anything else. (AT VII, p. 34; CSM II, 22-3)

The *existence* of the external world is not established until the Sixth Meditation, when the mind's union with the body and the adventitious ideas of the senses are considered seriously for the first time, but by then its *nature* is regarded as indubitable, which means that my clear and distinct perception of the external world is not caused by it. Which brings up immediately the question: how do I know the external world is as I believe it to be? The immediate, and hasty, answer is: by the ideas of sensation which, by virtue of arising from the union of mind with body, seem to have been caused by something other than the mind and therefore comprise my best source of information about the concrete object in front of me.

VI. The Problem of Material Falsity

Immediately we encounter a problem: sensation cannot be trusted. Even in normal circumstances sense-perception gives us dreadful information about the external world.

> If I look at the sum and represent it as a flat small yellow disk in the sky, I misrepresent it. Paradigm cases of sensory misrepresentation include ideas of so-called "secondary qualities" such as color and taste, since these represent their objects (i.e., bodies) as other than they are (i.e., as resembling the felt sensation of color and taste). The idea of red represents bodies as red. But since bodies do not instantiate the property of redness as we experience it, the idea of red misrepresents the properties of the material world. Descartes calls ideas of secondary qualities "materially false" in Meditation Three and in the Fourth Set of Replies and continues to regard them as misrepresentations of the material world in all subsequent works. (De Rosa, 2010, p. 1)

Material falsity is brought up in the Third Meditation, in which Descartes moots the possibility that some ideas "represent non-things as things" (AT VII, p. 43; CSM II, p. 30). These ideas are the confused and obscure ideas of secondary qualities, whose objective reality is so slight that I have no problem assuming that they could have originated in me, rather than in whatever they purport to represent. By contrast, my idea of God contains so much objective reality that it could not possibly have originated in me and so must represent something with as much formal reality as objective reality contained in the idea.[56] Arnauld points out in the *Fourth Objections* that if sensory ideas represented "non-things as things" then that would conflict with the principle of objective/formal causation, for in representing coldness, for instance, as a positive entity when in fact it is nothing,

> if cold is an absence, it cannot exist objectively in the intellect by means of an idea whose objective existence is a positive entity. (*Fourth Objections*, AT VII, p. 206; CSM II, p.145)

This definition of material falsity, Arnauld concludes, conflicts badly with Descartes' own explanation of causation. Descartes' response is to point out that it matters little, as far as the idea of cold itself is concerned, whether cold is a positive thing or an absence; the idea still *presents* cold to the mind. The point is that the idea is so obscure and confused that I am unable to determine if either heat or cold "represents more reality to me than the other." (*Fourth Replies*, AT VII, p. 233; CSM II, p. 163) In that case,

> if cold is simply an absence, the idea of cold is not coldness itself as it exists objectively in the intellect, but something else, which I erroneously mistake for this absence, namely a sensation which in fact has no existence outside the intellect. (*Fourth Replies*, AT VII, p. 233; CSM II, p. 163)

[56] Ideas of primary qualities, although they are clear and distinct, at this stage in the *Meditations* cannot be said to have been caused by the object, or truly represent the object, because we have no epistemic guarantee until God has been proven.

I take Descartes here to be saying that materially false ideas present an object to the mind as having a particular property that it does not really have. The idea arises as a result of the mind's union with the body, and the body's interaction with its environment; the union renders the idea obscure and confused *because* it presents the object as other than it is, leaving us unable to tell the nature of the object under scrutiny. To grasp the nature of the object we must use the intellect to understand its mathematically expressible, 'primary' qualities. We might experience the object as being coloured, for example, but that is due to the eyes' interaction with the motion of the parts of the object. When Descartes insists that nature can be expressed mathematically he is basing his claim, in part, on his conviction that the senses cannot deliver reliable information about the material world. In the absence of the senses we would still be able to cognize the physical world and navigate it, hence Descartes' impatience with real qualities and intentional forms.

> You have only to consider that the differences a blind man notes between trees, rocks, water and similar things by means of his stick do not seem any less to him than the differences between red, yellow, green and all the other colours seem to us. And yet in all those bodies the differences are nothing other than the various ways of moving the stick or of resisting its movements. Hence you will have reason to conclude that there is no need to suppose that something material passes from objects to our eyes to make us see colours and lights, or even that there is something in the objects which resembles the ideas or sensations that we have of them... By this means, your mind will be delivered from all those little images flitting through the air, called 'intentional forms', which so exercise the imagination of the philosophers. (AT VI, pp. 85-6; CSM I, pp. 153-154)

Our ability to grasp the nature of the external world is not owed to the senses, but to the intellect, which understands matter geometrically. Descartes' insistence that matter can be expressed geometrically stems from his conviction that matter everywhere is uniform in nature but varied in motion, and that it is that variation that accounts for different sensations. The mathematization of nature, therefore, is closely related to the doctrine of material falsity.

There is a problem with Descartes' account, however, that threatens to render it inchoate; this is the "puzzle" of sensory representation, in which Descartes consistently claims that the senses systematically deceive us while simultaneously understanding object-perception in such a way that precludes any such deception, "on pain of not being an idea of [the object]". (De Rosa, 2010, p. 2) Arguing that ideas of sense are inherently representational De Rosa takes them to comprise two features:

> (i) A phenomenal content – *viz*., the sensation of red as such or the phenomenal red.
> (ii) A conceptualization of the object of thought as a property of body causing the sensation.
> (2010, p. 154)

De Rosa's solution to the problem of material falsity lies in the interplay between the mind as intellect and sensation. The innate ideas of geometry are brought to bear on the phenomenal content of the idea of an object, while allowing for the material falsity of sensation. "[S]ensory ideas are obscure and confused representations of their objects because they *embody* the fusion of the latent conceptualization of the object (coming from the mind) and a phenomenal content (coming from a causal connection with a particular configuration of matter)." (2010, p. 153) Thus the mind supplies the innate notion of body as clear and distinct geometry, while adventitious sensation accounts for the phenomenal content of the sensory idea. "Even if the sensation-type is the product of the mind's causal interaction with different types of configurations of matter, it is the mind that refers the phenomenology to external objects." (2010, p. 145) In this way, De Rosa claims to have 'solved' the puzzle of sensory representation by explaining how the idea can both represent *and* misrepresent the object: the idea is fixed to a specific object by the mind's innate understanding of geometry, while the phenomenal content is determined by the body's causal relationship with the object. Material falsity comes about because both aspects are present in one act of perception. If object-perception were simply a case of intellectual apprehension there would be no problem; because the senses are involved, however, and they are brought to bear on the "conceptualization" of the object, the idea is confused and obscure, materially false.

VII. Determining the Object

I am not concerned so much with what makes a perception materially false, as with the relationship between the idea of the object and the object itself. If the idea is not reliable then we must ask what fixes it to a particular object: if sensory ideas *are* materially false, if object-perception is inherently unreliable because it is a result of the mind's union with the body, then we are left with no account of how the perception is determined at all. Descartes claims that we know the true and immutable nature of the external world through the innate ideas of arithmetic and geometry, while at the same time claiming that our perception of the external world is causal. In object-perception, therefore, we must marry the two, innate ideas with causal sensation. This leads me to ask, how do we determine the object of perception? Given that sensory ideas are materially false, how can we work out exactly what the object is that we perceive? De Rosa answers this question when she accounts for material falsity: in her opinion the answer lies in the split between phenomenal content and innate understanding of the object; it is the latent geometrical content of the mind that refers the phenomenal content to external objects. Unfortunately there is a problem with De Rosa's response that pierces to the heart of the question I want to answer. I agree that object-perception in Descartes relies on the interplay between the innate ideas of geometry and information from the senses; however I differ from De Rosa because I do not think that it is the latent geometrical content that refers the phenomenal content to the external world. I see why De Rosa thinks that it must: the materially false status of sensory ideas, that is, the inherent epistemic unreliability of phenomenal content, would seem to entail that if we were to rely on it to tell us anything about the object before us we would go wrong automatically. What we know for sure about the object we source from our innate ideas. However, the fact that sensations arise from the union of mind with body leads me to think that it is the phenomenal content itself that indicates the external world to the mind. I am on board with the mind's supplying the idea of the sensation as being of the external world *as so configured*, but I am not on board with the idea that it is the geometric configuration of the object, provided by the mind, that fixes the idea as *of a particular object*.

Here is why. The only properties that can truly be ascribed to external objects are those clearly and distinctly understood by the mind; all ideas of sensation arising from the union of mind with body are obscure and confused, materially false. But it is those ideas of sense that lead us to say of an object that it *is that* object. It is the phenomenal quality of the sense-perception that refers us to the external world. The clear and distinct ideas of the intellect can only be ascribed to the external world insofar as they are an ingredient in sense-perception; however, the only way we garner information that there is an external world in the first place is via the mind's union with the body. It is not the intellect that allows us to ascribe properties to the external world, it is sensation that does that. None of the properties arising from the mind's union with the body can be trusted; they simply are not properties of the object. So on the one hand we have the ideas of the intellect, those clear and distinct notions that we can definitely say apply to the external world, assuming that there *is* an external world. These are what we have by the end of the Fifth Meditation. One the other hand we have the phenomenal qualities of sensation, which arise from the mind's union with the body, that is, from the mind's contact with the external world.

But once more, the intellect does not deal with the real world; the subject-matter of the pure understanding is the mind and its contents; it has nothing to do with the external world. So if the actual properties of the real world can only be revealed by the mind's union with the body, but if the evidence of the senses is unreliable because it is obscure and confused, and if the primary properties of the real world are graspable by the intellect but the intellect cannot apply those properties to the world, owing to inherent restrictions on its remit, then we need a way of bridging the gap, of applying the ideas of the pure understanding (arithmetic and geometry) to the evidence of the senses, to mitigate the effects of union with the body on the mind.

This is where imagination comes in.

Part Two

The Imagination

I. Introduction

And so we come to the imagination. As a faculty of thought, imagination is closely allied to sensation in scope and content. Where sensation deals with thoughts and ideas arising from the agitation of the animal spirits in the brain, from either the external world or from the body itself, imagination deals with fictions, ideas that cannot be explained immediately and comprehensively by reference to the impact of objects on the senses. Most obviously this involves active invention or dreaming, ideas that have neither counterpart in the real world nor cause external to the mind. However, the various ways in which Descartes defines the imagination reveal it to be a complex faculty used in a variety of ways. It is my aim in what follows to begin to unravel this complexity and present an account of the imagination in Descartes that is as clear as possible, without losing its innate intricacy.

Even a brief acquaintance with just the Meditations will reveal that Descartes afforded the imagination significant weight. It is instrumental in the method of doubt and the subsequent reconstruction of knowledge, first by inventing the malin génie and then for introducing the thinker to possibilities beyond the cogito:

> But what else am I? I will use my imagination [...] I am not even some thin vapour which permeates the limbs - a wind, fire, air breath, or whatever I depict in my imagination; for these are things which I have supposed to be nothing. (AT VII, p. 27; CSM II, p. 18)

In one form or another, the imagination is a regular feature of Descartes' works. It might be as a counterfactual tool for thinking up possible scenarios; the fable of *Le Monde*, where Descartes describes a possible world wrought by God in a manner that makes it both fully comprehensible and just like our own, is a very good example of the useful fictions that the imagination can create. By describing the creation and laws of his imaginary realm Descartes was able to explain how, according to his own scientific principles, the universe was constructed, and demonstrate its inherent

clarity and simplicity. In the same way the *malin génie* of the First Meditation, who has "employed all his energies in order to deceive me" (AT VII, p. 22; CSM II, p. 15), focuses the hyperbolic doubt that Descartes needs to establish the *cogito* in a character far removed from God. That way he need not suppose that God deceives him (for that would cause major problems down the line), while setting up a neat device in his 'fight' against scepticism and the search for truth. Supposing that there is some entity out to deceive him as comprehensively as possible gives Descartes' *Meditations* narrative force. Fictions and counterfactual situations are crucial to science; forming hypotheses to test relies on being able to imagine how things might be, and how best to find out.

While Descartes clearly valued the imagination for this reason, he also saw the danger in too incautiously investing it with truth without adequate checks. His invections against the conclusions of the Scholastics shows how adamantly he opposed believing the imagination on little to no grounds:

> [Substantial forms] were introduced by philosophers solely to account for the proper actions of things, of which they were supposed to be the principles and bases [...][57] But no natural action at all can be explained by these substantial forms, since their defenders admit that they are occult and that they do not understand them themselves. If they say that some action proceeds from a substantial form, it is as if they said that it proceeds from something they do not understand, which explains nothing. (*Letter to Huygens, 31 January 1642*, AT III, p. 506; CSMK, pp. 208-9)

Descartes then goes on to explain how *his* method of explanation, which relies on "manifest and mathematical reasons for actions" (AT III, p. 506; CSMK, p. 209) rather than imaginary suppositions, is far superior. However, he also recognised that the fictions of the imagination have great persuasive power. In The Passions of the Soul, the passions are given as evidence for the union of soul and body, and the imagination as instrumental in the soul's Stoic manipulation of the body:

[57] 'Supposed' here is taken to be synonymous with 'imagined', rather than 'designed'.

> When we want to imagine something we have never seen, this volition has the power to make the gland move in the way required for driving the spirits towards the pores of the brain whose opening enables the thing to be represented. (*The Passions of the Soul 1:43*, AT XI, p. 361; CSM I, p. 344)

> Our passions, too, cannot be directly aroused or suppressed by the action of our will, but only indirectly through the representation of things which are usually joined with the passions we wish to reject. (*Passions 1:45*, AT VII, pp. 362-3; CSM I, p. 345)

Thinking up fictions and hypothetical situations, either to manipulate our emotions or to form scientific hypotheses, are easy to recognise as being of the imagination, and Descartes shows himself proficient in using it for these purposes. From the fable of *Le Monde* through to the manipulation of the passions mentioned above, via the *malin génie* and emotive language of the *Meditations*, Descartes employs well the imagination's flair for creating fictions and carrying the reader with them. Recognising the corporeal aspect of the imagination and working into it his theory of the animal spirits in passionate responses, he used imaginative language to influence his reader via the emotions.

My main interest in this thesis, and the first question I want to address, lies with the role the imagination can play in joining mind and body, and as a mode of thought the imagination has a clear link to sensation in general and object-perception in particular. Both sensation and imagination rely on the brain to function, and yet, as faculties of thought, are mental in nature; in this way they could be said to provide evidence for the mind-body union. In any case, neither faculty could be what it is without both mind and body. I draw the reader's attention to the imagination as a place for retaining and manipulating corporeal images in the brain. The so-called 'corporeal imagination' is a region of the brain in which ideas of physical objects are corporeally realised and manipulated according to wont, and is the defining feature of the imagination in the earlier works. Later on, as the rift between mind and body widened, the imagination's corporeal basis was heeded less as the imagination itself was categorised as a mode of thought over extension.

The sheer diversity of places the imagination appears can make it seem as diverse in nature. Nonetheless, there are certain threads running through Descartes' account, in spite of a shift in his opinion of imagination from the early works to the Meditations and beyond. For one thing, imagination's close alliance with sensation means that its usual remit is the corporeal world, even if that world is assumed not to exist in reality. In fact, the absence of a need for the corporeal world in imagination means that it is able to deal with pure mathematics—specifically geometry—as the essence of the physical without requiring that world to exist. That said, the imagination, at least in the early works, does require physical realisation itself in the brain; later on this corporeal imagination is emphasised less as the distinction between mind and body is played up and imagination is consigned wholly to the immaterial. Yet, even then, the imagination has a close bond with the body, for it is credited as the faculty that allows the mind to "turn towards the body" (Meditation VI, AT VII, p. 73; CSM II, p. 51). The mind's business with the external world is mediated by its union with the body, which is how sense-perception is brought about and explains the confusion of sensory ideas. The mind-body union is implicated in sensation; it makes no sense for there to be sensation if there is no body, and the ideas of sensation reveal the body in their objective reality.[58] But it is not the only mode of thought in which the body is implicated; the imagination is also enabled by, and reveals, the mind-body union:

> And I can easily understand that, if there does exist some body to which the mind is so joined that it can apply itself to contemplate it, as it were, whenever it pleases, then it may possibly be this very body that enables me to imagine corporeal things. (Meditation VI, AT VII, p. 73; CSM II, p. 51)

Throughout Descartes' life, he regarded the imagination as having a corporeal element. In fact, in many places Descartes seems to regard the imagination as predominantly, if not wholly, corporeal. This is more noticeable in the earlier works where the imagination and the sensus communis or the pineal gland are taken to be very closely connected. Later on, Descartes acknowledges the immaterial nature of

[58] See Chapter Three.

the imagination, particularly when the distinction between mind and body is of concern. There is, therefore, a perceived tension in Descartes' notion of the imagination, for how can it be both mental and corporeal? However, in the same way that this question is a non-starter for sensation, I believe it to be a misleading way of viewing the imagination. Instead we should start from the position of a unified mind and body – a human being – and ask, 'what is the significance of the imagination for the union of mind and body?' This way, we avoid the dead-end of Cartesian Dualism and should get at a much richer account.

Perhaps the imagination's affinity with sensation has meant that it has since been eclipsed by its more troublesome neighbour; the question of how the imagination might work and its importance for Descartes' philosophy certainly makes up a small fraction of the secondary literature (Wilson, 1978; Galison, 1984; Fóti, 1986; Sepper, 1996; Vinci, 1998). Still, it was of abiding interest throughout Descartes' career. As Dennis Sepper puts it,

> [i]magination can indeed serve as an index of Descartes' deeper concerns and of the transformations of his thought - not because there are remote and obscure connections between them, but rather because imagination was at the heart of his earliest philosophizing, and because his prolonged effort to establish the practical relevance and cognitive importance of imagination led him into a network of problems that defeated his initial hopes. (1996, p. 5)

The second question I want to address is finer and more technical and follows from the problem posed at the end of the last chapter: how does the mind's notion of matter's essence relate to the materially false information provided by sensory perception? How, in fact, can we have scientific, mathematical knowledge of the external world? Once I have established imagination's affinity with sensation, I shall return to the problem with sensory ideas. The material falsity of sensory ideas leaves a major gap in Descartes' account of knowledge, for it fails to explain how we come to know anything at all about the external world. While the mind is capable of figuring the essential properties of matter, all this is hypothetical until sense-perception confirms matter's existence. However, sensory ideas are inherently unreliable; their obscure and confused nature means that any information they

convey about the external world is likewise not to be trusted. This leaves us with a serious problem: the essential properties of matter are discerned by the mind, but the mind does not—cannot—apply those properties to the external world. Sense-perception brings ideas of the external world to the mind, and the mind can discern the essential nature of the external world independently of those ideas – which lends those properties legitimacy, but only if they can be ascribed to the external world. Neither sense-perception itself, which is inherently representative, nor the understanding, which is inherently reflexive, can do this. Descartes needs a way to bridge the gap between the understanding's cognition of primary qualities and sensation's presentation of secondary qualities to build a picture of the external world. It is my view that the imagination has a cognitively vital role in unifying the ingredients of sense-perception. Before I can lay out my solution to the problem, however, I need to lay bare Descartes' imagination and the (surprisingly few) interpretations thereof.

II. Fictions and Hypotheses

Studies on the imagination in Descartes tend to distinguish between the imagination as a cognitive tool (as which it usually comes up short) (e.g. Sepper, 1996), and its practical application as a creative force in thinking up counterfactual suppositions (e.g. Galison, 1984). The first approach focuses on the corporeal imagination's ability to store and manipulate images in the brain for translation to and scrutiny by the intellect; as such, the imagination aids cognition of anything involving shape or extension. The alternative concentrates on our ability to create fictions, to think up new notions, hypotheses or to daydream. In this section I want to explore the two versions of the imagination, with their differences and how they are related; for I shall claim later that the imagination's utility in knowing the external world is linked to its ability to think up fictions.

A great deal of this chapter will look at the imagination's role in cognizing the external world in the early works and how sense-perceptions are imprinted on the corporeal imagination for the mind's scrutiny. However, we have yet to consider the creative side of the imagination, how it allows the mind to think about things that are not the case and to create useful fictions. Although it is not the aspect to which I wish to devote most of my attention, the fictive imagination stands out as an

extremely useful philosophical tool for Descartes for two reasons. Firstly, it persuades its audience by eliciting emotive responses through a narrative, as in novels and plays. Secondly, it allows Descartes and his reader to make assumptions and explore hypotheses – the imagination's great contribution to science in general.

Descartes' *Meditations* is a story; designed to convince his readers of his method and metaphysics, it reads like a step-by-step guide to beating scepticism and rooting out the secrets to God, the Universe and Everything. The Doubter describes his sceptical difficulties, and the road to rehabilitation, in a way that takes the reader with him, if the reader is really concentrating, as a passenger on the journey. The style of the piece is narrative, almost romantic, and it appeals to the reader's imagination in its descriptions of the Doubter's battle with the *malin génie*, his fear and doubt, hope and eventual relief at finding himself victorious. Simple though the text seems, it is built on a strategy of imaginative persuasion.

Consider the all-embracing sceptical assumptions Descartes makes in order to make his project fly. By the beginning of the Second Meditation, the Doubter finds himself in a terrible quandary:

> So serious are the doubts into which I have been thrown as a result of yesterday's meditation that I can neither put them out of my mind or see any way of resolving them. It feels as if I have fallen unexpectedly into a deep whirlpool which tumbles me around so that I can neither stand on the bottom nor swim up to the top. (AT VII, pp. 23-4; CSM II, p. 16)

This passage is full of fear and confusion, and the imagery is very strong. Descartes is not required to write in this manner: to get his point across he needs only explain the steps of his reasoning, not describe the affective turmoil into which the Doubter might have been thrown.[59] Nevertheless, Descartes constructs this narrative in a very personal way: the decision to re-examine all his previously held beliefs, the confusion and turmoil into which this throws him, the relief as he reaches the *cogito*, and the realisation that scepticism is a risible stance are all emotive responses to the situation Descartes sets up and which have little to do with the philosophical insights

[59] For added proof that Descartes did not need to write in this style, see the geometric presentation of the same argument in the *Second Replies.* (AT VII, pp. 160-70; CSM II, pp. 113-20) A further iteration of the argument is given in a different style again in the *Principles of Philosophy* (1644). (AT VIII, pp.5-8 ; CSM I, pp. 193-95)

of the text. Their job is to lend the text narrative force, to draw the reader in to the story and have him follow Descartes on his quest for knowledge. In other words, they are an imaginative strategy that turn otherwise plain philosophical claims into a journey that appeals to the reader's own imagination. That appeal lies in making Descartes' ideas more attractive in their exposition, thus easier to follow. Descartes recognised the strong effect that fictions had in eliciting emotive responses, and put it to good use in convincing his readers of the truth of his philosophy. He is, in a way, putting into practice his own advice to Princess Elizabeth years later when he wrote that to achieve better health it is necessary to "direct [the] imagination" to certain matters over others, for it is easier to become convinced of something if the emotions, and the imagination, are led by it.[60] (*Letter to Princess Elizabeth, May or June 1645*, AT IV, p. 219; CSMK, p. 250) In the *Meditations*, the reader sails with the narrative until he is "so convinced" as to "spontaneously declare: let whoever can do so deceive me, he will never bring it about that I am nothing, so long as I continue to think I am something." (*Meditation III*, AT VII, p. 36; CSM II, p. 25) The 'spontaneous' assent to the *cogito*, an emotive, immediate response, is an imaginative tool to gain the readers' own assent.[61] The semi-fictional romance of the *Meditations* takes advantage of, and manipulates, the creative imagination in both author and reader to persuasive effect.

All this is without mentioning the obvious imaginary devices that Descartes employs through the *Meditations*. The *malin génie* is the personification of scepticism, designed to fix hyperbolic doubt and focus the fight for clear and distinct knowledge; it goes hand-in-hand with the brief supposition that God does not exist, in itself necessarily fictitious for fear of wider repercussions. These useful 'what-ifs' ground the sceptical challenge. Both are intended to drag the Doubter to the very depths before the truth of the *cogito* hits and he is able to re-establish what he knows. Once that has been established the Doubter can go beyond the *cogito* to test what else he might know clearly and distinctly.

[60] In *The Passions of the Soul* (1649), Descartes teaches us that the passions, "those perceptions, sensations or emotions of the soul which we refer particularly to it, and which are caused, maintained and strengthened by some movement of the spirits" (*1:27*, AT VII, p. 350; CSM I, p. 339), can be influenced by the imagination. In representing to the mind things that might not be the case, the imagination can direct the spirits and therefore our emotional response to a situation. The imagination's power over the passions, and our own wellbeing, seems to have been a concern for Descartes for many years.

[61] It is testament to the power of this approach that it tends to work even now on those who read the *Meditations* for the first time.

> But what else am I? I will use my imagination [...] I am not even some thin vapour which permeates the limbs—a wind, fire, air breath, or whatever I depict in my imagination; for these are things which I have supposed to be nothing. (AT VII, p. 27; CSM II,. p. 18)

Note that the testing of knowledge takes place in the imagination; there is no other faculty of the mind capable of conceiving what may be the case, of thinking up candidates for certain knowledge. The fictive, creative imagination is in evidence throughout the *Meditations*; in fact, the *Meditations* can be characterised as a thoroughly imaginative piece in both strategy and execution. Without the imagination there could be no rehabilitation of knowledge.

Beyond simple narrative charm, and the testing of *a priori* assumptions, the fictive side of the imagination proves useful for allowing us to consider counterfactual possibilities. 'What if,' we ask ourselves, 'the world were configured in such-a-way. What would the effects be, and how might we find out?' We construct hypotheses, we ask ourselves how the world *might* be beyond – and to explain – our meagre experience and come up with ways to find out; all of which is sheer imaginative enterprise, and all of which can be found in Descartes. Take the cosmological fable of *Le Monde*: there Descartes uses imaginative suppositions to demonstrate his theory of light, pretending that the world created in his story is a work of pure imagination. As Peter Galison notes, the 'story' does not last long. 'What opens as an imaginary exercise describing the properties of light on the eyes of mechanical men, closes in perfect accord with the real properties of light' (1984, p. 312). In this case the fictions created by the imagination allowed Descartes to draw his readers into his World, to have them accept the plausibility of his theory before dispensing with the pretence and presenting them with his physics of vision and light. Once again, Descartes has constructed a fiction to carry the reader with him until he cannot but assent to what is presented. The 'What if?' of the fable gives way to 'If the world were constructed in this way, then light and vision would work in this way. Since light and vision do, in fact, work in this way, the original hypothesis must have been correct. Voilà.'

