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A FUNDAMENTAL AMBIGUITY IN THE CARTESIAN THEORY OF IDEAS: DESCARTES AND LEIBNIZ ON INTELLECTUAL APPREHENSION[1]

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Abstract: *Traditionally the modern theory of ideas has been discussed primarily in reference to its alleged introduction of a veil of mental items between the mind and the world, which leads, through the empiricists, to radical skepticism about the existence of an external world. Here I propose to emphasize an entirely different aspect of the Cartesian theory of ideas which, in my view, is more fundamental in opening the empiricist path that leads to Hume's radical skepticism. I argue that what I call the "phenomenological presentation" model of ultimate justification is rooted in a fundamental ambiguity between sensible and intellectual apprehension insinuated by Descartes's view of "clear and distinct" ideas together with his emphasis on the priority of intuition over logical inference. Sensible apprehension relies on immediate acquaintance with items phenomenologically and ostensively present before the mind as given particulars. The phenomenological presentation model takes its clues from*

[1] I offer this article in honor of Professor Marcelo Dascal, whose work on Leibniz – in particular his book *Leibniz: Language, Signs and Thought* (Amsterdam and Philadelphia: John Benjamins Publishing Company, 1987) – I greatly admire. Although I do not work on the subject, I also admire Professor Dascal's work on the relationship between philosophy and politics. And, above all, I admire Marcelo and his wife Varda's courage in their long and indefatigable commitment to work for peace between Israelis and Palestinians.

sensible apprehension, although the items present before the mind might themselves be either ideas of the understanding, images of the imagination, sensory impressions, or material external objects. Intellectual apprehension, by contrast, as I illustrate with Leibniz's model of our knowledge of concepts and truths of reason, consists in the discursive, non-ostensive grasping of the generality of abstract concepts and of formal structures (as opposed to particular contents). For Leibniz, all intellectual apprehension is unambiguously "logical discursive apprehension" as opposed to "direct ostensive apprehension." Thus, Leibniz unmistakably disambiguates Descartes's model in favor of a precise intellectual model. The empiricists, by contrast, correspondingly disambiguate Descartes's conception in favor of an entirely sensible model.

Key-words: *Descartes; Leibniz; theory of ideas; clear and distinct ideas; rationalism; empiricism; sensible apprehension; intellectual apprehension.*

Traditionally the modern theory of ideas has been discussed primarily in reference to the "veil of perception." The standard story is that Descartes introduces with such a theory a veil of mental items between the mind and the external world, and this in turn leads, through the empiricists, to radical skepticism about the existence of a mind-independent external world. The theory of ideas so understood has been put at the center of the relationship between modern philosophy and skepticism; and there has been a subsequent reaction of interpreters who deny or downplay the claim that the veil of perception plays any significant role in particular in Hume, who should instead be viewed as not endorsing radical skepticism at all. Here I propose to emphasize an entirely different aspect of the Cartesian theory of ideas, which, in my view, is independent of both the ontological nature of the items present before the mind and the idea of a veil of perception hindering our epistemological access to an external world. According to my approach, which I develop elsewhere, the main source of Hume's radical skepticism is what I call the "phenomenological presentation" model of ultimate

justification suggested by the theory of ideas.[2] This model centers on the inspection of phenomenologically present items with which the mind is in a relation of immediate acquaintance – where the phenomenologically present items can be impressions, ideas, *or* external objects. What is crucial is that this direct or immediate phenomenological inspection provides the ultimate grounding of our beliefs.

In what follows I argue that the phenomenological presentation model of ultimate justification is rooted in a fundamental ambiguity insinuated by Descartes's theory of ideas, in particular, by Descartes's view of "clear and distinct" intellectual intuition. That there is an ambiguity inviting the empiricists' appropriation of Descartes's model of ultimate justification can be best appreciated by showing how Leibniz later unmistakably disambiguates Descartes's model in favor of a precise intellectual model. The empiricists, by contrast, correspondingly disambiguate Descartes's conception in favor of an entirely sensible model.

I. CARTESIAN INTELLECTUAL INTUITION

The source of the phenomenological presentation model can be found in Descartes. In my view, Descartes's conception of "clear and distinct" intellectual perception contains an important ambiguity between a sensible and an intellectual apprehension of ultimate evidence.[3]

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[2] See my articles, "Hume's Pyrrhonian Skepticism and the Belief in Causal Laws," *Journal of the History of Philosophy*, vol. XXXIX, No. 3, July 2001, and "Causation as a Philosophical Relation in Hume," *Philosophy and Phenomenological Research*, vol. LXIV, No. 3, May 2002.

[3] I include the imagination in what I call here the "sensible" mode of apprehension, since my purpose is to explore whether Descartes has a way of isolating features that pertain exclusively to the intellectual mode of

Sensible apprehension relies on the immediate acquaintance with items which are phenomenologically and ostensively present before the mind as given particulars. The phenomenological presentation model takes its clues from sensible apprehension, although the items present before the mind might themselves be either ideas of the understanding, images of the imagination, sensory impressions, or material external objects. The ambiguity, therefore, invites the empiricist appropriation of the theory of ideas. Intellectual apprehension, by contrast, as I illustrate below with Leibniz's model of ultimate justification, consists in the discursive, non-ostensive grasping of the generality of abstract concepts and of formal structures (as opposed to particular contents). Since the apprehension of generality is traditionally associated with the intellect whereas the senses are confined to the apprehension of particulars, Leibniz's model of ultimate justification implies a clear distinction between intellectual and sensible apprehension. The ambiguity in the phenomenological presentation model is therefore rooted in the absence of a distinction between the mere apprehension of a particular ostensively present before the mind, on the one hand, and the discursive apprehension of the generality of concepts or the apprehension of form, on the other. Descartes insinuates this ambiguity despite his persistent and wholesale condemnation of sensory apprehension as obscure and confused[4] and

apprehension as opposed to the two closely linked faculties of imagination and sensory perception.

[4] For example, in the *Sixth Meditation*, by the end of the proof of the existence of corporeal things, Descartes writes: "They [corporeal things] may not all exist in a way that exactly corresponds with my sensory grasp of them, for in many cases the grasp of the senses is very obscure and confused. But at least they possess all the properties which I clearly and distinctly understand, that is, all those which, viewed in general terms, are comprised within the subject-matter of pure mathematics." (C, vol. II, p. 55). (This and all other quotations in English of Descartes's writings are from *The Philosophical Writings of*

his attempt in the *Meditations* to diminish the role of the imagination in pure geometry.

The adoption of the phenomenological model is independent not only from either the mental or external character of what we directly apprehend, but also from its causal ancestry. Descartes's account of ultimate evidence gives rise to the ambiguity between the sensible and intellectual modes of apprehension despite his rejection of the Aristotelian view that all human knowledge must ultimately have a causal relation with sensory experience, and, in particular, despite Descartes's explicit and fundamental attempt to uphold human intellectual intuition as entirely free and independent from any ancestral relation to the corporeal substance that constitutes the human body. Descartes's ambiguity is therefore independent from his claim that modes internal to the human mind – innate ideas – are the sole source of intellectual apprehension.

In the *Third Meditation*, in the course of drawing a distinction between ideas and the mental attitudes which might accompany them (such as willing, being afraid of, affirming, or denying), Descartes likens ideas to images: "Some of my thoughts are as it were the images of things, and it is only in these cases that the term 'idea' is strictly appropriate – for example, when I think of a man, or a chimera, or the sky, or an angel, or God" (C, vol. II, p. 25). The intellectual idea of God is in this respect no different from all other ideas. However, later in the same *Meditation*, Descartes makes the claim, crucial for his proof of the existence of God, that ideas differ widely with respect to what they

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Descartes, John Cottingham, Robert Stoothoff, Dugald Murdoch, (editors), 2 volumes (Cambridge: Cambridge University Press, 1985), and volume III of the preceding, by the same translators and Anthony Kenny (Cambridge: Cambridge University Press, 1991). My references to this edition use the abbreviation 'C', followed by the volume and page numbers.)

represent – with respect to what Descartes's terms their "objective reality." The classification of ideas in accordance with their objective reality turns on the ontological status of what they represent (infinite substance as opposed to finite substances, substances as opposed to essential attributes, essential attributes as opposed to accidents). The suggestion is, then, that in all ideas something presents itself to our minds like an image, regardless of the ontological status of what they represent, and this in turn suggests that the mode of apprehension of sensation and imagination – the way ideas are presented when sensing and imagining – provides the model of what it is to grasp ideas. The apprehension of images contains the main characteristics of what I call the "sensible" mode of apprehension: something appears ostensively before the mind, the mind is in direct acquaintance with it, by focussing on it the mind can immediately apprehend and exhaust its features, no generality of concepts or of formal structure needs to be detected.

