Descartes on Composites, Incomplete Substances, and Kinds of Unity

by Dan Kaufman (Boulder)

Abstract: It is widely-accepted that Descartes is a substance dualist, i.e. that he holds that there are two and only two kinds of finite substance – mind and body. However, several scholars have argued that Descartes is a substance trialist, where the third kind of substance he admits is the substantial union of a mind and a body, the human being. In this paper, I argue against the trialist interpretation of Descartes. First, I show that the strongest evidence for trialism, based on Descartes' discussion of so-called incomplete substances, is highly inconclusive. Second, I show that a kind of unity ('unity of nature'), which is had by all and only substances, is not had by human beings. The fact that the proper parts of a human being, namely a mind and a body, are of different natures entails that what they compose has at most a 'unity of composition'. And a thing cannot be a substance in virtue of having a unity of composition. Therefore, Cartesian human beings are not substances.¹

Descartes is a dualist: he holds there are only two kinds of created substances – mind and body. Descartes' dualism and the sparseness of his mechanistic ontology call into question the existence of a number of various kinds of putative entities. The entities whose existence is particularly problematic for Descartes, however, are mind-body unions or, as I shall call them, 'human beings'. Descartes' dualism seems to entail that human beings do not exist. It is unclear, for instance, exactly *how* an extended, non-thinking substance and a non-extended, thinking substance – things whose natures are not only different but 'opposed' to one another² – could possibly compose *one* thing or 'unit'. Moreover, if mind and body are the *only* two kinds of substances in Descartes' on-

¹ Earlier versions of this paper were presented at the University of North Carolina at Chapel Hill, University of Kentucky, and Davidson College. I wish to thank those audiences for their comments and criticism. Thanks also to Vere Chappell, Paul Hoffman, David Ivy, John Palmer, Bob Pasnau, Rob Rupert, Lisa Shapiro, referees for *Archiv*, and its editor, Christia Mercer, for helpful discussion and/or suggestions.

² This is, of course, a well-known Cartesian doctrine, one found in too many texts to give exhaustive references to all of them here. But see, for instance, AT VII 13, CSM II 10; AT VII 86, CSM II 59; AT VII 225f., CSM II 158f.; AT VII 424, CSM II 286; AT III 475f., CSMK 202f.; AT III 567, CSMK 214.

tology, as the orthodox dualist interpretation claims, then human beings are not Cartesian substances. But human beings cannot be attributes, modes, or eternal truths (i.e. the only other things in Descartes' sparse ontology) either.³ It would appear, then, that Descartes' ontological claims commit him to denying, in some sense, the very existence of human beings, or to denying that human beings are anything more than *entia per accidens* or mere *entia per aggregationem*. And yet Descartes explicitly claims that human beings *do* exist and are *entia per se*.⁴

One interpretive approach to these issues, which has found its most impressive and detailed defense in the work of Paul Hoffman⁵, argues that Descartes holds that there are not two, but rather three kinds of created substances: minds, bodies, and human beings – a composite substance composed of a mind and a body, "une substance psychophysique". Fi shall call this the 'trialist interpretation' or 'trialism'. Trialism, if it were a true interpretation of Descartes, would relieve some of the tensions concerning Cartesian human beings. But, as I attempt to show in this paper, trialism is not true, and in fact the dualist interpretation is true. Nevertheless, it is instructive to examine trialism and its errors because doing so forces proponents of the dualist interpretation to look more closely at the problems that arise in virtue of Descartes' dualism and which trialism aims to address: problems concerning Descartes' views on substance and on the nature, unity, ontological status, and existence of human beings.

In the first part of this paper, I argue that what appears to be the strongest evidence for trialism, found in letters to Regius in the winter

³ AT VIIIA 22f., CSM I 208f.

⁴ I, for one, am quite sympathetic to Tad Schmaltz's recent admission "that Descartes never did figure out how to provide room in his ontology for a being [i.e. a human being] that is distinctive in this way but that is not itself a substance" (Schmaltz 2002, 177).

⁵ Because Hoffman's defense of trialism is the strongest, my discussion will focus mostly on his work.

⁶ Gueroult 1985, 117. The quotation is from Gueroult 1968, 201.

⁷ Hoffman 1986; 1999; Gueroult 1985; Broughton/Mattern 1971; Schmaltz 1992. Laporte 1950, 183, provides an early and unequivocal statement of the position: "D'où [...] trois sortes de substances: la substance étendue ou le corps, la substance pensante ou l'esprit, et la substance formée par l'union – 'substantielle' en effet – de l'esprit et du corps". See also *ibid*. 227, where Laporte claims that anyone with a true understanding of Descartes' notion of substance ought to have no more difficulty attributing substancehood to human beings than to mind and body.

of 1641–42 and the Fourth Replies, does not in fact establish trialism;⁸ and it is the *peculiarity* of Cartesian human beings, as composites of a thinking substance and an extended substance, which undermines this alleged evidence in favor of trialism. In the second part, I examine a kind of unity found in a relatively-neglected discussion from the Sixth Replies and argue that this kind of unity is had by all and only substances but is not had by human beings. Therefore, Cartesian human

⁸ Several prima facie reasons in favor of trialism, other than those discussed in this paper, have been offered in the scholarly literature. (1) Descartes sometimes refers to the human being as a substantial union of mind and body. This might naturally be taken to mean that the result of two things substantially united is itself a substance. Laporte 1950, 227, for instance, thinks that Descartes' use of the term 'substantial union' is explained by the fact that human beings are substances. See also Rodis-Lewis 1950. (2) In some texts, Descartes appears to treat sensations as modes of human beings, not as modes of minds by themselves. If there are modes of a human being that are not reducible to the properties either of a mind or a body, then human beings are Cartesian substances. See, for instance, Cottingham 1985, Cottingham, however, does not argue that human beings are a third kind of substance; rather he argues that there is a third kind of mode - 'property trialism'. (3) In correspondence with Princess Elisabeth in 1643, Descartes discusses three 'primitive notions'. These primitive notions (of thought, extension, and union) seem to correspond to principal attributes, and only substances have principal attributes. For discussions of human beings and the relevance of primitive notions to substancehood, see Laporte 1950, Schmaltz 1992. Schmaltz has, however, changed his mind on this issue since that paper. In this paper I do not discuss the alleged evidence for trialism found in the Elisabeth correspondence because it strikes me as incompatible with the strongest evidence for trialism, namely the 1641-42 letters to Regius, the Fourth Replies, and the Notae. In the Elisabeth correspondence, if Descartes claims anything about the principal attribute of human beings, he appears to claim that human beings have only one principal attribute, but the texts that provide the strongest evidence for trialism (i.e. the Regius letters, the Fourth Replies, and the Notae) claim that a human being has two principal attributes. Because I think that the Elisabeth correspondence is both wildly inconclusive and incompatible with the strongest evidence in favor of trialism, I will not discuss it. - On a related note, M. Rozemond (1998, 194) points out that if human beings have one principal attribute, and any substance with a principal attribute P_1 is really distinct from any other substances with principal attributes P_2 and P_3 (where $P_1 \neq P_2$ and $P_1 \neq P_3$), then a human being is really distinct from both its body and its mind. This is not only philosophically implausible but also contradicts Descartes' explicit statement in the January 1642 letter to Regius: "But if a human being is considered in himself as a whole, we say of course that he is a single ens per se, and not per accidens; because the union which joins a human body and soul to each other is not accidental to a human being, but essential, because a human being without it is not a human being" (AT III 508; CSMK 209). See also David Ivy (unpublished) for another convincing examination of the relationship between principal attributes, substances, and human beings.

beings are not Cartesian substances. If the interpretation I offer in this paper is correct, then Descartes' views on human beings and substance are even more radical than we might suppose. On my interpretation, human beings, which were paradigmatic substances according to his philosophical predecessors, are not substances, whereas entities whose existence and substancehood are highly-questionable for many earlier philosophers (e.g. articles of clothing, stones) are Cartesian substances.

There are two assumptions made in this paper. First, I will assume that the fact that a human being is composed of really distinct substances does not, by itself, entail that it is not itself a substance. If composition of this sort rules out substancehood, then the trialist (not to mention anyone who holds that there is a plurality of Cartesian corporeal substances) is in trouble right away: if being composed of really distinct substances entails that the composite is not a substance, then neither human beings (which are composed of a really distinct mind and body) nor individual bodies (which are composed of an infinite number of really distinct bodies) will be substances. Furthermore, the alleged evidence for trialism I will discuss, from the Fourth Replies and the 1641–42 letters to Regius, would not appear nearly as strong if the human body were not a substance.9 Second, I will assume that Descartes holds that individual bodies, such as a human body and a hand, are corporeal substances. This is a controversial assumption to make (albeit a *correct* one), given Descartes' remarks about the incorruptibility of substances and the corruptibility of the human body in the Synopsis of the *Meditations*. ¹⁰ However, this assumption is made, among other reasons, out of charity to the defender of the trialist interpretation, as it can only help the trialist interpretation. Descartes, after all, explicitly says that "a human being, being a composite entity, is naturally corruptible, while the mind is incorruptible and immortal" (AT III 422/CSMK 189). If corruptibility automatically ruled out substancehood, then the trialist interpretation would be a complete nonstarter, and I don't wish to treat it as such.

⁹ Peter Markie (1994), for instance, argues that if the type of dependence pertaining to composition entails that human beings are not substances, then it also entails that individual bodies are not substances.

AT VII 14; CSM II 10. For recent discussions of corruptibility and substance, see Carriero 2002, Secada 2000, Smith/Nelson (unpublished), Slowik 2001, Sowaal 2004, and Stuart 1999.