Of course, Descartes does not just use the imagination to draw his readers into his theories, nor does he use it primarily as an excuse to avoid political censure

by proposing fictions in the place of scientific hypotheses, as he arguably did in Chapter Six of *Le Monde.* (AT XI, pp. 31-6; CSM I, pp. 90-2) The possibilities dreamt up in the imagination, about how the world *might* be configured independently of our experience, is one of the insights of Cartesian science and, as I have argued already, the cornerstone of Descartes' epistemology and metaphysics. Dennis Sepper's study of the imagination in the early works points out that Descartes' notion of proportionality drives the application of what he knows to what he does not, thus creating the general scientific position that there must be something that connects the senses, a common source to their varied manifestations: "[Descartes] suspected that proportionality was the fundamental principle of knowing and that it reflected the way the cosmos was structured". (Sepper, 1996, p. 41) The imagination plays a key role in Sepper's proposal, both as a creative force and as the physical site of ideas to be compared, as images in the brain. The plain insight that the world as we perceive it might not be the world as it really is requires quite an imaginative leap in itself, and is the driving assumption of all scientific endeavour. Descartes' achievement in this field was to point out that there was no currency in simply believing that in perception, something is transmitted from the object to the senses that accurately presents the object to the mind. His further theory about the underlying structure of reality takes that assumption from a negative thesis to a positive one, a real achievement of the creative imagination. That he also wove a technical account of the imagination into that thesis strengthens its role in both knowledge of the external world and in scientific enterprise.

For Descartes, therefore, the imagination has two aspects: As a creative, fictive force, it is responsible for our theories and hypotheses by representing to the mind situations beyond mere perception. Descartes showed himself a master of this kind of imagination in *Le Monde*'s cosmological fable, and in the emotive manipulation and narrative devices of the *Meditations*. The other aspect of the imagination is more technical and recognisably corporeal—the physical site of representation to the mind. It is bound up with our knowledge of the external world in both operation and subject-matter, and it is to this that I now turn.

Chapter Four
The Early Imagination

III. *Regulae* vs. *Meditations*

It is possible to detect a shift in Descartes' thought between the *Regulae* and the *Treatise on Man* (roughly 1628-33) - which constitute the bulk of his early writing on the relationship between mind and body - and the *Meditations* (1641-2) and beyond, in which he cements the method of doubt and the real distinction between the substances. The mind of the *Meditations*, as we know, is strictly mental in character and has nothing fundamental to do with the body; the evidence of the senses, as a result, is treated with mistrust and ultimately taken with a healthy pinch of salt. By contrast, the body of the earlier works is much more heavily involved both in furnishing the mind with basic sensory ideas and in the cognition of those ideas. Once this involvement has been lost, the easy explanation of ideas of the external world, or even of the body itself, is lost too.

The difference between the early and later works is a subtle one, and there is evidence that Descartes' views do not change as much as I have implied. After all, the very purpose of the *Regulae* is to establish the supremacy of the mind in cognition and the right use of the intellect to get the best results:

> Fifthly, and lastly, the power through which we know things in the strict sense is purely spiritual, and is no less distinct from the whole body than blood is distinct from bone, or the hand from the eye. (*Rule Twelve*, AT X, p. 415; CSM I, p. 42)

Compare this to a passage from the Second Meditation about the mind's apprehension of the wax:

> So let us proceed, and consider on which occasion my perception of the nature of the wax, was more perfect and evident. Was it when I first looked at it, and believed I know it by my external senses [...] Or is it my knowledge, more perfect now, after a more careful investigation of the

> nature of the wax and of the means by which it is known? (AT VII, p. 32; CSM II, pp. 21-2)

The lesson in each passage seems to be that the intellect can quite happily cope without sensation or imagination, that it works best without the ideas of the external world. However, matters are a little more complex than that. As a result of the *cogito*, the mind of the *Meditations* is sovereign, requiring nothing beyond its native power to understand the secrets of the universe. All that it really needs for true and certain knowledge are the intellect and the will, the former to understand the universe and the latter for the impetus to learn; other faculties of thought may come and go as needed:

> I consider that this power of imagining which is in me, differing as it does from the power of understanding, is not a necessary constituent of my own essence, that is, of the essence of my mind. (*Meditation VI*, AT VII, p. 73; CSM II, p. 51)

There is a stronger distinction between the modes in the *Meditations* and beyond than previously because the mind has been identified with the faculty of understanding, despite Descartes' insistence that there is merely a modal distinction between the faculties of thought (*Principles 1:61*, AT VII, pp. 29-30; CSM I, pp. 213-4). The curse of the *cogito* means that, while the intellect is all that is required to gain certain knowledge, the mind will struggle to reach the external world because those faculties that deliver it are not required for the mind to function, i.e. to acquire certain knowledge. The fact that the intellect—or understanding—is identified with the mind itself puts it on a higher ontological rung than sensation or imagination, and whatever Descartes might insist about a merely modal distinction between the faculties, that identification renders the relationship between the mind and certain faculties quite distant.

In the *Regulae*, on the other hand, the mind is regarded much more holistically. The "power through which we know things" is a unity, a single power considered under a different name depending on the job it is doing:

> According to its different functions, then, the same power is called either pure intellect, or imagination, or memory, or sense-perception. But when it forms new ideas in the corporeal imagination, or concentrates on those already formed, the proper term for it is 'native intelligence'. (*Rule Twelve*, AT X, p. 416; CSM I, p. 42)

The mind, or native intelligence, remains whole in the exercise of the various faculties, and the way Descartes describes its relation to those faculties also demonstrates the tight association of the faculties themselves. They are each part of the one mind and take part in cognition, and any distinction between them is, at bottom, merely conceptual. At the same time, Descartes' attitude toward the mind and its modes here is very different from later works, for the notion of an ontological hierarchy involving the intellect and sensation and imagination simply does not figure. The reason for this is that the mind has not been identified with the intellect; the lesson of the *cogito* has yet to be learned and the strict separation of mind from body is not the major feature of Descartes' worldview. Corporeal matter can, and does, appear in explanations of the mind's operations, and it is given a way in via sensation and imagination.

That is not to say that the mind is regarded as corporeal in the way of, say, Hobbes. Descartes insists that "the power through which we know things in the strict sense is purely spiritual":

> In all these functions the cognitive power is sometimes passive, sometimes active; sometimes resembling the seal, sometimes the wax. But this should be understood merely as an analogy, for nothing quite like this power is to be found in corporeal things. (*Rule Twelve*, AT X, p. 416; CSM I, p. 42)

To think is not an activity for corporeal things, it is still a phenomenon reserved for spiritual substance. However, Descartes widens his definition of the cognitive powers to include the imagination and, in so doing, awards a more prominent role in mental operation to the body than the stark mind-body distinction allows in future. In the *Meditations* it is made very clear that only the intellect can attain clear and distinct knowledge; any idea not originating in the mind itself – that is, anything

originating in the body – is automatically tainted because of the basic unreliability of the senses. In the *Regulae*, by contrast, all powers of the mind are included in cognition because they are regarded under the one power "through which we know things", as different ways of gaining knowledge. In this regard, imagination (and memory and the senses) must be included as one of the cognitive powers, or as an instance of *the* cognitive power, and it all hangs together in the following way:

> So we can conclude with certainty that when the intellect is concerned with matters in which there is nothing corporeal or similar to the corporeal, it cannot receive any help from those faculties; on the contrary, if it is not to be hampered by them, the senses must be kept back and the imagination must, as far as possible, by divested of every distinct impression. If, however, the intellect proposes to examine something which can be referred to the body, the idea of that thing must be formed as distinctly as possible in the imagination. In order to do this properly, the thing itself which this idea is to represent should be displayed to the external senses. (*Rule Twelve*, AT X, pp. 415-6; CSM I, p. 43)

Such is the status of the imagination in the earlier works. It remains to establish just how the imagination contributed to cognition, and its affinity with sensation.

IV. The Imagination and Sensation

In scope and content, the early imagination has a lot in common with sensation. Both faculties deal with mind's apprehension of the body and the external world, both have a corporeal basis, and both are concentrated in the pineal gland. In fact, Descartes understood the two to be kindred; consider Descartes' description of the imagination in *Rule Twelve*:

> [...] the 'common' sense functions like a seal, fashioning in the phantasy or imagination, as if in wax, the same figures or ideas which come, pure and without body, from the external senses. The phantasy is a genuine part of the body, and is large enough to allow different parts of it to take

> on many different figures and, generally, to retain them for some time; in which case it is to be identified with what we call 'memory'. (Rule Twelve, AT X, p. 416; CSM I, pp. 41-2)

Descartes had a very straightforward view of how sensation, imagination and memory are connected. In both internal and external sensation, the animal spirits converge on the pineal gland and form figures there for the mind's apprehension. It is for this reason that the pineal gland is known as the *sensus communis*, or the common sense, the initial destination of the information from the senses, in which the animal spirits form figures corresponding to the object. Once the information from the senses has been assimilated there, the common sense literally shapes the imagination into the final destination of sensory experience, in a very close link with the pineal gland. Where the pineal gland is the destination of sensory experience, the phantasy or corporeal imagination is an area of the brain which is capable of taking on the figures that the common sense forms from sensory information, and it is these figures that are the subject of the mind's apprehension.

Descartes' view in the early works of the imagination is literally corporeal. As a section of the brain the corporeal imagination allows the physical rendering of images in the brain, in order that we might turn them to some use. The best translation of this corporeal understanding is Murdoch's phantasy from the standard English editions, which reflects those sections in which Descartes refers to the "part of the brain in which the physical processes associated with imagining take place" (CSM I, p. 41n). The phantasy takes on shapes according to the information of sensation; in corporeal imagination, figures are traced directly onto the brain; when that figure is to be retained, that is memory. The figures traced by the animal spirits on the pineal gland itself are what the mind perceives in sense-perception; those figures are traced onto the corporeal imagination for manipulation and retention.

This view of the imagination was not completely novel. Descartes was working in a tradition in which the imagination was considered to be the "coffer and repository of the common sense" which "receives the species, and the imagination retains it" (Roger Bacon in Optic part I, Dist. 1, ch. 2; quoted in Macintosh, 1983, p. 330). In other words the imagination and the common sense were understood to work closely together, the one receiving the sensible species and the other retaining

it for future use and abstraction. Memory on this view is to be identified with the imagination. Furthermore, according to Boyle, it was received wisdom in the seventeenth century that the brain "is the seat of that other faculty of the corporeal soul, that we are wont to call imagination, because it exhibits the images as it were of sensible things, which are variously contracted, enlarged, divided, compounded, or otherwise notably altered by this faculty" [Christian Virtuoso pt. 2] (Macintosh, 1983, p. 343).[62] Descartes did not subscribe to the notion of sensible species, nor to the corporeal soul, but he did understand the imagination to display the figures received through sensation for alteration by the mind. In his scientific writings he refers often to sensation and imagination as brain patterns or configurations (e.g. *Letter to Mersenne, July 1641*, AT III, pp. 392-7; CSMK, pp. 184-7).

The corporeal imagination of the earlier works therefore has a very strong link with the body and sensation; in fact sensation and imagination seem to be two aspects of one ability, to apprehend and understand the external world. For Descartes the cognitive import of corporeal imagination lies in its relation with the intellect and sense-perception; with the aid of the imagination, the intellect is capable of considering the impressions of sense-perception made on the common sense (Rule Twelve, AT X, pp. 415-6; CSM I, p. 42). Considered this way, imagination and the common sense bring the mind to the external world by bringing intellect and sense-perception together: the images and impressions of sensation are formed in the brain, collated in the common sense and manipulated for the understanding in the imagination. As commentators such as Wilson (1978) and Sepper (1996) have noted, the corporeal imagination is prominent in cognition in the early works because of its close relationship with the intellect; in the *Rules*, the imagination and sense-perception are cited as "instruments of knowledge" in addition to the intellect. (*Rule Eight*, AT X, pp. 395; CSM I, p. 30) More than that, though, imagination is implicated directly in almost all forms of knowledge.

> It is one and the same power [of thinking]: when applying itself along with imagination to the 'common' sense, it is said to see, touch, etc.; when addressing itself to the imagination alone, in so far as the latter is

[62] In fact the notion of the 'common sense' goes back much further than this; it can be found, for instance, in Da Vinci's sketch of the ventricles of the brain (c. 1490-4), in which the *senso commune* formed the middle chamber of the brain, and was the home of the imagination and intellect. (*Leonardo Da Vinci: Painter at the Court of Milan* (The National Gallery, London, January 2012))

> invested with various figures, it is said to remember; when applying itself to the imagination in order to form new figures, it is said to imagine or conceive. (*Rule Twelve*, AT X, pp. 415-6; CSM I, p. 42)

The only form of knowledge from which the imagination is excluded is pure understanding, otherwise it is involved across the board. It follows from this that the body is also implicated in almost all forms of cognition, for if the corporeal imagination and the senses are involved, then so are the sensory apparatus and the brain. More than anything else, this is the major feature of the early view: cognition features the body more than it excludes it, with both mind and body closely involved in cognition of everything apart from the mind itself. Since corporeal imagination deals with the ideas of sensation etched in the pineal gland and in the brain, its involvement with so many kinds of thought – conceiving, remembering, sensing – means that those kinds of thought in turn involve the brain. It is the job of sensation to deliver figures to the brain; it falls to the corporeal imagination to facilitate the mind's cognition of those figures.

Later on, particularly after the *Meditations*, Descartes' view of the imagination shifts and its close relationship with the body is diminished by the emphasis on the real distinction between mind and body. Sensation is also a casualty for much the same reason: the substantial rift between mind and body renders both faculties, which rely so heavily on the body for their content, less significant because the body is excluded from cognition. However, to anticipate what will come later in this thesis, that does not mean necessarily that the imagination has no part to play in cognition of the external world. Before I can explain why, however, I must explain how imagination manages this in the earlier works, and in which arenas it is most useful.

V. Geometry and Extension

When we encounter an object the senses send the animal spirits to the common sense, which traces a figure on the corporeal imagination that corresponds to the object and allows the intellect to grasp what has been sensed. Not only that: because the imagination is not tied to what is in front of it—as are sensation and, arguably, the understanding—it allows the creation of fictions using those figures:

> The phantasy is a genuine part of the body, and is large enough to allow different parts of it to take on many different figures and, generally, to retain them for some time; in which case it is to be identified with what we call 'memory'. (*Rule Twelve*, AT X, p. 414; CSM I, pp. 41-2)

It becomes immediately and starkly clear that this has considerable implications for geometry, because any faculty capable of retaining and manipulating figures in the brain is what allows the mind to consider geometric problems. At its most basic the corporeal imagination simply presents geometric shapes to the intellect for consideration and allows those shapes to be understood clearly and distinctly:

> That is to say, it is only the latter figures [traced on the pineal gland, or corporeal imagination] which should be taken to be the forms or images which the rational soul united to this machine will consider directly when it imagines some object or perceives it by the senses. (*Treatise on Man*, AT XI, p. 177; CSM I, p. 106)

Of course, while geometry was a worthy intellectual pursuit in its own right, its real value for Descartes lay in its application to matter and its central place in the laws of nature. The discussion of extension in Rule Fourteen—in which Descartes considers the possibility that extension and matter, or body, are not the same thing—illuminates Descartes'' view on the relationship between matter, geometry and the imagination. For here Descartes makes it very plain that to consider extension in general requires the imagination:

> By 'extension' we mean whatever has length, breadth and depth, leaving aside the question whether it is a real body or merely a space. This notion does not, I think, need any further elucidation, for there is nothing more easily perceived by our imagination. (*Rule Fourteen*, AT X, p. 442; CSM I, p. 59)

The reason the imagination is of such use is, once again, its ability to physically realise shapes in the brain (AT X, p. 414; CSM I, pp. 41-2). Descartes speaks very

disparagingly of anyone who tries to abstract the notion of 'extension' from that of 'body', arguing that this is an "incorrect judgement of the intellect alone" (p. 59). He goes to some length to establish that extension and body are the same thing, and that to separate the one from the other is a mistake owed to the intellect's tendency to forsake the ideas of the imagination:

> Finally, take the sentence, 'Extension is not body.' [...] This is a source of error for many who, not realizing that extension taken in this sense cannot be grasped by the imagination, represent it by means of a real idea. Now such an idea necessarily involves the concept of body. So if they say that extension so conceived is not body, they are unwittingly ensnared into saying 'The same thing is at once body and not body.' (AT X, p. 444; CSM I, p. 60)

Matter is extension, and extension is simply "conceived simply with respect to having a shape." That is, "it is something which has length, breadth and depth" (AT X, p. 446; CSM I, p. 61). Extension simply *is* geometry, and so in order to understand matter clearly and distinctly, the intellect must grasp that its essence is extension and that all our perceptions are fundamentally expressible in geometric terms. To achieve this, the intellect must encounter and understand geometric shapes, something it is unable to do without the corporeal imagination. Thanks to the corporeal imagination, the mind would be able to grasp the nature of matter even if no matter existed. That is the beauty of mathematics: its truths are eternal, immutable and ideal. But matter *does exist*, and the imagination aids the mind in knowing the existing material world via the senses.

VI. The External World

One very important feature of the corporeal imagination, and a corollary of its kinship with sensation, is its relation to the external world. Its concern is with those representations of the external world left on the pineal gland by the animal spirits in sensation, of which it allows manipulation and retention. The corporeal imagination seems, on this view, to account for most of the brain's involvement in cognition and thus for most of the mind's apprehension – and comprehension – of the

external world, for the reasons presented in the previous section. In the early works, the close association between corporeal imagination and intellect in cognition meant that the problem haunting the later work – the problem of knowing the external world – simply did not exist, for the metaphysical chasm of the real distinction in the *Meditations* lay in the future. In fact, Descartes provided an account of knowledge of external objects in the *Rules*:

> So we can conclude with certainty that when the intellect is concerned with matters in which there is nothing corporeal or similar to the corporeal, it cannot receive any help from those faculties [sensation, memory, or imagination]... If, however, the intellect proposes to examine something which can be referred to the body, the idea of that thing must be formed as distinctly as possible in the imagination. In order to do this properly, the thing itself which this idea is to represent should be displayed to the senses. (*Rule Twelve*, AT X, p. 416; CSM I, p. 43)

Without the imagination, the mind cannot contemplate anything corporeal. If it wants to concern itself with the non-corporeal, then it needs no assistance; if it wishes to contemplate anything other than itself or God, "something which can be referred to the body", then it must turn to the imagination to do so. Both ideas of the body and ideas of sense-perception, that is, both internal and external sensation, furnish the imagination, and the imagination in turn translates them into figures suitable for the intellect. As Desmond Clarke puts it, "[c]lear and distinct ideas of extended or physical objects are possible only with the aid of reliable images in the imagination." (2005, p. 83)

In this role, the imagination is crucial to knowledge of the external world, for the implication is that sensation alone cannot deliver the goods. Sensation delivers nothing more than the impressions, mediated by the specific sense-modality, of the corporeal world; it has nothing to do with the translation or interpretation of those impressions once they have been delivered to the common sense. Note that Descartes makes a careful distinction between what is in the idea and what had been displayed originally to the senses; the configuring of imagination by the senses does not entail any kind of resemblance, only representation, and this is achieved in the corporeal imagination. Our knowledge of the external world is enabled when the ideas of

sensation are figured in the corporeal imagination and there recognised by the intellect. With the intellect, the imagination is key to the mind's apprehension and understanding of the external world because "the imagination provides necessary data for reliable judgements about physical reality" (Clarke 2005, p. 81). This is consistent with Descartes' claim that the imagination takes on a certain figure to signify a specific feature of the external world to the mind: "Descartes' final position [in the *Regulae*] is that the imagination is a cognitive faculty and, like any other instrument, it may be used properly or improperly" (2005, p. 81).[63] When applied to natural philosophy the imagination is in its element, but when used in metaphysical speculation it cannot do the job. Perhaps Clarke is a bit premature when he describes the imagination as a cognitive faculty in its own right. After all, Descartes denies that there is any meaningful distinction between the faculties of imagination, sensation, will and understanding, stating instead that they form aspects of the one knowing power. It is beyond doubt, however, that the imagination is crucial for the mind's understanding of the external world.

It follows from this that, once again, the body is important for knowledge, first in delivering information to the mind about the external world, via the senses; second in housing the corporeal imagination in the brain. In the *Regulae*, the distinction between mind and body is not as hard a notion as in the later works, exemplified precisely in the place of the corporeal imagination in knowledge.[64] The very fact that the intellect is taken to be incapable of cognising the external world without it, coupled with the fact that the corporeal imagination is identified as an area of the brain, bring the body into cognition. Translation of the impressions of sense-perception takes place in the corporeal imagination, enabling the understanding to grasp those representations sufficiently to be able to manipulate them – once again in the imagination – to better understand them.[65] Descartes takes it for granted that all this happens in the brain, that this organ is as crucial for most kinds of knowledge as the intellect itself. Without it, the intellect's sphere of understanding would be severely restricted.

[63] Cf. the discussion of representing colour geometrically, from which Descartes concludes that "it is certain that the infinite multiplicity of figures is sufficient for the expression of all the differences in perceptible things." (*Rule Twelve*, AT X, p. 413; CSM I, p. 41)

[64] While I am adverting to the notion of a metaphysical distinction here – a 'real' distinction, to be precise – I also mean distinction in the more mundane sense.

[65] We are dealing here within Descartes' system; questions of independent validity are moot.

VII. Proportionality and Comparison

Thus the reduction of science to mathematics in the early works was facilitated by the corporeal imagination. The mind apprehends figures in the imagination and from there is understands the nature of the external world by manipulating them as it grapples with geometric problems. A sound grasp of geometry, then, is crucial to our ability to divine the nature and laws of the physical world; and of course this is the essence of Cartesian science, to divine those laws more fruitfully than his predecessors had managed. To do this, Descartes advocated his new method, which involves determining what is unknown by comparing two or more entities. But in order to do this successfully, we must find something that they have in common:

> This common idea is carried over from one subject to another solely by means of a simple comparison, which enables us to state that the thing we are seeking is in this or that respect similar to, or identical with, or equal to, some given thing. [...]We should note that comparisons are said to be simple and straightforward only when the thing sought and the initial data participate equally in a certain nature [...] The chief part of human endeavour is simply to reduce these proportions to the point where an equality between what we are seeking and what we already know is clearly visible. (*Rule Fourteen*, AT X, pp. 439-40; CSM I, pp. 57-8)

While he argues that extension and body are the same thing, Descartes also advocates using magnitudes to represent the proportionalities between entities in a way that allows this method to function, meaning that our notion of shape and size are also crucial for executing the Cartesian method. By representing sets or entities using lines and points, and subsequently discerning their relative proportions, Descartes maintains that we can work out the relations between those entities so as to make the unknown known. Not only does this aid us in mathematics (*Rules Sixteen – Twenty-one*), but also in knowing the nature of the external world; for if we can use the notion of proportionality to extrapolate from the known to the unknown, we can likewise use our understanding of geometry to apply the properties of physical objects we do know, to those of which we have little idea.

Peter Galison's article highlights the way Descartes uses the imagination to good scientific use in comparing the visible with the invisible or, as Galison calls it, the "subvisible" particles of the material world. (1984, p. 312) The value of the imagination in this analysis is in abstracting properties found in macroscopic objects and applying them to the microscopic corpuscles of which they are composed. Galison combines the technical operations of the imagination with its fictive side to construct his argument: "[Descartes] developed a theory of cognition based on a system in which the (material) imagination pictured objects before the (spiritual) understanding grasped them" (p. 311). Sensation delivers images to the corporeal imagination (as the surface of the pineal gland), from which "the understanding, a completely noncorporeal power [...] isolates abstract qualities from specific cases in which they are instantiated" (p. 320). The qualities that are abstracted are geometric, and they are projected on to the subvisible corpuscles in imagination in proportion from macro- to microscopic objects. Or, to quote Descartes,

> [t]he chief part of our human industry consists merely in so transmuting these ratios as to show clearly an equivalence [*aequalitas*] between the matter sought for and something else already known. (*Regulae*, quoted in Galison, 1984, p. 322)

When the corporeal imagination figures the ideas of sensation, it allows the intellect to abstract the geometric properties of matter in mathematical understanding; from there the fictive imagination applies those properties in ratio to material objects unavailable to the senses. Sheer perception, or even perception and the intellect together, are incapable of this kind of theorising. Only the imagination makes it possible.

Galison concludes that the role of comparison for Descartes was to "provide an image to the imagination" (p. 325) so that, in comparing the visible to the subvisible, the imagination was furnished with images. I am not entirely convinced by this conclusion; it is possible that this would benefit from being reversed. Galison's version seems to limit the imagination to the comparison of qualities of objects, but it seems to me that he has given priority to the wrong thing: the act of comparison does not provide the imagination's *raison d'être.* Instead, the imagination's ability to retain, manipulate and create its own images allows

comparison of the visible with the subvisible. Rather than comparison kick-starting the imagination, the imagination could be said to facilitate comparison by allowing the abstraction of relevant qualities from the image; it is only in the imagination that the qualities abstracted from the image of the macroscopic object can be applied to the possibly fictitious particles. Interestingly, Galison claims that the imagination has much the same role to play in later works, insofar as it facilitates comparisons for the good of scientific progress. He does detect a change, though, as the imagination loses its central cognitive role in and after the *Meditations*:

> In the early works all cognition of the external world must necessarily pass through the imagination; in the later work the understanding is given a much more autonomous role. Since comparisons share the fate of the imagination, in the early works they are a sine qua non of our knowledge of corpuscular reality, while in the later work they become merely a pragmatically useful tool. (1984, p. 326)

Galison is not alone in detecting a shift in Descartes' opinion of the imagination in the later works: it is the majority view in the secondary literature that the rise of the intellect was at the imagination's expense, and I shall discuss this in the next section. His view that the role of the imagination did not change – just how much attention Descartes paid to it – I shall consider in the next chapter, though for now I will say that it is plausible even if it does not make up the whole story.

VIII. Cognitive Decline and the Corporeal Imagination

In spite of the prevalence of imagination in all Descartes' work, the general consensus in the literature is that the imagination fell out of favour as a cognitive power as Descartes became older and as the epistemological consequences of his substance dualism developed (Wilson 1978; Galison 1984; Fóti 1986; Sepper 1996). The corporeal imagination of the earlier works—the Rules and Treatise in particular—played a more obviously prominent role in cognition than the later, wholly immaterial, version, where the imagination's role in knowledge and cognition was severely circumscribed. Where the later seventeenth century saw the "divorce" of intellect and imagination, Sepper (1996) shows that Descartes began by giving

imagination a far greater share in gaining knowledge. He is in agreement with Macintosh (1983) in arguing that Descartes' understanding of the imagination through his life allied him to his predecessors much more than the Cartesian and rationalist traditions that were to follow, but he also shows that the shift in Descartes' opinion of the imagination heralded a decline in its status, what Vico was to call "the estrangement of philosophical reason from imagination."[66]

Sepper argues that the imagination of the early works carried significant cognitive weight, particularly in the application of mathematics to nature. Descartes' investigation of proportionality as "the fundamental principle of knowing" (1996, p. 41), Sepper argues, made use of the imagination in a way that brought to light its importance, as early as the Compendium Musicae (1618). In this case, "[i]t is precisely imagination's character of being presentative, synthetic, and memorative that seems to interest him, rather than any merely representational use. This character rests on proportionality or, to use the Greek equivalent, analogy" (p. 45). In other words, imagination's use as a practical tool for discovering analogies between the macroscopic and the microscopic enabled Descartes to later work out his theory of proportionality, not just in music but for the natural world too, in Le Monde.