Descartes does not, however, intend the phrase "as it were the images of things" to be referring to sensory images of material things depicted in the corporeal imagination. The latter is Hobbes's conception of the term "idea," and in the *Third Objections* to the *Meditation*s, Hobbes projects his own usage onto Descartes's "ideas," undoubtedly encouraged by the above phrase. In the *Third Replies*, Descartes addresses Hobbes's biased interpretation:

> Here my critic wants the term 'idea' to be taken to refer simply to the images of material things which are depicted in the corporeal imagination ... I am taking the word 'idea' to refer to whatever is immediately perceived by the mind ... sed the word 'idea' because it was the standard philosophical term used to refer to the forms of perception belonging to the divine mind, even though we recognize that God does not possess any corporeal imagination. (C, vol. II, p. 127)

Nonetheless, disregarding the images of the corporeal imagination does not preclude the endorsement of the phenomenological model, which takes its clues from the sensible mode of apprehension, and in particular, from the apprehension of images. The *Second Meditation* includes the acts of imagining and sensing in the list of "acts of thought,"[5] and Descartes starts the *Third Meditations* with the reaffirmation that he cannot doubt that he is presented with ideas, even with ideas of sense and imagination: "even though the objects of my sensory experience and imagination may have no existence outside me, nonetheless the modes of thinking which I refer to as cases of sensory perception and imagination, in so far as they are simply modes of thinking, do exist within me – of that I am certain" (C, vol. II, p. 24). Thus, there is a mental presentation aspect of the images of the imagination (and sensory perception) which is not to be reduced to the image's corporeal realization in the corporeal imagination. Mental images of the imagination and sensations, as well as intellectual ideas, are all "immediately perceived by the mind."

Intellectual ideas and ideas of the imagination (or of sensation) differ with respect to the way they came to be present before our minds (the *origin* of the imagination's ideas can be traced back to corporeal nature and its relationship to mind, whereas intellectual ideas are innate). They also differ with respect to the *ontological* nature of what they respectively represent (the imagination contemplates shape or images of particular corporeal things, as Descartes writes in the *Second Meditation*, see C, vol. II, p. 19). Is there a further difference, however, between the *mode of presentation* of ideas of the pure intellect and ideas of sense and imagination? It seems that the sole difference in mode of presentation is

[5] In the *Third Replies*, Descartes summarizes this point as follows: "understanding, willing, imagining, having sensory perceptions, and so on: these all fall under the common concept of thought or perception or consciousness" (C, vol. II, p. 124).

simply that sensations of colors, sounds, and the like, often mislead us regarding what we take them to represent – in other words, they are obscure and confused – while intellectual ideas (and some ideas of the imagination as they are employed in geometry) can be taken at face value as they are clearly and distinctly presented to an attentive mind. Thus, according to Descartes, although we can sometimes have clear sensory ideas, only clear and distinct ideas of the intellect have the required kind of certainty and thus cannot be doubted. In the *Second Replies*, Descartes writes:

> Again, we do not have the required kind of certainty with regard to matters which we perceive solely by means of the senses, however clear such perception may be. For we have often noted that error can be detected in the senses, as when someone with dropsy feels thirsty or when someone with jaundice sees snow as yellow; for when he sees it as yellow he sees it just as clearly and distinctly as we do when we see it as white. Accordingly, if there is any certainty to be had, the only remaining alternative is that it occurs in the clear perceptions of the intellect and nowhere else. (C, vol. II, p. 104)

However, this is not a difference in the intrinsic features of, so to speak, the *presentations* offered by different kinds of ideas, but rather between the ways in which presentations relate to what they purport to *represent*. Furthermore, even if the presentations offered by the senses were always obscure, clarity and distinctness would still be an insufficient mark of the intellectual mode of apprehension unless it is precisely characterized so as to eliminate the ambiguity between the sensible and the intellectual mode of apprehension.[6]

[6] Margaret Wilson, in *Descartes* (London: Routledge & Kegan Paul, 1978) argues that Descartes's assignment of a privileged status to our perception of primary qualities, as opposed to our perception of secondary qualities – thus the claim that the scientific image is superior to the manifest image of common

Clear and distinct presentation of ideas to a rational mind commands justificatory primacy – it is the criterion of truth for our judgments and defines ultimate evidence.[7] Therefore, Descartes needs unambiguously and precisely to distinguish it from the apprehension of mental images and sensory contents. Yet, despite the heavy epistemological burden carried by it, Descartes does not provide an unambiguously intellectualist account of clear and distinct perception. Descartes's definition of clear "perception" in the *Principles of Philosophy*, Part One, section 45, for example, includes the requirement of a direct presentation of something, and, in turn, the explanation of this acquaintance is provided by a comparison with visual sensory perception: "I call a perception 'clear' when it is present and accessible to the attentive mind – just as we say that we see something clearly when it is present to the eye's gaze and stimulates it with a sufficient degree of strength and accessibility" (C, vol. I, p. 207). And the definition of "distinct" idea, in this same text, is parasitic on a clear presentation

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sense – relies entirely on Descartes's view that the former are clearly and distinctly perceived, while the latter are not. Wilson points out that Descartes has not argued for a phenomenological difference in the presentation of primary as opposed to secondary qualities. She also claims that Descartes regards the apprehension of secondary qualities as obscure and confused because he has assimilated sensations of color, and the like to pains and other "internal" bodily sensations. (See Chapter III, section 2, and in particular, p. 119). I focus here instead on the absence of an account of the difference between the mode of apprehension of ideas of the pure intellect and the rest. As it will turn out with Leibniz, the difference can be found beyond the phenomenologically given, in the logical and formal features of intellectual concepts, propositions, and inferences.

[7] According to the *Fourth Meditation*, error and falsity arise from the interaction between our infinite will and our finite understanding, but they can be avoided if our will (the faculty of judgment) refrains from assenting to confused and obscure ideas.

before the mind: "I call a perception 'distinct' if, as well as being clear, it is so sharply separated from all other perceptions that it contains within itself only what is clear." Throughout Descartes's writings, descriptions of clear and distinct intellectual perception are coupled with metaphors referring to visual sensory images: the natural light, the mind's eye, intellectual vision, and so on, and no sustained effort is applied to eliminate the imagist or sensory connotations. Indeed, although Leibniz does not go as far as accusing Descartes of creating an ambiguity between sensible and intellectual apprehension, as we will see below, he criticizes Descartes for his imprecise characterization of clear and distinct ideas and replaces it with his own unambiguously intellectualist account.

In the *Rules for the Direction of the Mind*, Descartes regards intellectual intuition as the privileged source of ultimate justification. Intellectual intuition – an immediate intellectual apprehension – is for Descartes no other than clear and distinct perception with the mind's eye. In *Rule Three*, for example, Descartes writes:

> By 'intuition' I do not mean the fluctuating testimony of the senses or the deceptive judgment of the imagination as it botches things together, but the conception of a clear and attentive mind, which is so easy and distinct that there can be no room for doubt about what we are understanding. Alternatively, and this comes to the same thing, intuition is the indubitable conception of a clear and attentive mind which proceeds solely from the light of reason.

Descartes adds that only two operations of the intellect – intuition and deduction – guarantee the avoidance of error (C, vol. I, p. 14). However, deduction borrows its certainty from intuition: "The self-evidence and certainty of intuition is required not only for apprehending single propositions, but also for any train of reasoning whatever" (C, vol. I, pp. 14-15).

Thus, in deduction, the conclusion is known with certainty only if it is inferred from true and intuitively known principles:

> through a continuous and uninterrupted movement of thought in which each individual proposition is clearly intuited. This is similar to the way in which we know that the last link in a long chain is connected to the first: even if we cannot take in at one glance all the intermediate links on which the connection depends, we can have knowledge of the connection provided we survey the links one after the other, and keep in mind that each link from the first to the last is attached to its neighbour. Hence we are distinguishing mental intuition from certain deduction on the grounds that we are aware of a movement or a sort of sequence in the latter but not in the former (C, vol. I, p. 15).