1. Composites and Incomplete Substances

Descartes thinks that there is a real distinction between my mind and my body, but also that there is some intimate relationship between them. He says: "I am not merely present in my body as a sailor ["pilot" in the 1647 French edition] is present in a ship, but [...] I am very closely joined and, as it were, intermingled [quasi permixtum] with it, so that I and the body form a unit [unum quid]" (AT VII 81/CSM II 56). What should be clear from the start is that the relationship between certain really distinct substances seems to be of a different sort from other relationships between substances. But Cartesian real distinctions do not admit of degrees. A real distinction obtains between x and y simply in virtue of the modal relation of mutual separability between x and y, where the relevant notion of separability concerns God's ability to separate them; that is, any two things that are possibly separated by God are actually really distinct.

[A] real distinction exists only between two or more substances; and we can perceive that two substances are really distinct simply from the fact that we can clearly and distinctly understand one apart from the other. For when we come to know God, we are certain that he can bring about anything of which we have a distinct understanding [...]. Even if we suppose that God has joined some corporeal substance to such a thinking substance so closely that they cannot be more closely conjoined, thus compounding them into a unity, they nonetheless remain really distinct. For no matter how closely God may have united them, the power which he previously had of separating them, or keeping one in being without the other, is something he could not lay aside; and things which God has the power to separate, or keep in being separately, are really distinct (AT VIIIA 28f./CSM I 213).

Although real distinctions do not admit of degrees, there appear to be degrees of unity among really distinct Cartesian substances. For instance my hand and the rest of my body have a degree of unity lacking in the case of my hand and the moon. And my mind and my body, as Descartes repeatedly states, form a unit despite being really distinct. The question is whether the unit or composite they form is a Cartesian substance.

It should be noted that Descartes *never* calls a composite human being a 'substance', although he has no reservations about using 'substance' to refer to a stone (AT VII 44/CSM II 30; AT VIIIA 29f./CSM I 214), an article of clothing (AT VIIIB 351/CSM I 299; AT VII 441/CSM II 297; AT III 460/CSMK 200, and half of a teeny-weeny particle (AT III 477/CSMK 202f.). Although I don't think Descartes'

¹¹ See also AT VI 59; CSM I 141.

silence here is decisive, it is surely revealing. Clearly, there are texts which would seem to demand that Descartes come out and call human beings 'substances', if he believes they are. Most notably, in correspondence with Regius – "*l'enfant terrible du cartésianisme*" ¹² – in the winter of 1641–1642, in which Descartes provides Regius with advice concerning how to avoid further controversy with the faculty at the University of Utrecht, much would have been accomplished if Descartes had simply told Regius to affirm that human beings, despite being composed of a really distinct mind and body, are substances. The fact that he does not do this appears to be more than coincidental.¹³

In one of his most detailed discussions of human beings, found in Notae in Programma quoddam, Descartes distinguishes simple entities from composite entities. For Descartes, all composites have parts, but there are two different types of composites (and two corresponding types of simples) found in Descartes' writings. I will call the two types 'Mereological Composites' and 'N-Composites' (short for 'Notae-Composites'), and correspondingly, 'Mereological Simples' and 'N-Simples'. Mereological Composites are things composed of parts. each of which has the same principal attribute. A body, for instance, is a Mereological Composite insofar as it has parts, and each of its parts has extension as its principal attribute. In contrast, minds and God are Mereological Simples in virtue of lacking parts altogether. 14 This sense of composite and the corresponding sense of simplicity are found most often in Descartes. 15 However, in the Notae, Descartes introduces a different sense of simple and composite according to which neither minds nor bodies are composites but simple. In fact, only human beings are N-Composites. He states:

I wish at this point to stress the difference between simple and composite entities. A composite entity is one which is found to have two or more attributes, each of which can be distinctly understood apart from the other [...]. A simple entity, on the other hand, is one in which no such attributes are to be found. It is clear from this that a subject which we understand to possess solely extension and the various modes of extension is a simple entity; so too is a subject which we recognize as having thought and the various modes of thought as its sole attributes. But that which we regard as having at the same time both extension and thought is a composite entity, namely a man – an entity consisting of a soul and a body (AT VIIIB 350/CSM I 299).

¹² According to Gilson 1967, 246.

¹³ For a more developed statement of this point, see Rozemond 1998, 165.

¹⁴ See AT V 270/CSMK 361.

¹⁵ For a discussion of this sort of composite and simple, see Kaufman 2003.

Attributes that "can be distinctly understood apart from the other" can only be the principal attributes of thought and extension. Thus, in the sense of composite and simple introduced here, something is N-Simple iff it has only one principal attribute, and something is N-Composite iff it has more than one principal attribute. Therefore, *every thing* except human beings is N-Simple, and all human beings are N-Composite in virtue of necessarily being composed of things with different principal attributes. ¹⁶ Descartes clearly thinks that there is something very peculiar about human beings. Furthermore, if human beings are substances, then they would be the only exception to the *One Principal Attribute Thesis*, found in *Principles* I.53, which states that each substance has only one principal attribute. (The *One Principal Attribute Thesis* will be discussed in more detail later.)

The most compelling evidence for thinking that N-Composites are Cartesian substances is found in the Fourth Replies and two letters to Regius written shortly after the Fourth Replies. The Fourth Replies in particular are very important for our present purposes insofar as it is the only text in Descartes' published writings where he states that a human being is an *unum per se* or *ens per se*, terms, as I have mentioned, traditionally synonymous with 'substance'. ¹⁷ Furthermore, the Fourth Replies were written in March of 1641, only a few months before Descartes' letters to Regius. Some scholars (Chappell 1994, for instance) discount these letters on the grounds that they contain mere advice to Regius about how to avoid further controversy at Utrecht. 18 It is true that in these letters, Descartes typically states things in terms of what Regius should tell people rather than as straightforward assertions of Descartes' own position, and it certainly would be convenient for the dualist interpretation to be able to discount the Regius letters on these grounds. However, the temporal proximity of the Fourth Replies and the Regius letters, plus the similarity of the discussion of human beings in both is convincing evidence of Descartes' sincerity concerning his own position in the Regius letters.¹⁹

¹⁶ I am ignoring the other elements of Descartes' ontology, namely attributes, modes, and eternal truths.

¹⁷ The term 'substantial union' to describe the union of mind and body also makes its first appearance in the Fourth Replies. See Chappell 1994 for discussion of the importance (or lack thereof) of this term.

¹⁸ For more on the Utrecht controversy, see Verbeek 1992; and on Descartes' relationship to Regius and its historical context, see Verbeek 1993.

¹⁹ See Hoffman 1999, 256f. Shapiro 2003 also takes Descartes at his word, though she recognizes the difficulty in interpreting these letters.

The textual evidence supporting trialism in the Regius letters and the Fourth Replies concerns so-called 'incomplete substances'. 'Incomplete substance' may seem like a contradiction in terms. For Descartes, a substance is something that is *complete* by its very nature, and even in the Fourth Replies, before discussing incomplete substances, Descartes refers to substance as a 'res completa' (AT VII 220f./CSM II 155f.). Descartes is clearly aware of the strangeness of calling any substance 'incomplete' and accordingly tells Arnauld the following:

I am aware that certain substances are commonly called 'incomplete'. But if the reason for calling them incomplete is that they are unable to exist *per se* alone, then I confess I find it self-contradictory that they should be substances, that is things which subsist *per se*, and at the same time incomplete, that is, not able to subsist *per se* (AT VII 222/CSM II 156f.).²⁰

Cartesian incomplete substances, therefore, cannot be things which both exist per se (and are complete) and which do not exist per se (and are incomplete). Nor can Cartesian incomplete substances be incomplete in the same manner as scholastic incomplete substances.²¹ (When discussing the 'scholastics' in the Cartesian context. I mean primarily to refer to Francisco Suarez, a sixteenth-century Jesuit with whom we know Descartes was familiar, from whom Descartes 'borrowed' and occasionally altered for his own purposes – several important philosophical concepts, and whose influence on seventeenth-century philosophy and theology is frankly undeniable.²² It is my conviction, that if Descartes were adopting a scholastic view of incomplete substances, it would most likely have been Suarezian in flavor.) Suarez characterized incomplete substances as things having not merely the passive ability for uniting as a substance but rather as having a positive aptitude 'desiring' union. For instance, when explaining why the soul is an incomplete substance, Suarez states:

In the case of the soul, the matter is quite otherwise; for even when separate, it is a part *in respect of positive aptitude* [aptitudinem] and nature, and not merely in virtue of there being no contradiction in its being joined to something else. It is not a part in the sense of something whole in itself; rather it is *essentially* a part, and has

²⁰ In the Third Replies, when spelling out the degrees of reality, Descartes compares the existence of *genuinely* incomplete substances to the existence of *qualitates* reales, another kind of thing whose existence Descartes denies (AT VII 185/CSM II 130).

²¹ See Rozemond 1998, chapter 5; Alquié 1966, chapter 15 (especially 307); Laporte 1950, 182f. and 227; Rodis-Lewis 1950, 77f.

²² See AT VII 235/CSM II 164.

an incomplete essence, which is by its own nature ordained to make another essence complete; hence, it is always an incomplete substance (DM 33.1.11, emphasis mine).