By the Meditations, however, Descartes' imagination has been scaled back and riven in two. Its cognitive power is severely restricted because the mind has been completely divorced from the body; the imagination's capacity for manipulating figures in the brain is no longer fundamental to its function, for Descartes has separated 'idea' proper from images formed in the corporeal imagination, and the former belongs to the mind's primary faculty, the intellect. Sepper tells us that originally Descartes' 'idea' meant "theory image or look of the corporeal thing" (p. 245), whereas by the Meditations, and particularly in the Second Replies the definition of idea has been modified to "only that which we perceive by intellect either in apprehending or in judging, or in discursive reasoning" (Descartes, quoted in Sepper, 1996, p. 245). This means that any mode of thought that is not the intellect is no longer itself fundamental to the mind's operation; any essential contribution made by the imagination to the mind has been abandoned.

Sepper is not alone in his view; Margaret Wilson likewise holds that the mind's division from the body leads to the demotion of imagination. Wilson focuses

[66] Vico quoted in Fóti (1986), p. 631.

on the question of mathematical knowledge and asks, "[d]oes our mathematical knowledge depend in any degree on our having a body (or does it rather derive directly from pure understanding)?" (p. 170). Wilson's initial response, on Descartes' behalf, is in the affirmative: "Even in the later work, our ability to develop a systematic science of body is not presented as independent of our ability to form corporeal images (the verae ideae of the Rules)" (p. 171). Her reason is that mathematical knowledge in early Descartes depends on the imagination, which in turn depends on the brain. However, by the later works, specifically the Meditations, the link between the imagination and the brain, Wilson argues, is accidental; the fact that imagination is a mode of the mind entails that it does not necessarily require the brain—it cannot be both mental and physical. But that does not prevent it from representing physical objects to the mind in order to aid understanding, what Wilson calls "presenting to our mental vision some kind of physical exemplar of these objects" (p. 171). Crucially, the imagination of the Meditations, for Wilson, need not imply the body at all: "The supposition of physical traces in the brain, which the mind 'inspects' [in imagining], merely provides the 'best explanation' of imagination that he is able to produce" (p. 201). Imagination might be involved in mathematical understanding in the early works, but that is because the imagination requires the body and the physical realisation of mathematical objects in the brain. Once that requirement is dispensed with, even though imagination can be best explained by corporeal figures in the brain, this is no longer part of its definition as an incorporeal mode. Besides, mathematics is best grasped by the understanding, which in turn needs no physical manifestation to operate.

The imagination's capacity for literally realising shapes also allows them to be manipulated for solving problems in geometry. Famously, though, Descartes created algebraic expressions of geometric shapes in order to better cope with those problems. This is where the two aspects of the imagination really shine together, for while the corporeal imagination might realise the geometry of the problems, the creative side translates those shapes into algebraic expressions. Michael Norton claims that it is this very translation that renders objects in the world intellectually accessible, and argues that, as a result of this, Descartes' treatment of the imagination in the early works "evinces [...] a fully developed dualism" (2011, p. 1). Descartes' reduction of physical science to mathematical operation, Norton claims,

reduces "(potentially, at least) to geometry, and all geometry to simply two-dimensional constructions" (p. 9):

> This supposition already entails that our imaginative figures need not resemble the objects of perception themselves, for it would be impossible to have an imaginative *figure* that resembles in form a sound, smell or taste. Therefore, Descartes' whole physiology of perception leads to his conclusion that all sensations are represented by the imagination as geometric shapes. (2011, p. 4)

Once we have reduced all sensations, and therefore all physical properties, to geometric shapes, the way is open to express them algebraically, and once *this* has been achieved Norton claims that matter has been made intellectually accessible. Algebra, not geometry, is grasped by the mind best, and in this way the intellect can "constantly communicate with the corporeal imagination" (p. 10). The one is the equivalent of the other, either physical shape or intellectual algebraic construction, and both express the same thing: the object. Norton goes on to claim that, because of this dual-aspect expression of the object, "the structure and function of imagination is such that it implies a clear distinction between mind and body" (p. 11) by positing "as a presupposition a conceptual distance between the corporeal function of perception and imagination and the incorporeal cognitive power by which all thought properly occurs" (p. 12).

Unfortunately, I simply cannot agree with Norton's conclusion that the imagination of the *Regulae*, in aiding the intellect's grasp of the physical world, implies and entails the division of mind from body. Even if the corporeal imagination facilitates the geometrization of nature, and the assimilation of algebra and geometry renders that nature even more abstract, that does not mean that the imagination itself implies ontological dualism. It is important to recall that Descartes was concerned with the long-standing question of how the mind comes to know the world, or in fact how object-perception works. In reducing nature to mathematics, he was trying to account for the unreliability of perception rather than argue for a fundamental difference between the mind and the world; there is such a difference is inferred from the disparity between the object and the idea, but that disparity is not meant to establish ontological dualism. The mathematization of nature allowed that

nature to be *known*. The imagination helps that along nicely as the part of the knowing subject that accepts and makes available the 'real' properties of nature, while the intellect simply takes on the knowledge. There is, of course, a distinction between 'knower' and 'known' but that itself does not mean a distinction between the intellect and all things physical; it could just as easily mean a distinction between the intellect and an immaterial object of thought. Similarly, the imagination is capable of taking on figures that do not exist physically. Norton is guilty of confusing the distinction between knower and known with that between mind and body .

Norton is correct to point out that the invention of algebraic geometry made shape and figure more intelligible than imaginative. Geometric problems were removed from the realm of lines and points, and placed squarely with symbolic representation; they no longer required literal figuration in the corporeal imagination. While they remained the subject-matter of geometry proper, those lines and points no longer needed to be present when problems were tackled. Arguably, this led to a decline in Descartes' opinion of the corporeal imagination's cognitive capacity: if it was no longer necessary to manipulate geometric figures in the corporeal imagination to understand the problem and its solution, if the intellect was perfectly capable of doing that without the imagination, then the imagination was not the cognitive force Descartes had previously believed it to be.

Finally, Véronique Fóti asks how the aforementioned charge of the "estrangement of philosophical reason from imagination" could be laid at Descartes' door. (1986, p. 631) After all, she reasons, "a preoccupation with imagination runs like a continuous thread through Descartes' work" (p. 631). From the earliest work, the Cogitationes Privatae (1619), Fóti finds reference to the powerful poetic imagination and its usefulness in suggesting avenues to science. However, from that time Fóti also finds evidence of a steady decline in Descartes' opinion of imagination. In the Regulae "pure intellect (intellectus, ingenium) alone is now considered capable of the cognitive acts of intuitus and deductio which constitute the foundation of the universal science (mathesis universalis)" (1986, p. 634). That said, imagination is of assistance in supplying to the intellect "the criteria for possible existence in extended nature" (pp. 634-5), even though it needs to be reined in by intuitus to avoid error. This role cannot be understated, for the intellect alone, while

perfectly able to conceive the essential nature of extended matter, cannot provide grounds for the existence of that matter. That is the job of the imagination.

In the Discourse and the First Meditation the imagination is linked strongly to fiction, particularly in dreaming and illusion.[67] Here the imagination is presented by Fóti as deceptive, the evil genius of the First Meditation, its machinations only defeated—or perhaps tempered—by the sheer rationality of the cogito. All of this is to the detriment of imagination as a cognitive faculty. Fóti claims that, by the Meditations, the imagination is grounded firmly in the body, only granted the status of mental faculty because of the union of mind with the body: "Imagination, though proper to the body, issues in a mode of cogitatio in virtue of the intimate union and even permixtio of mind and body to which it attests" (1986, p. 640), and this severely restricts its power. From here onward, Fóti's Descartes relegates the imagination to the body, shown in his discussion, in the mid-1640s, of the imagination under the domain of the will. Without it, the imagination is "too weak to deceive" (1986, p. 640) because in that case it is simply "memory traces and the movements of the animal spirits". In this Fóti agrees with Wilson that imagination involves traces in the brain, but the two part ways in their final view of imagination: where Fóti has it as a denizen of the body, Wilson's imagination finishes up not requiring the body at all.

The danger of the imagination—in dreams and in illusions—is that it "threatens to disrupt the unity of the mind and to undermine the sovereignty of the intellect" (1986, p. 641). Against this threat, Fóti measures Descartes and finds him wanting. In neutralising the threat, she judges him too hasty in relegating the imagination to the body "to exclude it from the interior of thought" (p. 641). By this I take her to be referring to Descartes' proclamation that the imagination is not essential to the mind, while the intellect is. For Fóti, in so doing, Descartes unnecessarily restricts the range and power of the mind itself, not to mention its freedom. She concludes that had he paid more attention to "the complexities of imagination and its importance for the life of reason" (p. 642), then he might have been more open to its potential. Quite a pessimistic view, all told.

[67] Oddly enough, Fóti neglects the fable of *Le Monde* in her discussion of the imagination. I would have thought it a fine counterpoint to the dangers of a deceptive imagination of dreams and illusion.

IX. Conclusions

The rationale for this chapter has been to present the imagination of the early works, given that there is a distinction to be made between 'early' and 'late' Descartes, in order to set up an account of its place in the *Meditations* and beyond. What we have discovered is a complex cognitive faculty with a number of aspects and applications, some of which carry through to the later works, some of which are less obvious later on. The imagination has been found to be creative to the point of mendacity; it is manipulative in representing fictions to elicit emotive responses; and it involves the body to a fundamental level in a close affinity with sensation. At the same time, the imagination represents figures to the mind as being literally shaped by the impressions of the senses, via the *sensus communis*. In this, it enables the mind's comprehension of geometry; more than that, though, it enables the mind's apprehension of the external world. Finally, in allowing the apprehension and comparison of magnitudes, the imagination creates hypotheses of proportion, to allow us to delve beyond mere appearance to the nature of matter and our relation to it.

The fictive side of the imagination, its ability to present counterfactual suppositions to the mind—its ability to lie, in short—is a preoccupation of Descartes' throughout his career. He uses it to good effect in *Le Monde* in convincing the reader to follow his fable through before abandoning all pretence to hypothesis; in this he avoids censure for his nonconformist science. Later on, he shows concern at the imagination's facility in deceiving *him*, all-the-while fixing this worry in an imaginary demon of his own device. In all this Descartes shows himself to be a master of imaginative manipulation but never more so than in the narrative of the *Meditations*, where his philosophy is presented to the reader as a story, filled with emotive descriptions of his battle with the possibility of comprehensive deception. The whole is presented as a journey from deep scepticism to the safety of the *cogito* and the worldview (*his* worldview) inferred from it. Towards the end of his life, Descartes put the creative potential of the imagination to further use in controlling the emotions to prolong life, and he advised Princess Elizabeth to do the same. Prior to the *Meditations*, however, the fictive imagination was restricted to the creation of scientific hypotheses and their presentation as mere suppositions. It seems that Descartes was not yet fully aware of the manipulative potential of the imagination.

Beyond fictions and hypotheses, the imagination of the early works has a very specific role: to aid the intellect in cognition of the external world. To do this, it occupies a specific site in the brain where the impressions of sensation are configured; impressions of sensation must go through the corporeal imagination to be manifested eventually as ideas of sensation. These configurations are presented to the mind for understanding; sometimes they are retained in memory, sometimes manipulated in imagination proper. Either way, the corporeal imagination, because it literally realises shape in the brain, is responsible also for the mind's cognition of geometry and therefore the external world *as it really is*. Since it is not tied to what is in front of it—as, arguably, sensation and the intellect are—it makes no difference whether the shapes figured in the imagination are of sensation or its own creation and, as such, it is an invaluable aid in abstract geometry. It is also essential for understanding applied geometry, i.e. physics, for in figuring the ideas of geometry it allows cognition of extension, and body is simply that which is extended in length, breadth and depth. The intellect cannot grasp these notions without being presented with figures in the corporeal imagination. So the corporeal imagination has a twofold role in our understanding of the external world: on one hand, it is the ultimate destination of information from the senses for translation into figures for the intellect; on the other, its facility with shape means it allows the intellect to grasp the nature of matter.

Finally, if we combine the two main aspects of the imagination—fictive and mechanical—as Peter Galison does, we can build a picture of how it aids scientific progress. (Galison, 1984) Descartes' great project in the *Regulae* was to expound a method by which we can discover previously unknown facts or entities in the world without resorting to the dubious benefits of real qualities. His idea was to find a way in which the unknown is similar or equal to something known, and to compare them, finding and applying proportions between them to solve the problem of the unknown quantity. The twist to all this is that Descartes advocates representing these proportions in lines and points to better grasp them, leading him to apply this proportionality in magnitude to the physical world. After all, if proportions are expressible in lines and points, and lines and points are extended, and extension is the essence of matter, then matter must also fall under the rule of proportion and comparison. In this, the imagination's facility with shapes and its ability to consider hypothetical situations combine to drive Descartes' science.

All of this makes the imagination sound like a fairly accomplished faculty; it certainly plays a number of roles in Descartes' early philosophy. Nonetheless, its complexity reveals a tension: the imagination is at once manipulative and untrustworthy *and* responsible for our knowledge of the essence and properties of matter. Fóti (1986) identifies this tension and grounds it in the imagination's dependence on the body. Certainly the imagination's alliance with the body provides the basis for any degradation from the *Meditations* onwards. Once the real distinction between mind and body has been established beyond doubt by the *cogito*—whose self-evidence is described in imaginative terms, no less—the imagination inevitably suffers. The extent to which it suffers, however, is still to be determined. The next two chapters will explore the change in the fortunes of the imagination, and asks if there is anything that can be done for it.

Chapter Five

The Later Works

I. Introduction

The status of the imagination in the *Meditations* and beyond is not completely transparent. While I agree that the imagination shifted position in the later works, I do not agree that it suffered as badly as has been portrayed. But in order to argue this effectively, I must first set out Descartes' characterisation of the imagination in the *Meditations* and beyond, explaining exactly how it changes after 1641.

The *Meditations* is written to convince people of the truth of his philosophy and, if you believe the letter to the Sorbonne, to convince his readers of the existence of God and the immortality of the soul:

> What I have done is to take merely the principal and most important arguments and develop them in such a way that I would now venture to put them forward as very certain and evident demonstrations. (*Letter to the Sorbonne* (AT VII, p. 4; CSM II, p. 4)

In the *Preface to the Reader*, Descartes declares that he does not expect "any popular approval, or indeed any wide audience", urging only those "who are able and willing to meditate seriously" (AT VII, p. 9; CSM II, p. 8) to read his book. In other words, only those able to assent to his claims and to follow his reasoning ought to bother; and if they do still come across any great problem or objection, they would do well to withhold judgement "until they have been kind enough to read through all these objections and my replies to them."[68] In the text, several strategies are employed to

[68] I suspect Descartes of disingenuousness when he declares his indifference to his popularity. In spite of his reclusive existence, his delight at having his work read and commented on is evident in both his lengthy and prolific correspondence – particularly in the joy of his discussions with Princess Elizabeth – and in the very fact that he sent the *Meditations* out for comment. My belief is that he was deeply invested in the popularity of his work and resented strongly anyone who professed doubts about his claims.
Depending on his aggressor, Descartes was either dismissive, as with Hobbes ("I do not see how one can pretend that there is any doubt or obscurity here" (*Third Replies*, AT VIII, p.177; CSM II, p.125)); condescending, as with Gassendi ("Bravo! Here at last you produce an argument against me" (*Fifth Replies*, AT VIII, p. 361; CSM II, p. 249)); or triumphant, as with Harvey ("This experiment

persuade the reader; the *malin génie* is one of a host of imaginary devices designed to fix sceptical doubt and convince Descartes' reader of the plausibility of his claims, all of which are couched in emotive imagery designed to appeal to the reader as a novel or play would: by manipulating his visceral responses.

II. The Passions

Descartes continued this theme in his correspondence with Elizabeth, urging her to use her imagination to control her emotions by imagining situations that would evoke calmer, more sanguine responses. He is more explicit about the fictive imagination's effect on the body in these letters; in one he asks the Princess to imagine two people, themselves with healthy imaginations:

> [...] consider on the one hand a person who [...] spent all his time in the consideration of sad and pitiful objects. Let us suppose that he knew they were imaginary fables, so that though they drew tears from his eyes and moved his imagination, they did not touch his intellect at all. I think that this by itself would be enough gradually to constrict his heart [...] On the other hand, there might be a person who had countless genuine reasons for distress but who took such pains to direct his imagination that he never thought of them except when compelled by some practical necessity, and who spent the rest of his time in the consideration of objects which could furnish contentment and joy. (*Letter to Princess Elizabeth, May or June* 1645, AT IV, p. 219; CSMK, pp. 249-50)

This second person would enjoy better health and a longer life from a calmer attitude towards adversity. That the imagination has close ties to the passions is clear from the above, which also shows that Descartes knew how to manipulate it to his (or others') advantage. It also shows that, beyond the *Meditations*, Descartes still regarded the imagination to be closely affiliated to the body, a view that did not change through his life, from the literally corporeal imagination of the *Regulae* to the

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gives the *coup de grâce* to Harvey's view on the movement of the heart" (*Letter to Plempius, 15 February 1638,* AT I, p. 527; CSMK, p. 82)). In the rare instances he was gracious Descartes was usually addressing Princess Elizabeth, his social superior.

viscerally effective power of the later works. What he is less forthcoming about is the relationship between mind and body that allows this to happen.

Thankfully, Princess Elizabeth too wished to know more about how mind and body affect one another and, in response to her questions, Descartes wrote *The Passions of the Soul* (1649). There the imagination is depicted once again as a visceral force, capable of manipulating the emotions, this time by mispresenting the object of a passion as worthier of more stubborn pursuit.[69] What is depicted in the imagination will prompt involuntary changes in the body, "that no amount of human wisdom is capable of counteracting":

> Thus many people cannot keep from laughing when they are tickled, even though they get no pleasure from it. For the impression of joy and surprise, which previously made them laugh for the same reason, is awakened in their imagination and causes their lungs to be swollen suddenly and involuntarily by blood sent to them from the heart. (AT XI, pp. 486-7; CSM I, p. 403)

These reactions in the body to what is depicted in the imagination is what leads Descartes to conclude that if we could only control what is depicted in the imagination, we would in turn be able to control our emotions and responses to situations, thus making ourselves calmer by avoiding violent passions. Unfortunately, as he acknowledges earlier in the treatise, the imagination comes in two flavours: active or passive.

Active imagination Descartes defines as "caused by the soul". It is worthwhile quoting him in full here because we get a good idea of what the active imagination involves:

> When our soul applies itself to imagine something non-existent—as in thinking about an enchanted palace or a chimera—and also when it applies itself to consider something that is purely intelligible and not imaginable—for example, in considering its own nature—the

[69] *The Passions of the Soul 3:211* (AT XI, pp. 486-7; CSM I, p. 403).

> perceptions it has of these things depend chiefly on the volition which makes it aware of them. (*Passions 1:20,* AT XI, p. 344; CSM I, p. 336)

Key to this passage is the comparison with the intellect. The intellect is still considered the purest form of mental activity, concerned with nothing but the mind and its contents. In comparing the active imagination to the intellect, Descartes is highlighting its mental status, and the fact that, in thinking up total fictions, the imagination needs to apply itself to nothing beyond its own content. The difference in this case between it and pure intellect seems to be that the intellect can only consider itself and the mind, while imagination is still able to intend towards external objects, even if they do not exist in reality. Both faculties are driven by the will, making them wholly voluntary and causing Descartes to call them actions.

Passive imagination is involuntary, caused by the body, but is not the same as sense-perception. The latter is caused by movements of the nerves set in motion by external objects, whereas passive imaginings

> [...] arise simply from the fact that the spirits, being agitated in various ways and coming upon traces of various impression which have preceded them in the brain, make their way by chance through certain pores rather than others. Such are the illusions of our dreams and also the day-dreams we often have when we are awake and our mind wanders idly [...] (*Passions 1:21,* AT VII, p. 345; CSM I, p. 336)

The will is nowhere to be seen in this definition, because it may exert influence only over the mind's faculties. This definition of imagination depends on the body and its dispositions; if the animal spirits are lively and pass through traces in the brain left recently by sense-impressions, then the mind cannot help but wander into dreams and daydreams.

What we have, then, is a duality to the one faculty. Imagination is active and passive, dependent either on the mind and its contents or on the body and its impressions. No other faculty, save perhaps sense-perception, reveals the difference between mind and body quite so starkly. But sense-perception is completely dependent on the body and its configuration; the mind has absolutely no control over what is manifested in ideas of external objects coming from sense-impressions, only

how it interprets them. There is nothing voluntary about sensation, making it wholly passive in nature. The duality of imagination is what leads Descartes to promote its utility in influencing our health and happiness: its passive side places it squarely with the body – it no longer has a physical site in the brain of its own but it still depends on the brain and sense-perception for its content – while its active, voluntary side is what defines it as a mode of the mind and gives the will room to influence the body. Hence Descartes' advice to Elizabeth, some years before, to imagine beneficial things to herself to train her body into benign somatic responses, which in turn would make her feel happier. When the fictive imagination is controlled by the will, the emotions are reined in and the body made healthier.

In this way, the imagination of the *Passions* reveals the union of mind with body, ironically by being a dual-aspect faculty. Both imagination and sensation depend on the body for content, but for sensation this is a one-way street: external objects impinge on the sensory apparatus, exciting the nerves and agitating the animal spirits, which in turn travel to the brain and leave impressions there that are manifested in the mind as sensory ideas. As I said before, there is nothing voluntary about this process, the mind receives these ideas at all times unless it is unconscious. In contrast, imagination works in both directions: the movements of the animal spirits through previous sense-traces elicits involuntary imaginings in one direction and, in the other direction, by creating fictional sense-perceptions the imagination may influence the route of the same animal spirits to trick the body into certain somatic responses. Yet, however voluntary the fictive imagination might be, it still relies on the body for content and efficacy: without previous sensory stimulation, the imagination would be ill-equipped to generate fictional sense-perceptions with which to elicit the desired response. The imagination seems to sit halfway between the unfettered intellect on one side and vivid sensation on the other, and contains aspects of each.

Insofar as fictive imagination makes use of previous sense-data to mimic sensation, it is parasitic upon it. This itself suggests that the imagination depends on the body for its content, at least in part; to voluntarily influence the passions the mind must make use of ideas previously provided by the body. In fact, Descartes does claim that immaterial entities—God or angels—would have no facility for imagination (*Third Replies*, AT VII, p. 181; CSM II, p. 127), because they have no body to provide the content of its ideas. Conversely, the imagination is completely

useless for knowing God because knowledge of God relies on nothing even related to the corporeal. Descartes grumbles when the author of the *Third Objections* claims that, in order to have an idea of God, we must have an image of him:

> Here my critic wants the term 'idea' to be taken to refer simply to the images of material things which are depicted in the corporeal imagination; and if this is granted, it is easy for him to prove that there can be no proper idea of an angel or of God. (*Third Replies*, AT VII, p. 181; CSM II, p. 127)

While the intellect concerns itself with the immaterial imagination's remit concerns the corporeal, and since God is neither corporeal nor known with the help of the body, imagination is of no use in conceiving of God. Even at the end of his life, then, Descartes viewed the imagination as once again a corporeal faculty, even if that definition of 'corporeal' had shifted slightly from 'physically situated in the brain' to 'influences, and is influenced by, the body's responses to sense-data'. Officially, the imagination of the *Passions* is a mental faculty, but we have seen here that, without the mind's union with the body, the imagination would not have anywhere near the force or application it is described as having. In creating fictions and making use of previous sense-perceptions, the imagination can manipulate the body via ideas in the mind. No other faculty can achieve as much, and it is the application of imagination in the mind's apprehension of the body, and body in general, to which I shall now turn.

III. The *Meditations*

We have already seen how adept the imagination is at creating fictions, either as hypotheses or as narrative devices, all of which Descartes uses in the *Meditations*. Leaving those to one side for the moment, there is another side to the imagination that I will call its 'technical' role, and this is of particular interest to me in the puzzle of object-perception. In this section, I shall explain the difference between the 'fictive' and the 'technical' imagination and highlight the principal features of the latter.

The fictive imagination makes its appearance early in the First Meditation, in which Descartes considers the possibility that not is all as it seems, and it surfaces

again in the Second Meditation's investigation of the nature of the thinking thing. All the while, Descartes is using imaginative devices to persuade his readers of the truth of his claims. Earlier in this thesis I highlighted several uses for the imagination in the earlier works that have little to do with making things up and a lot to do with cognizing aspects of the material world.[70] That is, as a physical site in the brain, the corporeal imagination was given the job of translating figures traced there by sense-perception for apprehension by the mind. The mind was able to comprehend geometry only because the shapes were literally configured in the corporeal imagination, and manipulated there so that problems could be addressed and solved. One major entailment of this is that the imagination proves crucial for understanding the external world because matter is identified with extension, and extension is expressed mathematically in lines and points, that is, geometrically.

Little in the *Meditations* suggests such a solid, straightforward view of the technical imagination, for there Descartes is concerned less with the apparatus involved in our perception of the external world, under which it falls, than he is with the conditions for knowledge, particularly of metaphysics. Allowing for the difference in purpose between the *Meditations* and the *Regulae* and *Le Monde* I do not think it inconceivable that there should be some continuity between the early and later imagination, even given the change in emphasis from natural philosophy to metaphysics and epistemology. Unfortunately, the lack of forthrightness on Descartes' part means that we need to tease out his view of the technical imagination from how he uses it in his arguments.[71] Which is not to say that the imagination is not important to the *Meditations*; it is. As I will show in what follows, it figures heavily in Descartes' notion of object-perception and the union of mind and body. Nonetheless, the imagination features mainly in two of the six *Meditations*: *Meditation II*, concerning the human mind and "how it is better known than the body" (AT VII, p. 23; CSM II, p. 16), and *Meditation VI*, concerning the existence of material things; otherwise it is mentioned briefly in the Fifth as enabling Descartes to grasp quantity. In both Meditations, there is grist to the 'cognitive decline' mill, in that Descartes does deride its ability to help him grasp certain things. However, as I hope to show, those things were never the remit of the imagination to begin with.

[70] See Chapter Four.
[71] This goes for the fictive imagination too; as I have argued, Descartes clearly knew how to use it to persuade and manipulate his audience, but this too needed to be inferred from the text itself.

There is considerable continuity between the imagination of the *Regulae* and that of the *Meditations* in the remit of the imagination; where the two differ is in the emphasis they place on the intellect as the 'knowing' faculty and the help Descartes acknowledges on its behalf from imagination.