In analyzing the path to certainty, Descartes points out that we intuit *that* the inferential links are connected, but he does not focus on the awareness of *how* the inferential links are connected – that is, on the apprehension of the logical or formal rules grounding the sequence. Instead, he claims that we achieve certainty because the intuition of each link's being connected to its neighbor is always present throughout the movement of thought. There is here no reference to the role played by our knowledge of logical or formal rules in achieving certainty; this becomes even clearer in subsequent *Rules*.

Rule Seven shows again our inescapable dependence on intuition in order to achieve any degree of certainty in any kind of inference. This rule prescribes a surveillance of everything relating to the understanding "in a continuous and wholly uninterrupted sweep of thought" and, in the case of a long and complex inference, its inclusion in "a sufficient and well-ordered enumeration," in order to remedy the deficiencies of memory (C, vol. I, p. 25). In the explanation of *Rule Seven*, Descartes writes:

> If, for example, by way of separate operations, I have come to know first what the relation between the magnitudes A and B is, and then between B and C, and between C and D, and finally between D and E, that does

> not entail my seeing what the relation is between A and E; and I cannot grasp what the relation is just from those I already know, unless I recall all of them. So I shall run through them several times in a continuous movement of the imagination, simultaneously intuiting one relation and passing on to the next, until I have learnt to pass from the first to the last so swiftly that memory is left with practically no role to play, and I seem to intuit the whole thing at once" (C, vol. I, p. 25).

Notice that Descartes appeals to the imagination, and that the only issue with which he is concerned is whether the steps can be intuited at the same time or not – and this question can easily be applied to the apprehension of relations among sensory given magnitudes or their mental images. Crucially, Descartes neglects to point out that the links among the magnitudes are of a formal or general character. Rather, the upshot of his discussion is that our knowledge of the inference can be certified as certain only if we infer one proposition from another swiftly enough, thereby reducing the inference to an expanded intuition.

Moreover, in *Rule Seven* Descartes appeals again, as he has done in *Rule Three*, to the comparison between the certainty of an inference and seeing with our eyes a long physical chain: although we might not be able to see the whole chain at one glance, we can claim that we have seen how the last link is connected to the first, if we have seen the connection between each link and its neighbor. In giving a prescription on how to achieve certainty in a long inference, the emphasis is again on the intuition of the component self-evident propositions, and again there is no acknowledgement of the contribution of our knowledge of the rules of inference. Later in *Rule Eleven* Descartes provides a useful clarification for understanding the terminology of *Rule Seven*: in *Rule Seven* deduction is regarded as a completed process, not as a movement of the mind as it is regarded in *Rule Three*. Yet, according to Descartes, the two conceptions are two ways of viewing the same thing. Furthermore, in *Rule Eleven* Descartes says that a completed deduction should be

contrasted with enumeration (induction). Descartes here seems to equate a completed deduction with an inference made through intuition alone, and this is possible when the deduction is simple and transparent, not complex and involved (C, vol. I, p. 37). When the inference is complex, involved, and long, we are less likely to be able to encompass all of the steps in a single intuition and such is the case of enumeration. In cases were the ideal certainty of completed deduction is not achievable, sufficient and well-ordered enumeration can still be attained.

In characterizing sufficient or well-ordered enumeration, Descartes gives no indication that he conceives it as relying on a type of intuition different from that of completed deduction. According to *Rule Seven*, sufficient enumeration starts with the intuition of some particular cases and then proceeds by generalization, in contradistinction to completed deduction in which we can intuit at once all premises and conclusion. The fact that in sufficient enumeration we cannot intuit at once all premises and conclusion does not suggest that Descartes intends enumeration necessarily to involve sensory perception or images of the imagination. However, one of the examples of a sufficient enumeration in *Rule Seven* is taken from geometry:

> ... say I wish to show by enumeration that the area of a circle is greater than the area of any other geometrical figure whose perimeter is the same length as the circle's. I need not review every geometrical figure. If I can demonstrate that this fact holds for some particular figures, I shall be entitled to conclude by induction that the same holds true in all the other cases as well (C, vol. I, p. 27).

Sufficient enumeration (induction) appears here to consist in a generalization based on particular figures regarded as representatives of their kind (properties of particular figures are taken to be universally shared by all other figures of the same kind). Although the intellect must

be involved in pure geometry for Descartes, this example ambiguously suggests that in sufficient enumeration, because we start with the inspection of particular properties of particular figures, we first apprehend images. Descartes's suggestion that sufficient enumeration begins with the aid of the imagination stands even if we assume that Descartes thinks that the further grasping of the representativeness and universality of the properties first presented as particulars by the imagination employs solely the pure intellect. Intuition here seems to rely on the imagination.

Rule Seven prescribes a surveillance in a continuous and wholly uninterrupted sweep of thought for any inference. This surveillance results in either the intuition of all the steps at once in the case of a simple, transparent deduction (completed deduction), or the intuition of a few particular cases in a sufficient enumeration. However, as we have seen, Descartes does not differentiate between the former and the latter kind of intuition, that is, between the intellectual intuition involved in simple deduction and the intuition involved in an enumerative inference of geometry. The reader is therefore invited to project her understanding of the latter onto the former and thereby to conceive both in terms of the phenomenological model. Any inference that can enjoy any degree of certainty turns out to be parasitic on intuition, and it is left unclear whether there are different types of intuition, in particular, whether there is any other way of conceiving intuition but on the model of the apprehension of images by the imagination as it is employed in geometry. This ambiguity is reinforced by *Rule Fourteen*, which prescribes that "perfectly understood" problems – those that arise almost exclusively in arithmetic and geometry (as explained at the end of *Rule Twelve*) – "should be re-expressed in terms of the real extension of bodies and should be pictured in our imagination entirely by means of bare figures.

Thus it will be perceived much more distinctly by our intellect" (C, vol. I, p. 56).

In the *Sixth Meditation*, by contrast, Descartes explicitly tries to separate the intellectual apprehension of geometry from the imagination. Here he distinguishes between understanding and imagination precisely with respect to how these two faculties differ in their employment in geometry. Descartes suggests that in understanding the mind turns towards itself and inspects ideas that belong to it, but when the mind imagines, it turns towards the body and looks at something in the body. This point is illustrated here with examples from our knowledge of geometry, in particular, with the famous example of the chiliagon:

> When I imagine a triangle, for example, I do not merely understand that it is a figure bounded by three lines, but at the same time I also see the three lines with my mind's eye as if they were present before me; and this is what I call imagining. But if I want to think of the chiliagon, although I understand that it is a figure consisting of a thousand sides just as well as I understand the triangle to be a three-sided figure, I do not in the same way imagine the thousand sides or see them as if they were present before me. It is true that since I am in the habit of imagining something whenever I think of a corporeal thing, I may construct in my mind a confused representation of some figure, but it is clear that this is not a chiliagon. For it differs in no way from the representation I should form if I were thinking of a myriagon, or any figure with very many sides (C, vol. II, p. 50).

Thus, Descartes here intends pure geometry to depend entirely on intellectual ideas, not on the images of the imagination. However, Descartes says very little in the *Meditations* about what it is to "understand' that the chiliagon is a figure of thousand sides, and how such an understanding can be completely independent of the images of the imagination or of sensory operations like counting, in order to eliminate the role in geometry assigned to the imagination by the *Rules*. I

shall return below to Descartes's lack of specification of the intellectual mode of apprehension in the *Meditation*s and other works.