And when discussing the relationship between the paradigmatic incomplete substances, matter and form, Suarez says that "Since neither matter nor form *per se* are complete and whole beings in their kind [*entia completa et integra in suo genere*], but are instituted by their nature to be composed, that which is composed immediately from them, deserves to be called, and is, an essence and nature that is one *per se*" (DM 4.3.8).²³

The scholastic view of incomplete substances, as expressed by Suarez, simply cannot be attributed to Descartes: First, as we shall see, Descartes tells us that mind and body are incomplete substances in so far as they are parts of a human being. But Descartes repeatedly states, even in the Regius letters and Fourth Replies, that mind and body are complete per se. That is, they are not essentially incomplete, as scholastics such as Suarez thought. Second, it is practically axiomatic in scholastic philosophy that only essentially incomplete substances can compose a complete substance, and that two complete substances could, at the most, compose an ens per accidens (or an ens per aggregationem).²⁴ But if there are composite substances for Descartes (and there are: bodies for instance), then they are composed of genuinely complete substances.²⁵ If the trialist wishes to employ the discussion of incomplete substances to bolster her interpretation, then she certainly does not want to say that a substance cannot be composed of per se complete substances. So, even the trialist must admit that Cartesian incomplete substances differ in this significant way from scholastic incomplete substances, and thus it cannot be assumed from the fact that scholastic incomplete substances compose a substance that what is composed of *Cartesian* incomplete substances is itself a substance. Third, unlike scholastic incomplete substances, Descartes explicitly

²³ See also DM 15.5.2; 32.2.30; and Des Chene 1996, 134f.; Cover/Hawthorne 1999, 48. In his *Summa*, Eustachius a Sancto Paulo characterizes a substantial form as an incomplete substance: "Thus form is a particular substantial *actus* but is nevertheless incomplete, i.e. an incomplete substances or (so to speak) a semi-substance, which conjoined with matter constitutes one whole substance" (*Summa* 3.1.2.5). For the source of this kind of thinking, see Aquinas ST Ia 75.2 ad 1.

²⁴ See Suarez DM 33.1.10; Adams 1987, vol. 2, chapter 15; Des Chene 1996, 134f.

²⁵ Hoffman 1999, 266, recognizes that there is a tension in Descartes concerning the issue of whether every composite whose parts exist *per se* is an *ens per se*.

holds that the mind and body do *not* have a positive aptitude desiring union. Frequently in scholastic discussions of incomplete substances, terms such as 'convenire', 'aptitudo', and 'inclinatio' appear. ²⁶ Each of these terms, in the relevant contexts, is a normative term describing a condition in which something, by its nature *ought* to be united with something else. But the normative component of scholastic incomplete substances is unequivocally denied by Descartes. As he states in the December 1641 letter to Regius:

[I]t may be objected that it is not the soul's being joined to the body, but only its being separated from it after death, which is accidental to it [...]. You should reply that these things can be called accidental, because when we consider the body alone we perceive nothing in it desiring [desideret] union with the soul; as there is nothing in the soul because of which it ought to be united to the body (AT III 461/CSMK 200).

Paul Hoffman, however, has claimed recently that Cartesian incomplete substances *do* resemble scholastic incomplete substances in this last respect, and Cartesian incomplete substances have this aptitude or desire for union, the normative component of scholastic incomplete substances.²⁷ He claims that the following statement from the December 1641 letter to Regius supports this contention:

Ibi enim dixisti animam & corpus, *ratione ipsius*, esse substantias incompletas; & ex hoc quod sint incompletae, sequitur illud quod componunt, esse ens per se (AT III 460, emphasis mine).

²⁶ For instance, see Aquinas ST Ia 76.5.1 ad 6: "[...] thus, the human soul in its own being when separated from the body, still has a natural aptitude and inclination [aptitudinem et inelinationem naturalem] to union with the body". It has been pointed out to me by Bob Pasnau that 'inclinatio' does not have the same normative force as the other terms mentioned here. I agree that by itself it does not have the normative force, but in relevant contexts – for instance, the quotation in this note from Thomas – it does imply a normative component.

²⁷ Rodis-Lewis 1950 also claims that (at least in the case of mind and body) there is a normative component to Cartesian incomplete substances: In order to be united to a mind, a body must have an appropriate arrangement of its parts. This, of course, is something Descartes holds. But Rodis-Lewis then draws the conclusion: "Cette 'aptitude naturelle de chaque partie à l'union' suffit à faire du composé un individu veritable et c'est ce degree nouveau de réalité que Descartes exprime en appellant l'union substantielle" (78f.). This conclusion is unwarranted. The fact that a body's arrangement is a necessary condition for union does not entail anything about a 'natural aptitude' in a stronger, normative sense, a sense that would justify Rodis-Lewis' conclusion about status of human beings.

Hoffman translates this as follows:

For there you said that the body and soul, by their very nature, are incomplete substances; and it follows from their being incomplete that what they constitute is an ens per se.²⁸

CSMK, on the other hand, translates 'ratione insitus' as 'in relation to the whole human being' (i.e., the ens per se mentioned in the preceding sentence). Hoffman's translation, if correct, would provide powerful support for the trialist interpretation by eliminating an important and apparent difference between Cartesian and scholastic incomplete substances by showing Cartesian incomplete substances to be incomplete by their nature. While Hoffman's translation is a grammatical possibility, it seems rather peculiar because 'ipsius' is genitive singular while the subject and verb of his translation are plural. In any case, there is a nongrammatical reason which shows Hoffman's translation to be implausible: In the Letter to Dinet (AT VII 585f.), where Descartes recounts the dispute at Utrecht, he says something very similar to the statement in the letter to Regius: "illas substantias dici incompletes, ratione composite quod ex earum unione oritur" ["these substances are called incomplete in relation to the composite which arises from their union"]. Mind and body are not incomplete by their very nature, but only with respect to the human being they compose.²⁹ Thus, contrary to what Hoffman claims, Descartes is not making the stronger, scholastic claim that incomplete substances are essentially incomplete and 'desire' union. When 'ratione ipsius' is appropriately translated (as in CSMK), the trialist interpretation is significantly weakened.

Descartes' relationship to his philosophical predecessors is, of course, incredibly complex and difficult to assess, and a detailed examination of it is surely beyond the scope of this paper. There are some texts which would seem to indicate that Descartes is more closely aligned with scholastic views of incomplete substances and of the relationship between the parts of a human being than I have admitted thus far. For instance, scholastics commonly count substantial forms as incomplete substances, and Descartes, despite largely rejecting substantial forms and talk of substantial forms, does refer to the soul/mind as "the true substantial form of man" (AT III 505/CSMK 208).³⁰ This

²⁸ Hoffman 1999, 257, emphasis mine.

²⁹ Thanks to Paul Hoffman for reminding me of the passage from the Letter to Dinet.

³⁰ For a good discussion of Descartes' stance concerning substantial forms and their philosophical uses, see Pasnau 2004, 56f. Pasnau and I are in agreement that Descartes does not use substantial forms to explain the unity of human beings.

would seem to indicate that Descartes embraces a much more scholastic view of human beings and the incomplete substances which compose them than the line I have been pressing. If we take Descartes at his word – that the soul is the substantial form of man – then it seems that the soul is like a scholastic incomplete substance, and anything having a substantial form counts as a substance. That being said, it isn't clear at all that Descartes' claim that the mind is the substantial form of man entails anything about the substancehood of human beings unless Descartes means to embrace a sufficiently weighty notion of substantial form. The Cartesian soul does play some of the *roles* traditionally played by substantial forms; for instance, the soul provides the persistence conditions and the unity conditions for living human beings. That is, Descartes thinks that a human body has its diachronic identity insofar as it is a portion of matter united to the mind at a various times, and the human body has its unity (i.e. is one thing at a time) insofar as a portion of matter is united to the mind at that time. Consider the following from two different letters to Mesland:

[W]hen we speak of the body of a man, we do not mean a determinate part of matter, or one that has a determinate size; we mean simply the whole of the matter which is united with the soul of that man. And so, even though that matter changes, and its quantity increases or decreases, we still believe that it is the same body, numerically the same body, so long as it remains joined and substantially united with the same soul [...]. I do not think that there is any particle of our bodies which remains numerically the same for a single moment, although our body, insofar as it is a human body, remains always numerically the same so long as it is united with the same soul (AT IV 166f./CSMK 243).

[I]t is quite true to say that I have the same body now as I had ten years ago, although the matter of which it is composed has changed, because the numerical identity of the body of a man does not depend on its matter, but on its form, which is the soul (AT IV 346/CSMK 278f.).

In both passages, Descartes assigns the soul the role of providing unity and persistence to the human being,³¹ and in the latter, he refers to the soul as a 'form'. However, I don't think that too much weight should be placed on these considerations. As we have seen (and will continue to see), Descartes weakens the scholastic notion of incomplete substances to such a degree that the notion of the soul as substantial form and its relation to the human body would need to be correspondingly

³¹ He even uses Latin scholastic terminology (i.e. '*idem numero*'), in an otherwise French letter to Mesland (AT IV 166f.), to discuss the numerical identity.

weakened in the relevant respects. My opponent will also point out that Descartes refers to the unity of the soul and body as a 'substantial union', 'a real and substantial' union, and 'a true mode of union'. We must be careful, however, not to take these phrases to indicate anything more than Descartes tells us they mean. 32 Consider that following Descartes' use of the latter two phrases, he tells Regius that "no one explains what this [union] amounts to", but if Regius wishes to explain it, he "could do so, however, as I did in my Metaphysics, by saving that we perceive that sensations such as pain are not pure thoughts of a mind distinct from a body, but confused perceptions of a mind really united to a body" (AT III 493/CSMK 206). Here, as in every text in which Descartes explicitly explains what the 'substantial union' amounts to. Descartes explains the union in terms of nothing more substantial than the fact that certain types of causal interactions between mind and body result in particular states of a mind or a body that would otherwise be absent, for instance if an angel were 'occupying' a body.33

And in the January 1642 letter to Regius, immediately following the quotation above, Descartes gives another version of the Sixth Meditation argument for union: "For if an angel were in a human body, he would not have sensations as we do, but would simply perceive the motions which are caused by external objects, and in this way would differ from a real man" (AT III 493/CSMK 206). Moreover, this is the explanation of the union of mind and body found in the *Principles* (II.2), Descartes' most developed and mature account of his metaphysics. In all of these texts, Descartes is saying that union consists of the fact that certain kinds

³² See Chappell 1994.