Using his (creative) imagination to further investigate his nature as a thinking thing in the Second Meditation, Descartes begins by postulating "a wind, fire, air, breath, or whatever I depict in my imagination" before dismissing them because they are "things which I have supposed to be nothing" (AT VII, p. 27; CSM II, p. 18). In other words, those ideas lack the clarity and distinctness of the *cogito*, and so we are given to understand that some fictions created by the imagination fall foul of the clarity and distinctness rule. The reason for this is given in the first declaration of the nature and remit of the imagination itself:

> It would indeed be a case of fictitious invention if I used my imagination to establish that I was something or other; for imagining is *simply contemplating the shape or image of a corporeal thing.* (AT VII, p. 28; CSM II, p. 19; my emphasis)

In other words, if I use my imagination to investigate my nature I am bound to go wrong, because in doing so I would be committing a category error. It is not the imagination's place to consider incorporeal things such as the mind, for it deals with corporeal nature, and for this reason the shapeless 'I' that I have discovered in the *cogito* "cannot be pictured in the imagination" (AT VII, p. 29; CSM II, p. 20):

> I thus realize that none of the things that the imagination enables me to grasp is at all relevant to this knowledge of myself which I possess. (AT VII, p. 28; CSM II, p. 19)

Still, in using my imagination I am always reminded that "the power of imagination is something which really exists and is part of my thinking" (AT VII, p. 29; CSM II, p. 19). So even if it is useless in contemplating my immaterial nature, it still remains a faculty that I possess and, in that sense, shows me something about myself.

Further on in the Second Meditation, the imagination comes up, this time in an illustration of its limits. Because the imagination is limited to the nature of

corporeal things it seems that it is not capable of metaphysical endeavour, illustrated in the discussion of the wax. Once all the sensory properties of the wax have been jettisoned, Descartes looks at it again to see what is left:

> [...] something extended, flexible and changeable. But what is meant here by 'flexible'? Is it what I picture in my imagination: that this piece of wax is capable of changing from a round shape to a square shape [...] Not at all; for I can grasp that the wax is capable of countless changes of this kind, yet I am unable to run through this immeasurable number of changes in my imagination. (AT VII, p. 31; CSM II, pp. 20-1)

Ultimately, the lesson of the wax is that imagination is not capable of metaphysical knowledge; it simply is not suited to the subject-matter of that kind of abstract speculation. This passage is wheeled out often by commentators who wish to illustrate the decline of the imagination in the *Meditations*, and they point out that it comes out badly in the discussion of the wax because Descartes' conclusion is that true perception of the wax is not a case of imagination or sensation, "nor has it ever been, despite previous appearances – but of purely mental scrutiny" (AT VII, p. 31; CSM II, p. 21). On reflection, Descartes comes to realise that clear and distinct knowledge of the nature of bodies is not a case of imagination, which is limited in what it can handle, but a question of pure intellect. Which immediately raises the question of what is so special about the intellect that it can cope with innumerable permutations of shape and the geometric qualities thereof, while the imagination is left behind? Later on in the Fourth Meditation, Descartes takes time to remind us that the intellect itself is finite, and we are not capable of the infinite knowledge of God, even if we would wish to have it. So he cannot here be saying that the intellect is capable of cognizing an infinite number of different shapes in an infinite number of permutations, while the imagination is restricted to a few, for that would contradict the Fourth Meditation's conclusion about the causes of error.

The reason that Descartes makes this distinction between imagination and intellect, and the true properties of bodies, rests with his notion of the imagination as a faculty. The intellect trumps the imagination in understanding the essence of bodies because the intellect does not depend on figure to do so. Going back to the passage above, the difference between the two faculties is that with the intellect I am

capable of grasping *that* the wax is capable of all these changes and more, but using imagination I am restricted to what I can actually depict, which in turn presupposes shape and figuration. Pure intellect does not deal with the properties of bodies *as shapes*, it deals with the properties of bodies as made otherwise intelligible, in equations and as algebraic constructions (Norton, 2011), and the intellect need not rely on having the shape in front of it, which is what imagination's endeavour amounts to. Besides, the discussion in the Second Meditation, as Williams points out, is not about the essence of material things but about the metaphysics of entities in general, and about what persists through change. (Williams, 2005, Ch. 8) Imagination is not suited to that kind of knowledge precisely because it is tied to shape, one of the changeable properties of matter.

Again, though, we must ask why imagination relies on having a shape in front of it to allow cognition of body when the intellect need not. After all, the two are attempting to grasp the same thing: the nature of the wax. Answers are not forthcoming this early in the text, but clues can be found in the Second Meditation's final comparison of the two:

> I see that without any effort I have now finally got back to where I wanted. I now know that even bodies are not strictly perceived by the senses or the faculty of imagination but by the intellect alone, and that this perception derives not from their being touched or seen, but from their being understood [...] (AT VII, p. 34; CSM II, p. 22)

Imagination here is coupled with sensation as a mode of perception, and key to sensation is its reliance on corporeal apparatus to function—no nervous system, no sensation. For all that he talks about the imagination—and he does, particularly later on—Descartes does not really mention how it is supposed to operate. But even this early on it becomes apparent that it is related to sensation in a manner that does not allow it the same freedom and scope as the intellect. The operation of imagination must have something in common with the operation of sensation for the two to have been contrasted with the intellect in this way, and it is this: clear and distinct perception of the wax is not delivered by the senses, nor is it delivered by the imagination, for these are limited by something that the intellect is not limited by: the body. Although Descartes does not discuss it this early in the *Meditations*—and

in fact does not consider it explicitly at all—his notion of imagination at this stage links it closely to the body. That would explain his insistence that the imagination is not best-placed to grasp the persisting essence of the wax, because that essence would be expressed in figure, a changeable property of concrete, particular (if incorporeal) entities. Otherwise we would have had a discussion of measurable extension on our hands and the Fifth Meditation's discussion of the essence of material things would have been anticipated.

Dwelling for a moment on the Fifth Meditation's argument about the essence of material things, a clearer picture of imagination begins to emerge. For while the final conclusion of that Meditation is that the essence of material things is best grasped by the intellect, nevertheless imagination is of more assistance: "I distinctly imagine the extension of the quantity (or rather of the thing which is quantified) in length, breadth and depth" (AT VII, p. 63; CSM II, p. 44).The distinctness of the notion of quantity, even though it is in the imagination, is enough to convince Descartes that "I am not so much learning something new as remembering what I knew before" (AT VII, p. 64; CSM II, p. 44). Even if no such shape as a triangle exists outside his imagination "there is still a determinate nature, or essence, or form of the triangle which is immutable and eternal" (AT VII, p. 64; CSM II, p. 45). Imagination, then, is quite acceptable an aid when I come to consider the essence of shape or figure, as long as in imagining I do not exceed "what I clearly and distinctly understand" (AT VII, p. 68; CSM II, p. 47); thus, intellect and imagination work together in grasping specific figures and drawing them to the attention of the mind. By the end of the Fifth Meditation, God has guaranteed all my certain knowledge, including knowledge of "the whole of that corporeal nature which is the subject-matter of pure mathematics", adding in the French edition,

> [...] and also concerning things which belong to corporeal nature in so far as it can serve as the object of geometrical demonstrations which have no concern with whether that object exists. (AT VII, p. 71; CSM II, p. 49)

Corporeal nature is the object of geometric demonstration; in other words, geometry is the discipline that tells us about the nature of the physical world. Distinct perception of shape by the intellect is enabled by imagination, in which it is realised.

Thus, we arrive at the Sixth Meditation, by far the most important to this discussion, for here the role of the imagination is made most manifest; it is no coincidence that the subtitle of the Sixth Meditation is "*[t]he existence of material things, and the real distinction between mind and body.*"(AT VII, p. 71; CSM II, p. 50) The imagination plays a defining role in the relationship between mind and body, and furthermore in the apprehension of material things, a role that is established very early on when Descartes considers the argument that, because I *seem* to perceive material things and because God is not a deceiver, then those material things must exist:

> The conclusion that material things exist is also suggested by the faculty of imagination, which I am aware of using when I turn my mind to material things. For when I give more attentive consideration to what imagination is, it seems to be nothing but an application of the cognitive faculty to a body which is intimately present to it, and which therefore exists. (AT VII, pp. 71-2; CSM II, p. 50)

Obviously the thesis of material falsity upsets this inference; for even if my ideas of corporeal objects lead me to infer that they exist, they do not exist as I perceive them, leading once more to the conclusion that imagination is cognitively defective if it forces me to infer that the material thing that it suggests might exist is as I perceive it. However, that is to assume that the ideas of material things provided by imagination are in fact materially false, which in itself is false: only those aspects of the ideas that are mediated by sensory apparatus are materially false. At no point does Descartes claim that the ideas of the imagination are materially false, for the thesis of material falsity applies to ideas that come to the mind unbidden, and which seem to represent objects external to me as resembling those ideas. That is not the job of the imagination; according to the quotation above, imagination is the mind's apprehension of the body. In fact, this passage tells us that imagination is *prior* to sensory ideas, because sensory ideas come from the external world to the mind via the body, but when the mind turns towards the body it does not use sensation, it uses imagination.

Descartes makes a thorough investigation of the difference between imagination and intellect in an effort to better explain his claim that imagination is

the application of the mind to the body, assuming that this will help make everything clear. As in the Fifth Meditation he contrasts the intellect's grasp of shape with imagination's, and once again imagination comes off worse:

> When I imagine a triangle, for example, I do not merely understand that it is a figure bounded by three lines, but at the same time I also see the three lines with my mind's eye as if they were present before me; and this is what I call imagining. But if I want to think of a chiliagon, although I understand that it is a figure consisting of a thousand sides just as well as I understand the triangle to be a three-sided figure, I do not in the same way imagine the thousand sides or see them as if they were present before me. (AT VII, p. 72; CSM II, p. 50)

When I imagine a shape I present it to my 'mind's eye', which is a problem because my imagination is not terribly strong, particularly compared to the intellect:

> It is true that since I am in the habit of imagining something whenever I think of a corporeal thing, I may construct in my mind a confused representation of some figure; but it is clear that this is not a chiliagon. For it differs in no way from the representation I should form if I were thinking of a myriagon, or any figure with very many sides. (AT VII, p. 72; CSM II, p. 50)

When I represent a complex figure to myself it is confused because the imagination requires "a peculiar effort of mind" (AT VII, p. 72; CSM II, p. 51) that the intellect does not, and "this additional effort of mind clearly shows the difference between imagination and pure understanding" (AT VII, p. 73; CSM II, p. 51).But what is this peculiar effort of mind? My belief is that Descartes is referring to the act of representation to the mind, which seems to mark the distinction throughout his work between the intellect and the imagination. Intellect is not concerned with the realisation of shape: it is perfectly capable of grasping the principles of geometry without requiring shapes to be literally realised in front of it, and it is only "habit" that makes me form a shape in my imagination when trying to understand it. Instead the intellect can turn to symbolic representation in letters and numbers and still form

a perfect understanding of it. Previously, of course, Descartes would have explicitly stated that the limitation of the imagination is down to its corporeality and left it there, but he cannot do that in the *Meditations* because he has firmly and irrevocably made the imagination incorporeal. A corporeal imagination, like that of the *Regulae,* is out of the question now that mind and body are substantially distinct. But there is still something physical about the imagination, hinted at in both Descartes' definition of it as the mind's application to the body and the "effort" that goes into it, and is still more strongly suggested when Descartes states that the further difference between imagination and intellect consists in their relative importance for the mind itself:

> Besides this, I consider that this power of imagining which is in me, differing as it does from the power of understanding, is not a necessary constituent of my own essence, that is, of the essence of my mind. For if I lacked it, I should undoubtedly remain the same individual as I now am; from which it seems to follow that it depends on something distinct from myself. (AT VII, p. 73; CSM II, p. 51)

The distinct thing on which imagination depends turns out to be the body, even though this conclusion is not sufficient alone to establish beyond doubt that the body exists – that would be a "probable conjecture" (AT VII, p. 73; CSM II, p. 51). The point seems to rest on the fact that the imagination can make things up; it is not tied to what really exists and is, if you believe the First Meditation, capable of deceiving me about the reality of its intentional content. Still Descartes can "easily understand" that *if* there were a body *then* it would allow the mind to imagine corporeal things, even though those things may not exist:

> So the difference between this mode of thinking and pure understanding may simply be this: when the mind understands, it in some way turns towards itself and inspects one of the ideas which are within it; but when it imagines, it turns towards the body and looks at something in the body which conforms to an idea understood by the mind or perceived by the senses. (AT VII, p. 73; CSM II, p. 51)

This is the crux of Descartes' notion of the imagination in the *Meditations*, and he slips it under the radar in what is, ostensibly, nothing more than a rumination on the possibility of external objects existing. The imagination is still, at bottom, corporeal in content. It remains to be seen what that "something in the body" to which the mind turns in imagination is exactly, but it is at least clear that to function imagination needs the body. It explains why the mind does not require the imagination in the same way that it requires the intellect. The intellect is necessary to the mind because it *is* thought, and all instances of thought are an instance of intellectual activity. It is *not* necessary for the mind to be united to a body, and so it is not necessary for the modes of the mind dependent on the body to exist; they are accidental in every sense of the word.

The problem remains, though, that even if the imagination is the mind's application to the body, it is not enough to establish the existence of material things beyond doubt, particularly to the standard of clarity and distinctness now the norm. So Descartes turns to the other faculty apparently dependent on the body—sensation—to see if that fares any better. Interestingly, Descartes explicitly distinguishes between ideas of "that corporeal nature which is the subject-matter of pure mathematics" and sensory ideas of "colours, sounds, tastes, pain and so on" (AT VII, p. 74; CSM II, p. 51), and sticks to this distinction in what follows. Sensory ideas, then, are the ideas that were earlier called materially false, and are obscure and confused. Crucially, these are the ideas that bring with them the notion that there are bodies external to the mind:

> For my experience was that these ideas came to me quite without my consent, so that I could not have sensory awareness of any object, even if I wanted to, unless it was present to my sense organs. (AT VII, p. 75; CSM II, p. 52)

These are adventitious ideas, and here Descartes is describing his 'pre-Meditational' belief in the veracity of sensory ideas. However, now he is able, to an extent, to vouch for these ideas, for the fact that they come to me unbidden means that it is a result of some active faculty "either in me or in something else, which produced or brought about these ideas" (AT VII, p. ; CSM II, p. 53). By dint of the Causal Adequacy Principle, he claims that these ideas—since they contain nothing

intellectual in their object but do contain the clear and distinct idea of extension, the essence of material things—must have been caused by something "which contains either formally or eminently all the reality which exists objectively in the ideas produced by this faculty" (AT VII, p. 79; CSM II, p. 55). Two options remain: God, or matter. Since God is not a deceiver, the cause of my sensory ideas of material things must have been caused by material things:

> They may not all exist in a way that exactly corresponds with my sensory grasp of them, for in many cases the grasp of the senses is very obscure and confused. But at least they possess all the properties which I clearly and distinctly understand, that is, all those which, viewed in general terms, are comprised within the subject-matter of pure mathematics. (AT VII, p. 80; CSM II, p. 55)

The final part of the Sixth Meditation is devoted to the union of mind and body in an attempt to explain how sensation and imagination have come about at all. I have already discussed the union in Chapter Two so I will not go into a lot of detail here. Needless to say, Descartes needs to explain how, given that imagination and sensation are modes of the mind, they depend yet on the body to operate, and this is the question that the union is designed to address.

IV. A Tension

The strict incorporeality of the imagination in the *Meditations* is where the real difference between the early and the later works lies, for it sets up a tension, not present in the *Regulae*, between the notion of a purely mental act of imagining—either as a fiction, as the contemplation of shape, or as the application of the mind to the body—and its reliance on the body. In the earlier works, the imagination is unabashedly corporeal; even as a mode of thought, it is situated in the brain, lending Descartes an explanation of the mechanics of imagining. No such easy explanation is available in the *Meditations* because the notion of a corporeal site of imagining in the brain is precluded by the essential definition of imagination as a mode of thought, and the mutual exclusivity of thought and extension. That Descartes was aware of this is evident from his cagey treatment of imagination in the Sixth Meditation, where it is reasonable to assume that, if imagination relies on the body for content as

the mode of thought responsible for the mind's voluntary apprehension of the body, it needs some corporeal aspect. Descartes sets himself up to explain how the imagination can be the application of the mind to shape or to the body and, had it been available to him, the corporeal imagination would have been the perfect device. As it is, he comes close to asserting the corporeality of imagination when he describes the "peculiar" effort that goes into it, but stops just short, settling instead for describing the mind-body union and leaving the reader to draw his own conclusion.

In the *Objections and Replies* Descartes is more open about the imagination's corporeal side. He defines 'idea' in the *Geometric Meditations* in the Second Replies as follows:

> Thus it is not only the images depicted in the imagination which I call 'ideas'. Indeed, in so far as these images are in the corporeal imagination, that is, are depicted in some part of the brain, I do not call them 'ideas' at all; I call them 'idea' only in so far as they give form to the mind itself, when it is directed towards that part of the brain. (AT VII, pp. 160-1; CSM II, p. 113)

Similarly, when responding to Gassendi's objections, he writes that imagination employs the brain, occasionally to the detriment of the intellect (and clear thinking):

> I also distinctly showed on many occasions that the mind can operate independently of the brain; for the brain cannot in any way be employed in pure understanding, but only in imagining or perceiving by the senses. Admittedly, when imagination or sensation is strongly active (as occurs when the brain is in a disturbed state), it is not easy for the mind to have leisure for understanding other things. (*Fifth Replies*, AT VII, p. 358; CSM II, p. 248))

If we take into account correspondence contemporaneous with the *Meditations* we see that the imagination of the later works is almost as corporeal as it has ever been, although the term 'idea' is no longer the "form or image of a corporeal thing", but refers to an act of the intellect:

> The forms or corporeal impressions which must be in the brain for us to imagine anything are not thoughts. (*Letter to Mersenne, 21 April 1641*, AT III, p. 361; CSMK, p. 180)

> For by 'idea' I do not just mean the images depicted in the imagination; indeed, in so far as these images are in the corporeal imaginations, I do not use that term for them at all.[72] Instead, by the term 'idea' I mean in general everything which is in our mind when we conceive something, no matter how we conceive it. (*Letter to Mersenne, July 1641*, AT III, p. 392; CSMK, p. 185)

The mutual exclusivity of mind and body, upon which Descartes insists throughout this period, means that both sensation and imagination have dual status, as denizens of the mind that rely on the body. A Cartesian Dualist would see a problem in having modes of thought that require the body to operate, but not Descartes:

> I do not see any difficulty in understanding on the one hand that the faculties of imagination and sensation belong to the soul, because they are species of thoughts, and on the other hand that they belong to the soul only in so far as it is joined to the body, because they are kinds of thoughts without which one can conceive the soul in all its purity. (*Letter to Gibieuf, 19 January 1642*, AT III, p. 479; CSMK, p. 203)

Imagination in the *Meditations* and beyond is, ontologically, a mode of thought but, equally, it will always rely on the body: no brain, no imagination. Only now, instead of imagination explained as a corporeal faculty full stop, it is a mode of thought *enabled* by the body but not resident in it. For sensation, it is easier to see how this is the case: the sensory apparatus (CNS and animal spirits) are responsible for sensory ideas and, as a result, all sensory ideas contain the body in their objective reality, as I have argued in Chapter Three. In imagination, the brain is used for the physical rendering of figure and as a place where images are depicted for scrutiny; we need

[72] The translators here note that Descartes uses *fantaisie* to denote the corporeal imagination as the place ideas are 'depicted.' (CSMK, p. 185n)

these figures for imagination to function, but at all times it remains incorporeal. For this reason, it seems counter-productive to consider imagination from the standpoint of dualism, for it simply does not scan with the text to claim that it 'bridges the metaphysical gap' created by the *cogito* and the mutual exclusivity of mind and body. If Descartes saw no problem with defining imagination as the mind's apprehension of the body, and in understanding it as a mode of thought with the body as its intentional object, then my inclination is to follow him in claiming it as a product of the union of mind with body. This means taking the union as primitive, much as Descartes recommends to Elizabeth as she struggles to make sense of the mind-body relationship. But this is preferable to viewing it on mutually exclusive, dualist grounds because, in that case, imagination as described in the *Meditations* would make little sense. As a mode of thought divorced from the body, it would have no content; as a part of the brain where images are depicted, it would relinquish its ontological status and become nothing more than a part of the sensory apparatus. In that case, it would no longer be voluntary and would lose its most celebrated role: dreaming up fictions and hypotheses. In this imagination scans perfectly with Descartes' description of the union of mind and body, and of the imagination as the mind's apprehension of the body, as long as we accept the union as part of Descartes' considered view. Until we do that, we can make very little sense of the operation, or the content, of the imagination and its ideas. In spite of this there is a tendency in the secondary literature to regard the imagination through the lens of Dualism, even tacitly; the notion of imagination as an embodied faculty under the aegis of the union of mind and body is not appreciated as it should be. This has led to the view, shared by most commentators, that during and after the *Meditations* it fell from favour as a cognitive faculty. The next chapter will explore this claim and how such a state of affairs might have come about, showing how it is a result of the implicit acceptance of Cartesian Dualism.

Chapter Six

The Impoverishment of Imagination

I. Introduction

There is a shift in Descartes' treatment, if not view, of the imagination after the publication of the *Meditations*. The secondary literature has drawn attention to this change to the detriment of the imagination; the majority view is that the imagination goes from being key in cognition to being surplus to requirements. As Descartes champions the intellect in the *Meditations* and beyond, any other faculty previously involved in cognition falls away, chief among them the imagination. Various reasons have been sought for such a fall from grace: a change in the definition of an idea from an image to a representation of an object (Sepper, 1996); the divorce of the imagination itself from the body (Wilson, 1978); the invention of algebraic geometry (Norton, 2011); even the imagination's inherent untrustworthiness (Fóti, 1986) have all been put forward as reasons. There is merit in all of these suggestions, I think; the imagination's fortunes are certainly mixed up in Descartes' treatment of mathematics, the body, and the notion of an idea, while the imagination's fictive ability certainly bears on its reputation. With the exception of Fóti's argument each of the above refers, in the end, to the mind's separation from the body and its implications for those faculties of thought with a corporeal element: sensation and imagination. Where previously Descartes had been happy to include the corporeal imagination and the *sensus communis* in his explanation of cognition and perception, once he had confirmed the real distinction between the substances and placed knowledge and cognition firmly in the realm of the mental he could no longer assume their heavy involvement.

There is a difference in nature between sensation and imagination, and this will be addressed in what follows. Sensation fares terribly in the analysis I am about to present; it is heavily contrasted with the trustworthy intellect to its ultimate detriment. The evidence of the senses is not to be trusted; the best we can hope for is that God would not deceive us when we take the time to ensure we have got it right. Even then, however, we can only assume that what we perceive with the senses, error-allowing, is what is in front of us. There is nothing new in this; Descartes had

always pointed out that the senses are deceptive, it is just that in the *Meditations* the point is put fairly forcefully. Descartes' treatment of the imagination is more subtle but arguably ends to its detriment also. However, while the imagination is clearly related to sensation it need not assume the existence of any extra-mental object, which is where the two part company and which is reflected in their respective fates.

In what follows, I shall explore the real distinction between the mind and the body as it is 'discovered' in the method of doubt to investigate the hypothesis that it is responsible for the demotion of sensation and the imagination. As the *Meditations* progresses, the story arguably contributes to the estrangement of the imagination and sensation from cognition. From the beginning, as the Doubter rejects all sensory experience as obscure and confused, and opts to rebuild his knowledge from *a priori* foundations, the body finds itself marginalised. Sense-perception stands no chance as a source of clear and distinct knowledge because it is materially false; instead, all reliable knowledge depends on the spontaneous certainty of the *cogito* and innate ideas in the intellect, until ultimately sensory ideas are found to be probably true, at best. Similarly, the corporeal basis of the imagination, until now useful and unproblematic, renders it far less valuable in cognition and far more problematic as a faculty now that the body has been found to be useless for knowledge. As a mental mode, which it must now be classified, the imagination is fairly ineffectual if it no longer physically renders geometric figures and translates sense impressions for the mind.

However, I must make it plain now that this is not a position with which I wish to align myself. I agree that the strong separation of mind from body promoted in the *Meditations* distances the body from cognition, particularly since the intellect is given precedence in knowledge and its remit is purely mental. I do not agree, however, that the main lesson of the *Meditations* is that mind and body are really distinct, that Descartes was the arch-rationalist, untrusting of the senses and only willing to believe what he could divine *a priori*. The analysis I am going to attempt here does in fact assume this, and comes at the problem from the standpoint of Cartesian Dualism, and I aim to use it as a counterpoint to my own argument. My position is that Cartesian Dualism and the substantial distinction are not representative of Descartes' considered view. He saw mind and body as united, both metaphysically and epistemologically: a human being is a unit made of the two

substances and as a result is capable of knowledge of himself, God and the external world. This last is only possible via the body.

II. The separation of mind and body, and the primacy of the understanding

Through his life, Descartes shows himself consistently interested in the same things: the fundamental constitution of the material world and man's place in it, including the extent of man's knowledge of the world. Inevitably his ideas change, his interests move from the cosmology and experimentation of *Le Monde* and the *Discours* to the more contemplative and personal *Passions of the Soul* via the overview of the *Principles* and the metaphysics of the *Meditations*. Still, he remained concerned with the same themes throughout. The aim of this section is not to argue that there was a significant change of tone between the early works—the *Regulae, Le Monde* and the *Discours*—and what came after. There is a difference between the early and later works rooted in Descartes' treatment of man's knowledge of the external world, in which the imagination and sensation firmly rest, but that difference is not significant enough to warrant viewing Descartes' *corpus* as split in two. While natural science and the mechanics of the natural world were of abiding concern, Descartes felt that the time was right to turn to metaphysics and epistemology. In his own words:

> I am again tackling the same questions concerning God and the human mind; and this time I am also going to deal with the foundations of First Philosophy in its entirety. (*Preface*, AT VII, p. 9; CSM II, p. 8)

In so doing, Descartes turns his attention to the operation of the human mind, something that he cannot achieve without also resolving man's place in the universe, his point of view, which involves delving into the metaphysics of the problem. The relationship between mind and world is the locus around which the *Meditations* revolves. Of course, this means dealing with the problem of scepticism to establish that the mind can have knowledge of the external world (indeed, knowledge of anything) at all. The method and its results are recounted in the *Meditations* after a dry run in the *Discourse*, in an attempt to avoid the problems of limited human cognitive capacity and unreliable sensory apparatus.

All of this is addressed in the *Meditations*, heralded in the *Discourse's* rehearsal of its main arguments: the primacy of the understanding and the existence of God. Those arguments establish, or at least claim to have established, the real distinction of mind and body, that the mind is better known than the body, the material falsity of sensory ideas, and the existence of God. The most striking result of Descartes' arguments, for our purposes, is his conclusions about the relative importance of the faculties of the mind and the fate of the adventitious faculty of sensation and the corporeal imagination.[73] In the *Regulae*, any distinction between the faculties of the mind Descartes considered conceptual, each being one aspect of a single knowing power. By the *Meditations*, his description of the faculties is much less holistic and, while he guards against reifying them, he does regard them as strictly, if modally, distinct. In what follows I shall attempt to prove that the project of establishing "anything at all in the sciences that was stable and likely to last" (*Meditation I*, AT VII, p. 17; CSM II, p. 12) entails the demotion of the corporeal faculties on the grounds that they do not conform to the standard of clarity and distinctness typical of true ideas. Each step of the journey, from the initial doubt to the reclamation of the external world, seems calculated to consign the body and associated faculties to cognitive redundancy. According to this analysis, it is little wonder that Descartes earned the title 'Rationalist'.