The centrality of intuition is again underlined in *Rules Eight* and *Nine*. *Rule Eight* concerns what to do if we come across something which our intellect is unable to intuit sufficiently, and *Rule Nine* discusses how to acquire the habit of intuiting the truth distinctly and clearly. *Rule Eleven* returns to *Rule Seven*'s prescription of the need to run through the intuited simple propositions of an inference, that is, as it is now put, "in a continuous and completely uninterrupted train of thought." This is a prescription to be applied specifically to deduction, in order "to form a distinct and, as far as possible, simultaneous conception of several of them [propositions in an inference]" (C, vol. I, p. 37). The aim is to avoid the weaknesses of memory and gain more certainty:

> conclusions which embrace more than we can grasp in a single intuition depend for their certainty on memory, and since memory is weak and unstable, it must be refreshed and strengthened through this continuous and repeated movement of thought. Say, for instance, in virtue of several operations, I have discovered the relation between the first and the second magnitude of a series, then the relation between the second and the third and the third and fourth, and lastly the fourth and fifth: that does not necessarily enable me to see what the relation is between the first and the fifth, and I cannot deduce it from the relations I already know unless I remember all of them. That is why it is necessary that I run over them again and again in my mind until I can pass from the first to the last so quickly that memory is left with practically no role to play, and I seem to be intuiting the whole thing at once" (C, vol. I, p. 38).[8]

[8] At the end of the *Fifth Meditation*, Descartes writes that when he is not fixing his mental vision on a clear and distinct proof (which in this context Descartes illustrates with the geometrical proof that the three angles of a triangle are equal to two right angles), despite remembering that he perceived the proof very clearly in the past, he can fall into doubt about its truth. This uncertainty can only be eliminated by perceiving that God exists and is not a deceiver. In this way, the proof of the existence of an all powerful, undeceiving God

Here, once again, using the example of comparisons among particular magnitudes and without referring to formal mathematical generality, intuition as a clear and distinct immediate apprehension emerges as the sole model of ultimate justification. In sum, in the *Rules*, the certainty of any inference is parasitic on intuition, there is no unambiguous distinction between intellectual intuition and the intuition of the imagination, and there is no reference to the contribution of our knowledge of logical or mathematical rules of inference to certainty.

Descartes attempts of course to cast his model of ultimate justification in purely intellectual terms: he does not intend the notion of clear and distinct perception to be understood as an especially reliable sense experience or as a kind of apprehension whose origin can be traced down to sense perception, in particular, he does not regard intellectual ideas as abstracted from sensory contents.[9] Our understanding of the category of substance, for example, is not the result of a process that starts with the sensory perception of individual things and ends with a general or abstract idea of the substantiality shared by all sensed or imagined things. As the *Second Meditation* shows, to use another example, grasping the essence of this piece of wax as something over and above the changes imagined with the corporeal imagination or perceived with the senses is not conceived by Descartes as the apprehension of an attribute abstracted from qualities sensed or imagined in the piece of wax. However, in order to differentiate intellectual from sensible apprehension, it is not enough to divorce intellectual ideas from any causal

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guarantees that the certainty of the clear and distinct ideas with which we were directly acquainted can be transmitted to the intellectual memory of such ideas (C, vol. II, p. 48).

[9] See the treatment of this topic by John Carriero in *Descartes and the Autonomy of the Human Understanding* (New York & London: Garland Publishing, 1990).

relation to the senses and postulate that their origin is to be found in our minds (as bestowed by God with innate ideas).[10] For the innateness of the ideas involved in intellectual apprehension does not guarantee that the intellectual mode of apprehension is radically different from the sensible mode in the kind of *justification* it provides.[11]

What should the characterization of intellectual apprehension be, if it is to leave behind the clues afforded by sensible apprehension and it is not to be reduced to a claim about a distinctive origin of the ideas thus apprehended? Descartes explicitly includes in the apprehension of what is possible or impossible, for example, the grasping of the logical relation of contradiction; yet, he does not exploit this feature in order to demarcate intellectual apprehension:

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[10] In the *Third Meditation*, Descartes writes: "My understanding of what a thing is, what truth is, and what thought is, seems to derive simply from my own nature" (C, vol. II, p. 26).

[11] Perhaps the reason for Descartes's focus on the origin of intellectual ideas as the decisive factor that makes them intellectual, rather than on what is distinctive in their mode of apprehension, is very simple: Descartes's model of intellectual apprehension is geometry, and the apprehension of the truths of geometry cannot easily be conceived as entirely independent from phenomenological presentations akin to those of sensation or imagination. Arguably, there is in Descartes an ambiguity regarding the role of imagination in geometry. As we saw above, at least the *Rules*, if not the *Meditations*, give to the imagination the indispensable role of aiding the intellect in geometry. (For a defense of the view that Descartes regards the imagination as more than an incidental aid to geometry, even in the *Meditations*, see Margaret Wilson, *op. cit.*, pp. 169-171). This ambiguity might, in turn, explain Descartes's ambiguity between the sensible and intellectual modes of apprehension. Be this as it may, geometry is not the whole story. The foundation of metaphysics and knowledge ultimately rests on the Cogito and on the idea of God. I discuss below Descartes's view of an ostensive apprehension of the Cogito in "The Search for Truth by means of the Natural Light."

> And whenever my preconceived belief in the supreme power of God comes to mind, I cannot but admit that it would be easy for him, if he so desired, to bring it about that I go wrong even in those matters which I think I see utterly clearly with my mind's eye. Yet when I turn to the things themselves which I think I perceive very clearly, I am so convinced by them that I spontaneously declare: let whoever can do so deceive me, he will never bring it about that ...; or bring it about that two and three added together are more or less than five, or anything of this kind in which *I see a manifest contradiction* (*Third Meditation*, C, vol. II, p. 25, emphasis added).

Indeed, the intellectual notions Descartes uses are traditionally associated with a distinctive logical or formal mode of apprehension, even if Descartes does not focus on it. For example, the apprehension of some ideas as simple and others as composite involves the apprehension of logical structures (such as non-contradictory conjunctions of concepts), and the apprehension of basic metaphysical categories involves the apprehension of their generality or universality. Traditionally, the categories of substance and attribute, in particular, seem to derive from the logical form of subject and predicate of the categorical proposition, and this allows us to make a *prima facie* claim that the apprehension of these categories is modelled on the apprehension of a logical form.

Descartes's definition of substance in *Principles*, Part One, article 51, as "a thing which exists in such a way as to depend on no other thing for its existence" (C, vol. I, p. 210) – that is, in terms of a causal notion of dependence or independence – unlike the definition of substance as the ultimate subject, is not directly modelled on the notion of the logical subject of a categorical proposition. However, Descartes's definition in terms of independence is sufficiently abstract so as not to evoke at first the model of a direct phenomenological presentation. Other concepts and propositions used by Descartes are also free from a close association

with this model, for example: the concept of principal (essential) attributes of substances; the concept of modes; the causal principles used in the proof of the existence of God in the *Third Meditation*, the common notions or eternal truths ("If you add equals to equals the results will be equal,"[12] "It is impossible for the same thing to be and not to be at the same time," "What is done cannot be undone"[13]). However, Descartes exploits none of these in order to determine what is distinctive in their apprehension so as to find clues to delimit the intellectual mode of apprehension. Intellectual concepts and propositions are introduced in the system as legitimate simply because they are clearly and distinctly perceived, but, as we have seen, clear and distinct intellectual perception is inextricably entangled with the phenomenological presentation model of ultimate evidence.[14]

Going back to the *Rules*, in *Rule Twelve* Descartes seems to approach a characterization of intellectual apprehension that appears to be free from the clues provided by the mode of apprehension of sensory perception and imagination. Here he characterizes simple natures as those discovered when considering things in the order in which the

[12] *Principles*, Part One, article 13 (C, vol. I, p. 197).

[13] *Principles*, Part One, article 49 (C, vol. I, p. 209).

[14] Moreover, according to the *Meditations*, the most clearly and distinctly apprehended ideas, the foundation of the whole system, are the Cogito and the idea of God. Neither one is an abstract or general idea. Both refer to individual thinking substances, not merely to the general concept of a thinking substance or to the general concepts of the finite and the infinite. The third fundamental idea, the idea of an extended substance, also refers to an individual. Accordingly, ostensive relation to particulars constitutes the model of our relationship to the foundational elements of the system. Moreover, as I propose below, Descartes suggests that the apprehension of the essence, not simply the existence, of the created thinking substance that I am, consists in the direct acquaintance with something particular ostensively present before the mind.

intellect knows them, not in accordance with how they exist in reality, and as "those things which we know so clearly and distinctly that they cannot be divided by the mind into others which are more distinctly known. Shape, extension and motion, etc. are of this sort; all the rest we conceive to be in a sense composed out of these" (C, vol. I, p. 44).[15] Yet, the mind's grasping that simple natures cannot be divided into other things which are more distinctly known is not here regarded as reducible to the mind's detection that simple natures lack the logical structure of, say, conjunction – even if Descartes mentions in passing that composites result from the conjunction of simples. Nor does Descartes mean that simple natures cannot be further divided because they are the most general concepts in the tree of concepts of the logicians: Descartes's list is not based on the logical hierarchy of genus and species of the logician's tree. Indeed, as Descartes explains in the continuation of the paragraph just quoted, the idea of the limit of an extended thing is abstract and more general than the idea of shape, yet, it is not simple, but composed out of simple natures:

> We are abstracting, for example, when we say that shape is the limit of an extended thing, conceiving by the term 'limit' something more general than shape, since we can talk of the limit of a duration, the limit of a motion, etc. But, even if the sense of the term 'limit' is derived by abstraction from the notion of shape, that is no reason to regard it as simpler than shape. On the contrary, since the term 'limit' is also applied

[15] The simple natures themselves are: purely intellectual (knowledge, doubt, ignorance, volition); purely material (shape, extension, motion, etc.); common to both, that is, those that can be ascribed both to spirits and corporeal things (existence, unity, duration, etc.) and the "common notions," which function as links that connect other simple natures together – such as "Things that are the same as a third thing are the same as each other"; in addition, Descartes proposes to count privations and negations among the simple natures (see C, vol. I, pp. 44-45).