³³ In the Fourth Replies, Descartes tells Arnauld: "For in the Sixth Meditation, where I dealt with the distinction between mind and body, I also proved at the same time that the mind is substantially united with the body. And the arguments which I used to prove this are as strong as any I can remember ever having read" (AT VII 228/CSM II 160). In the Fourth Replies and the January 1642 letter, Descartes refers Arnauld and Regius to Meditations, and an inspection of the *Meditations* reveals that the only argument to which he could be referring are, as he tells Arnauld, found in the Sixth Meditation. Here is the argument: "I am not merely present in my body as a sailor is present in a ship, but [...] 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. Similarly, when the body needed food or drink, I should have an explicit understanding of the fact, instead of having confused sensations of hunger and thirst. 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" (AT VII 81/CSM II 56).

I think that there is very good reason *not* to think that Descartes' view resembles scholastic views in a stronger way than I have indicated. Descartes is surely not simply inheriting the scholastic account of incomplete substances. Thus, he explains to Arnauld what a *Cartesian* incomplete substance is: "It is [...] possible to call a substance incomplete in the sense that, although it has nothing incomplete about it *qua* substance, it is incomplete in so far as it is referred to some other substance with which it composes something which is an *unum per se*" (AT VII 222/CSM II 157). This passage yields the follow analysis:

x is an incomplete substance iff x is a substance; there is a substance y; x and y are proper parts of some C; and C is an *unum per se*.

A substance is incomplete just in case it, in conjunction with another substance or other substances, composes something else; and not merely something else but an *unum per se*, a genuine unity. Descartes reiterates this last point in the December 1641 letter to Regius: "the body and the soul, in relation to the human being, are incomplete substances; and it follows from their being incomplete that what they constitute is an *ens per se*". Unlike the scholastics, Descartes' view of incomplete substances is metaphysically-weak: An incomplete substance is simply a (complete) substance that is a *part* of an *unum per se*.³⁴

Thus far, there is no overwhelming reason to think that Descartes holds that human beings are substances. The fact that he says that the thing whose parts are incomplete substances is an *unum per se* or *ens per se* would give good reason, but only if we could be reasonably confident of Descartes' use of these scholastic terms. We have seen good reason, however, to think that Descartes is characteristically putting his own spin on scholastic terms. And, after all, he *must* be because we have

of events in the body cause certain kinds of confused perceptions in the mind. Of course, this interpretation of the unity of human beings is highly controversial and problematic, but, given the frequency and explicit nature of these texts, it is difficult not to take them seriously as expressing Descartes' view of the substantial union

³⁴ Cf. Suarez's view in DM 31.10.10. – Before getting into the discussion of incomplete substances in the December 1641 letter to Regius, Descartes tells him that "the best way I can see to remedy this is for you to say that in your ninth thesis you considered the whole human being in relation to the parts of which he is composed, and in your tenth thesis you considered the parts in relation to the whole" (AT III 460/CSMK 200). See Hoffman 1999, 255.

already seen that a scholastic *ens per se* cannot be composed of a plurality of *entia per se*, but a Cartesian *ens per se* can be.³⁵

Descartes' puts his notion of an incomplete substance to use in the following passage from the Fourth Replies:

Thus, a hand is an incomplete substance when it is referred to the whole body of which it is a part; but it is a complete substance when it is considered on its own. And in exactly the same way [in eodem plane modo] the mind and the body are incomplete substances when they are referred to a human being which together they compose; but if they are considered alone, they are complete (AT VII 222/CSM II 157, emphasis mine).

According to this passage, a hand is a complete substance, but it is an incomplete substance in so far as it is a proper part of a human body. Likewise, mind and body are complete substances, but both are incomplete substances insofar as they are proper parts of a human being. In the December 1641 letter to Regius, as we have already seen, Descartes states that incomplete substances compose an ens per se. It would seem to follow, then, that if mind and body are incomplete substances in relation to the human being they compose, then the human being is an ens per se. The trialist may not need to make the case for synonymy of 'ens per se' and 'substance' here because Descartes holds that the human body, of which the hand is a proper part and hence an incomplete substance, is itself a substance. It would seem to follow from this. given that the mind and body are incomplete substances in relation to the human being in exactly the same way as the hand is an incomplete substance in relation to the whole body (a substance), that the human being is itself a substance.

This text, at least as much as any other text I find in Descartes' works, provides the most compelling evidence for the trialist interpretation. So in order to defeat the trialist interpretation, we must (at least) defeat this argument. On the face of it at least, the example from the Fourth Replies looks fairly decisive. We have a comparison of the (parts of a) mind-body union to (the parts of) a substance, and we are told that the mind and body are incomplete substances in relation to

³⁵ Hoffman notes that Descartes consistently refers to the human being as an ens per se (or unum per se) and denies that it is an ens per accidens. For the scholastics, the term ens per se was used to refer to a substance, at least more often than not. Moreover, at the end of the First Replies, Descartes implicitly tells Caterus that an ens per se is a substance. This text is not decisive, however, because in it Descartes is not comparing an ens per se to an ens per accidens but rather to modes, which are entia per aliud.

the human being *in exactly the same way* that a hand is an incomplete substance in relation to the body. Moreover, we are assuming that Descartes believes that the human body is a substance. How then is the dualist to deal with this seemingly powerful evidence against her interpretation? A start would be to figure out exactly what the '*in eodem plane modo*' means and how strong is it intended to be.

In order to figure this out, we must remember Descartes' discussion of composite entities from the *Notae*. To refresh our memories, the passage from the *Notae* states:

I wish at this point to stress the difference between simple and composite entities. A composite entity is one which is found to have two or more attributes, each of which can be distinctly understood apart from the other [...]. A simple entity, on the other hand, is one in which no such attributes are to be found. It is clear from this that a subject which we understand to possess solely extension and the various modes of extension is a simple entity; so too is a subject which we recognize as having thought and the various modes of though as its sole attributes. But that which we regard as having at the same time both extension and thought is a composite entity, namely a man – an entity consisting of a soul and a body (AT VIIIB 350f./CSM I 299).

And remember from the earlier discussion of N-Composites that human beings are strikingly peculiar things: they are the only N-Composites, the only things having both the principal attributes of thought and extension.³⁶ So, when comparing a human being as a composite entity, something with incomplete substances as proper parts, to something else, Descartes cannot compare it to anything of the same kind, i.e. to another N-Composite. Rather, if he can compare it to anything at all, it must be compared to an N-Simple: a finite mind, a finite body, or God. However, because a human being, in addition to being an N-Composite, is also a Mereological-Composite, Descartes can only compare it to another Mereological-Composite in order to explain how its parts are incomplete substances insofar as they are parts of a human being. Given these constraints on an appropriate comparison to illustrate what Cartesian incomplete substances are, Descartes cannot com-

³⁶ It may be objected that human beings are not the only N-Composites. Perhaps an angel occupying a human body would count as an N-Composite. I am not convinced of this. Descartes does not mention angels-in-bodies as N-Composites. This is an understandable given that Descartes thinks that the degree of unity had by *his only* example of an N-Composite, namely a human being. Also consider that Descartes' actual words are: "But that which we regard as having at the same time both extension and thought is a composite entity, namely a man [hominem scilicet]."

pare a human being to a mind because a mind is both an N-Simple and a Mereologically Simple. For the very same reason, Descartes cannot compare a human being to an N-Simple and Mereological Simple God. Descartes cannot compare a human being to an attribute, a mode, or an eternal truth (the only other elements in his ontology). Therefore, finite bodies are the only plausible candidates for things to which Descartes may compare human beings in a reasonably-informative way. After all, the following is true:

The Things with Parts Thesis: In Descartes' ontology, the only things with proper parts are human beings and bodies.

Thus, the only things that can have incomplete substances as proper parts are human beings and bodies. As we've seen, incomplete substances are simply substances that are proper parts of something else. Thus, when giving a helpful example to illustrate what incomplete substances are, an example that will tell Arnauld something about human beings and their parts, Descartes' hands are tied: He must compare mind and body as incomplete substances to parts of something which is both N-Simple, but Mereologically Composite. A body is the only possible candidate in Descartes' ontology. This, I suggest, is what Descartes is doing in the Fourth Replies. Yes, he compares a human being to a substance (a human body), but not because the human body is a substance. Given the restrictions placed on an informative comparison, it strikes me that Descartes' comparison of a human being to a substance is incidental to the point of the comparison; what is not incidental is the fact that Descartes compares a human being to something with parts. We must remember what is under discussion in the context of the Fourth Replies passages: Descartes is attempting to explain to Arnauld what he means by 'incomplete substance' and to explain the relations between human beings and their parts. The point of Descartes' comparison, then, is to illustrate the manner in which complete substances can be 'incomplete' insofar as they can be parts of something else. Mind and body, just as a hand, are complete substances in themselves, but they are incomplete only in the weak sense that they are parts of something else. The 'in eodem plane modo' is just meant to capture the mereological notion that incomplete substances are substances that are parts. At the very least, we would need some further argumentation to establish that incomplete substances compose a substance in every case.

Of course, it is undeniable that Descartes claims that incomplete substances are proper parts of an *unum per se* or *ens per se*. However, the rather metaphysically-weak notion of incomplete substance Descartes

has suggests to me that he might be using the scholastic terms *ens per se* and *unum per se* in a correspondingly weak sense, a sense much weaker than the traditional sense in which they refer to substances.³⁷ He appears to be using it to distinguish the unity of mind and body from the 'unity' of a sailor in a ship or an angel occupying a human body. But if that is what is going on, then a Cartesian *ens per se* isn't necessarily a Cartesian substance, especially when we consider the fact that Descartes has no qualms about calling a human being an *ens per se*, but noticeably *never* calls human beings substances.³⁸

There is reason also to believe that Descartes *knowingly* distances himself from the scholastic notion of an *ens per se*. In 1640, as Descartes

³⁷ See Rozemond 1998, 166f., for several reasons to think that these are not synonyms for Descartes. See also Shapiro 2003. For a discussion of the relationship between the notions of *ens per se* and substance in both late-scholastic thought and in Descartes, see Olivo 1993, 72f.