(i) The *cogito*, the Wax and the Mind

Several conclusions follow on from the *cogito*, including the realisation that even in the very depths of scepticism there is one thing that cannot be touched: "this proposition, *I am, I exist*, is necessarily true whenever it is put forward by me or conceived in my mind." (*Meditation II*, AT VII, p. 25; CSM II, p. 17) The beauty of the *cogito* lies in the clarity, distinctness and immediacy with which I apprehend its truth: I cannot but assent to it. This becomes the standard for true ideas, i.e. how I know that they are certain. Now that I know what goes into a certain idea, I can recognise another, thus the immediate clarity and distinctness of the *cogito* becomes the defining feature of true ideas, ideas that I can trust:

[73] 'Adventitious' here means faculties dealing with ideas that come unbidden to the mind; essentially any idea that isn't innate—in other words, the ideas of sensation. Thomas Hobbes, in his Objections to the Third Meditation, tried to prove that all ideas are adventitious. Descartes' reply, in which he expresses amazement at Hobbes' claim that ideas put together in the mind are adventitious, reveals that the imagination is not an adventitious faculty. (AT VII, p.362 ; CSM II, p. 250)

> In this first item of knowledge there is simply a clear and distinct perception of what I am asserting; this would not be enough to make me certain of the truth of the matter if it could ever turn out that something which I perceived with such clarity and distinctness was false. So now I seem to be able to lay it down as a general rule that whatever I perceive very clearly and distinctly is true. (*Meditation III*, AT VII, p. 35; CSM II, p. 24)

The spontaneity with which I assent to the *cogito*, that visceral 'yes' that I flagged up in the preceding chapter, Descartes offers as proof and paradigm of clear and distinct ideas. Significantly, the *cogito* is self-referential: to recognise and know it requires the subject of the proposition to reach no further than himself, which for Descartes means that the first item of true knowledge is mental—the *cogito* refers to the mind and the mind alone. The paradigm clear and distinct idea does not refer, at all, to the external world. As far as the project of the *Meditations* is concerned, this is cause for celebration because at last we have knowledge impervious to doubt. But as far as the body and sense-perception goes it is a disaster, for there is nothing about the *cogito* that even entertains extra-mental knowledge. In the initial doubt, all sensory ideas were rejected on the grounds that they deceive us; at the start of the rehabilitation of knowledge, they are nowhere to be found. The paradigm idea on which all subsequent true and certain knowledge is modelled is proudly immaterial in nature and object.

None of this would carry much weight if, from the *cogito*, Descartes only draws the conclusion *that* he exists and that is all he knows. Unfortunately for the body, that is not what happens: once he has established that he knows that he is thinking, Descartes draws from this the conclusion that he is nothing *but* a thinking thing. All other options—nutrition, movement, sense-perception—are all rejected on the grounds that they belong to the body:"[...] and besides, when asleep I have appeared to perceive through the senses many things which I afterwards realized I did not perceive through the senses at all." (*Meditation II*, AT VII, p. 27; CSM II, p. 18) Since he is "not admitting anything except what is necessarily true", Descartes decides that thought "alone is inseparable" from him (AT VII, p. 9; CSMII, p. 18). Upon which he tries to ascertain what else he is, and concludes that all and any

mental faculty belongs to him as a thinking thing, but as soon as he tries to imagine anything, since imagination is "simply contemplating the shape or image of a corporeal thing" , he knows that he exists and "at the same time that all such images and, in general, everything relating to the nature of body, could be mere dreams." (AT VII, p. 28; CSM II, p. 19) Any idea or faculty of the mind that seems to go beyond the mind's own contents is disregarded on the grounds of previous form. As long as he understands that when apparently sensing and imagining "in this restricted sense of the term *is just thinking*" (AT VII, p. 28; CSM II, p. 19, my emphasis), he will not go wrong.

Finally, from the truth of the *cogito* and the suspect nature of ideas of sensation, we discover that the mind is better known than the body:

> Moreover, if my perception of the wax seemed more distinct after it was established not just by sight or touch but by many other considerations, it must be admitted that I now know myself even more distinctly. This is because every consideration whatsoever which contributes to my perception of the wax, or of any other body, cannot but establish even more effectively the nature of my own mind. (*Meditation II*, AT VII, p. 33; CSM II, p. 22)

The wax of which Descartes speaks is the subject of what Bernard Williams called a "baffling" argument concerning perception and knowledge. (Williams, 2005, p. 199) Even once he has decided that the mind constitutes his nature, Descartes is plagued by the notion that sense-perception is a better source of knowledge than the intellect. In the spirit of enquiry, he decides to give this notion the time of day:

> Let us consider the things which people commonly think they understand most distinctly of all; that is, the bodies which we touch and see. I do not mean bodies in general – for general perceptions are apt to be somewhat more confused – but one particular body. Let us take, for example, this piece of wax. (AT VII, p. 30; CSM II, p. 20)

To briefly rehearse the discussion: The properties of the wax perceived through the senses change under different conditions, for example, the wax melts when put near

heat, leading to a wholesale change in its qualities. Still, we claim it as the same piece of wax through those changes. After considering the different ways we claim to have knowledge of the wax, either through the senses or the intellect, Descartes concludes that our true knowledge of the wax stems from a judgement of the intellect rather than the faulty information of the senses and the limited capacity of the imagination. From the start, the tone of the discussion is mildly sarcastic but, that aside, the discussion of the wax is illuminating for two reasons: it establishes the difference between the intellect on one hand, and imagination and sense-perception on the other as sources of knowledge, while revealing something of Descartes' metaphysics. Williams calls the argument baffling precisely because its purpose is ambiguous: is it a demonstration of substance-mode metaphysics, a discussion of essence versus accident, or is it an epistemological argument designed to show the superiority of the intellect? Certainly, the discussion presupposes Descartes' metaphysics, and is concerned with the question of persistence through change. To my mind, it is an epistemological argument grounded in ready-made metaphysics, an argument about how best to truly grasp an object of the senses, which means understanding that, through all change, there is still a subject—a substance with what Descartes would later call the essential attribute of extension—through which all material accidents are conceived and of which they are all modifications.[74] By the end of the discussion, the reader (and the Doubter) is given to understand that what is really present is not a set of changing physical characteristics but something permanent undergoing those changes. Therefore the question is not 'what makes this a piece of wax as opposed to something else?' but rather 'how can we identify objects when their sensible qualities can change so comprehensively?' Williams explores the different interpretations of the wax discussion and concludes that it is:

> [...] an argument not directly about the nature of physical things, but about our conception and knowledge of their nature [...] On reflection, Descartes discovers that he has the conception of the wax just as an extended, flexible and changeable thing [...] It is a purely intellectual conception, something that he understands in pure thought, without the help of images. (Williams, 2005, p. 208)

[74] *Principles of Philosophy 1: 53* [1644] (AT VIII, p. 25; CSM I, p. 210)

There is, as Williams points out, a gap between seeing that sensory qualities have changed, and concluding that we cannot know of the persisting object through the senses; this can be justified if we bear in mind that any quality perceived through the senses is subject to change, yet we still have an idea of *something* capable of undergoing those changes that has nothing to do with the information from the senses. The intellect's (clear and distinct) perception of the wax concerns its general, material properties; all charges of confusion and obscurity in my idea of it must be laid at the door of the senses.

For all that, the lesson Descartes draws from the wax, that the mind is better known than the body, is at first glance a strange one because it bears not a jot on the subject in question: material things. Any conclusions about that are saved for the Fifth Meditation, to which we shall turn in time. For now, Descartes restricts himself to what he can say for certain; sensory ideas cannot help because they only deliver the changing properties of an object, not its essence. If it were a question of material things, this would be even more baffling than Williams points out. It is important to remember that this is a relatively abstract discussion about metaphysics, not physics. The essential nature of the wax as an object is not under discussion so much as what persists through its various changes, and this is borne out by the fact that Descartes' final conclusion concerns the mind rather than the body. Still, it bears examination if only for the conclusion itself, in which I take Descartes to mean that the more I exercise the mind, the more complete my idea of its ideas and faculties. Obviously this goes beyond the basic illustration that there is a difference between what persists and what changes in any object, and it also goes beyond the insight that the senses are not suited to clear and distinct, metaphysical knowledge, though it incorporates both. To make sense of the claim we need to look at the *Principles of Philosophy*, where Descartes elaborates on his notion of substance and attribute.

How a substance itself is known.

> However, we cannot initially become aware of a substance merely through its being an existing thing, since this alone does not of itself have any effect on us. We can, however, easily come to know a substance by one of its attributes [...] Thus, if we perceive the presence

> of some attribute, we can infer that there must also be present an existing thing or substance to which it may be attributed. (*Principles 1:52*, AT VIII, p. 24; CSM I, p. 210)

The principle (essential) attribute of thinking substance is thought, so any faculty of thought I exercise in my perception of the wax shows up the mind as a thinking substance, regardless of the veracity of the perception itself.

It strikes me, however, that to resort to a later work to make sense of Descartes' claim is cheating, at least as far as the narrative and purpose of the *Meditations* is concerned. Since we are investigating the journey the Doubter takes through his *Meditations*, we ought to place Descartes' conclusion in it. The discussion of the wax serves, in this case, to establish that true perception comes from the intellect rather than sensation or the imagination, because now that I am aware of the changeability of sensory qualities, and of the limits of the imagination, only the intellect is capable of grasping the unchanging essence of this object and of *any* object. However, the Doubter is not in a position to make any pronouncements on any object of perception; all he can say at this stage is that, in perceiving clearly and distinctly that something persists through change, he gains knowledge of those perceptions and, consequently, of the state and operations of his mind.

As my appeal to the *Principles* demonstrates, the conclusion contains more than is warranted by the discussion in assuming Descartes' substance-mode metaphysic. It also strikes me as a tenuous conclusion in that it assumes that, in perceiving something, I am aware also of the mind. In experiencing an idea it is fair to say that I am clearly and distinctly aware of having that idea, but then to infer from there that I know my mind better simply through having that idea and in exercising a particular faculty, goes beyond what Descartes says, even later in the *Principles*. In having an idea or in exercising a faculty, there is no immediate apprehension of the mind itself; it is, in fact, like the wax—known through its attribute and modes. The existence and nature of the mind is at best inferred from the information at hand, and such an inference seems to contradict Descartes' claim that the mind is apprehended with the same kind of immediate certainty of the *cogito*. Still, no substance, mental or physical, is ever directly apprehended; it is best understood by the intellect and this is the main point of the discussion—that the

understanding is a better faculty for perceiving things clearly and distinctly than any other:

> I now know that even bodies are not strictly perceived by the senses or the faculty of imagination but by the intellect alone, and that this perception derives not from their being touched or seen but by their being understood. (*Meditation II*, AT VII, p. 34; CSM II p. 22)

The contemplation of the wax in the Second Meditation helps to establish the cognitive primacy of the understanding, confirmed later in the Sixth Meditation. The immediate consequence of this is that all ideas of the external world gained through sensation are immediately discounted as fallacious because all they can only ever show are the impermanent properties of objects, not their true natures. At a stroke, the evidence of sensation is completely disregarded and the understanding is given preference for enabling knowledge of the metaphysical (true) nature of objects, the substance rather than the modes.

By this point—that is, the end of the Second Meditation—I know with absolute certainty my mind and its contents. Famously, the conclusion Descartes draws from this is that since I have a clear and distinct idea of myself as a thinking thing, "I can infer correctly that my essence consists solely in the fact that I am a thinking thing" (*Meditation VI*, AT VII, p. 78; CSM II, p. 54). Regardless of the validity of the inference, the implication is clear: the faculty of understanding not only allows me to grasp clearly and distinctly what the mind is, it is sufficient to allow me to grasp fully my own nature, and that is wholly mental. I am a mind, not a body, and I know this because the clear and distinct nature of the knowledge, grasped unaided by the intellect, is irrefutable.

Two points of interest should be made here. The first is that there is no mention of the external world in Descartes' notion of a clear and distinct idea. The first and most important clear and distinct idea—I think, therefore I am—is utterly reflexive and the subsequent conclusions, that I am a mind and that the mind is better known than the body, both entail the exclusion of the external world from clear and distinct knowledge. As we shall see, this only gets worse as the *Meditations* progresses. The second thing to note is that all this means that the body is disqualified from participating in knowledge; it is relegated to secondary status,

temporarily united to the mind and interesting for that, but in the end incidental. I shall elaborate on this more in a moment, but it has implications for the mind and its faculties. Any faculty concerned with anything beyond the mind or its immediate contents—concerned, in fact, with the body—is rendered at best unnecessary for true knowledge, at worst extraneous to it.

(ii) Arguing for God

Skipping for the moment over the problem of material falsity brought up in the early stages of the Third Meditation, Descartes' two arguments for God's existence also contribute to the estrangement of sensation and imagination from cognition. The stated aim of the *Meditations* is to establish *what* can be known for certain in the sciences (understood as all human epistemological endeavour) but, before that can happen, Descartes must establish *that* something can be known, and fast; not an easy task since by the Third Meditation all I know for sure is that I exist as a thinking thing, and that sensory ideas are no good for delivering stable, clear and distinct knowledge of anything beyond themselves. Descartes needs a guarantee that his ideas of anything beyond himself as a thinking thing are correct and God provides, not only in benevolence but also as a 'bridge' from knowledge of the self to knowledge of something beyond it.

In his idea of God, Descartes finds an affinity with the *cogito*, inasmuch as the two ideas shine with the same clarity and distinctness:

> The idea [of God] is, moreover, utterly clear and distinct; for whatever I clearly and distinctly perceive as being real and true, and implying any perfection, is wholly contained in it. (*Meditation III*, AT VII, p. 46; CSM II, p. 32)

I have covered the Causal Adequacy Principle in Chapter One so I shall not go into great detail here, except to say that Descartes makes his first leap from the mind to the external world, and God is his stepping stone. According to this Principle, I do not possess the requisite formal reality to invest in the objective reality of my idea of God, and so could not have thought it up myself, and yet I still have this idea. Therefore, it must have been caused by something external to me, and that thing

must itself possess the necessary reality. At the same time, my idea of God must be innate for "it has never come to me unexpectedly" (*Meditation III*, AT VII, p. 51; CSM II, p. 35), as do the ideas of sensation. It is the idea's innateness that holds the key to Descartes' argument and its place in his overall project. The idea of God is indubitable, in part because it has God for its object and so its objective reality infinitely outweighs its (my) formal reality, but mainly because it is innate; clarity and distinctness are features of innate ideas rather than of their adventitious cousins, criteria used as the defining feature of true ideas since.

Descartes performs a nice sleight of hand here. It might seem that the idea of God is caused in the same way that a mundane object might cause its corresponding idea; indeed, Descartes' argument for God appears to rest on this notion. My idea of God must have been caused by something external to me but, causally speaking, I cannot account for it so it must have been caused by something with at least as much, if not more, reality than the idea represents. The question of the objective reality of sensory ideas that stems from this argument I have surveyed already, and it is a real problem for Descartes scholars. Nonetheless, the indubitability of the idea of God rests on the fact that the idea is *innate*, not caused, and so it cannot be said to be an instance of simple object-perception; God is not encountered as an object, I just 'come across' the idea of him. And indeed it is no surprise that God, in creating me, should have placed this idea in me to be, as it were, the mark of the craftsman stamped on his work. (AT VII, p. 51; CSM II, p. 35) If it were a case of simple object-perception similar to my perception of, say, the wax—even as a perception of the intellect—my idea of God would still be riddled with uncertainty. This is because it is an idea of something other than myself, it goes beyond the *cogito* and would still be subject to epistemic doubt. The complex argument from causal adequacy is designed to argue for God *a priori*, and the innateness of the idea in the first place means that Descartes need appeal to nothing *a posteriori* and still prove the existence of a further entity. God, or rather the argument for God, bridges the epistemic gap between myself and everything else. The upshot of this is that the next step in the journey after the *cogito*, and the first hint of knowledge beyond the self, concerns innate ideas not adventitious ones, even though the argument seems to rely on the perception of an object. The idea of God is caused by God in a unique fashion that starts and finishes with the mind; because the idea is innate it need not presume the same kind of causal story affixed to sensory ideas, preserving both the soundness of

the ‘clear and distinct’ criterion for true ideas and the epistemic primacy of the understanding over sensation.

(iii) Sensation, Imagination, Corporeal Things and the Body

The causal argument of the Third Meditation forms one part of Descartes’ proof for God; the Fifth Meditation also weighs in with Descartes’ own version of the ontological argument. Descartes draws the analogy between the essential properties of a triangle and the essential properties of God as a perfect being, and claims that since it is of the nature of a perfect being to exist just as it is of the nature of a triangle that its interior angles equal two right angles, God must exist. Crucially, the intellect can understand the essential properties of material things without requiring them to exist in the physical realm; a grasp of geometry is all that is required. The ontological proof of God is parasitic upon this insight: I do not need to have seen or otherwise experienced God as an object of perception when I can clearly and distinctly demonstrate that he exists from sheer definition. For the second time, the understanding is able to establish the existence of God from a standing start, and this time there is no hint of causation in object-perception. The argument here does not rest on the corporeal existence of the object of the idea, the abstract nature of geometric shapes and mathematics in general means that the understanding need deal only with the mind and its contents, not the evidence of the senses, thus all corporeal nature is excluded from knowledge.

That said, proving God’s existence is really a side affair in the Fifth Meditation, whose real purpose is to establish the essence of material things. The argument occurs alongside Descartes’ discussion of material things, in which he concludes that their essence is best expressed and understood mathematically, specifically in the discipline of geometry. The beauty of geometric objects lies in their abstract nature: I do not need to have seen a triangle to grasp its essential properties,

> [...] and since these properties are ones which I now clearly recognize whether I want to or not, even if I never thought of them at all when I previously imagined the triangle, it follows that they cannot have been invented by me. (*Meditation V*, AT VII, p. 64; CSM II, p. 45)

Descartes argues that to know the true nature of the material world requires nothing beyond a clear and distinct conception of its essential properties, and that those properties are whatever can be expressed mathematically. This was not novel, it had been Descartes' considered opinion at least since the *Optics* of the late-1620s/early-1630s that the properties of the material world reduced to geometry and motion. Since knowledge of pure mathematics is abstract and does not require physical realisation, likewise our knowledge of the nature of corporeal things does not require that those things exist.[75] Consequently, we need only the understanding, which deals with the abstract and the theoretical, and which apprehends geometric truths, to understand the external world clearly and distinctly: "the nature of my mind is such that I cannot but assent to these things, at least so long as I clearly perceive them" (*Meditation V*, AT VII, p. 65; CSM II p. 45)). In the Sixth Meditation, Descartes states that because his idea of material things is clear and distinct, "at least I now know they are capable of existing, in so far as they are the subject-matter of pure mathematics" (AT VII, p. 71; CSM II, p. 50). So not only are the properties of material things made intelligible by geometry, my clear and distinct understanding of them as such means that they exist.

Descartes' reason for claiming that material things are best understood mathematically rests with the material falsity of sensory ideas. Even before the *cogito* has set up the primacy of the understanding, Descartes recognises the difficulty in trusting the senses, for "from time to time I have found that the senses deceive, and it is prudent never to trust completely those who have deceived us even once." (*Meditation I*, AT VII, p. 18; CSM II, p. 12) The disparity between what the senses tell us and what the understanding tells us is simply too great to ignore; more often than not, the senses give us the wrong impression while what the intellect tells us, based as it is only on those qualities mathematically expressible and therefore reliable, is the true idea. The example given in the text concerns two conflicting ideas of the sun:

> One of them, which is acquired as it were from the senses and which is a prime example of an idea which I reckon to come from an external

[75] Pure mathematics is, I assume, to be contrasted with applied mathematics, i.e. mechanics (cf. Hattab, 2010).

> source, makes the sun appear very small. The other idea is based on astronomical reasoning, that is, it is derived from certain notions which are innate in me [...] and this idea shows the sun to be several times larger than the earth. Obviously both these ideas cannot resemble the sun which exists outside me; and reason persuades me that the idea which seems to have emanated most directly from the sun itself in fact has no resemblance to it at all. (*Meditation III*, AT VII, p. 39; CSM II, p. 27)

Materially false ideas result from the mind's union with the body, and are comprised of ideas of secondary qualities that are themselves a function of the body's interaction with the environment, rendered confused and obscure by the contamination of the body. Descartes' extensive discussions of phantom limb syndrome and dropsy in the Sixth Meditation are intended to show how unreliable a sensory or somatic idea can be:

> It is quite clear from all this that, notwithstanding the immense goodness of God, the nature of man as a combination of mind and body is such that it is bound to mislead him from time to time... This deception of the senses is natural, because a given motion in the brain must always produce the same sensation in the mind [...] (*Meditation VI*, AT VII, p. 88; CSM II, p. 61)

Knowledge of the true nature of physical things—extension, size, shape, position, motion and duration—is grasped by the intellect without the help of the senses. (*Meditation V*, AT VII, p. 64-5; CSM II, p. 45) Suddenly sensation is nowhere to be seen; even in its own arena – corporeal things – it has been suppressed. Whereas at the start of the First Meditation Descartes was happy to allow sensation a role in knowledge of the external world, now he is saying that while sensation does *seem* to deliver information about that world, any idea that is to be trusted comes from the understanding. Clear and distinct knowledge of the material world comes not from sense-experience but the *a priori* innate ideas of the intellect, and so sensation is responsible solely for obscure and confused ideas of the external world. The best that can be said is that from sensory ideas we can infer that material things exist, because a loving God would not allow such a profound deception. Sensory ideas involve the

body in their objective reality, arising as they do from the mind-body union, meaning that the arguments of the Third and Fifth Meditations further alienate the body from the mind by rendering all true ideas of material things – all true ideas full stop, really – nothing more than a product *of* the mind.[76] Sensation is not required *at all* for true knowledge of the nature of the external world, having been usurped by the understanding. But even arguing that we can infer the existence of material things thanks to a benevolent God is a hollow victory, when sensory ideas merely represent of material reality rather than resemble it:

> I do not see how God could be understood to be anything other than a deceiver if the ideas were transmitted from a source other than corporeal things. It follows that corporeal things exist. They may not all exist in a way that exactly corresponds with my sensory grasp of them, for in many cases the grasp of the senses is very obscure and confused. (*Meditation VI*, AT VII, p. 80; CSM II, p. 55)

Ultimately, when Descartes turns to the existence of material things in the Sixth Meditation, he comes to the conclusion that sensory ideas can only ever *imply* that material objects are as the senses tell him, and he must rely on the benevolence of God to make the argument stick. The inference from sensation to the existence of material things is not good enough to qualify as certain knowledge; only those ideas that are "comprised within the subject-matter of pure mathematics" (*Meditation VI*, AT VII, p. 80; CSM II, p. 55) can be trusted. However, those ideas are, as the Fifth Meditation makes plain, reached in spite of sensation, rather than with its help. The implication is clear: any idea that does not originate in the mind, or cannot be directly traced to God once and for all lacks the indubitability that marks out ideas such as the *cogito* as clear and distinct. Clear and distinct ideas do not and cannot come from the body; sensory ideas are all and only obscure and confused, and useless in delivering certain knowledge of the kind Descartes seeks.

Similarly for the imagination, by the Sixth Meditation the pre-eminence of the understanding has been so deeply entrenched as to depose it entirely:

[76] See Chapter Three.

> Besides this, I consider that this power of imagining which is in me, differing as it does from the power of understanding, is not a necessary constituent of my own essence, that is, of the essence of my mind. For if I lacked it, I should undoubtedly remain the same individual as I now am; from which it seems to follow that it depends on something distinct from myself. (*Meditation VI*, AT VII, p. 73; CSM II, p. 51)

This distinct thing that the imagination depends on turns out to be the body:

> So the difference between this mode of thinking [i.e. imagining] and pure understanding may simply be this: when the mind understands, it in some way turns toward itself and inspects one of the ideas which are within it; but when it imagines, it turns towards the body and looks at something in the body which conforms to an idea understood by the mind or perceived by the senses. (*Meditation VI*, AT VII, p. 73; CSM II, p. 51)[77]

With that, the understanding goes from having authority over true knowledge to being *the only faculty we need*. From being the best tool for knowing the mind itself, the understanding has become the only tool we need to know anything at all, because all true knowledge is either innate or of the mind and its contents. Beginning with the *cogito* as the first item of knowledge, the criteria of clarity and distinctness for true knowledge means that for a large part of the *Meditations* the mind remains the best-known things apart from God. Then the discussion of the wax shows that the understanding is the sole faculty required for getting to the true nature of any object. This argument is bolstered in turn by the theoretical investigation of physical objects in the Fifth Meditation. By the Sixth Meditation, the real distinction between mind and body, and the primacy of the understanding in knowledge, leads Descartes to conclude that we need nothing else—except perhaps the will—to gain clear and distinct knowledge. It is the first and most important faculty of thought purely for its role in the apprehension of ideas and, consequently, knowledge of the mind.

[77] I shall discuss the notion of imagination this betrays shortly.

Compare this with the description of the "power through which we know things" in the *Regulae*, according to which the same power is referred to as the intellect, the imagination, memory, will or sensation. (*Rule Twelve*, AT X, p. 415; CSM I, p. 42) These are faculties of the "native intelligence", each with a different cognitive job. (*Rule Twelve*, AT X, p. 416; CSM I, p. 43) Nonetheless, in Descartes' own words, "[w]e are regarding it [native intelligence] as being capable of performing these different operations [...]." (*Rule Twelve*, AT X, p. 416; CSM I, p. 43) Not only is this view of cognition inclusive of all the faculties of the mind, as I showed in Chapter Four, according to the *Regulae* a great deal of cognition involves the body. By the *Meditations*, on the other hand, the body has been all but excised from serious cognitive work, along with the faculties associated with it, sensation and imagination.[78] In the earlier works, the body is more present, allowing those faculties associated with the body to be as much a part of cognition as the intellect. For instance, the *Regulae* tells us that in memory figures and images are literally stored in the brain, and of course the imagination was considered to be a corporeal faculty, allied closely to the *sensus communis* and the pineal gland. At this stage Descartes saw no problem with including the corporeal aspect of each of these faculties in his descriptions of cognition, as long as everything was kept in its proper place:

> So we can conclude with certainty that when the intellect is concerned with matters in which there is nothing corporeal or similar to the corporeal, it cannot receive any help from those faculties; on the contrary, if it is not to be hampered by them, the senses must be kept back and the imagination must, as far as possible, be divested of every distinct impression. (*Rule Twelve*, AT VII, p. 416; CSM I, p. 43))

Unfortunately, in the *Meditations* the body fares much worse: it is responsible for any error that cannot be traced to the will outstripping the understanding, for it furnishes the mind with faulty sense-impressions. Any idea that seems to involve the body, even if we can conclude that it *does* involve it, is as a result inherently unreliable and subject to the deepest suspicion.