> to other things – such as the limit of a duration or a motion, etc., things totally different in kind from shape – it must have been abstracted from these as well. Hence, it is something compounded out of many quite different natures, and the term 'limit' does not have a univocal application in all these cases.[16]

A simple nature is just presented to the attentive mind and

> if we have even the slightest grasp of it in our mind – which we surely must have, on the assumption that we are making a judgment about it – it must follow that we have complete knowledge of it. Otherwise it could not be said to be simple, but a composite made up of that which we perceive in it and that of which we judge we are ignorant (C, vol. I, p. 45).

Ignorance and error can only take place in composition. Descartes claims that "we need take no great pains to discover these simple natures, because they are self-evident enough. What requires effort is distinguishing one from another, and intuiting each one separately with steadfast mental gaze" (C, vol. I, p. 48). However, Descartes does not sufficiently explain how to separate one simple nature from another or how to recognize what can be further divided and what cannot, so as to provide a convincing account of what is distinctive of intellectual apprehension. In the end, recognition of what can or cannot be further divided by the mind seems to rely not on the apprehension of the formal or logical structure of the composite, but, like intellectual apprehension more generally in the *Meditations*, on clear and distinct perception with the mind's eye – but again, as we have seen, clear and distinct perception suggests a phenomenological presentation model of unstructured contents. Descartes offers in the *Rules* the distinction between simple and

[16] Moreover, simple natures are not characterized as "imposed" on what is presented or as constructed by the mind – in fact, what we ourselves put together is always composite (see, for example, C, vol. I, p. 46).

composite, but he does not focus on the logical character of this distinction.

In this section I have attempted to show that Descartes strongly suggests a phenomenological model of intellectual intuition and also fails to provide a definite characterization of intellectual apprehension which counterbalances this suggestion by precluding any similarity with sensible apprehension. The entanglement of Descartes's epistemological model with the sensible mode of apprehension, together with Descartes's neglect of the generality of concepts and the formal logical features distinctive of intellectual apprehension, invite the empiricists' appropriation of the model. To illustrate this point I draw, in the next section, a contrast between Descartes's and Leibniz's conceptions of ultimate justification.

II. LEIBNIZ'S ALTERNATIVE

In my view, Leibniz's model of our knowledge of truths of reason and concepts, by explicitly focusing on the apprehension of logical relations, disambiguates Descartes's model of ultimate justification in favor of a clearly intellectual model. Leibniz never seems to rely (for knowledge of truths of reason and concepts) on the alleged certainty of a direct apprehension of contents phenomenologically present before the mind, precisely because, unlike Descartes, Leibniz provides resources to distinguish content from form. As I show below, Leibniz criticizes Descartes's conception of clear and distinct ideas and of what it is *to have* an idea, and in both cases Leibniz offers alternatives which crucially involve formal logical notions. Leibniz's own criterion of truth for both truths of reason and truths of fact – the containment of the concept of the predicate in the concept of the subject – is purely logical, in contrast to Descartes's criterion based on clear and distinct perception. In particular, human knowledge of truths of reason is for Leibniz entirely

logical in character: complex truths of reason are known via a finite analysis that reduces them to primary identical propositions. This analysis consists in finite deductions and finite definitions – where definitions analyze composite concepts into simpler and ultimately primitive concepts. Leibniz also has a notion of *immediate* knowledge of primary truths of reason, but it differs from Descartes's notion of intellectual intuition in that it too centrally involves a logical relation. Furthermore, not only does Leibniz characterize the immediate apprehension of primary truth in logical terms, but he also ties the intellectual apprehension of primary simple concepts to a logical, discursive, non-ostensive mode of apprehension.

In addition to his lack of confidence in deductive inference discussed above, Descartes denigrates the established discipline of logic. In the *Discourse on the Method*, Part II, for example, Descartes writes: "But on further examination I observed with regard to logic that syllogisms and most of its other techniques are of less use for learning things than for explaining to others the things one already knows or even, as in the art of Lully, for speaking without judgement about matters of which one is ignorant." (C, vol. I, p. 119). In the "Preface to the French Edition" to the *Principles*, Descartes adds stronger disparaging words for the "logic of the Schools;" and offers an alternative notion of logic, which he recommends: "Such logic ["the logic of the Schools"] corrupts good sense rather than increasing it. I mean instead the kind of logic which teaches us to direct our reason with a view to discovering the truths of which we are ignorant" (C, vol. I, p.186).

As is well known, Leibniz, unlike Descartes, holds the established discipline of logic and formal inferences in general in high regard. In Leibniz's criticisms of Descartes's *Principles*, (1692), especially on article 75, Leibniz defends Aristotelian logic against Descartes's pronouncements. According to Leibniz, Aristotelian logic is not sufficient for discovery but

is generally sufficient for judging, at least where necessary consequences are concerned. The most frequent fallacies introduced in serious matters are "sins against logical form." Since the complexity of matters in the sciences and the field of action prevents the straightforward use of the most common rules of logic, for these matters there must be certain special logical forms. The special forms are demonstrated from the general rules of logic but with the peculiar nature of the subject taken into consideration: "Just so Euclid has a certain logic of his own concerning the conversion, composition, and division of proportions, which are first proved in a particular book of the *Elements* and then are applied throughout the whole geometry" (L, p. 391).[17]

In his comments on *Principles*, Part I, articles 43, 45, and 46, Leibniz points out that Descartes has not offered sufficiently good marks for the notion of clear and distinct idea. Here Leibniz expresses again his preference for the rules of demonstrative methods in logic and geometry over Descartes's method of discovery based on clear and distinct perception:

> I have elsewhere called attention to the fact that there is not much use in the celebrated rule that *only what is clear and distinct shall be approved*, unless better marks of clearness and distinctness are offered than those of Descartes. Preferable are the rules of Aristotle and the geometricians, namely, that with the exception of principles, that is, of first truths or hypothesis, we are to admit nothing unless proved by a valid argument." (L, p. 389).

[17] Quotations in English of Leibniz's writings are from Gottfried Wilhelm Leibniz, *Philosophical Papers and Letters*, Leroy E. Loemker (editor), second edition (Dordrecht, Holland: D. Reidel Publishing Company, 1969), abbreviated as 'L' followed by the page number; and from *New Essays on Human Understanding*, Peter Remnant and Jonathan Bennett (translators and editors), (Cambridge: Cambridge University Press, 1981), abbreviated as 'NE' followed by the page number.

Leibniz's high regard for "formal argumentations" is expressed very strongly throughout his early as well as his later writings (for a later writing where this high regard is once again put forward, see "Letter to Gabriel Wagner on the Value of Logic," 1696, in L, pp. 462-71), and it is unmistakably revealed in his life-long search for a more universal and sublime logic than traditional logic: the development of his own logical calculus and "general characteristic."