³⁸ Hoffman 1999, 256f., is surely right to point out that Descartes' notion of substance is much weaker than that of the scholastics, and this is demonstrated by Descartes' comparison of the substancehood of a mind to the substancehood of a hand in the Fourth Replies. It might be thought, then, that even if Descartes is using 'ens per se' in a weak sense (as I am suggesting), a sense too weak to capture the scholastic notion of substance, nevertheless Descartes' weak notion of ens per se may exactly correspond to the weak notion of substance he accepts. So perhaps the fact that Descartes' notion of an ens per se is weaker than the scholastics and the fact that he never calls human beings substances does not prevent human beings (which are Cartesian entia per se) from being Cartesian substances. A detailed examination of this suggestion would require much more space than the present paper allows. But let us grant that Descartes' notions of a substance and an ens per se are both weaker than the scholastic notions. Still, I find it very strange that Descartes would call human beings 'entia per se' (in his weak sense) while refraining from calling them 'substances' (also in his weak sense). The reason I find it strange is Descartes' total willingness to use the term 'substance' to refer to 'questionable' entities, such as a hand, the rest of the human body minus a hand, a stone (AT VII 44f./CSM II 30f.; AT VIIIA 29f./CSM I 214; AT VIIIA 46/CSM I 227f.), an article of clothing (AT VIIIB 351/CSM I 299; AT VII 441/CSM II 297; AT III 460/CSMK 200), a piece of bread (AT IV 372/CSMK 284), a piece of gold (AT IV 372/CSMK 284), and half of a tiny particle (AT III 477/CSMK 202f.). It is clear to me that Descartes is using the term 'substance' in a weaker sense than his scholastic predecessors if he thinks that my shirt is a substance! If Descartes' notions of an ens per se and of a substance are both weaker than those of the scholastics, and Descartes has no qualms either about calling human beings 'entia per se' or calling clothing 'substances', I simply cannot understand why he would be shy about calling human beings substances. Unless, of course, his notions of an ens per se and of a substance do not correspond, and that is why he is willing to say that human beings are instances of the former but not the latter.

prepared to enter a 'war' with the Jesuits (see AT III 752/CSMK 151), he asks Mersenne to suggest some works in scholastic philosophy to refresh his memory. Mersenne apparently suggested Eustachius a Sancto Paulo's Summa Philosophica Quadripartite. Descartes later tells Mersenne: "I have bought the *Philosophy* of Father Eustache of St. Paul. which seems to me the best book of its kind ever made." (AT III 232/CSMK 156) While we cannot be fully certain of the extent of Descartes' familiarity with Eustachius, we know that in November of 1640. Descartes claims to be planning a textbook containing Eustachius' Summa and Descartes' own notes on the Summa.³⁹ In his Summa, Eustachius contrasts an ens per se with "entia per accidens, which are not unities except per aggregationem, [whereas] absolutely speaking they are many things [multa] – such as an army, a state, and a republic. Likewise, artificial things like a house and a stool are excluded, since they are composed of many things assembled by human industry" (Summa 1.3.1.3). An ens per se, according to Eustachius, has a single nature or essence, but a Cartesian ens per se, if the human being were an ens per se, would not have a single nature. Moreover, Descartes appears to think that artifacts such as houses are substances, and that there is not much of a difference between natural bodies (corporeal substances) and artifacts.⁴⁰ When general considerations are included, it is clear to me that Descartes must have been aware of the differences between the scholastics' strong notion of an ens per se and his own weaker notion. There is reason, therefore, to resist treating Cartesian *entia per se* as Cartesian substances

2. Real Distinctions and Degrees of Unity

My mind and my body are really distinct substances. As I have already mentioned, the relation of being really distinct is a relation that is much weaker than it might be thought to be. It is a relation that obtains between *any* two substances, whether or not those substances are united, non-united, contiguous, or nowhere near each other, and hence this relation does not admit of degrees. It simply holds between any two *mutually-separable* things (i.e., substances). There is just as much of a real distinction between my mind and Michael Jordan's body as there is

³⁹ AT III 233/CSMK 157. This plan was given up by 22 December 1641 (AT III 470).

⁴⁰ In Principles IV.203 (AT VIIIA 326/CSM I 288).

between my mind and my body. There are, however, cases in which really distinct substances are united and various 'strengths' of unity. My mind and my body, my hand and the rest of my body, and the parts of a watch are all united, but in different ways. But exactly what sort of unity does a human being have?

There are various discernible kinds of unity found in Descartes' writings, some of which are obviously inapplicable to the unity of mind and body: for instance, the kind of unity which individual bodies have ('unity through common motion'41), the kind that some bodies and artifacts have ('unity of position or disposition'42), the kind that God, minds, and 'body in general' have ('unity through incorruptibility'). More often than not, when discussing the union of mind and body. Descartes indicates the kinds of unity that human beings do *not* have: they are not united by a unity of nature, a unity of position or disposition, or a unity of 'lodging' (i.e. the way in which a sailor is 'united' with his ship⁴³). In fact, leaving aside the inconclusive scholastic language used in the Fourth Replies and the Regius letters, in Descartes' explicit pronouncements, the only kinds of unity human beings have are unity of composition, unity through 'special' causation/interaction, and mereological unity (i.e. having mind and body as proper parts). Because it is one of Descartes' most explicit discussions of the unity of human beings, I wish to concentrate on the Sixth Replies' discussion of the difference between unity of nature and unity of composition and the reason why Descartes thinks that human beings have the latter and lack the former. Descartes says:

[T]here are two ways in which they [i.e., a thinking thing and a moving thing] can be taken to be one and the same thing: either in virtue of the unity or identity of their nature, or else *merely* in respect of unity of composition [...] [W]e clearly perceive that the same substance which is such that it is befitting of taking on a shape is also such that it is befitting of being able to be moved [*illi eidem substantiae, cui competit ut sit figurata, competere etiam ut possit moveri*],⁴⁴ and hence that which has shape and that which is mobile are one and the same in virtue of a unity of nature [...]. But now the question is whether we perceive that a thinking thing and an

⁴¹ See Garber 1992, 175f.

⁴² See AT III 493/CSMK 206; AT III 508/CSMK 209.

⁴³ See AT VI 59/CSM I 141; AT VII 81/CSM II 56.

⁴⁴ It is important to translate 'competitlcompetere' more strongly than CSM does. They translate it as 'to be capable of'. But surely this inappropriately weakens the claim, made a few lines down, that we don't find "the same kind of affinity or connection [affinitatem sive connexionem] [between thought and extension] that we find between shape and motion, or understanding and volition".

extended thing are one and the same by unity of nature. That is, do we find between thought and extension the same kind of *affinity or connection* that we find between shape and motion or understanding and volition? Alternatively, when they are said to be 'one and the same' is this not rather in respect of unity of composition, in so far as they are found in the same man just as bones and flesh are found in the same animal? The latter view is the one I maintain, since I observe a distinction or difference in every respect between the nature of an extended thing and that of a thinking thing (AT VII 423f./CSM II 286, emphasis mine).

And later in the Sixth Replies, Descartes even more forcefully uses this distinction to characterize human beings:

Thus, however often we find them in one and the same subject – e.g. when we find thought and corporeal motion in the same man – we should not therefore think that they are one and the same in virtue of a unity of nature, but should regard them as the same only in respect of unity of composition (AT VII 425/CSM II 287).

Although scholastic philosophers hold that there are various kinds of 'unity of composition', Descartes' explicit contrast between unity of composition and unity of nature is not common in Descartes' predecessors. Thus, there is no reason to think that Descartes is inheriting a well-known and well-established bit of scholastic ontology. Rather, the distinction seems peculiarly Cartesian.

In the passages from the Sixth Replies, Descartes vacillates between modes, attributes, 'faculties', and individuals as the things united by nature or by composition. He claims, for instance, that there is a unity of nature between 'that which has shape and that which is mobile', and then discusses the unity of 'shape and motion' as a case of a unity of nature. I will give my interpretive analysis in terms of things-with-properties-broadly-construed.⁴⁵

From the passages above, we can characterize Descartes' notion of unity of nature as follows:

A thing that has F and a thing that has G are one by a *unity of nature* in some thing x iff F and G are not identical properties; x has F and x has G; and all things that have F are things that have an affinity or aptitude to have G and vice versa.

On the other hand:

A thing that has F and a thing that has G are one by a *unity of composition* in some thing x iff x has F and x is G, but it is not the case that things with F have an affinity or aptitude to have G or vice versa.

⁴⁵ By 'properties broadly construed' I mean to include modes, faculties, run-of-the-mill attributes (e.g., existence, duration), and principal attributes.

Now even if Descartes had not said so, it should immediately be clear that human beings are not one by a unity of nature. 46 For, as we have already seen in his December 1641 letter to Regius. Descartes denies that mind and body have a positive aptitude or affinity for union.⁴⁷ In order to make sense of a unity of nature, we need to figure out what it could mean for something to have an affinity for something else. Unfortunately, Descartes does not provide an explicit account of affinity. Fortunately. Descartes gives several telling examples to illustrate the notion of affinity. He says that there is an affinity between things with shape and things with mobility (and between shape and mobility), an affinity between things with understanding and things with volition (and between understanding and volition), but there is *not* an affinity between things with thought and and things with extension (thought and extension), nor between things with bones and things with flesh (an example to which I shall return shortly). Furthermore, Descartes says that it is befitting of or proper to [competit] something with shape to be befitting of, or proper to, being mobile. What could explain this notion of affinity in such a way that captures the affinity between shape and mobility, understanding and volition, and the lack of affinity between

⁴⁶ Gilson 1967, 249 f., mentions the fact that human beings have a unity of composition, but strangely he seems to treat this fact, as well as the very notion of a unity of composition, as unproblematic. For a similarly-strange and dismissive treatment of the notion of composition in the Sixth Meditation, see Rodis-Lewis 1993, 39.