[78] Technically this also includes memory, but since memory seems to be a long-term form of imagination it is safe to leave explicit discussion of it aside.

III. A Dualist Standpoint?

It is difficult to separate the method of the *Meditations* from the conclusions therein, for Descartes weaves a very compelling tale. I have had reason to note before that the language of the *Meditations* draws the reader on a journey with the Doubter from wretched scepticism to joyful knowledge, but Descartes did not restrict himself to emotive language in an effort to persuade his reader.[79] Assenting to the *cogito* means going along with the doubt in the first place, and once I have agreed as a fellow doubter that if I am thinking then I exist, and that this is beyond all doubt whatever, then I have the template for clear and distinct knowledge, against which I can test all my other ideas. Once I have a starting point for knowledge I can examine my other ideas and proceed beyond myself to knowledge of other things. But it is too early to start examining sensory ideas; I have already established that they are faulty and find no reason suddenly to begin believing them, so I must start with ideas of things that do not rely on the senses: God and mathematics. In the end, it transpires that these are the only ideas that qualify as clear and distinct, because their reliance on the body means that sensory ideas are still infected with doubt. Fortunately, God would not lead me astray when I am inclined so forcefully to believe my senses; as long as I guard against the possibility of deception of my own accord, I ought to fare well enough to secure stable knowledge. If Descartes' proofs of God fail, however, then even this much is not guaranteed and the body is irretrievably alienated from participating in knowledge.

Descartes' reputation as the arch-Rationalist and the progenitor of the Enlightenment's mania for reason over passion makes this version of the *Meditations* sound familiar to anyone with a basic education in the history of modern philosophy. According to this version, the *Meditations* represents a watershed in Descartes' thought in which he moved from natural philosophy to metaphysics and epistemology, whence his legacy was bequeathed to us in the form of the method and the conclusions it entails. His work in optics, mathematics, physics and biology are of interest only as far as they bear on the argument of the *Meditations*.[80] This is the first reason I find this version difficult to stomach: it plays to Cartesian Dualism, and the anachronistic image of Descartes as the beginning of the Rationalist-versus-

[79] See the discussion of 'Fictions and Hypotheses' in Chapter Four.
[80] See, for instance, the controversy with Harvey over the correct description of the circulatory system in Gorham (1994).

Empiricist debate. In fact, I agree with Desmond Clarke (2005) when he argues that we ought to take in Descartes' whole corpus when looking at the *Meditations* and try to see it in context. If we do this, Clarke argues, we will see that it is not as indicative of Descartes' wider beliefs as taking it at face value would have us believe. Instead the *Meditations*, for Clarke, is Descartes' attempt to fit the mind into his natural philosophy, an attempt he fails because Descartes' mind harks back to scholastic substantial forms. When Descartes' method of explanation and investigation came up against the mind, Clarke's view is that it failed because Descartes' science was simply too primitive to encompass it:

> The reappearance of soul or faculty language in Descartes' project, therefore, marks the place where genuine explanation comes to a provisional halt rather than the limits, in principle, of what can be explained. (Clarke, 2005, p. 9)

While I do not agree that the *Meditations* is nothing more than Descartes' struggle to fit the mind into the worldview he has already set up, it is undeniable that the mind figures heavily in what he says there, and that it ends up looking a lot like a substantial form in an hylomorphic relationship with the body. Unlike Clarke, I do not see the *Meditations* simply as an addendum to Descartes' natural philosophy; rather, it is Descartes' attempt to metaphysically and epistemologically ground his previous work. This is supported by the structure of Descartes' most complete work, *The Principles of Philosophy* (1645), which endeavours to set up the epistemological and metaphysical principles underpinning his natural philosophy in the first two parts, before moving on to astronomy, geophysics and biology in the final two parts. In his lengthy preface to the *Principles* Descartes explains that, in order to understand fully the natural philosophy therein, the reader must first grasp the fundamental structure of the universe, as well as his own epistemic limitations and how best to overcome them—all of which is dealt with systematically in the *Meditations* and is simply rehearsed in the *Principles*. Nonetheless, the inclusion of Descartes' natural philosophy, and his profession that the point of the work is to provide "an explanation of the whole of philosophy in an orderly way" (*Preface to the French Edition* (AT VIII, p. 16; CSM I, p. 187), ought to show us that he wished his natural philosophy to feature in any consideration of his philosophy as a whole.

In that case, regarding the Meditations as representative of his ideas is rather short-sighted; still more short-sighted would be to regard the promotion of the intellect and the establishment of substance dualism, both of which are arguments among others, as representative of the work itself.

The second reason I do not like the analysis offered above is that it leaves little room for the union of mind and body, a point related to the last one when one considers that the union is something Descartes insisted upon beyond the *Meditations* and to which he devoted a great deal of effort. The mind-body union features heavily in the Sixth Meditation too; Descartes goes to some trouble to explain that mind and body are not distantly related but are closely "intermingled" to form a unity, but the 'intellectual' analysis offered above does not leave room for the union. In the version given above, the body is separated from knowledge to such a degree that the notion of a mind-body union is totally implausible. The method of doubt and the rehabilitation of knowledge described in the *Meditations* leads the Doubter from blithely believing all he sees and hears to put his faith in whatever he clearly and distinctly understands. To achieve this, all clear and distinct knowledge, it transpires, comes from the contents of the mind, either as the immediate self-evidence of the *cogito*, the logical *a priori* demonstration of God from an innate idea, or in the innate understanding of mathematical truths; while 'adventitious' ideas, involuntary ideas not of the mind's own contents but of the external world, are to be believed only if they scan with the mind's predetermined knowledge of measurable geometry and motion. Adventitious ideas come from sensation, and are either of the body or of objects external to it; the latter are mediated by sense-apparatus and therefore include the body in their objective reality. The upshot of all this is that, by the end of the *Meditations,* the body has been completely alienated from clear and distinct knowledge; the best it can do is deliver probable information about the external world, and even about itself since there are no guarantees that the pain I feel to be in my left arm really comes from damage to my left arm, as opposed to damage to something between my left arm and my pineal gland. In the final analysis, the body is found severely wanting. Meanwhile, the dubiousness of the body, both epistemic and existential, leads Descartes to conclude that there is a substantial distinction between it and the mind. The distance that all this creates between mind and body makes the notion of their union very unlikely, and from which arises Cartesian Dualism and the problem of interaction.

On the other hand, regarding the *Meditations* as Descartes' attempt to ground his natural philosophy means that the body resumes strong epistemic significance, even if the reader needs to know more of Descartes than just the *Meditations* to appreciate it, because in order to successfully conduct scientific investigation we need full and trusting use of our sensory apparatus. As I have argued above, Descartes needed to establish the conditions for certain knowledge "in the sciences"(*Meditation I*, AT VII, p. 17; CSM II, p. 12) which meant setting out the truth conditions for sensory ideas; abstract mathematics and metaphysics would only get science so far before sense-experience would need to take over. That, I think, is part of the job of the *Meditations*; without that grounding, Descartes does not have a complete worldview. The persuasive techniques employed as he relates his 'story' suggest that he wanted very much for his audience to accept his principles, on the basis of which his natural philosophy rested.[81]

IV. The Fate of the Imagination

Nonetheless, the above version of the *Meditations* would ring true (with room for variation) for the commentators I covered in an earlier section who claim that, in his later years, Descartes came to view the imagination as cognitively negligible. (Wilson, 1978; Galison, 1984; Fóti, 1986; Sepper, 1996) This is because there is no other reason for this to be the case than the real distinction between mind and body, and the vaunting of the intellect, both of which are so persuasively claimed for in the analysis above, and for which the method of the *Meditations* seems to be responsible. When Sepper argues that "[k]nowing belongs to the intellect alone" he says it is "one of the lessons of the piece of wax example at the end of the Second Meditation" (1996, p. 247):

> Only the intellect is powerful enough to conceive the unity of substance through all the appearances and possibilities, and it is intellect itself that perceives the existence of more possibilities than I have ever sensed or imagined. (1996, pp. 247-8)

[81] For instance, the identification of matter with extension led Descartes to regard the notion of a vacuum as unintelligible. (*Letter to Mersenne, 9 January 1639*, AT II, p. 482; CSMK, p. 132)

Imagination's limits mean that it simply cannot cope with the problems tackled in the *Meditations*, and its remit is circumscribed accordingly; whereas before the imagination could quite happily cope with all our sense-impressions and translate them for the mind, and think up hypotheses about everything from the nervous system to the beginnings of the universe, in the *Meditations* it cannot even help us to grasp the properties of geometric objects. Sepper argues that this runs very deep indeed, right down to the definition of an idea. Whereas before the *Meditations,* 'idea' meant "the image or look of a corporeal thing" (1996, p. 245), by the *Second Replies,*

> [...] the idea proper is 'only that which we perceive by intellect either in apprehending, or in judging, or in discursive reasoning'. (Sepper 1996, p. 245; CSM II, p. 99)

He puts this down to the *Meditations*' goal of finding out what we can know for sure, including of the external world, and Descartes' conclusion that the imagination is simply far too limited to allow us to know anything really for certain, starting with the fact that the imagination simply cannot encompass infinity—thus, it is incapable of comprehending God. That task falls to pure intellect (pure understanding). Clear and distinct knowledge cannot rest with anything as limited as the imagination, a lesson we learn in considering the difference between a myriagon and a chiliagon and realising that we know it not through the imagination, but the intellect. (*Meditation VI*, AT VII, p. 72; CSM II, pp. 50-51)

Margaret Wilson, another proponent of the 'cognitive relegation' view, argues that the separation of mind and body, and the metaphysical classification of the imagination as a mode of thought, distances the imagination so far from the body that it no longer needs to be corporeally realised. (Wilson, 1978) Interestingly, Wilson takes a slightly different view from Sepper; she argues that the imagination's cognitive decline is owed to its incorporeality and therefore its subsequent inability to realise geometric shapes to solve mathematical problems. Sepper argues that the imagination is a victim of its own limitations, and that Descartes changed the definition of an idea to allow for this, which took the notion of 'idea' away from the imagination and corporeal things. Thus, all clear and distinct knowledge of mathematics no longer requires the imagination because the objects of mathematical

knowledge are wholly immaterial in nature. Since, for Wilson's Descartes', mathematical knowledge depends on literal figuration in the body (the brain), an incorporeal imagination amounts to an impotent one for it no longer has the link to matter that it used to have. On the other hand, Véronique Fóti argues that by the *Meditations* the imagination was so inextricably corporeal that the very definition of it as a mental mode in the *Meditations* and beyond was what rendered it powerless. (1986, p. 631) However, unlike Wilson and Sepper, Fóti's idea of the imagination's powerlessness rests not with its inability to render mathematical shapes, but with how Descartes banishes it from the "interior of thought" (1986, p. 641), making the intellect the mind's most important tool and thus ignoring the potential of the imagination.

Despite their differing reasons, all of the commentators above hold that the imagination in the later works suffers at the hands of the intellect, as does Galison (1984), whom I covered in the previous chapter. There I showed that, prior to the *Meditations*, Descartes had a solid notion of the imagination as a corporeal site in the brain, to which the impressions of sensation are sent, after being gathered in the *sensus communis*, and translated for the apprehension of the mind. The role of the imagination in that process was to physically render sense-impressions as geometric figures, which the mind would then render as sensory ideas corresponding to (but not resembling) the object under investigation. Regardless of the factual incorrectness of the theory, Descartes at least had an account of sense-perception that included mind and body. Of course, this account is a piece of natural philosophy, not metaphysics; Descartes' concern is to describe meaningfully the process of object-perception that avoids the kind of spurious explanation his predecessors favoured, and this meant explaining the bodily and cognitive processes involved. Nonetheless, there is a shift in Descartes' view of the imagination with the advent of the *Meditations*, where his description of the 'knowing faculty' is restricted to the intellect alone.

However, I take issue with the claim that the imagination suffered so badly at the hand of the intellect. There are two reasons for this. Firstly, while it is undeniable that sensation suffers in the *Meditations*, it is not clear that the imagination need be treated in the same way for the same reasons. Imagination and sensation are not the same faculty, and where they come apart has significant implications for their relative fates. Secondly, to argue that the imagination fares so ill in the later works plays to the Cartesian Dualist view that the intellect held sway in all matters of

knowledge, which once again sends forth the twin problems of interaction and 'Cartesian' scepticism, neither of which is representative of Descartes' views but both of which ignore the union of mind and body. It is possible, in my view, to attempt a rehabilitation of the imagination in the later works that reinstates it as an important cognitive faculty; indeed, it is my view that the imagination has a crucial role in solving the problem of the material falsity of ideas, and in making sense of the mind-body union. As a mode of thought enabled by the body, then, imagination stands with sensation as evidence of the mind-body union. How else to explain two faculties of thought that seem to have corporeal things as their objects? When the mind applies itself to anything except itself it uses imagination; it is defined as the mind's turning outward and considering something external to it. In order to consider anything *at all* external to it, the mind must first go through the body, for ideas of external objects themselves involve the body in their objective reality, but sensation is passive, it cannot in itself turn outward—it only brings ideas *to* the mind. The mind requires a mode of thought under its control, capable of actively considering and manipulating ideas of corporeal things: step forward imagination.

Chapter Seven

Object-perception

I. The Problem

Part of the rehabilitation of the imagination that I want to attempt in this thesis involves the very tortured topic of sensory representation in Descartes' *Meditations*, which in itself raises the issue of mind-body causation. Both the Third and Sixth Meditations cover sensory representation; I shall refer to both in my exposition and subsequent discussion of the debate. This chapter is an engagement with De Rosa's (2010) view of object-perception and the overview her book gives of the general debate. Ultimately, this is a problem for the *Meditations*; Descartes' notion of causation in *Meditation III* combines with his discussion of sensation there and in *Meditation VI* to cause commentators to ask: how does he understand sensory representation, and what are the mechanisms—mental and physical—involved?

Descartes never frames the question of 'sensory representation' himself. It arises from his treatment of sensory ideas, that is, the perception of external objects; these are adventitious ideas, examples of which include "my hearing a noise, as I do now, or seeing the sun, or feeling the fire", each of which "comes from things which are located outside me, or so I have hitherto judged" (AT VII, p. 38; CSM II, p. 26). Under scrutiny, these ideas seem less and less reliable, first of all in origin because "there may be some other faculty not yet fully known to me, which produces these ideas without any assistance from external things" (AT VII, p. 39; CSM II, p. 27); in other words, I could be dreaming. Secondly, and more damningly, it is not guaranteed that a sensory idea even resembles the object:

> For example, there are two different ideas of the sun which I find within me. One of them, which is acquired as it were from the senses and which is a prime example of an idea which I reckon to come from an external source, makes the sun appear very small. The other idea is based on astronomical reasoning, that is, it is derived from certain notion which are innate in me [...] Obviously both these ideas cannot resemble the sun which exists outside me [...] (AT VII, p. 39; CSM II, p. 27)

The single idea of the sun that I have includes all those physical properties I clearly and distinctly understand, namely shape, size, motion and the metaphysical categories of substance, duration and number:

> But as for all the rest, including light and colours, sounds, smells, tastes, heat and cold and the other tactile qualities, I think of these only in a very confused and obscure way, to the extent that I do not even know whether they are true or false, that is, whether the ideas I have of them are ideas of real things or of non-things. (AT VII, p. 43; CSM II, p. 30)

This is the notorious doctrine of material falsity, discussed in Chapter Three. More is made of it in the Sixth Meditation but, put simply, sensory ideas are materially false—that is, under normal circumstances they consistently deceive me about the object under scrutiny. When, by the end of the *Meditations*, Descartes concludes that the doubts of the First Meditation are "laughable", and that knowledge is perfectly attainable, he yet maintains that sensory ideas are materially false and not to be trusted. (AT VII, p. 89; CSM II, p. 61) De Rosa puts the point that this is a strange doctrine for, as she would have it, Descartes' understanding of sense-perception precludes the possibility of materially false ideas:

> Descartes holds what I will call a 'descriptivist account of ideas' (DA), according to which, the object of an idea is determined by an identifying description expressed by the mode of presentation of the idea. For an idea to be an idea of *x*, then, it cannot represent *x* as other than *x* is, on pain of not being an idea of *x*. (De Rosa, 2010, p. 2)

De Rosa sets out to solve the "puzzle" of sensory misrepresentation by first setting out the state of the literature on Cartesian sensations before explaining why none is wholly fit for purpose. Her own version of sensory representation, she argues, is the best because it enables an explanation of material falsity.

I am less concerned about the so-called "puzzle" of sensory *mis*representation as I am the notion of object-perception in Descartes. The material falsity doctrine is relevant to the question of object-perception because it holds that my perception of an object is not all it seems to be. But my real interest lies in the interplay between

two aspects of the perception of a physical object: the clear and distinct, and the obscure and confused. De Rosa's treatment of sensory representation brings out these two aspects very well, but I do not follow her analysis because I find it to run counter to the text. The reason for my interesting object-perception is twofold: first of all, object-perception is the primary example of mind-body interaction. When the senses encounter an object the information is relayed to the mind, and there manifested as (materially false) ideas. The second reason for my interest is that Descartes' account of object-perception is causal, insofar as it makes use of the causal principles of formal and objective realities discussed in Chapter One. This makes Descartes' insistence on the mind-body union as a story for mind-body interaction very interesting, because it seems that there is a causal story embedded in it; but it is not obvious how this might work. In this chapter I will explore the causal account of sensory representation in the Third and Sixth Meditations. I shall outline the issue of sensory representation before tackling De Rosa's analysis. I shall then offer my own analysis of object-perception, in which the imagination plays a central role in unifying mind and body.

II. Sensory Representation

Margaret Wilson (1978) draws attention to the representative character of sensation in Descartes' assertion that ideas are "as it were the images of things" (*tanquam rerum imagines*). (AT VII, p. 37; CSM II, p. 25) We do not directly perceive an object, instead we have an idea that *represents* that object to us. So 'object-perception' cumbersomely becomes 'sensory representation' and, in the ensuing discussion, Wilson throws up a perceived inconsistency in Descartes' definition. Having always contended that sensation is inherently unreliable, Descartes codifies this idea in the Third Meditation as 'material falsity', stating that any idea of a material thing mediated by a sense modality represents the object as having a quality that it might not really have. Indeed, there is no reason, Descartes eventually concludes, to believe that there is anything in the material realm resembling the felt sensations of light, heat, sound, taste or smell. Wilson's problem lies in Descartes' contention that materially false ideas of heat or cold are sufficiently obscure and confused to make it impossible to tell whether they exist in the object or not:

> And since there can be no ideas which are not as it were of things, if it is true that cold is nothing but the absence of heat, the idea which represents it to me as something real and positive deserves to be called false. (AT VII, p. 44; CSM II, p. 30)

In the Third Meditation's causal proof of the existence of God, Descartes turns to the notions of objective and formal reality. This is discussed in Chapter One, but to rehearse it briefly: 'Formal reality' refers to the inherent reality of an entity and determines where it is on the ontological scale. Substances have more formal reality than modes, and ideas and physical objects have their own formal reality. 'Objective reality' refers to ideas alone, and the objective reality of an idea is a function of the formal reality of the object of that idea; the greater the object's formal reality, the greater the objective reality of the corresponding idea. The objective reality of a sensory idea, then, plays a fundamental role in what the idea is *of*, insofar as all ideas are "as it were of things", and what an idea is of—the thing to which it refers—is determined, at least in part, by the idea's objective reality. Furthermore, this is a causal view of object-perception: for the objective reality of a sensory idea to be a function of the formal reality of the object of that idea, there must be a causal link between the two. Given that sensory ideas are causally linked yet materially false, the process cannot reasonably be called 'object-perception' on pain of assuming it to be a direct apprehension of the object.

Wilson finds the fact that materially false ideas, if they represent non-things as things, end up having no cause, to be an 'embarrassment':

> But notice that the view that sensations, from the objective point of view, are 'caused by nothing' has an interesting and surprising implication: sensations must *lack objective reality, despite having representative character*! That they have representative character has been an assumption of the whole discussion. That they lack objective reality follows directly from the premise that they are 'caused by nothing' together with the principle [...] that there can be no more objective reality in an idea than there is formal reality in its cause. (1978, p. 111)

Note that Wilson is not assuming any kind of similarity between cause and effect in her analysis, and so the charge that she has misunderstood Descartes cannot be laid at her door. Nonetheless I do not see that this need be the problem that Wilson takes it to be; objective reality and representative character need not come apart in this way. Sensory ideas do not cease to have objective reality while retaining representative character; the causal link between the object and the idea need not be broken, it is simply that the representative character of the idea must come from something other than the materially false element of that idea. When sensory ideas represent an object as having properties that it does not have, this simply means that an aspect of the idea is not trustworthy.

Still, I am anticipating the argument of the Sixth Meditation here. From what is written in the Third Meditation, the conclusion stands that if sensory ideas are materially false, they apparently have no objective reality. The objective reality of a sensory idea is causal: it is a function of the formal reality of the object under investigation, and we shall see later that I consider this causal link still to lie in the felt sensation, what De Rosa calls the "phenomenal content" (2010, p. 154) of the idea. The representative character of the idea, at bottom, *is* the idea's objective reality. But the discussion of sensory ideas is suspended in *Meditation III* in favour of the proof for God, and does not reappear until the Sixth. I am inclined to agree with Hoffman's (1996, pp. 357-81) analysis of the question of objective reality of sensory ideas:

> While it is true that in introducing the concept of material falsity Descartes makes use of our sensory ideas to illustrate the possibility that ideas that appear to have objective reality have no objective reality (because they have no cause), he does not think that as a matter of fact sensory ideas lack objective reality. His argument in the *Sixth Meditation* for the existence of bodies makes it clear that he thinks that our sensory ideas, however confused and obscure, are caused by bodies or modes of bodies. (1996, p. 361)

The argument to which Hoffman refers follows from the Fifth Meditation's declaration that the essence of material things consist in extension, and that all those qualities measurable mathematically (size, shape, motion) that I can clearly and

distinctly understand, really would inhere in corporeal substance, if it existed. Descartes' argument for proving the existence of corporeal things in the Sixth Meditation is subtle, and hinges on the fact that corporeal qualities cannot exist in incorporeal things, "for the clear and distinct conception of them includes extension, but does not include any intellectual act whatsoever" (AT VII, p. 79; CSM II, p. 55). This being the case, it is equally impossible that I could have thought up the ideas of these qualities, because as a thinking thing I do not have the wherewithal to bring them about: the involuntary nature of my ideas of corporeal things means that, if I did cause them, I would have been aware of it.

> So the only alternative is that it is in another substance distinct from me—a substance which contains either formally or eminently all the reality which exists objectively in the ideas produced by this [active] faculty [capable of bringing about ideas of corporeal things]. This substance is either a body, that is, a corporeal nature, in which case it will contain formally everything which is to be found objectively in the ideas; or else it is God... in which case it will contain eminently what is to be found in the ideas. (AT VII, p. 79; CSM II, p. 55)

Not being a deceiver, God cannot have caused my ideas of corporeal things; and so , they must have come from corporeal things. Therefore, corporeal things exist. And here is the crux of the debate:

> They may not all exist in a way that exactly corresponds with my sensory grasp of them, for in many cases the grasp of the senses is very obscure and confused. But at least they possess all the properties which I clearly and distinctly understand, that is, all those which, viewed in general terms, are comprised within the subject-matter of pure mathematics. (AT VII, p. 80; CSM II, p. 55)

Anyone claiming that there is a relation of *similarity* between cause and effect in Descartes' account of causation would regard this as perfectly fair. Tad Schmaltz holds the view that objective reality amounts to the object containing "the same properties as those contained objectively in the idea". (Schmaltz 1992, p. 40, quoted

in De Rosa 2010, p. 82) Since ideas of sense are caused by the object, even if they do not resemble it, according to Schmaltz what is represented by the idea are the properties of the object that we clearly and distinctly understand. To support his claim, he indicates the section of *Meditation VI* in which Descartes states that sensory ideas correspond to, but do not resemble, the bodies that are their source. (AT VII, p. 82; CSM II, p. 56) This being the case, sensory ideas must be caused by bodies; ideas of corporeal things have objective reality "insofar as they direct the mind towards objects in space" (De Rosa, 2010, p. 84). The Causal Similarity Principle that Schmaltz favours means that ideas of bodies are represented *as bodies* – that is, as extended in length, breadth and depth—while the objective reality of those ideas, even though they do not resemble their objects, comes from the fact that the 'primary qualities' of the objects bring about the materially false sense-perceptions. Interpreting the causal relation as one of similarity means that, in principle, there is no reason to doubt that the body possess the properties I clearly and distinctly understand it to have.

However, I have already demonstrated that Descartes' notion of causation is not premised on similarity but ontological adequacy, and so interpreting sensory perception on Schmaltz's lines relies on a misconception. The clear message in this passage, as Hoffman demonstrates (1996, p. 376f), is that even though objective reality is a function of the formal reality of the object, there apparently needs to be no resemblance between the two, and so it seems that whatever causes my idea of an object need not resemble the idea at all. It requires only that there be enough formal reality in the object to bring about the corresponding idea. Yet Descartes moves from the object containing formally everything that is to be found eminently in the idea, to having a "great propensity" to believe that ideas of corporeal things come from corporeal things. (AT VII, p. 80; CSM II, p. 55) The source of that propensity? The fact that I *clearly and distinctly* understand that corporeal things have the properties that are the "subject-matter of pure mathematics." (AT VII, p. 80; CSM II, p. 55) In other words, in order to cognitively grasp corporeal things, I must know the properties that they formally, inherently possess.

The outstanding problem with this is that those properties that I understand to be inherently in the object are not caused by the object, they are innate in me. This is the inescapable lesson of the Fifth Meditation and is, in fact, the reason that Descartes can demonstrate the essence of material things before their existence. All

discussion of material things' geometric essence in the Fifth Meditation is explicitly conducted on the understanding that corporeal things might not exist. For instance, the triangle:

> When, for example, I imagine a triangle, even if perhaps no such figure exists, or has ever existed, anywhere outside my thought, there is still a determinate nature, or essence, or form of the triangle which is immutable and eternal, and not invented by me or dependent on my mind. (AT VII, p. 64; CSM II, pp. 44-5)

My clear and distinct understanding of, and ability to demonstrate, the properties of any geometric object shows that "there can be no suspicion of my ever having encountered [them] through the senses" (AT VII, pp. 64-5; CSM II, p. 45). The final sentence of the French version of the Fifth Meditation makes this abundantly clear.

> And now it is possible for me to achieve full and certain knowledge [...] concerning things which belong to corporeal nature in so far as it can serve as the object of geometrical demonstrations which have no concern whether that object exists. (AT VII, p. 71; CSM II, p. 49)

Given that Descartes' notion of sensory representation is causal, that all sensory ideas are inherently intentional, and their intentional object is presented to the mind as an obscure and confused sensation, what makes that sensation obscure and confused is the fact that it *presents* the object as resembling the felt sensation for the relevant sense modality. The presentational content of the idea is separate from its representative character: the former is how the idea manifests in the mind, the latter is determined by the mind's relation to the object, the causal connection. What the idea is *of* is different from how it *seems,* most of the time. The question then is, how can Descartes claim that objects cause their representative ideas when there seems to be nothing *in* the idea that resembles the object? What in the idea, if there is no relation of resemblance, fixes it as being *of* that particular object?