In an early piece of 1667, entitled "A New Method for Learning and Teaching Jurisprudence," Leibniz offers the rules of what he calls "analytics" or the "art of judging" as an alternative, based on logic and on the logical structure of concepts provided by definitions, to Descartes's methodological rules, in particular, to the requirement of clear and distinct perception (L, p. 88). In a revision note to this article, dated 1697-1700, Leibniz clarifies the rules comprising the analytics:

> Two rules: (1) that no derivative notion is to be accepted unless it is explained, and (2) no derivative proposition unless it is proved. Explanation takes place through definition, proof through the syllogism, which provides a conclusion by force of its form, even if it does not always make use of the Scholastic arrangement" (L, p. 91).[18]

Descartes's method for the discovery of truth denigrates the rules of logic and attempts to make the certainty of deduction parasitic on

[18] The revision note of 1697-1700 continues: "... The rules of Descartes are less adequate, however. Certainly the first one – that what is perceived clearly and distinctly is true – is itself untrue (unless it be restricted on some ground) and proves, not existence, but only possibility. Nor is it very useful, unless we already have the criteria of clearness and distinctness which I once stated in a study on truth and ideas" (L, p. 91). Leibniz is here referring to the essay "Meditations on nowledge, Truth, and Ideas" (1684). More on the latter essay, and on the logical character of the explanation of derivative concepts through definitions, below.

intellectual intuition, whereas Leibniz, on the contrary, has absolutely no qualms concerning the certainty of deductive inference. This opposition, however, still leaves room for Leibniz to agree with Descartes on the character of our knowledge of first truths of reason. There is indeed for Leibniz some kind of intuitive knowledge of both truths of reason and truths of fact, which is linked to the notion of immediate evidence. Thus, in *New Essays on Human Understanding* (1705), Leibniz writes: "All primary truths of reason are immediate with the *immediacy of ideas*. As for primary truths of fact, these are inner experiences which are immediate with the *immediacy of feeling*. This is where the first truth of the Cartesians and St. Augustine belongs: *I think, therefore I am*." (NE, p. 367). Later on in this text Leibniz puts the same point thus: "the immediate awareness of our existence and of our thoughts provides us with the first a posteriori truths or truths of fact, i.e. the first experiences; while identical propositions embody the first a priori truths or truths of reason, i.e. the first illuminations" (NE, p. 434).

From these words one might conclude that for primary truths of reason Leibniz might endorse the Cartesian suggestion of a phenomenological presentation of an unstructured content before the mind. Nonetheless, Leibniz explicitly clarifies what he means by "immediate" awareness of primary truths of fact and of primary truths of reason respectively: "neither kind admits of proof, and each can be called 'immediate' – the former because nothing comes between the understanding and its object, the latter because nothing comes between the subject and the predicate" (NE, p. 434). The reference to the immediate relation between subject and predicate in identical propositions shows that the immediacy involved in the knowledge of first truths of reason does not reduce to a phenomenological presentation of, or direct acquaintance with, a mere unstructured content. The immediacy of the Leibnizian model is explicitly logical: it involves the logical relation of

containment of the concept of the predicate in the concept of the subject. The apprehension of this logical relation in turn reduces to the apprehension of the logical form of an identical proposition.[19] By contrast, Descartes's model, which does not emphasize form or generality, can lead to the assimilation of all immediacy to sensory or imaginary immediacy. Furthermore, for Leibniz, in order to prove truths of reason other than identities, an analysis must be carried out to reduce them to identities – such analysis involves the apprehension of the logical relation of containment among concepts, and of conjunctions and negations of concepts, exhibited by definitions. The apprehension of definitions cannot be captured in terms of a Cartesian phenomenological presentation of clear and distinct ideas – ideas which, as far as Descartes's model is concerned, may be entirely unstructured logically.

Logical notions also play a crucial role in Leibniz's criticisms of Descartes's conception of "having an idea" and of a "distinct" idea. In "Critical Thoughts on the General Part of the Principles of Descartes" (1692), Leibniz criticizes Descartes for claiming that when we speak of something with an understanding of what we say, *we have an idea* of the thing. According to Leibniz, on the contrary:

> it often happens that we combine things that are incompatible, as when we think of a most rapid motion, which is certainly impossible, and

[19] It can be argued that this logical notion of immediacy is tied only to the metaphysical notion of the truth of identical propositions, not to an epistemological notion of immediate evidence, immediate understanding, or immediate awareness. However, either there is no epistemological notion of immediacy at all here (or at most a notion that only applies to God's knowledge, which coincides with what is metaphysically true), or, if there is an epistemological notion of immediacy applicable to us, there seems to be no other model for it than the apprehension of the logical form of an identical proposition.

> hence not an idea; and yet we may speak of it, understanding what we mean. For I have elsewhere explained that we often think only confusedly of what we are talking about, and we are not conscious of the existence of an idea in our mind unless we understand the thing and analyze it sufficiently"(L, p. 387).

Strictly speaking, then, we are conscious of an idea in our minds – we have the idea – when we can show that the idea is possible, and this in turn amounts to showing that the idea is not or does not imply a contradiction.

In the *New Essays*, Book IV, Chapter x, section 7, pp. 437-438, for example, Leibniz writes that Descartes's proofs of the existence of God do not achieve "strict mathematical evidence." The ontological argument of the *Fifth Meditation* assumes, without proof, that the idea of a wholly great or wholly perfect being is possible and does not imply a contradiction. The argument in the *Third Meditation*, which assumes that the idea of God is in our souls and that it must have come from that of which it is an idea, shares with the ontological argument the defect of assuming that we have the idea of God. According to Leibniz, to have the idea of God is to have the idea that God is possible. Before we rigorously demonstrate anything from an idea, we must prove that the idea is possible – again, before this proof, we can only appear to have the idea of something: "M. Descartes argues that when we speak of God we know what we are saying and therefore have the relevant idea; but that is a misleading sign; for when we speak of perpetual motion, for example, we know what we are saying and yet such motion is an impossibility and so we can only appear to have an idea of it" (NE, p. 437).[20] Drawing out

[20] Leibniz, through Theophilus adds: "You will tell me, sir, that since I acknowledge the idea of God to be innate in us I ought not to say that one can entertain doubts about whether there is such an idea? But I allow such doubts only with reference to a rigorous demonstration founded wholly on the idea; for

an innate idea, of which we are not yet aware, in such a way that we can claim that we have it – that we can reason clearly about it – involves the rigorous demonstration of the possibility of the idea.[21] In other words, for us to have an idea is to be conscious of the possibility of a concept, which in turn amounts to being – aware of the formal logical notion of non-contradiction or of not implying a contradiction.[22] We can thus appreciate that Leibniz has built a logical notion on top, so to speak, of the notion of being aware of an innate idea. Contrary to Descartes, the fact that we are endowed with an innate idea does not guarantee by itself that we can have a clear intellectual apprehension of it, since in order rigorously to understand the idea we need to go through the logical exercise of proving the idea's consistency.

Leibniz undoubtedly relies on a logical model of our apprehension of composite or derivative concepts: first, we can only have a distinct idea of the elements of composite concepts through definitions, and, second, the possibility of composite concepts entirely depends on the logical

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we have from other sources enough assurance of the idea and of the existence of God." Then Theophilus reminds Philalethes that he has proved that we are not necessarily aware of all the ideas that are in us, but that ideas are in us in such a way that we can draw them from our own depths to become aware of them. The same is the case with the idea of God: the pre-established harmony, for example, as well as other "methods," provide the proof of the possibility of the existence of God.

[21] Possible ideas can be called "true" and impossible ideas, "false" (see, for example, NE, p. 269).

[22] In equating the strict notion of having an idea with knowing that the idea is possible – thus, in equating it with something more than the act of being acquainted with a content present before the mind – and in allowing that ideas are not at all times apprehended by the human minds in which they are potentially, Leibniz assumes that ideas possess a permanent unchanging character. This permanent unchanging character derives from the fact that the ideas to which we have access are in God's mind.

relation of non-contradiction. The first thesis is manifest in Leibniz's discussion of our apprehension of distinct ideas. In the *New Essays*, *p.* 256, Leibniz criticizes Locke for not giving separate, distinguishable characterizations of "clear," on the one hand, and "distinct," on the other. Leibniz, through Theophilus, puts the criticism as follows:

> So in this matter I always follow M. Descartes: for him an idea can be at once clear and confused, as are the ideas of sensible qualities which are associated with particular organs, e.g. the ideas of colour and of warmth. They are clear, because we recognize them and easily tell them from one another; but they are not distinct, because we cannot distinguish their contents. Thus, we cannot define these ideas: all we can do is to make them known through examples, and beyond that, until their inner structure has been deciphered we have to say that they are a *je ne sais quoi*. Thus, although according to us distinct ideas distinguish one object from another, so also do ideas which are clear though in themselves confused; so we do not call 'distinct' all the ideas which are distinguishing (i.e. which distinguish objects), but only those which are distinguished, i.e. *which are in themselves distinct and which distinguish in the object the marks which make it known, thus yielding an analysis or definition*" (emphasis added).