⁴⁷ I am treating 'x desires union with y' (where 'desires' is used in a technical sense, as found in the December 1641 letter to Regius) as synonymous with 'x has an aptitude or affinity for union with y' because, among other reasons, it allows for a uniform interpretation of Descartes' position. Hoffman 1999, 263f., however, attempts to provide reasons to think that x's desiring union with y is different from x's having an aptitude/affinity for union with y. I don't wish to downplay Hoffman's discussion, which surely points to a possible ambiguity in Descartes and does so carefully and skillfully. However, I speculate that much of Hoffman's motivation for differentiating these notions is due to his mistranslation of 'ratione ipsius', which I have already discussed above, and which makes Descartes appear to be saying both that mind and body are incomplete by their very nature and that the mind and body do not desire union. It is imperative, then, for Hoffman to differentiate desire from aptitude, and to say that the fact that mind and body do not desire union but that "should not be construed as evidence that he thinks [the body] has no aptitude to be united to the soul" (267). In any case, even if the notions of desire and of aptitude/affinity are to be distinguished, this will not affect anything I claim in the remainder of the paper. On the other hand, if what I say in the remainder of this section is correct, we can see exactly why Descartes would claim that mind and body do not desire union in the December 1641 letter to Regius.

thought and extension? And what could explain the normative import of 'competere' contained in the concept of affinity? I suggest that Cartesian affinity is to be explained in terms of the following sort of entailment between something and its properties or modes:

x has an affinity for F and G iff x has a principal attribute P; P entails having determinable modes D_1 and D_2 ; and either $F=D_1$ and $G=D_2$ (or vice versa) or F is a determinate of D_1 and G is a determinate of D_2 (or vice versa).⁴⁸

To support this analysis of Cartesian affinity, consider Descartes' examples of things with an affinity for each other. What explains why a thing with shape has an affinity for having size (or something with understanding has an affinity for having volition) and hence is united by nature, but a thing with thought and extension or a thing having bones and having flesh lack this affinity and hence are united by composition, is the fact that anything with shape or mobility must have the principal attribute of extension, *and* anything with extension must have shape and mobility, whereas it is possible for something to be extended without having flesh or bones, let alone flesh *and* bones.

The claim that having shape and mobility entail having extension is an uncontroversial and well-known Cartesian doctrine. When explaining the relationships between a substance, its principal attribute, and its modes, Descartes states:

[E]ach substance has one principal property which constitutes its nature and essence, and to which all its other properties are *referred*. Thus extension in length, breadth and depth constitutes the nature of corporeal substance; and thought constitutes the nature of thinking substance. Everything else which can be attributed to body *presupposes* extension, and is merely a mode of an extended thing; and similarly, whatever we find in the mind is simply one of the various modes of thinking. For example, shape is unintelligible except in an extended

As I have mentioned, Descartes characterizes a unity of nature and the notion of affinity as a relation between things and their properties and as a relation between properties. I have given my analyses of unity of nature and of affinity in terms of things and their properties. But we can now see that Descartes' vacillation concerning the relata of a unity of nature and of affinity is not indicative of sloppiness on his part. Consider the example of something with shape and size: There is an affinity (and a unity of nature) between the thing and its shape and size because having shape and having size both entail and are entailed by the principal attribute of extension, and the thing in question has extension. So, if the thing has an affinity for shape and size, it follows that the properties of shape and size entail each other, as well as entailing and being entailed by the principal attribute of extension. In a 'derivative' sense, then, there is an affinity and a unity of nature between the properties of shape and size.

thing; and motion is unintelligible except as motion in an extended space; while imagination, sensation and will are intelligible only in a thinking thing (AT VIIIA 25/CSM I 210f., emphasis mine).⁴⁹

Here and elsewhere, Descartes states that all of the corporeal modes presuppose the principal attribute of extension, and all of the mental modes presuppose the principal attribute of thought. I take it that x presupposes y iff x entails y or (equivalently) is for x to have y as a necessary condition. Therefore, each of the corporeal modes entails extension, and each of the mental modes/faculties entails thought.

The fact that nothing can have a shape or size without being extended and the fact that nothing can think of God or will to sit down without having the principal attribute of thought is about as uncontroversial as anything in Descartes. However, Descartes' view of the relationship between a substance's principal attribute and its modes is stronger than simply the view that having modes entails having the principal attribute, especially if the notion of affinity (and hence the distinction between unity of nature and unity of composition) is to be explained in terms of the relationship between a thing's principal attribute and its modes. Descartes' example of something with bones and flesh as something with a unity of composition would be undermined if affinity were explained merely in terms of modes entailing a certain principal attribute: After all, having bones and having flesh do entail having extension, but Descartes tells us that there is no affinity or connection between something's having bones and having flesh. Thus, Cartesian affinity consists of a *mutual entailment* between the principal attribute of a thing and certain kinds of modes. Now the principal attribute obviously cannot entail that a substance has the particular determinate modes that it has at any given time. For instance, the fact that a thing has extension does not entail that it is rectangular and three feet tall. but the principal attribute entails that a substance will have certain

⁴⁹ See also AT VII 162/CSM II 114; AT VII 176/CSM II 124. I follow Chappell 1997, 116, in reading 'presupposes' as an explanation of what it means for a mode to be 'referred to' a principal attribute. That is, a mode is referred to a principal attribute iff that mode presupposes (i.e. entails) that principal attribute. Also, as Chappell correctly notes, Descartes does not mean that *all* of the properties we can attribute to a substance are modes of the principal attribute. There are (what Chappell calls) 'omni-generic properties' or properties had by both minds and bodies – e.g., existence and duration. In Kaufman 2003, I have called these 'run-of-the-mill attributes'. Only (what Chappell calls) 'uni-generic properties' will presuppose a certain principal attribute.

determinable modes at every time at which the substance exists.⁵⁰ The fact that a thing has extension does entail that it has some determinable shape and some determinable size, and the fact that a thing has thought does entail that it has some-thought-or-other at all times. As Descartes states: "It is impossible to deny one of the other [i.e., shape and extension] when one thinks of both together" (AT III 475/CSMK 202).⁵¹ And most explicitly, Descartes discusses with Elisabeth, "the notion of extension, which *entails* [*suivent*] the notions of shape and motion" (AT III 665/CSMK 218, emphasis mine).

This interpretation of Cartesian affinity, in terms of mutual entailment between a thing's principal attribute and its modes, explains why there is an affinity between something with shape and something with mobility, and something with understanding and something with volition, but why there is no affinity between something with bones and something with flesh: The principal attribute of extension entails shape and mobility; the principal attribute of thought entails understanding and volition; but the principal attribute of extension does not entail that the extended thing will have bones and flesh. That is, unlike having a shape and mobility, something can be extended without having bones and flesh. And because the distinction between a unity of nature and a unity of composition is to be understood in terms of affinity, both my body and my mind (by themselves) are the former, whereas something with bones and flesh is the latter. It is no surprise, then, that the former are Descartes' examples of things one by a unity of nature.

Descartes' discussion of unity of nature and of composition contains several important lessons about the nature of human beings: First, because there is no affinity between a thinking thing and an extended thing, human beings have *at most* a unity of composition. We have already seen that Descartes explicitly states that this is the case. After

The principal attribute of a substance does not entail that a substance has the determinate modes it does at any given time because this would dissolve the modal distinction, the distinction between a substances and its modes. See Principles I.61 (AT VIIIA 29f./CSM I 213f.), and the letter to an unknown correspondent from 1645 or 1646 (AT IV 349/CSMK 280), in which Descartes clarifies the fact that the modal distinction applies only to determinate modes: "Thus shape and motion are modes, in the strict sense, of corporeal substance; because the same body can exist at one time with one shape and at another with another, now in motion and now at rest; whereas conversely, neither this shape nor this motion can exist without this body". See also AT VII 440/CSM II 297; Secada 2000, 197, 211; and Wilson 1978, 167f.

⁵¹ See also AT VII 440/CSM II 297.

the discussion of the unity of composition and unity of nature in the Sixth Replies, Descartes continues: "all I have seen is that there are human beings, who possess both thought and a body. This happens as a result of the composition [per compositionem] of a thinking thing with a corporeal [thing]" (AT VII 444/CSM II 299).

Second, a unity of nature is *substance-entailing*, i.e. *everything* one by a unity of nature is a *substance* because anything with a principal attribute is a substance and anything that is a unity of nature will have a principal attribute. We may wonder whether *only* things that are one by a unity of nature are Cartesian substances. As I will discuss shortly, it is possible for something with a unity of composition to be a substance. It would be strange, however, if both unity of nature and unity of composition were substance-entailing. I think that Descartes is implicitly giving us a defining characteristic of substances: they have, in every case, a unity of nature. Everything with an affinity for shape and mobility will be a body, and everything with an affinity for understanding and volition will be a mind. And bodies and minds are Cartesian substances.

Third, if we take unity of nature to be a stronger kind of unity than a unity of composition – and that seems like a natural thing to do – it follows that human beings have a lesser degree of unity than things with a unity of nature. This is not yet to say that human beings are not Cartesian substances. Perhaps Descartes allows that there are degrees of unity among substances, but unless Descartes thinks that there is an important difference between unity of nature and unity of composition. then it is unclear what is significant about making such a distinction: the distinction would be doing no metaphysical work at all. I have suggested that the distinction delimits which things are substances and which are not. Someone who wishes to resist this conclusion might suggest that the distinction merely shows that there can be different degrees of unity among substances (i.e. substances that have a unity of nature are *more united* than substances having a unity of composition). For instance, Descartes seems to think that minds and God have a greater degree of unity than bodies due to the incorruptibility of the former and the corruptibility of the latter. In an infamous passage from the Synopsis of the *Meditations*, Descartes states:

[A]bsolutely all substances or things which must be created by God in order to exist, are by their nature incorruptible and cannot ever cease to exist unless they are reduced to nothingness by God's denying his concurrence to them [...]. But the human body, in so far as it differs from other bodies, is simply made up of a certain configuration of limbs and other accidents of this sort; whereas the human

mind is not made up of any accidents in this way, but is a pure substance [...]. And it follows from this that while the body can very easily perish, the mind is immortal by its very nature (AT VII 14/CSM II 10).