III. De Rosa's Account

De Rosa's version of sensory representation is designed to solve the "puzzle" of *mis*representation: how the senses habitually and consistently give us faulty information about the external world. She argues that hers is not a general epistemological question; the aim is not to explain how this happens full stop. Rather, the problem is internal to Descartes' philosophy. By his own definition, she says, it is impossible for a sensory idea to misrepresent anything, because on his account the object of an idea is determined by how it is presented to the mind. Her strategy is to review the secondary literature, testing each theory's capability to deal with the puzzle of misrepresentation, before proposing her own account of Cartesian sensory representation and showing how it deals with the problem best of all. As I have said, I am not concerned with misrepresentation, but I am very concerned with De Rosa's account of sensory representation, for I believe it to be flawed. In what follows I shall set out her account of sensory representation, before explaining where I believe it (and all such accounts) falls short.

De Rosa's 'descriptivist-causal' account amounts to a "qualified" internalism (2010, p. 117), in which the sensory idea is partially determined by the mind itself ('descriptivist'), and partially by the mind's relation to the world ('causal'). When I perceive an object, De Rosa argues, I clearly and distinctly understand it to be an instance of extended matter and, *at the same time*, erroneously believe it to be coloured, have a specific taste, smell, texture and characteristic sound. This is due to the confusion, in a single perception, of two kinds of content: latent, innate geometry and phenomenal content. These two kinds of content mingle to confuse the overall perception, making the nature of its object obscure.

Drawing on the 'primitive notions' of Descartes' correspondence with Elizabeth, De Rosa argues that the second of the three, the notion of extension, is both innate and always brought to bear on any perception of a physical thing. For instance, when I consider the piece of wax, I understand that it is a physical thing capable of an impressive number of configurations, but always under the notion of extension:

> I take Descartes to be saying here that the distinct (and intellectual) perception of the wax *as a body having certain categorial features* is

> latently contained (and actively employed) in the confused sensory perception of the piece of wax. (De Rosa, 2010, p. 128)

Now, since our sensory ideas include ideas of secondary qualities, De Rosa argues that they are like the perception of the wax, insofar as we have an understanding of them as representing corporeal bodies. But, De Rosa asks, "in virtue of what do [perceptions of secondary qualities] represent them given that the phenomenal red (say) does not resemble any corporeal property?" (2010, p. 128). Her answer is that internal to any sense-perception is an understanding of it as extended. My innate notion of geometry, and my ability to employ it prior to, and independently of, any existing object as the essence of corporeal things shows that in order to perceive anything as corporeal, I must first understand it as extended, and therefore capable of being described geometrically:

> As our perception of the wax *as* something extended behind the mutable sensory appearances is to be explained in virtue of the hidden intellectual perception of the wax, so our experience of red *as* a property of body is also to be explained in virtue of some latent intellectual content. (2010, p. 129)

The intentional object of all sensory ideas is predetermined, as the essential features of corporeal things. According to De Rosa's account this is inescapable. All thoughts exhibit intentionality, and all thoughts are a mode of the intellect, more broadly construed than simply the faculty of understanding:

> [...] since 'understanding' is only one of the listed operations of the intellect [...] It follows that the intellect, broadly construed as a faculty of representation, is responsible for the intentionality exhibited by all mental states. *But... it is the innate ideas or simple notions contained in the intellect that determine the intentional content of our thoughts.* (2010, p. 130; emphasis in the original)

Innate, primitive notions are brought to bear on all our thoughts. Furthermore, all our ideas of material things are inherently representational, and so De Rosa claims that

this representationality is furnished by the innate idea of extension: whenever we conceive, or perceive, a material thing, we do so as an instance of extended matter.

Such is the internalist element of De Rosa's account; now for the causal aspect. We have seen that the mind's innate notion of extension accounts for the sense-perception's representation of a material thing. However, this does not explain the role causation plays in sensory representation, as it clearly does for Descartes. De Rosa's answer is:

> [...] the causal connection with bodies accounts for the *phenomenal aspect* of sensory ideas [...] The 'substantial union' of mind and body and the causal connection between our mind and external bodies is what makes us have sensations of heat, colour and so on. The mind *alone* cannot explain why we have the sensation of red as opposed to the sensation of green. Different bodies or different types of configurations of matter are the causes of different types of sensations or phenomenal appearance. (2010, pp. 141-2)

On the one hand, we have the innate, clear and distinct conception of the object as a mode of extension; on the other, a perception of the object as resembling the felt sensations that arise from the mind's union with the body. In a single sensation, then, De Rosa's account of sensory representation consists of a "fusion" (2010, p. 153) of the mind's implicit understanding of the essential features of the object, with the phenomenal content coming from the sensory apparatus' causal connection with the object itself. Both aspects are present in sensory representation: the innate notion of extension presents the mind with the "identifying description of the object of thought", while the causal connection provides its "associated qualitative aspect" (p. 154).

On De Rosa's account, what fixes the idea is the latent geometry provided by the mind; the mind itself determines the idea to be of a particular corporeal object. The phenomenal content provided by the mind-body union and its causal connection with the object is what makes the idea materially false. It muddies the idea to the extent that it becomes obscure and confused, presenting the object as having properties that it really does not have. The true description of the object as a corporeal body is furnished by the primitive notion of extension and our

predetermined clear and distinct understanding of geometry. (p. 129) In the interests of a complete treatment of De Rosa's work, sensory *mis*representation occurs because the obscure and confused content of the mind-body union is fused with the clear and distinct conception of the idea as of a corporeal thing. Or, in De Rosa's words: 'A sensory idea mis-presents its object because it contains a confused description of the right object of thought' (2010, p. 154). The referent of the idea remains stable, preserving the objective reality of the idea, but the presentation of the object is rendered materially false by the body's interference with the causal process. In this way, De Rosa claims to have solved the 'puzzle' of sensory misrepresentation, while providing a thorough account of sensory representation.

IV. Whither the Cause?

To recap: the fact that Descartes calls sensory ideas 'materially false' means that they cannot be trusted to give us reliable information about any object under scrutiny. We know this because, as with the example of the sun, the faculty of understanding corrects our sense-perceptions. We trust the understanding over sensation because the former does not require the body for its information and is not mediated by the mind's union with the body. The understanding is concerned with innate ideas and logical propositions, nothing else, and as long as the ambition of the will does not outstrip the understanding there is no reason to doubt its conclusions. In sense-perception, the object in front of us is presented to the mind as 'other' than it really is, yet we understand it to be a corporeal thing comprising the physical properties of extension, size, shape and motion. If we give the matter real thought, we realise that the object does not have the properties our senses tell us, and so we come to know the 'real' object using only our minds.

In De Rosa's version, the essential properties of matter—what would come to be known as its primary qualities—are responsible for fixing the object of thought. Our innate ideas of geometry tell us that the adventitious sensory idea we are experiencing is of a corporeal object with certain qualities, and that is all there really is to it; the causal aspect provides the materially false element of the perception, and is therefore responsible for making it obscure and confused in the first place. I find this explanation of Descartes' sensory perception deeply unsatisfying. De Rosa's account might be able to deal with the problem of sensory misrepresentation but at

some cost, for her analysis seems to push the causal aspect of sensation to the periphery. In this section, I will explain further my issue with De Rosa's analysis, which will illustrate a difficulty in the more general view of Cartesian sensations, to wit: the relationship between the innate ideas of geometry and the adventitious ideas of sensation in a single perception. Then, in the final section, I will present my hypothesis about the role the imagination could play here.

In her analysis, De Rosa promotes the innate ideas of primary qualities heavily, at the expense of the adventitious element of sensory perception. The idea presented to the mind is experienced as a mode of corporeal substance because the mind has already made it so, to the extent that "the mind itself determines the intentional content of our thoughts." (2010, p. 130) Whither the causal element of sensation? In this version, the adventitiousness of our ideas of sense, delivered via the senses, is called briefly to account for their inherent obscurity and confusion, but otherwise is pushed to one side. The 'sensory' part of sensory representation seems to have been rendered moot, which is difficult to accept given that Descartes calls on the causal part of sensation to prove the existence of external objects in the Sixth Meditation. (AT VII, p. 79; CSM II, p. 55) The representative nature of sensations and their adventitious (that is to say, involuntary) nature requires them to be causal in nature because there is no other way to explain why I have these ideas at all.

While the innate ideas of the mind do allow us to clearly and distinctly understand which properties inhere in the object and which are the result of interference from the relevant sensory apparatus, that does not mean that the content of the sensation is determined by the mind's innate ideas. As much is demonstrated by the Fifth Meditation's investigation into the essence of material things before their existence is shown in the Sixth. There, Descartes is concerned to show what, if anything, his ideas of material things consists in. But, in order to show *why* he has ideas of material things in the first place, he must turn to a causal argument. Furthermore, that causal argument draws on both aspects of sensory ideas, primary and secondary, which means that Descartes considered both to be important in sensory representation, even if one turns out not to accurately represent the object. Finally, the objective reality of a sensory idea, determined as it is by the formal reality of the object, must mean that the content of the idea is determined by its causal relationship with the corporeal object; otherwise, the argument for the existence of material things of the Sixth Meditation does not hold water. In this case,

the intentional object of the idea cannot have been determined by the mind's contents alone and causation must have played a part.

At this point, De Rosa would be right to ask, 'but if the objective reality of the idea is determined by the formal reality of the object, and our clear and distinct understanding of the formal properties of that object are furnished by the mind, then surely the idea is determined by the mind and not its relation to the object?' To which my response would be to point out that, actually, the idea is always adventitious and so our understanding of the object likewise depends on our causal relation to it. While the mind indubitably provides the understanding of extension, independently of our experience of any corporeal objects, that understanding is superfluous without sensory ideas to make sense of. Which brings me to the second problem with De Rosa's account: if the intentional object of the idea of sensation is determined by the mind's latent conceptualization of it as a mode of extension, and if the phenomenal aspect of the idea is merely responsible for rendering that idea obscure and confused, then it seems a mystery to me how we know that the idea is of one object over another. All that the mind can do is determine that the idea is of a corporeal object because it seems to have all those properties that correspond to an *a priori* understanding of geometry. However, the reason for the distinction between the Fifth and Sixth Meditations surely is that there is a difference between demonstrating the essence of material objects, and demonstrating their existence, and that difference is based again in the causal element of sensation. To establish that there exist material objects, independent of us, we require more than an abstract understanding of their essence; we need concrete examples of their existence, known through the mind-body union's causal relationship with them. If, on De Rosa's account, the phenomenal content alone is determined by the mind's causal relation with the object, but that content has no bearing on what the idea is *of*, then it seems pertinent to ask, 'what makes the idea represent a particular object, if not its causal relation to it?'

When I perceive a red ball, on De Rosa's account, the idea I have of it is not determined by the ball, it is determined by my innate understanding of extension, shape, motion and the like. Likewise, when Macbeth sees the dagger the idea is not determined by the dagger but the mind's innate understanding. Both ideas—of the ball and of the dagger —are occasioned by the appearance of an object, but all that this appearance entails is that I perceive a red, rubbery object, while Macbeth

perceives a silver, metallic object, none of which actually inheres in the objects themselves but are a result of the senses' interference in proceedings. However, the crucial difference between my perception of the red ball and Macbeth's perception of the dagger is that the latter is

> A dagger of the mind, a false creation,
> Proceeding from the heat-oppressèd brain
> (*Macbeth*, II. 1.)

Macbeth's dagger is a fiction, whereas my red ball is not. But the only way we each can tell is if we ask how the idea was caused. Mine was caused by a material object, Macbeth's is an hallucination; one has objective reality, the other does not, and so the causal element to sense-perception is of the utmost importance in determining whether the object before us is *real*. But if both ideas are determined by the mind's innate notion of extension, then there is no such difference between the two; both are conceptualized in the same manner, as modes of extension and, as such, both are corporeal objects. Causation has no say in the basic truth of the belief 'I am perceiving a red ball' as opposed to 'I am having a vivid hallucination.'[82]

All of this contravenes Descartes' causal argument for the existence of material things in the Sixth Meditation, in which he relies wholesale on the fact that ideas of physical objects adventitiously crop up and seem to have been caused by their object; all-the-while admitting that, "[t]hey may not all exist in a way that exactly corresponds with my grasp of them." (AT VII, p. 80; CSM II, p. 55) Still, causation plays a much more fundamental role in Descartes' account than De Rosa allows. On her version, the abstract notions of extension, shape and the like are wholly responsible for determining particular objects, but I fail to see how this could be the case. The difference between a red ball and a dagger—fictitious or real—lies in their respective appearances: one round, red, rubbery; the other silver, slim and sharp. These secondary qualities are what determine the focus of the idea—its intentional object—even if they present the object as other than it is. Innate ideas of geometry are brought to bear on the adventitious ideas of sensation to allow us to

[82] Descartes does mention that daydreams are a species of imagining that get away from the will, in which the animal spirits wander through certain pores in the brain causing us to experience illusions. (*Passions 1:21*, AT VII, p. 344-5; CSM I, p. 336) These are not, he says, actions of the soul for they are caused by the body.

gain a clear and distinct understanding of corporeal objects but, as they stand, those innate ideas are abstract, nebulous ideas of shape and quantity that have no concrete existence. They alone cannot tell us about what is in front of us because they are *not caused by the object*, they are *elicited* by it. Because the idea of the object is caused by the object, our innate ideas can only inform us about how to understand the essential properties of the object, they cannot determine the content of the idea nor its intentional content. That is determined by the mind-body union's causal interaction with the object—in other words, its phenomenal content.

In Descartes' account of sensory representation, there are two ingredients: the innate ideas of geometry and the phenomenal, unreliable ideas of the senses. I agree with De Rosa that the two come together in one act of perception and that we must disregard the latter if we wish to gain true knowledge of the object of thought, but I depart from De Rosa in arguing that the causal link between the mind-body union and the object determines the intentional object of thought, as well as accounting for the idea's phenomenology. Cartesian sensations are inherently causal and, as such, include phenomenal content determined by the relevant sense-modality. In this way, they include the body in their objective reality, for all such ideas are sense-dependent: a single object will have a characteristic smell and colour, for instance. The intentional object of the idea, then, is not only the external object but also the body, the go-between for mind and external object. Therefore, the phenomenal content achieves more than merely muddying the otherwise clear and distinct idea; it delivers the mind-body union. Hence the continuing discussion in *Meditation VI* of the union and its resulting sensations. Contrary to De Rosa's claims, sensory ideas are brought about by the union's interaction with its environment, and the resulting phenomenal content, though materially false, is responsible for individuating the intentional object of the idea. In so doing, it also reveals the mind's union with the body. Innate ideas of geometry help us to clearly and distinctly understand the object under scrutiny (and, incidentally, the body), but the fact that they originate in the mind means that they cannot contribute to determining the specific object under scrutiny.

V. Marrying the Innate and the Adventitious

De Rosa's analysis illustrates a general trend in the literature on Cartesian sensations, namely, the division of sensation between innate and adventitious ideas. In all but one piece that I have found on the subject, the authors have acknowledged that when we perceive an external object our idea is materially false but our innate understanding of geometric principles enables us to gain clear and distinct knowledge of the true nature of the object, and their analyses rest on this assumption.[83] (Wilson, 1978; Williams, 1978; Cottingham, 1986; Hoffman, 1996; Clarke, 2003; Simmons, 2003; De Rosa, 2010) Textually this is correct; Descartes does state in many places that the perception of matter consists in the mind's clear and distinct perception of the object as geometrically expressible, as well as an obscure and confused sense-perception of it as having secondary qualities. However, as I have intimated in the discussion above, there is a gap in this kind of explanation which has implications for how we understand sense-perception in Descartes, and which has passed largely unregarded so far. Simply put, it is not clear at all how the innate ideas of geometry come to bear on the adventitious ideas of sensation, and the gap that this leaves shows that there is a problem with the standard view of Cartesian sensation. I have touched on this problem already in the chapter on sensation. In what follows I shall explain where the problem arises, before proposing a solution in the final section.

According to the standard view, the two aspects of sensation come together to create the one perception. Yet it is difficult to see how, when the information coming from the senses is so unreliable, and the innate ideas of the mind do not concern the external world. This is particularly urgent in De Rosa's version, where innate ideas do so much work in determining the object of thought, but it is relevant to all such accounts. The problem lies in Descartes' definition of the intellect, the faculty of thought responsible for grasping true and immutable natures like extension, as well as mathematics. Consistently in the *Meditations* Descartes defines the intellect as the faculty best equipped for clear and distinct knowledge; indeed, this is the basis for the argument that imagination suffered a decline in fortune, as I showed in Chapter Four.[84] For instance, in the Second Meditation Descartes claims

[83] Thomas Vinci (1998): *Cartesian Truth* (Oxford: OUP). I will discuss Vinci's ideas more thoroughly in due course.
[84] 'Intellect' is co-extensive with 'pure understanding' or 'the faculty of understanding'.

that the wax is best known "not by the senses or the faculty of imagination but by the intellect alone" (AT VII, p. 34; CSM II, p. 22), the reason being that metaphysical matters are best left to the intellect because it is unfettered by the body. This allows it to grasp mathematical truths, as innate as the idea of God, none of which requires sense experience to be grasped clearly and distinctly. (AT VII, p. 68; CSM II, p. 47) His constant interrogation of the mind leads Descartes to the conclusion in the Sixth Meditation that the intellect's remit is nothing beyond the mind itself and its contents: "When the mind understands, it in some way turns towards itself and inspects one of the ideas which are within it." (AT VII, p. 73; CSM II, p. 51) Mathematical ideas are an example of the ideas within the mind to which the intellect turns, for "even though they may not exist anywhere outside me [these ideas] still cannot be called nothing'" (AT VII, p. 64; CSM II, p. 44). The "immutable and eternal" (AT VII, p. 64; CSM II, p. 45) nature of a triangle does not depend on me but neither does my understanding of it rely on a triangle ever having existed beyond my thought. Given that the intellect is concerned with the mind's contents the innate, eternal essence of a triangle also falls under its ken. My clear and distinct grasp of the essence of material things, therefore, remains the property of the intellect; but the intellect does not concern itself with anything beyond the mind and its own contents.

Sensory ideas, on the other hand, are causal; critically, Descartes contrasts them with innate ideas in the Third Meditation: "Among my ideas, some appear to be innate, some to be adventitious, and others to have been invented by me." (AT VII, pp. 37-8; CSM II, p. 26) In sensation an external object stimulates the senses, which relay the information to the mind via the relevant apparatus. As I have argued above, the causal element of these ideas is fundamental to them; they arise in the mind when the body interacts with an external object and the idea that ends up in the mind is a poor representation of the object as a result. According to the standard view, we gain true knowledge of the object when the innate ideas of the mind 'mend' the adventitious sensation, allowing us to perceive, with the intellect, the object without the qualities our sense-perception dupes us into believing it has. But there is a gap here, because the remit of the intellect is not external bodies, it is the contents of the mind: innate ideas and logical truths. In order to apply geometric principles to sensation, the intellect must be capable of grasping ideas of bodies that have come to it involuntarily, obscured by the interference of the senses. The reflexive nature of

the intellect precludes this kind of application. On the standard view, the two ingredients – innate and adventitious – come together in one sensation. Unfortunately, as it stands this cannot work, because the two do not meet in the middle.

At this stage it is possible to counter that, in applying innate notions to sensory ideas, the intellect is working with nothing beyond its own contents, because sensory ideas are ideas in the mind. This only works, however, if we believe that sensations are inherently non-representational qualia, modes of the mind with no reference beyond themselves.[85] The reason for this is as follows: If we strip the intentionality from sensations, on the grounds that they do not resemble anything in the object and therefore could not represent it, then they become merely modes of the mind and fall perfectly well within the intellect's purview.[86] On the other hand, if we reintroduce representationality into sensory ideas—as we must if we are to claim that they are caused by objects—and if we stick to the letter of Descartes' word—while agreeing that they are inherently obscure and confused—then we run up against the same problem. The intellect deals with innate, non-intentional ideas, making it very difficult to see how it can apply its innate content to sensory ideas, which are both intentional and not innate—particularly if there is no clear and distinct content to the idea in the first place, because then Descartes cannot, and does not, claim that the idea resembles the object. Sensations do not suddenly lose their intentionality to allow the mind to understand them clearly and distinctly; their obscure and confused nature never goes away.

Besides, their muddied nature also means that sensations are inherently representational. As well as being caused by objects external to the mind, they necessarily involve the (human) body in their objective reality, which is what renders them materially false. Moreover, their inherent obscurity and confusion means that it is impossible to separate their materially false component from the materially true, because it is impossible to rid them of their sensory content. If we were able to separate, on demand, the qualities really inherent in the object from those that are not, we would not need the innate ideas of the intellect in the first place and the standard view would never have arisen.

[85] Malebranche held this view of Cartesian sensations. (Malebranche,1980) See also De Rosa (2010) for a comprehensive presentation, and refutation, of the non-representationalist view.
[86] This is the strategy non-representationalists use to argue that Cartesian sensations lack representationality. (De Rosa, 2010, p. 39).

What we need is something to bridge the gap between innate ideas and adventitious sensations and which is able to apply the former to the latter to enable clear, distinct and, above all, *reliable* knowledge of the external world. Such a faculty would also have the knock-on effect of facilitating our scientific knowledge, while making manifest the union of mind and body. Fortunately, this is precisely the role of imagination, before, during, and after the *Meditations*.

VI. Bridging the Gap: Imagination in Object-Perception

Part of the rationale behind this thesis has been to show how the standard view of Descartes' philosophy, Cartesian Dualism, disregards a central thesis of his work: the mind's union with the body. I have also aimed to show how, if we take seriously Descartes' natural philosophy and admit that this was his primary concern through his life, a different picture of his work begins to emerge, in which his reason for writing the *Meditations* starts to look more like an exercise in persuading his readership of the effectiveness of his method for gaining true scientific knowledge.[87] This is borne out from the First Meditation's statement of intent: "[to] establish anything at all in the sciences that was stable and likely to last" (AT VII, p. 17; CSM II, p. 12), right through to the eventual (mitigated) vindication of sense-perception in the Sixth. In rejecting substantial forms as an explanation of natural phenomena, it became ever-more urgent for Descartes to establish a different paradigm and to make it as watertight as possible, hence his famous 'method'. On this interpretation, it becomes a way of ultimately vindicating knowledge of the external world by establishing a way of getting it right that does not rely on nebulous 'species' transmitted from object to eye, but on universally available, *a priori* grounds. Perceptual knowledge, that is, knowledge of the world delivered in sense-perception, must have been his ultimate concern because without it successful natural philosophy becomes all-but impossible.[88]

[87] Desmond Clarke takes this approach, arguing that the abiding view of Descartes as a metaphysician ought to be replaced with a more accurate vision of him as a natural philosopher, desperately trying to introduce a new explanatory paradigm into philosophy to replace substantial forms. (Clarke, 2005) I use the term advisedly; 'science' here refers to all human endeavour to gain more knowledge, and reflects the all-encompassing nature of philosophy in the seventeenth century.

[88] Necessarily, this is shorthand for 'sense-perceptual knowledge'. Descartes calls the mind's apprehension of clear and distinct, innate truths "perception" (*Meditation II*, AT VII, p. 33; CSM II, p. 22), but this better deserves to be called clear and distinct knowledge.

Perceptual knowledge requires sensory apparatus, and a reliable way of discerning the true from the false in sense-impressions. The standard interpretation of Descartes assumes that the clear and distinct ideas of the mind correct the material falsity inherent in sense-impressions to give us definite knowledge of the nature of the external world, a dualist interpretation in its own right in which sense-perceptions coming from the body fuse mysteriously with ideas already in the intellect. Mind and body work together in the act of perceiving, and which seems, on the face of it, a neat demonstration of the mind-body union but which, in fact, still relies on the distinction so heavily flogged by the Dualist camp. The single act of sensory-perception does reveal the mind-body union, but not as it stands. There needs to be a medium via which the ideas of the intellect can be applied to the impressions of sensation, a faculty of thought that, like sensation, uses the body but does not rely on the same causal mechanism for content. This faculty also needs to cope with the clear and distinct notions of extension, figure, motion, duration and quantity held in the intellect. Step forward imagination. Imagination unifies sense-perception by applying the innate ideas of the intellect to the adventitious ideas of sensation, enabling clear and distinct knowledge of the external world and, by extension, successful physical science. In so doing, it provides the best evidence for the mind-body union. The rest of this chapter will be devoted to explaining how this happens and providing evidence for it, which will also illustrate my belief that the imagination of the *Meditations* was not as cognitively maligned as it is viewed in the secondary literature.

Following the secondary literature, my strategy in this thesis has been to distinguish between the 'early' and the 'later' imagination, with a view to debunking the notion that it became more difficult after the advent of the *cogito* for Descartes to hold that the imagination is a serious cognitive power. I will continue to make the same distinction, despite my overall aim, because it serves the purpose of highlighting pertinent features of imagination that carry through from the *Regulae* to the *Meditations*. In the *Regulae* and the *Treatise on Man*, the imagination is explicitly described as corporeal, an area of the brain specifically designed for the common sense to "fashion" once it has collated the information from the separate senses (*Rule Twelve*, AT VIII, p. 414; CSM I, pp. 41-42). The 'figures' there inscribed are apprehended by the mind, and ideas of external objects then arise:

> That is to say, it is only the latter figures which should be taken to be the forms or images which the rational soul united to this machine will consider directly when it imagines some object or perceives it by the senses. (*Treatise on Man*, AT XI, p. 177; CSM I, p. 106)

In other words, when the intellect wishes to apprehend external things it turns to what is inscribed on the corporeal imagination and, because these are simple figures, the intellect is able to grasp them. Sense-impressions are realised as shapes on the corporeal imagination, translating sensation for the benefit of the mind.