It might appear that here Leibniz is in alliance with Descartes. Both philosophers separate "clear" from "distinct," and take the ideas of colors, odors, sounds, and the other secondary qualities as sometimes clear but never distinct. Leibniz goes well beyond Descartes, however, in characterizing the "distinctness" of composite concepts as achievable only through definitions. Leibniz thinks that Descartes's notion of a "distinct" idea has to be made more precise, and the precision is achieved through the appeal to the marks logically contained in a concept and made explicit by definitions.

Leibniz made the same points in the essay "Meditations on Knowledge, Truth, and Ideas" (1684), to which he often refers in subsequent years as containing his considered views on the topics of the title. In this essay knowledge is classified as either obscure or clear; clear

knowledge, in turn, is either confused or distinct; and distinct knowledge is either inadequate or adequate, and also either symbolic or intuitive. The most perfect knowledge is that which is both adequate and intuitive. Knowledge of something is clear when by means of such knowledge it is possible to recognize the thing represented.[23] Clear knowledge of a thing is confused when it is not possible explicitly to enumerate one by one the marks which are sufficient to distinguish the thing from others, even though the thing may in truth have such marks and constituents into which its concept can be resolved. For example,

> we know colors, odors, flavors, and other particular objects of the senses clearly enough and discern them from each other but only by the simple evidence of the senses and not by marks that can be expressed. So we cannot explain to a blind man what red is, nor can we explain such a quality to others except by bringing them into the presence of the thing and making them see, smell, or taste it, or at least by reminding them of some similar perception they have had in the past. Yet it is certain that the concepts of these qualities are composite and can be resolved, for they certainly have their causes (L, p. 291).

The causes into which secondary qualities can be resolved, and to which Leibniz is probably referring here, are, according to the mechanical philosophy endorsed by Leibniz, the primary qualities studied by mathematics. Thus, ideas of secondary qualities are clear, in spite of being composite, but because we cannot list their essential marks or determinants – that is, we cannot provide definitions for them – they are not distinct. As Leibniz explicitly illustrates in the above text, we can

[23] Leibniz provides here as examples of obscure knowledge, first, the vague memory of a flower or animal he has once seen which does not enable him to distinguish the flower or animal, at a later time, from similar ones, and, second, terms which the Scholastics had defined poorly, such as Aristotle's entelechy, or cause as a common term for material, formal, efficient, and final cause, or other such terms of which we do not have good definitions.

have ostensive but not discursive, descriptive knowledge of secondary qualities.

Leibniz gives as an example of a distinct composite concept the notion which assayers have of gold, that is, one that enables assayers to distinguish gold from all other bodies by sufficient marks and observations. In general, concepts of which we have a nominal definition, which consists in the enumeration of sufficient marks or determinants, are distinct concepts (here Leibniz gives as examples the concepts of primary qualities, such as number, magnitude, and figure) (L, p. 292). Knowledge is adequate "when every ingredient that enters into a [composite] distinct concept is itself known distinctly, or when analysis is carried through to the end" (L, p. 292). Thus, adequate knowledge of a thing is achieved when the concept of the thing has been analyzed completely into primary truths and primary distinct concepts. The knowledge that assayers have of gold may be distinct, but is nonetheless inadequate. It is inadequate because it does not involve a maximally distinct concept (a concept in which every component is known distinctly): some of the single component marks of the composite concept of gold, such as heaviness, color, and so on, are sometimes known clearly but nevertheless 'always' confusedly. Our understanding of the concept of gold always has as ingredient secondary qualities, and they can be known clearly but not distinctly. In this context, Leibniz remarks that he is not sure that a perfect example of adequate knowledge attainable by humans can be given, yet, our concept of number approaches it closely. From other texts it seems clear that human knowledge of abstract possibilities – metaphysics, logic, mathematics – approaches very closely adequate knowledge, but undoubtedly there is no human adequate knowledge of empirical matters of existence.

Adequate knowledge crucially relies on definitions, since in it every component of a composite distinct concept must itself be known

distinctly. Definitions exhibit the marks of derivative or composite concepts arranged in a structure of component concepts formed by the logical operations of conjunction and negation. On the basis of definitions human knowers can reduce truths of reason to identical propositions and thereby apprehend the containment of the concept of the predicate in the concept of the subject. The apprehension of identical propositions, the apprehension of the composition of concepts by means of conjunction and negation, and the apprehension of concept-containment are all logical in character, indeed they involve the apprehension of logical forms. Moreover, in addition to making our apprehension of composite concepts depend on the discursive intellectual character of definitions, Leibniz makes it explicit that the very *possibility* of composite or derivative concepts entirely depends on the logical relation of non-contradiction. In "On Universal Synthesis and Analysis, or the Art of Discovery and Judgment," (1679?), for example, Leibniz writes:

> All derivative concepts, moreover, arise from a combination of primitive ones, and the more composite concepts from the combination of less composite ones. But one must take care that the combinations do not become useless through the joining together of incompatible concepts. This can be avoided only by experience or by resolving them into distinct single concepts. One must be especially careful, in setting up real definitions, to establish their possibility, that is, to show that the concepts from which they are formed are compatible with each other" (L, p. 230).

However, what about distinct primitive (simple) concepts? How can the understanding of distinct primitive concepts be cast as centrally involving logical notions? The appeal to the notion of definition is here not available. In the essay "Meditations on Knowledge, Truth, and Ideas" Leibniz points out that we can have distinct knowledge of an indefinable concept when this concept is primitive: "[when the concept] is the mark

of itself, that is, when it is irreducible and to be understood only through itself and therefore lacks requisite marks" (L, p. 292). Therefore, there still remains the question whether for Leibniz the apprehension of a logical notion is equally at play in our apprehension of indefinable primitive or simple concepts. Indeed, one central difficulty with my attribution to Leibniz of a thoroughly logical model of human knowledge of truths of reason is that the grasping of simple or primitive concepts does not seem to be logical in character. One might insist that the primitive concept of "being," for example, which is for Leibniz a paradigm of a simple concept understood through itself, does not seem to require the apprehension of identity, consistency, or non-contradiction. On this view, it would seem that no logical notion is involved in the apprehension and knowledge of the simplest metaphysical concept, therefore Leibniz must rely here on a mode of apprehension very much like the direct, immediate phenomenological presentation of clear and distinct ideas of Descartes.

Yet, in "On Universal Synthesis and Analysis, or the Art of Discovery and Judgment," Leibniz suggests that distinct primitive concepts are *understood* through themselves because here one can immediately grasp that they are non-contradictory:

> Those real definitions are most perfect, furthermore, which are common to all the hypothesis or methods of generation and which involve the proximate cause of a thing, and from which the possibility of the thing is immediately apparent without presupposing any experiment or the demonstration of any further possibilities. In other words, those real definitions are most perfect which resolve the thing into simple primitive notions understood in themselves. *Such knowledge I usually call adequate or intuitive, for, if there were any inconsistency, it would appear here at once, since no further resolution can take place.* (L, p. 231, emphasis added).

What "appears here at once" is logical in character: it is the apprehension or knowledge of a logical form that is free from self-contradiction. This is not the mere apprehension of an unspecified phenomenologically present content in no need of a further understanding in terms of a logical form.

For Leibniz, therefore, *all intellectual* apprehension is what I call "logical discursive apprehension," as opposed to "direct ostensive apprehension." The distinction between these two modes of apprehension is a further refinement of the distinction between a phenomenological apprehension of an unspecified, unstructured content and the apprehension of a logical relation or structure. For, the phenomenological apprehension of a logically unstructured content turns out to be crucially tied to ostensive apprehension. Thus, as I show below, whereas Descartes, for example, likens our knowledge of what thinking *is* to acquaintance with a sensory content or given particular, Leibniz reserves the ostensive mode of apprehension exclusively for sensory contents and matters of existence. Definitions provide for Leibniz the model of the logical discursive apprehension of concepts. Furthermore, as we have just seen, he ties the intellectual intuition involved in apprehending distinct primary concepts to the discursive, non-ostensive mode of apprehension of a logical form. Here again, Leibniz's view that to have a concept is to know that the concept is possible (non-contradictory) lends further support to my view that Leibniz has disambiguated Descartes's model of ultimate justification in favor of a clearly intellectual model.