Although I have been assuming in this paper that the human body, as well as other individual bodies, are Cartesian substances, some scholars think that this passage indicates that Descartes did not think that individual bodies are substances.⁵² But it is still possible to think that bodies are substances in some looser sense – they are not pure substances, they are corruptible and composite substances. With the Synopsis passage in mind, consider what Descartes says about human beings: "[A] human being, being a composite entity, is naturally corruptible, while the mind is incorruptible and immortal" (AT III 422/CSMK 189). So, one might suggest that human beings, as corruptible things, are still substances albeit in the same loose sense in which individual bodies are substances. Perhaps then the distinction between a unity of nature and a unity of composition simply captures the 'looseness' of the substancehood of human beings. This suggestion, however, is implausible. After all, on the account given in the Sixth Replies, both minds and bodies have a unity of nature, but human beings have merely a unity of composition. Even if bodies are substances having a lesser degree of unity than minds and God (and perhaps are substances to a lesser degree), they still have a unity of nature, whereas human beings do not. Moreover, there is no indication, in the Sixth Replies or elsewhere, that Descartes is explaining degrees of substancehood in terms of the difference between unities of nature and unities of composition. If there were a difference in the degree of substancehood, it is more plausible to think that Descartes explains this in terms of the incorruptibility of certain substances and the corruptibility of others rather than in terms of the distinction between unity of nature and unity of composition. Finally, in the context of his discussions of substantial unions, Descartes never says that minds are more substantial than bodies. On the contrary, he says that they are equally substantial.⁵³

Earlier I alluded to a fairly obvious objection to the conclusions I have drawn from Descartes' discussion in the Sixth Replies: I have claimed that a unity of nature is substance-entailing, whereas a unity of composition is not. I even went so far as to say that having a unity of nature is a defining characteristic of a substance. However, Descartes

⁵² Gueroult 1968–1974; Keeling 1968; Lennon 1994 and 2007; Secada 2000; Sowaal 2004; Woolhouse 1993.

⁵³ For instance, AT VII 223/CSM II 157.

says that something having flesh and having bone is one by a unity of composition in so far as the same animal has both. But, I have been assuming that an individual body, such as an animal, is a Cartesian corporeal substance. Therefore, there are unities of composition that are substances. If that is true, then the fact that a human being has a unity of composition does not entail that it is *not* a substance. In response, I first admit that the fact that something has a unity of composition does not entail that it is not a substance. Whereas a unity of nature entails substancehood, unity of composition does not entail substancehood. In response to this objection, I appeal to the previously-stated Things with Parts Thesis: In Descartes' ontology, the only things with proper parts are human beings and bodies. Of course, the example he gives to illustrate a unity of composition (the animal's bones and flesh) is an example in which the things that are united by composition are parts of a substance. However, given the Things with Parts Thesis, we once again are confronted by the fact that Descartes simply cannot give an informative example to illustrate the fact that human beings are united by composition without comparing them to something else with parts. But the only things with parts, other than human beings, are corporeal substances. There is a very salient difference, however, between an animal and a human being, namely that every proper part of an animal has the same principal attribute (i.e. extension). The following is true:

Peculiarity of Human Beings Thesis: In Descartes' ontology, human beings are the only things with proper parts having different principal attributes.⁵⁴

In much the same way as Descartes is restricted in his illustrations of incomplete substances, he is restricted in his illustrations of unity of composition. Because human beings are so peculiar, Descartes cannot compare the unity of their components (as united by composition) to anything of the same kind. He must compare human beings united by composition to something having parts, but whose parts and properties have no affinity for each other. Therefore, we shouldn't put much weight in Descartes' example of bones and flesh. More precisely, we shouldn't think that it follows from the fact that there are things having a unity of composition that are substances that human beings are substances.

Still, it might be thought that claim that having a unity of nature is a defining characteristic of a substance is in conflict with the substance-

⁵⁴ Human beings are peculiar not only in that sense, but also insofar as they are the only things in Descartes' ontology which have parts but which he never calls substances.

hood of something having a unity of composition, such as the animal with bones and flesh. It is my contention that Descartes holds that something can have both a unity of nature and a unity of composition. and thus there is a good explanation of how something having a unity of composition can be a substance. In order for something having a unity of composition to be a substance, there must be an affinity between *some* modes and that substance such that there is a unity of nature present. Take the case of an animal having bones and having flesh: there is a unity of composition because there is no principal attribute that entails something having bones and flesh. Nevertheless there is a substance (the animal) that has both bones and flesh. The animal is a *substance*, however, and has a unity of nature, in virtue of its principal attribute entailing certain modes such as size and shape. We could say that a substance has a unity of nature necessarily, whereas in cases in which something with a unity of composition is a substance, the substance has a unity of composition merely accidentally. A dog has bones and flesh in virtue of having a unity of composition, but the dog is a substance in virtue of having a unity of nature. The dog has the principal attribute of extension, and as such, has an affinity for certain modes (i.e. size, shape). A human being, on the other hand, has no such principal attribute that could endow it with a unity of nature. Thus, the fact that it is possible for something having bones and flesh to be a substance (in virtue of having the principal attribute of extension) does not entail the possibility of thought and extension (things united by composition) belonging to a single substance.

The obvious difference, therefore, between something with bones and flesh and something with thought and extension is that the former has only one principal attribute. At the beginning of this paper I mentioned the One Principal Attribute Thesis, i.e. that a Cartesian substance has only one principal attribute. We can now see the relevance and importance of this thesis to the discussion of unity of nature, unity of composition, and substancehood: Something with bones and flesh is a substance in virtue of having one principal attribute irrespective of its status as also having a unity of composition, whereas something with thought and extension – a human being – has a unity of composition but is not a substance because it does not have one principal attribute. To put it forcefully:

A thing that is F and a thing that is G are one by a unity of composition in a *substance* x only if x has F^* and G^* ; $F^* \neq F$ and $G^* \neq G$; and there is an affinity between the thing with F^* and the thing with G^* (i.e. if x has only one principal attribute).

According to my interpretation of Cartesian affinity, it is possible for the something with a unity of composition to be a substance only if it has only one principal attribute. Therefore, whereas a dog with bones and flesh is a substance, a human being is not.

Conclusion: Descartes' Definitions of Substance and Human Beings

It is well-known that Descartes gives at least two different definitions of 'substance'. According to the most prominent definition, one found in many texts, a substance is something which enjoys a certain level of independent existence. According to another, found in the Second Replies, a substance is the subject of properties. It has been argued that, given certain considerations, a human being will satisfy both of these definitions and hence will count as a Cartesian substance. ⁵⁵ Clearly a detailed examination of Descartes' definitions of 'substance' and whether human beings satisfy them would make the present paper entirely too long. Thus, I must be content merely to make brief mention of the reasons why I don't think that Cartesian human beings satisfy Descartes' definitions, while recognizing that there are various ways (unconvincing, by my lights) an opponent could respond.

First, consider the 'independence criterion' for substancehood in *Principles* I.51–52:

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 (AT VIIIB 24/CSM I 210).⁵⁶

Descartes immediately goes on to claim that created minds and bodies are substances in the way proper to created things, namely as being things that depend only on God. A mistake would be to suppose that the relevant sort of dependence in this context is mereological or compositional in nature, that is, to think that if a thing is composed of parts, then that thing is dependent on those parts in a way that rules out substancehood. What is clear from the *Principles* passage above, as well as

⁵⁵ For instance, Markie 1994, 71.

⁵⁶ See also AT VII 226/CSM II 159; AT III 429/CSMK 193f.; AT VII 185/CSM II 130; AT VII 14/CSM II 10.

from every discussion of the independence criterion for substancehood, is that the relevant sort of dependence is causal: Finite substances depend causally on God's conservation for their existence. The fact that human beings and individual bodies depend 'mereologically' on their component parts is, therefore, irrelevant to whether they satisfy the independence criterion. But even if we accept that the notion of independence relevant to substancehood is causal in nature, it still might be thought that either *both* individual bodies and human beings satisfy the independence criterion or *neither* satisfies it. As Peter Markie states: "Any reason to exclude mind-body unions from the category of substances, is an equally good reason to exclude particular bodies from the category. Mind-body unions [...] are just as causally independent of other things as particular bodies are" ⁵⁷.

Markie is mistaken about this. Human beings do not, in fact, enjoy the same degree (or perhaps even kind) of causal independence as individual bodies. In the interest of refraining from 'scooping' an argument from an excellent, but currently unpublished, paper by David Ivy, I can only sketch my reason for thinking that Markie is wrong.⁵⁸ Unlike the case of individual bodies, in which God need only create/conserve one genus of substance (extended substance),⁵⁹ in order for human beings to exist, God cannot create/conserve only one genus of substance. Rather. He would need to create/conserve at least two substances (a mind and a body), and two substances of different genera to boot! But even that is not enough for a human being to be created/conserved by God because it is possible for minds and bodies to exist without any union between them. The existence of human beings, their creation and conservation by God, requires not only the creation/conservation of two other substances of two other genera, their existence also depends on God instituting relations between particular minds and particular bodies. So human beings, unlike individual bodies, depend on God's creation and conservation of two other kinds of substances and

⁵⁷ Markie 1994, 71.

⁵⁸ I strongly encourage the reader to look at Ivy's paper. It contains details and rigorous argumentation that would be too lengthy (not to mention unfair and inappropriate to Ivy, given that his paper is currently unpublished) for me to discuss in the present paper.

⁵⁹ I take it to be uncontroversial that Descartes holds that God could create a world containing only bodies, as well as a world containing only minds. Minds and bodies are not only really distinct substances, they are really distinct genera of substances. God could certainly create and conserve the substances of one genus without the substances of the other.

on God's establishing certain sorts of relations between those other substances. Surely, then, human beings do not enjoy the same degree (or sort?) of causal dependence on God.