Sepper (1996) argues that in the *Regulae* the main job of the corporeal imagination is to aid cognition of the external world, and he articulates this as a problem Descartes needed to solve between the *Regulae* and *Le Monde*. In transmitting the image of the object from sense-organ to corporeal imagination, Sepper has Descartes ask himself, "What precisely was transmitted? An image. But is the image present at every point between the sense-organ and the phantasia?" (1996, p. 223) We know that Descartes decided that no, the image was not what was transmitted at every point, and that sense-perception boils down to the motion of the parts of the object acting on the sense organs, rendered geometrically on the corporeal imagination. This was not a conclusion Descartes arrived at all at once; according to Sepper, it took Descartes some time to reach the conclusion that motion is ultimately responsible for sense-perception. Sepper contends that as a result of Descartes' representing colour geometrically in the *Regulae*, it

> [...] must have made him realize that translating the impression of color on the organs into geometrical form could obviate the impression of color as such, so that only the geometry and motion, not the colored image perceived by the mind, would be absolutely necessary in the physical and physiological account of transmission. (1996, p. 223)

By *Le Monde* the question of how the mind gets from figure in the *phantasia* to the idea of colour is solved by the natural institution of a 'language' between the mind and imagination, in which there are "ideas corresponding to [geometric] signals" (1996, p. 224). The geometrically-realised figure in the corporeal imagination render the external world perfectly intelligible, because "ideas in imagination would thus be

of exactly the same nature as the extended bodies, and that nature qua geometrical would be perfectly perspicuous" (1996, p. 224). In proposing that the ideas of sense-perception ended up in the brain figured geometrically, Descartes was attempting to make the physical world comprehensible without resorting to real qualities and substantial forms.[89]

This is the material falsity of sensory ideas seen through the imagination, in which Descartes appreciates that the figures of the corporeal imagination, while fundamentally corresponding to the true and immutable nature of the external world (they are extended), do not give rise to ideas that resemble those figures. Sepper's account of how Descartes' understanding of sense-perception develops from the *Regulae* to *Le Monde* illuminates the role of the early imagination in both object-perception and the unreliability of sensory ideas. Sensations delivered to the common sense end up in the corporeal imagination, where the translation of geometric configurations, or extended bodies, is enabled. This translation entails the non-resemblance of our ideas of sensation to the object causing the sensation; for if what the mind grasps are ideas of colour, taste and the like, but what it actually apprehends are geometric configurations in the corporeal imagination, then there is no reason to suppose any kind of resemblance between our ideas and the objects that cause them. Something is lost in translation between the imagination and the mind.

In the other direction, the imagination allows the manipulation and retention of shapes, and in so doing enables the mind to consider geometric problems. The figures that the mind contemplates need not exist beyond the brain; the imagination is just as able to conjure them without their manifestation as sense-impressions. At the same time, when the mind turns towards the basic notion of extension and seeks to understand it, again it uses the imagination's ability to realise shapes (*Rule Fourteen*, AT X, p. 442; CSM I, p. 59); without imagination, this is beyond the mind, for intellect alone cannot do it. (AT X, p. 444; CSM I, p. 60; see also *Letter to Princess Elizabeth, 28 June 1643*, AT III, p. 692; CSMK, p. 227) So, in one direction, imagination takes on figures from sense-impressions for the benefit of the mind; in the other direction, the mind utilises imagination when it wishes to understand extension. Common to both these uses is the imagination's facility with figure, without which the mind would be able neither to apprehend sensation nor

[89] Cf. Clarke (2005).

think about the nature of the external world. Clearly, the imagination is a key cognitive faculty in the early works.

In the *Meditations*, the cognitive role of the imagination is taken to have declined to the point of negligibility. (Wilson 1978; Galison 1984; Fóti 1986; Sepper 1996) I have established, however, that this conclusion is a result of an implicit acceptance of the dualist rhetoric surrounding Descartes. If we stand back and take in his whole corpus, it is clear that his major concern was natural philosophy, whose operation requires *expériences*. It also ignores the union of mind and body. My claim is that the nature and role of the imagination did not change a great deal between the early and later works, and very strong echoes of the early notion remain in the account given in the *Meditations*. I will show how the imagination unifies intellect and sensation in sense-perception, and in so doing unifies mind and body, by showing that the mind, when contemplating corporeal things, uses the imagination to aid it in conceiving shape and, when the mind turns towards the body, it again uses the imagination. Therefore, in contemplating all forms of corporeal objects, however proximal or distant, imagination is employed.

I will deal first with the corporeality of the imagination in the *Meditations*, for this is the most obvious difference between the early and later works. The metaphysics of the *Meditations* is very clear: mind and body are really distinct and their accidents likewise belong to one or the other. Strictly speaking, this immediately rules out a corporeal imagination as likewise a mode of thought. However, in the *Replies* Descartes speaks in several places of the imagination as though it is corporeal, going so far as to define it this way in the geometric demonstration of the *Second Replies*:

> Indeed, in so far as these images are in the corporeal imagination, that is, are depicted in some part of the brain, I do not call them 'ideas' at all; I call them 'idea' only in so far as they give form to the mind itself, when it is directed towards that part of the brain. (AT VII, pp. 160-1; CSM II, p. 113)

Likewise in the *Third Replies*, Descartes states that God cannot possess a corporeal imagination, presumably because God is not corporeal. (AT VII, p. 181; CSM II, p. 127) Although he does not state as much in the text itself, these examples show that

in the *Meditations* and beyond, Descartes still saw the imagination as tied to the brain. The definition of the *Second Replies* goes further and tells us that although he can no longer refer to the imagination as a 'dual-aspect' faculty, at once a mode of thought and an area of the brain, he still regards that part of the brain in which sense-impressions are 'depicted' to be the corporeal imagination. The reason for this seems to be that the depiction in the brain is of an image, that is, a corporeal representation of the object of thought. This is supported by something Descartes mentions to Mersenne in 1641, which sheds light on the new, apparently conflicted definition of imagination:

> The sense in which I include imaginations in the definition of *cogitatio* [...] differs from the sense in which I exclude them. The forms or corporeal impressions which must be in the brain for us to imagine anything are not thoughts; but when the mind imagines or turns towards those impressions, its operation is a thought. (*Letter to Mersenne, 21 April 1641*, AT III, p. 361; CSMK, p. 180)

Descartes sends this under the radar; it does not come up at all in the main text of the *Meditations*, even between the two versions. According to these examples, the imagination retains some corporeality even in the face of the mutual exclusivity of mind and body. This raises the obvious question: how is this possible, given the strictness of his metaphysics? The answer is that the question itself is misguided. As I argued in Chapter Two concerning the union of mind and body, with which this is intimately bound, to ask about how mind and body interact is to come at the problem from a ready-made dualist standpoint; it would be more profitable to come at it from the union of mind and body. If we do that, we stand a much better chance of understanding the imagination, and its place in object-perception: "imagination requires a peculiar effort of mind" (AT VII, p. 72; CSM II, p. 51). Cottingham (1986) has argued that the "peculiar effort of mind" characteristic of the imagination is evidence for its reliance on the body, akin to the 'pangs' of bodily appetites. (1986, pp. 122-5) Cottingham puts it down to the fact that imagination and sensation are modes of thought arising from the mind's union with body, and now I am in a position to unpack that proposal. Like sensation, imagination relies on the body for

content. Descartes does not offer the same technical description of imagination in the *Meditations* that he gives in the *Regulae*, but he gives hints:

> [Imagination is] nothing else but an application of the cognitive faculty to a body which is intimately present to it. (AT VII, p. 72; CSM II, p. 50)

> [W]hen [the mind] imagines, it turns towards the body and looks at something in the body which conforms to an idea understood by the mind or perceived by the senses. (AT VII, p. 73; CSM II, p. 51)

Descartes draws parallels here between imagination and the senses and, although the two differ markedly in certain respects, the comparison is a fruitful one.[90] In sensation, the mind is furnished with information from the body, and this is what happens in imagination. One of the crucial differences between the two faculties, however, is that imagination appears not to deal with external objects, anything impinging on the sensory apparatus; instead, it is limited to the body "intimately present" to the mind. Add this to Descartes' later remarks in the *Replies* about the brain's involvement in imagination and a picture emerges that is not so different from the descriptions in the earlier works. Despite his inability to refer to the imagination as at once immaterial and material, Descartes still seems to regard it as responsible for the mind's apprehension of the brain and, by extension, the state of the body. Descartes admits that he can draw no firm conclusions about the external world from what is depicted in the imagination, but nevertheless concludes that whatever is in the corporeal imagination corresponds to something perceived by the senses. (*Meditation VI*, AT VII, p. 73; CSM II, p. 51) This implies that because imagination is limited to the brain, it is still able to act as a conduit of sensory impressions to the brain. When an object is perceived, the impressions end up in the brain. But the intellect—with which imagination in explicitly contrasted in this passage—does not deal with impressions in the brain. Instead, the mind uses imagination to inspect the impressions left there, and translate them for the mind's clear and distinct apprehension.

[90] See Chapter Five.

As well as allowing the mind to inspect the impressions of sensation on the brain, imagination provides the wherewithal for the mind to apply its innate ideas of corporeality to the ideas of sensation to gain a clear and distinct understanding of the external world as it exists, rather than how it might exist. As I have mentioned, imagination and sensation are different in nature, and one of the main points of divergence is their respective autonomy. Sensation, as a mode of thought, is entirely passive; it receives stimuli from objects and ideas arise as a result. Imagination is not passive, although when the animal spirits are sufficiently animated it might not be able to help itself (AT XI, pp. 344-5; CSM I, p. 336), it is controlled by the will. In imagination, the mind can call up ideas as it pleases, and it seems that it pleases to consider corporeal things. Many times in the *Meditations*, Descartes invokes imagination when considering the possibility of physical objects, each time stopping short of claiming their existence but ultimately establishing their essence with the aid of the imagination. As the faculty responsible for considering " the shape or image of a corporeal thing" (*Meditation II*, AT VII, p. 28; CSM II, p. 19), the imagination simply *is* the mind's contemplation of the nature of material reality. Note, though, that in considering material things, imagination deals with shape and image, again brought through from the earlier works. Imagination is invoked when the mind considers the possible shapes that the wax can take (AT VII, p. 31; CSM II, pp. 20-21), and in discussing the difference between a triangle and a chiliagon. (AT VII, p. 72; CSM II, p. 50) The limits of imagination in the latter endeavour are caused by its embodiment, and this is the ground for its (unfavourable) comparison with the unfettered intellect. Nonetheless, the subject-matter of imagination is geometric shape, regardless of the provenance of the idea—whether the mind itself or sense-impressions.

Put all this together and imagination becomes the sole faculty of thought capable of assimilating information from the senses *and* the mind's innate ideas. While it is one of the mind's 'embodied faculties', reliant on the mind's union with the body to configure its ideas in the brain, imagination is not tied to the existence of the entities it presents as sensation is. It is able to posit geometrical configurations, and then turn towards the body and test to see if the images it has correspond to the existing objects. In other words, it can take the innate ideas of geometry in the intellect, render them corporeal, and apply them to the ideas of sensation that have ended up in the brain. The inward-looking intellect understands geometry but the

mind still relies on imagination to render figure to itself, thus the link between intellect and imagination is established. Sensation delivers ideas of particular objects, and their existing qualities, albeit in a confused and obscure manner, and these impressions pass through corporeal imagination. In order to gain clear and distinct knowledge of the external world, the mind must apply its innate, though abstract, knowledge of extension to the ideas of sensation, that is, to the bodily impressions of sensation. The creative aspect of imagination enables the mind to do this, for it can entertain possibility and test one idea against another at will. Thus, the problem identified in this chapter—how the clear and distinct ideas of the intellect can be applied to the adventitious ideas of sensation—has been solved: it happens through imagination.

Thomas Vinci is the only commentator I have found who has identified this feature of the imagination. (Vinci, 1998) Vinci argues that "imaginal images" described in the *Principles* have "the logical properties of concrete intuitions of geometrical properties" (1998, p. 136), upon which Descartes rests his proof of the existence of material things. "Imaginal images" or figures in the brain are apprehended "within the precincts of imagination" (p. 136), and these present corporeal things to the mind. Vinci recognises the importance of imagination for perceiving shape and assimilating it into sense-perception, as well as the implication it has for the doctrine of the mind-body union:

> Since on this reading imaginal images entail both the existence of bodies and the existence of minds, it follows that imaginal images fall within that special domain of the union of mind and body [...] (1998, p. 137)

He does not take his ideas on imagination much further than this, except to note that the imagination in this version seems to comprise a "special cognitive relation" between mind and brain (1998, p. 136), thus partially reinstating imagination's cognitive significance post-*Meditations.*[91] I agree both that imagination is significant for the union of mind and body, and that it remains a cognitive force in the later works. Unlike Vinci, I would argue that despite Descartes' reticence on the matter,

[91] Vinci wants to characterise imagination as this 'special cognitive relation' but is at pains to note that Descartes plays it down in the *Meditations* itself. (1998, p. 136)

both arguments can be made about the *Meditations* itself and this is what I have tried to do in this thesis. In what follows, I shall tie each argument up.

Vinci and the other commentators mentioned in this chapter and the previous have all claimed that the imagination takes a severe blow in the *Meditations*. I am now in a position to challenge the unilaterality of that claim, and argue that it is not as maligned as the literature would have it. Firstly, imagination brings together the innate and the adventitious in sense-perception by applying the mind's latent understanding of geometry and extension to the ideas of sensation, which in themselves exhibit intentionality but do not give reliable information about the external world. Descartes had long used the material falsity of sensory ideas as proof of the patent uselessness of scholastic *species*, allegedly transmitted from the object to the perceiver in perception and responsible for true sense-perception. The fact that we have no reason to believe our eyes means that we must rely on another method for getting to the truth of the matter; hence his insistence of comparison and proportionalities of measurement for divining the real properties of material things, itself an imaginative enterprise. His own view of perception, carried from the *Optics* right through to the *Passions*, is that sense-perceptions traced on the corporeal imagination were then translated for the benefit of the mind and manifested as sensation, but that the mind brings to this its own understanding of extension and the primary qualities of corporeal objects.[92] However, the intellect itself is not capable of applying those innate, clear and distinct ideas to the perceptions provided by corporeal imagination; it requires some way of bridging the gap. Thus the Janus-faced faculty of imagination, as a mode of thought with the corporeal making up its content, brings geometry and sensation together to enable the mind to gain clear and distinct knowledge of existing material objects. Without it, such knowledge would not be humanly possible.

This is the real cognitive significance of imagination in the *Meditations* and beyond. Contrary to the consensus in the literature, it is central to cognition of the external world and thus does not suffer in Descartes' opinion. In fact, imagination stays central to his account of the relationship between mind and body right through to his death; its ability to present images and fictions to the mind is cited as the best way to control and account for emotional responses in *The Passions of the Soul*

[92] See Chapters Four, Five and Six.

(1649). (AT XI, p. 361; CSM I, p. 344) Descartes' perceived derogation of imagination at the hands of the intellect, exemplified in the discussion of the wax in the Second Meditation, is designed to highlight the intellect's proficiency in knowledge of non-material affairs, specifically of metaphysics but also of God and of abstract mathematics. (*Third Replies*, AT VII, p. 181; CSM II, p. 127; *Meditation V*, AT VII, p. 71; CSM II, p. 49) Where imagination shines is in allowing the mind to move beyond the sheer contemplation of geometric truths and to turn towards corporeal things. True, intellect is sold as the only faculty capable of clear and distinct knowledge, but to claim on the back of this that imagination is incapable of knowledge is to state the obvious: imagination is not the 'knowing faculty', it is not responsible for cognition in and of itself. It never was. Imagination only ever aided the mind in cognizing the external world. Whereas, in the early works, it was very straightforwardly an aspect of the one "knowing power", its range extended to corporeal figures (*Rule Twelve*, AT VIII, p. 415; CSM I, p. 42) but no further. In the *Meditations*, that-which-knows is always and only the intellect, which is now to be identified with the mind itself, while the other non-essential faculties contribute to cognition but are not themselves capable of it. However, without imagination cognition of existing material objects would be totally alien to the mind, meaning that while it might be metaphysically non-essential, the mind requires it for cognition of both the body and objects present to it.

This brings me to my second reason to argue for the importance of imagination in Descartes' philosophy; and against the doctrine of Cartesian Dualism, which holds that the mutual exclusivity of mind and body entails the impossibility of their mutual influence. If Descartes' considered position rested with the substantial distinction of mind and body and no further, then his description of imagination, and its central role in cognition of the external world, would be unintelligible; it would make no sense to speak of a mode of thought as the mind's "turning toward" a body "intimately present" to it. (*Meditation VI*, AT VII, p. 73; CSM II, p. 51) Neither would it make sense to speak of the mind apprehending figures traced in the brain, or of those figures bringing about certain ideas in turn. Imagination reveals, and is enabled by, the mind's union with the body in a manner quite unlike any other faculty. Where sensation is involuntary, bringing the body to the mind's attention regardless of the will, imagination is employed when the mind wills the apprehension of the body. It is the faculty of thought responsible for the mind's

manipulation of the body, exemplified in Descartes' recommendations about stoically controlling the passions by imagining certain situations to gain habitual influence over the animal spirits. (*Letter to Princess Elizabeth, 6 October 1645,* AT IV, pp. 304-17; CSMK , pp. 268-73) Passions, appetites and sense-perceptions occur without, and often in spite of, the will; by contrast, imagining is voluntary and yet is enabled by the body and has the corporeal for content. It is this marriage of the voluntary and the corporeal which reveals the mind's union with the body.

Conclusion – Reinstating the Imagination

My aim in this thesis has been to build a case for the imagination in Descartes' later works, that acknowledges its central role in the paradigm case of mind-body exchange: object-perception. To achieve this aim it has been necessary to argue for and against several positions concerning different aspects of Descartes' philosophy. Fundamental to my project has been the conviction that, as a representation of Descartes' considered position on the mind-body relationship, Cartesian Dualism is totally inadequate. Not only does it fail to represent Descartes' work, it does very little justice to the complexity of his real views; like any caricature it selects the prominent features and in a few broad brush strokes presents an image that is almost, but not quite, wholly unlike the original. Descartes does indeed stipulate that mind and body are both really distinct and mutually exclusive. Unfortunately these are the only features of a much more complex position seized upon by opponents of the notion that mind and body are distinct, when in fact Descartes provides an account of mind-body interaction in the doctrine of their union. As a result the position against which the authors mentioned in the introduction – Ryle (1975), Churchland (1999), Damasio (2000) – pit themselves is, to use Descartes' own parlance, a chimera.

However, to argue for this effectively has required me to present a constructive account of how mind and body work together, because Descartes' union is not the most transparent of devices. I took as my starting point, therefore, Cottingham's observation that the faculties of sensation and imagination both contain a corporeal element, and as such might be evidence for the mind's union with the body, upon which Descartes insists consistently through his career. Whereas the faculty of sensation has been discussed from many different angles there is a relative dearth of research on the imagination.[93] Notable exceptions are Sepper (1996) and Vinci (1998), both of whom see some potential in the imagination for explicating the mind's union with the body, and it is to their work that this thesis has aimed to add. In the introduction my stated aim was to establish Descartes' understanding of the imagination in the *Meditations* and beyond. Now that I have

[93] Object-perception is the most widely discussed version of sensation, being the most obvious example of the mind's interaction with the external world. However, sensation as simple somatic feelings and responses has also come under scrutiny. See, for instance, Cottingham (1978).

reached the conclusion, the short response is that it is in a much stronger position the secondary literature would have it. Allowing for the paucity of commentary on the topic, it is nonetheless held, almost unanimously, that in and after the *Meditations* Descartes' opinion of the imagination declined drastically. One of the aims of this thesis has been to challenge that opinion, and to do that in a way that would establish a concrete place for the imagination in Descartes' philosophy. To that end I divided the question initially into two:

(i) How does Descartes characterise the imagination in the earlier works such as the *Regulae* (c. 1628) and *Le Monde* (c. 1632)?
(ii) Does this change in the *Meditations*, and if so, how, and to what extent?

At the same time any investigation of the imagination will conclude very quickly that, along with sensation, it has a major place in the doctrine of the union of mind and body, shorthand for Descartes' account of intersubstantial relations. It seems that the union enables the imagination, as it does for sensation, by providing both its content and locus of operation; therefore any investigation of the imagination must aim to reconstruct this relationship. Two other research questions have provided this focus:

(iii) How do imagination and sensation differ, and how are they alike, given their reliance on the union of mind with body?
(iv) What is the relationship between imagination and the union of mind with body: how does the one enable the other?

I am now in a position to answer these questions.

Throughout his life Descartes recognised, and paid service to, the fictive imagination. He knew the utility in creating fictions and hypotheses for all forms of *scientia*, and it is put to good use in all his works. In *Le Monde* he devises a useful story about the creation of the universe, from which he is able to derive the principles of his physics in relative safety until he need keep up the illusion no longer. The *Optics* is also a work of considerable creativity, in which Descartes moves from observed phenomena to hypothesis to experiment, the very model of scientific theorising; and his method of deriving physical laws of unobservables by

comparing them, in proportion, to observable phenomena is rightly celebrated by Peter Galison (1984) and Dennis Sepper (1996) as an imaginative enterprise (in both the literal and figurative senses). In the *Discourse*, the *Meditations* and beyond, the fictive imagination powers the method of doubt by creating the *malin génie*, personifying hyperbolic doubt and fixing the target of the *cogito*; and in the *Meditations* Descartes manipulates the emotional responses of his audience, by employing emotive language and a storytelling technique to carry them with him; thus presaging his later advice to Princess Elizabeth to imagine situations suitable for eliciting specific (calming) passions. His advice ultimately made its way into the *Passions of the Soul* as one of the central claims about the relationship between the mind and the passions: in its fictive form the imagination can conjure counterfactual situations that have, in the past, elicited specific somatic responses, controlling the passions.

Between the early and later works, then, Descartes' views of the fictive imagination undergoes not so much a change as a development, from implicitly moulding his readers' responses as an act of persuasion, to openly acknowledging the manipulative potential of the imagination. Its ability to create fictional situations with no immediate counterpart in reality carries through to the 'technical' imagination, that aspect of the imagination specifically designed to aid cognition of material things. In the early works, the *Regulae* and *Le Monde*, the imagination is corporeal as well as a mode of the mind. The corporeal imagination is described as a site in the brain, in which information from the senses, transported via the animal spirits, leaves impressions as figures – shapes – for the apprehension of the mind. In this the corporeal imagination plays a relatively straightforward role in object-perception; it allows the translation of sense-impressions into a mode comprehensible to the mind, by presenting geometric shapes to it. From there, the mind perceives the object in a divinely ordained system of representation. However, what separates imagination from sensation so-called is its ability to represent objects that are not present to the senses, and to manipulate them. Once an impression has been left on the corporeal imagination it can be recalled, with greater or lesser ease depending on how recently and vividly it first manifested, and this is memory. It also means that the mind can call up and manipulate the figures, redirecting the animal spirits to do so. In so doing it allows the mind to indulge in creative geometry and then to apply it to the external world. All of this is attributed by Descartes to the

corporeal imagination; the close relationship between it and the mind is not in question at this stage.

In the *Meditations* the distinction between the faculties of the mind becomes more pronounced, as does the distinction between the substances. Whereas in the early works the mind and its faculties are understood holistically, where all the faculties are facets of the one knowing "power" (*Rule Twelve*, AT VIII, p. 415; CSM I, p. 42) such parity is much less obvious later on. Instead Descartes goes to some pains to emphasize the difference between the imagination and the intellect, and he is not entirely complimentary about the imagination. The underlying reason for this apparent change of heart lies in the alienation of the body from knowledge. Ideas of sense are inherently unreliable, because the relevant sense modality is part of the structure of the original perception: how the object is represented to the mind depends, to a significant degree, on which of the five senses interacts with it. In the quest for certain knowledge Descartes is bound to reject such ideas, because they are not a true representation of the object, they are materially false. As a result the body is separated from the 'knowing 'power', now equated with the mind, where previously all but a very specific area of knowledge was considered unproblematically embodied. Affected too are sensation and imagination, whose dependence on the mind's union with the body likewise alienates them from cognition.

It is easy to see how sensation is affected by the strict separation of mind and body; it relies exhaustively on the body for intentional content and the doctrine of material falsity is therefore aimed squarely at it. Ideas that arise from the senses' interaction with external objects contain within them, as fundamental to their objective reality, pollution from the senses themselves. As a result we cannot tell whether the idea is a true representation of the object; Descartes goes so far as to say that the idea represents the object as other than it is (*Meditation III*, AT VII, p. 44; CSM II, p. 30), that is, it is materially false. Thus the epistemic unreliability of the body is established, and sensation alone as a source of knowledge discredited. However, while the imagination is affected by the intellectualization of cognition, it does not fare as adversely as has been advertised. This is because imagination is not in the same position as sensation; while it too relies on the body for content, it is different for its liberty from what is present to it. As in the earlier works, imagination still has a strongly corporeal element to it, only this is emphasized less as time goes

on, presumably because of the alienation of the body and the difficulty in accommodating previously accepted accounts of the mechanics of embodied cognition. Descartes can no longer blithely assume that the brain is fundamental to cognition, even though he might still believe it to be so; therefore where previously this had enabled him to describe the workings of the corporeal imagination, now he must come at it differently. The story of imagination is taken up by the union of mind and body, which, instead of providing a blow-by-blow account of mind-body interaction, opts to illustrate the mutual influence of the two by highlighting its effects, one of which is bodily feelings, another the faculties of imagination and sensation.

Descartes uses the union of mind and body as a device to explain the mutual influence of the two substances, where otherwise it would be difficult to divine. Instead of explaining mind-body interaction causally he holds that the two are united in such a way as to allow bodily sensations and sense-perceptions to arise. The paradigm example of mind-body interaction is sense-perception, in which the information from the senses is transmitted to the brain and from there apprehended by the mind. Our knowledge of the union comes about through our experiences; as always, sensation and imagination are a result of the stimulation of nerves and agitation of animal spirits, which flow into the brain in a particular way, and give rise to certain ideas. The major problem with this is that these ideas are not reliable, at least in the case of sense-perception, because their phenomenal content renders them materially false. However, imagination's freedom from what is immediately present to the senses means that it need not be subject to the same unreliability, at least as far as cognition of the real nature of the external world. Thus imagination is central to Descartes' method of *mathesis*, insofar as it allows the manipulation of geometric figures in the mind, the application of proportion from known to unknown, and the creation of hypotheses to be tested. All of these are crucial to the scientific enterprise, but without reliable knowledge of the external world we cannot embark on a programme of natural philosophy. This means that we must be able to adjust for the materially false ingredient of object-perception to get at a clear, distinct and above all, true understanding of the nature of the external world. This is enabled by the imagination.

Central to Descartes' understanding of object-perception is the notion that the mind clearly and distinctly understands geometric figures; and central to his notion

of the imagination is that it deals only in the corporeal world and its geometric configuration. The mind's innate understanding of geometry is present in every instance of object-perception, correcting the senses' materially false phenomenal content. The imagination's contribution is to allow the application of the mind's innate geometry to the information of the senses, enabling clear and distinct knowledge of the external world, a job it had always done but which is underplayed in the later works. The reason for this is, I think, the lingering tension between the real distinction between, and the union of, mind and body. As Descartes distances the body from knowledge in the *Meditations* and beyond he effectively voids his original definition of imagination as a corporeal faculty, however much he attempts to reinstate it in the *Fifth Replies*. As a result in his definition of the imagination the emphasis is much less on its corporeal aspect; he must rely more on its ability to translate, and manipulate, the images of corporeal objects to aid cognition of the external world. The role that the imagination plays does not change between the early and late works, but the explanation for how it achieves it shifts with the alienation of the body. The abiding notion that the imagination is maligned in the later works is a myth, to be jettisoned with its cousin, Cartesian Dualism.

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