As we saw above in a text from "Meditations on Knowledge, Truth, and Ideas," Leibniz acknowledges that we apprehend sensory contents via ostensive direct presentation, but he never suggests that such a mode of apprehension can be likened to our apprehension of ideas of the intellect. In "On Universal Synthesis and Analysis, or the Art of Discovery and Judgment," as in "Meditations on Knowledge, Truth,

and Ideas," Leibniz asserts that primary or primitive concepts are distinct if they are *understood* through themselves. We find in these two articles, as well as in other writings, the claim that distinct primary concepts are crucial in dealing with distinct composite concepts: most of our concepts are composite and, if they are distinct, they are derived from simple distinct concepts by means of nominal definitions or real definitions. Definitions enable us to distinguish one thing from another, making the concept of a thing clear, via description – via a discursive logical analysis of concepts. However, in "On Universal Synthesis and Analysis, or the Art of Discovery and Judgment," Leibniz goes further and draws very explicitly a contrast between distinct primary concepts, which are understood through themselves, and confused primary concepts, which are instead *perceived* through themselves. Sensory qualities cannot be defined, we can only have a clear idea of them by means of direct acquaintance (ostensive presentation):

> The primary concepts from whose combination the rest are made are either distinct or confused. Those are distinct which are understood through themselves, such as 'being'. Those are confused though clear, which are perceived through themselves, such as color, because we can only explain them to someone else by showing them to him. For the nature of color is analyzable since it has a cause, we cannot sufficiently describe or recognize it by any concepts that are separately explained; it is known only confusedly and hence cannot be given a *nominal definition* (L, p. 230).[24]

[24] The text here continues: "A nominal definition consists in the enumeration of signs or elements sufficient to distinguish the thing defined from everything else. If we proceed to seek the elements of the elements, we shall come at last to primitive concepts which have no elements at all, or none which we can explain to a sufficient degree. This is the art of dealing with distinct concepts. The art of dealing with confused concepts, however, must discover the distinct concepts which accompany the confused ones, whether these distinct concepts can be understood through themselves or can at least be

Precisely because the content of the experience of color can be apprehended only by ostension – not by analysis and description – it is a confused concept. Primitive distinct concepts, such as the metaphysical concept of being, are understood rather than perceived through themselves and as such they are never apprehended by ostension. Leibniz suggests, therefore, that it is a necessary condition for a concept to be distinctly apprehended that our apprehension involve a non-ostensive, logical, discursive element.

Descartes suggests, by contrast, that the apprehension of intellectual ideas can be likened to the apprehension of a sensory content ostensively present before the mind, thus, he does not appear to acknowledge the distinction between ostensive versus logical discursive apprehension. In "The Search for Truth by means of the Natural Light" Descartes represents Epistemon (the character who has a detailed knowledge of everything that can be learned in the Schools) as demanding definitions of "doubt," "thought," and "existence" after Polyander, following Eudoxus's (Descartes's) method of doubt, has arrived at the Cogito argument. Eudoxus responds to the challenge by criticizing the logician's method based on the tree of concepts and the very need for definitions of ideas that are clear and distinct. Thus, Eudoxus says:

> I quite share your view, Epistemon, that we must know what doubt is, what thought is, what existence is, before being convinced of the truth of this inference, 'I am doubting, therefore I exist', ... But do not imagine that in order to know what these are, we have to rack our brains trying to find the 'proximate genus' and the 'essential differentia' which go to

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resolved into such as are understood [through themselves], for with their help we can sometimes arrive at some cause or resolution of the confused notion" (L, p. 230).

> make up their true definition. We can leave that to someone who wants to be a professor or to debate in the Schools. But someone who wants to examine things for himself, and to base his judgements about them on his own conceptions, must surely have enough mental capacity to have adequate knowledge of what doubt, thought and existence are, whenever he attends to the question, without having to be taught the difference between them. Besides, there are, in my view, some things which are made more obscure by our attempts to define them: since they are very simple and clear, they are perceived and known just on their own, and there is no better way of knowing and perceiving them. ... But doubt, thought and existence can be regarded as belonging to the class of things which have this sort of clarity [something that does not need a definition if it is to be known] and which are known just on their own (C, vol. II, p. 417).

Eudoxus proceeds to explain what it is to know these things through themselves by appealing to a comparison with the ostensive presentation that must take place if one wants to apprehend something which can be learnt only by having the right sensory experience – if one wants to be exposed, for example, to a sensory content:

> ... the only way we can learn such things is by ourselves: what convinces us of them is simply our own experience or awareness – that awareness or internal testimony which everyone experiences within himself when he ponders on such matters. Thus it would be pointless trying to define, for someone totally blind, what it is to be white: in order to know what that is, all that is needed is to have one's eyes open and to see white. In the same way, in order to know what doubt and thought are, all one need do is to doubt or to think. That tells us all it is possible to know about them, and explains more about them than even the most precise definitions. (C, vol. II, pp. 417-18).

Notice that here, if he wants to address the demand for definitions, Descartes must be talking about what doubt and thought *are* – about the nature of attributes of the mind, not about their existence as momentary episodes in my mental life – and yet he seems to reduce the knowledge of the nature of the attributes to ostensive knowledge of

particular events in our mental life (here the comparison is with seeing colors).

Does Leibniz share the ostensive account of our knowledge of the nature of thinking or doubting presented in this Cartesian text? As we have seen, Leibniz regards the Cogito as a truth that we know with the immediacy of feeling, but, for Leibniz, the Cogito as a truth of fact involves a different kind of knowledge from that of primary truths of reason (identical propositions) and of abstract concepts: "All primary truths of reason are immediate with the *immediacy of ideas*. As for primary truths of fact, these are inner experiences which are immediate with the *immediacy of feeling*. This is where the first truth of the Cartesians and St. Augustine belongs: *I think, therefore I am*." (NE, p. 367). It is likely that Leibniz takes the Cogito as an empirical proposition precisely because it involves the knowledge of the *existence* of one's own thoughts and mind. Human knowledge of existence for Leibniz – experiential knowledge of the existence of individual substances – as opposed to our knowledge of essences, seems to require the acquaintance with something presented ostensively, to which we can point out as "this" or "that." It is knowledge that relies on the indexicality of our experiential acquaintance with individual substances. Descartes, for his part, suggests that both the knowledge of my existence and, also, of the nature of thinking involve ostension. Descartes's conception of the Cogito argument relies on acquaintance with contents ostensively presented, and this ostensive presentation reveals everything that needs to be revealed, as the text from "The Search for Truth by means of the Natural Light" claims. Moreover, in sharp contrast with Leibniz, the knowledge of "I think, therefore I am" must be for Descartes intellectual knowledge. How can the Cogito be a primary *truth of fact* for Descartes, if it is a condition of the possibility of our knowledge of all other truths knowable by us independently of experience? In addition, Descartes does not draw a

distinction between the ostensive model of intellectual intuition implicit in his account of the clear and distinct perception of the Cogito, and some other model of intellectual intuition applicable to other clear and distinct ideas of the pure understanding. In Leibniz, on the contrary, whatever the immediacy of feeling is, or whatever the immediacy of the relation such that "nothing comes between the understanding and its object" (NE, p. 434) is, it does not provide a model for the knowledge of *a priori* primary truths and simple concepts.

In spite of his sustained effort to provide a method that wins the meditator away from knowledge based on the senses, Descartes offers as the most reliable source for the legitimization of any knowledge claim a kind of intellectual intuition which in effect is left seriously unspecified. The lack of specification suggests that intellectual intuition consists in a phenomenological inspection of mere contents, directly exhibited as in the ostensive presentation of sensory particulars or images, with no attention paid to a logical or other kind of formal structure. This implicit tendency in Descartes's epistemology of clear and distinct ideas should be welcomed by any empiricist reading of Descartes. For, the phenomenological, ostensive model of direct intellectual apprehension is very suitable for a theory of knowledge modeled on a natural conception of empirical perception according to which sensory objects are most reliably perceived when they are directly present before the mind. In my view, Locke, Berkeley and Hume associate the phenoenological ostensive presentation model of ultimate grounding with the direct presentation of sensory particulars or images.[25] Leibniz himself suggests the association

[25] On my approach, Hume's view that the ultimate proper grounding of our beliefs relies on the inspection of "impressions of sensation or objects" which are or have been directly present before the mind – rather than the veil of perception aspect of the theory of ideas – leads to his radical skepticism. Again,

I draw between Descartes's epistemology and its empiricist readers, since he uses his own logical model of ultimate evidence to oppose both Descartes's clear and distinct perception and also the empiricists' confusion of concepts with images.

I begin to develop this approach to Hume, in particular, in the papers cited in note 2 above.