Now consider the 'subject criterion' for substancehood found in Descartes' 'geometrical exposition' in the Second Replies: "Substance. This term applies to every thing in which whatever we perceive immediately resides, as in a subject, or to every thing by means of which whatever we perceive exists" (AT VII 161/CSM II 114). Do human beings satisfy that subject criterion? In order to satisfy it, human beings must be the subjects of their own modes, modes that are not reducible to modes of either their minds or bodies. The most promising candidates for such modes are sensations and other 'obscure and confused perceptions', and Descartes does make some statements that could be taken to be affirming that sensations are modes of human beings. In *Principles* I.48, he states:

But we also experience within ourselves certain other things which must not be referred either to the mind alone or to the body alone. These arise [...] from the close and intimate union of our mind with the body (AT VIIIA 23/CSM I 209).⁶⁰

This text is ambiguous. It could either be taken to mean that sensations are modes of the human being, or it could be taken to mean that sensations are modes of thought had by a mind *insofar as it is united to a body*. If the former reading is true, then human beings must be substances in virtue of satisfying the subject criterion. On the other hand, if the latter reading is true, then it is an open question whether human beings satisfy the subject criterion. If human beings have *no* modes of their own, and all their alleged modes are really modes of either their mind or body, then, in the absence of any other plausible candidates for modes of human beings, human beings do not satisfy the subject criterion. Thus, they are not substances.⁶¹

In addition, there are important features of Descartes' ontology supporting the latter reading. First, we are familiar with Descartes' view that modes are, without exception, modes of a principal attribute. Size and shape are modes of extension, and ideas and volitions are modes of thought. As we have seen, Descartes characterizes the relationship be-

⁶⁰ See Cottingham 1985 for a discussion of sensations and this passage very different from my own. Also see my remark about Cottingham in note 8 above.

⁶¹ There is also textual evidence that the latter reading is what Descartes means. In a letter to Regius, Descartes states that "sensations are not pure thoughts of a mind distinct from a body, but confused perceptions of a mind united to a body" (AT III 493/CSMK 206, emphasis mine).

tween a principal attribute and its modes as a 'referring' relation, and the 'referring' relation is an entailment relation. Principal attributes are entailed by, or are presupposed by, their modes. In the passage from *Principles* I.48 above, Descartes claims that sensations are not *referred* to the mind *alone* or to the body *alone*. A natural way to understand this claim, given our understanding of the referring relation, is that sensations require that the mind and body be united. But the latter reading of *Principles* I.48 perfectly supports the notion that sensations presuppose that the mind and body are united. A more substantial claim about sensations and their subjects than that seems unwarranted.

Second, if human beings have their own modes, then, given Descartes unequivocal endorsement of the One Principal Attribute Thesis, human beings would require their own principal attribute in addition to the principal attributes of their minds and bodies, such that their own modes are modes of *that* principal attribute.⁶² Although Descartes makes some obscure statements to Elisabeth, which some have taken to indicate that human beings have their own single principal attribute,⁶³ his most explicit, detailed, and forceful statements on this issue in the Fourth Replies, Regius letters, and *Notae* point to the view that human beings have two principal attributes. The fact that human beings have only the two principal attributes of thought and extension, in conjunction with the fact that all modes are modes of a principal attribute, shows that human beings must only modes of thought and of extension. Human beings have no modes of their own, and thus do not satisfy the subject criterion for substancehood.

These, once again, are merely sketches of the reasons why I think human beings do not satisfy Descartes' definitions of 'substance'. Of course, there is much more to be said about Cartesian substances and Cartesian human beings, but that discussion must wait for another occasion.

⁶² The notion that human beings have their own principal attribute would seem to entail either that human beings are substances *really distinct* from both their minds and their bodies, or that human beings have *three* principal attributes. I find the former alternative absurd. Luckily, my intuitions need not settle the matter because Descartes explicitly repudiates the view that human beings are really distinct from their minds and bodies in the January 1642 letter to Regius (AT III 508/CSMK 209). The latter alternative simply cannot be anything Descartes holds or would hold, given his views about principal attributes and substances.

⁶³ AT III 665; CSMK 218. See Schmaltz (1992).

Abbreviations:

AT C. Adam/P. Tannery (eds.): Œuvres de Descartes. Paris 1996.

CSM J. Cottingham, R. Stoothoff, D. Murdoch (eds.): The Philosophical Writings of Descartes, vols. I and II. Cambridge 1985.

CSMK J. Cottingham, R. Stoothoff, D. Murdoch, A. Kenny (eds.): *The Philosophical Writings of Descartes*, vol. III. Cambridge 1991.

DM Suarez, Francisco: Disputationes Metaphysicae. In Opera Omnia. Paris 1861.

ST Thomas Aquinas: Summa theologiae. Cambridge 1964–1981.

Summa Eustachius a Sancto Paulo: Summa philosophica quadripartite, de rebus Dialecticis, Ethicis, Physicis, & Metaphysicis. Paris 1609.

Adams, M. M. 1987. William Ockham. Notre Dame.

Alquié, F. 1966. La découverte métaphysique de l'homme chez Descartes. 2nd ed. Paris.

Broughton, J. / Mattern, R. 1971. "Reinterpreting Descartes on the Union of Mind and Body". *Journal of the History of Philosophy* 9: 23–32.

Carriero, J. 2002. "Monism in Spinoza". In: Koistinen O. /Biro J. (eds.): Spinoza: Metaphysical Themes. Oxford: 38–59.

Chappell, V. 1994. "L'Homme Cartesien". In: Beyssade, J.-M./Marion, J.-L. (eds.): Descartes: Objecter et répondre. Paris: 403–426.

-. 1997. "Descartes' Ontology". *Topoi* 116: 111–127.

Cottingham, J. 1985. "Cartesian Trialism". Mind 94: 218-230.

Cover, J. / Hawthorne, J. 1999. Substance and Individuation in Leibniz. Cambridge.

Des Chene, D. 1996. Physiologia: Natural Philosophy in Late Aristotelian and Cartesian Thought. Ithaca.

Dutton, B. 2003. "Descartes's Dualism and the One Principal Attribute Rule". British Journal for the History of Philosophy 11: 395–415.

Garber, D. 1992. Descartes' Metaphysical Physics. Chicago.

Gilson, É. 1967. Études sur le rôle de la pensée médiévale dans la formation du système cartésien. 3rd ed. Paris.

Gueroult, M. 1985. Descartes' Philosophy Interpreted according to the Order of Reasons. Vol. II. Transl. R. Ariew. Minneapolis.

1968–1974. Spinoza. 2 vols. Paris.

Hoffman, P. 1986. "The Unity of Descartes' Man". Philosophical Review 95: 339–370.

-. 1999. "Cartesian Composites". Journal of the History of Philosophy 37: 251-270.

Ivy, D. [unpublished]. "The Dependence of Descartes' Human Being".

Kaufman, D. 2003. "Divine Simplicity and the Eternal Truths in Descartes". *British Journal for the History of Philosophy* 11: 553–579.

Keeling, S. V. 1968. Descartes. Oxford.

Laporte, J. 1950. Le rationalisme de Descartes. Paris.

Lennon, T. 1994. "The Problem of Individuation among the Cartesians". In: Barber, K. / Gracia, J. J. E. (eds.): *Individuation and Identity in Early Modern Philosophy: Descartes to Kant*. Albany: 13–39.

-. 2007. "The Eleatic Descartes". Journal of the History of Philosophy 45: 29–45.

- Markie, P. 1994. "Descartes's Concepts of Substance". In: Cottingham, J. (ed.): Reason, Will and Sensation: Studies in Descartes' Metaphysics, Oxford: 63–87.
- Olivo, G. 1993. "Descartes: l'homme en personne". In: Verbeek, T. (ed.): Descartes et Regius: autour de l'explication de l'esprit humain. Amsterdam: 69–91.
- Pasnau, R. 2002. Thomas Aquinas on Human Nature: A Philosophical Study of Summa theologiae Ia 75–89. Cambridge.
- -. 2004. "Form, Substance, and Mechanism". Philosophical Review 113: 31-88.

Rodis-Lewis, G. 1950. L'individualité selon Descartes. Paris.

 -. 1993. "Problèmes discutés entre Descartes et Regius: l'âme et le corps". In: Verbeek, T. (ed.). Descartes et Regius: autour de l'explication de l'esprit humain. Amsterdam: 35–46.

Rozemond, M. 1998. Descartes's Dualism. Cambridge.

Schmaltz, T. 1992. "Descartes and Malebranche on Mind and Mind-Body Union". Philosophical Review 101: 281–325.

-. 2002. Radical Cartesianism: The French Reception of Descartes. Cambridge.

Secada, J. 2000. Cartesian Metaphysics: The Scholastic Origins of Modern Philosophy. Cambridge.

Shapiro, L. 2003. "Descartes' Passions of the Soul and the Union of Mind and Body". *Archiv für Geschichte der Philosophie* 85: 211–248.

Smith, K. / Nelson, A. [unpublished]. "Descartes and Spinoza on the Divisibility and Indivisibility of Body".

Sowaal, A. 2004. "Cartesian Bodies". Canadian Journal of Philosophy 34: 217–240.
 Verbeek, T. 1992. Descartes and the Dutch: Early Reactions to Cartesian Philosophy 1637–1650. Carbondale / Edwardsville.

1993. "Le contexte historique des Notae in programma quoddam". In: Verbeek, T.
(ed.): Descartes et Regius: autour de l'explication de l'esprit humain. Amsterdam:
1–33

Wilson, M. 1978. Descartes. London.

Woolhouse, R. S. 1993. Descartes, Spinoza, Leibniz: The Concept of Substance in Seventeenth-Century Philosophy. London.