

LEIBNIZ'S CRITIQUE OF LOCKE'S
VIEWS CONCERNING THE LIMITS AND
EXTENT OF HUMAN KNOWLEDGE

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ABSTRACT

Knowledge, for Locke, consists in perceiving agreement between ideas, i.e., roughly either (a) the perception of necessary truth, or (b) the perception of certain facts about oneself. He subsequently includes sensitive knowledge concerning objects actually present to the senses. Leibniz holds a less strict position.

There can be no knowledge without ideas and, for Locke, there can be no ideas without the appropriate experience. Leibniz, even after heavily qualifying Locke's view, still seems to disagree.

Locke distinguishes "identical" from "non-identical" necessary truths and suggests that the former are all trifling. Leibniz holds that all necessary truths are identical but does not argue for the possibility of discovering necessary truth. Locke also suggests that the knowledge of identical necessary truths, and on occasion even of non-identical truths, consists simply in the knowledge of the uses of words. Leibniz rejects such nominalistic tendencies.

For Locke, knowledge of existence is confined to that of oneself, God, and objects actually present to the senses. Leibniz holds a more liberal view, appealing to the reasonableness of the claim that there are external objects not actually present to the senses - a reasonableness which Locke recognises.

Human knowledge of general truths in science and metaphysics is virtually impossible for Locke because one can perceive very few logical connections. Leibniz again objects on the grounds that Locke is demanding too much for knowledge, but also because he feels there are greater possibilities of knowledge here in Locke's sense - or at least that there is more a priori knowledge possible here than Locke allows.

In view of points raised above, Leibniz remains chiefly a rationalist. Locke's case is not so clear. Aside from his position on the origin of ideas, and save for leanings towards empiricism, Locke is in certain respects even more of a rationalist than Leibniz.

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INTRODUCTION
NOTE

1. Unless otherwise indicated, square brackets used in quotations are mine.

Abbreviations will be used as in the following examples:

'E IV iii 2, p.190' means Locke's An Essay Concerning Human Understanding, ed. A. C. Fraser, Book 4, Chapter 3, Section 2, page 190.

'NE IV iii 2, p.423, G 356' means Leibniz's New Essays Concerning Human Understanding, Book 4, Chapter 3, Section 2, page 423 in A. G. Langley's translation and page 356 in Volume 5 of C. I. Gerhardt's Die philosophischen Schriften.

'G iii 242' means page 242 of Volume 3 of Gerhardt's edition.

¹Vol. VIII, pp 49-142. The abstract was prepared by Locke and translated by Le Clerc. For a description of the stages through which Locke's thought and writing on knowledge and related matters progressed prior to publication of the Essay, see R. I. Aaron, John Locke, 2nd edition (Oxford, 1955), Part I, Ch. iii, Notes 1-2.

²See J. W. Yolton, John Locke and the Way of Ideas (O.U.P., 1956), especially Ch. 1.

INTRODUCTION

1. In January 1688, an abstract of John Locke's An Essay Concerning Human Understanding appeared in Jean Le Clerc's Bibliothèque Universelle.¹ At the time, Locke (1632-1704) was residing in Rotterdam, possibly functioning as one of the advisers to William of Orange. A year later, James II had fled England and Locke returned after an absence of over five years. In December 1689, the Essay (dated 1690) first appeared and, partly because of the abstract and partly because of subsequent excerpts in Le Clerc's journal (Vol. XVII), occasioned considerable immediate interest on the Continent.²

Among those whose attention was attracted by Locke's work was Gottfried Wilhelm Leibniz (1646-1716), librarian to the Duke of Brunswick at Hanover and by this time noted in several capacities amongst the intellectual circles of Europe. Leibniz's first written comments on the Essay were in the form of a short set of remarks (Langley, pp 13-19, G v, 14-19) made while initially reading through the book.

¹Vol. VIII, pp 49-142. The abstract was prepared by Locke and translated by Le Clerc. For a description of the stages through which Locke's thought and writing on knowledge and related matters progressed prior to publication of the Essay, see R. I. Aaron, John Locke, 2nd edition (Oxford, 1955), Part I, Ch. iii, Notes 1-2.

²See J. W. Yolton, John Locke and the Way of Ideas (O.U.P., 1956), especially Ch. 1.

He sent these remarks to Thomas Burnet of Kemnay in March 1696, and Burnet passed them on to Locke for his comments. Not uncharacteristically,¹ the latter declined to answer in any detail, replying to Burnet merely that there were a number of points he did not fully understand (see Burnet to Leibniz, 30 November 1696, G iii 185-86; 3 May 1697, G iii 197-99; and 26 July 1698, G iii 242). In fact, however, Leibniz's paper commanded little respect from Locke - a lack of respect he expressed in correspondence with his friend, William Molyneux (see Locke to Molyneux, 10 April 1697, Works (1823 edition) ix, p.407; and Locke to Molyneux, 3 May 1697, Works ix, p.417), and an attitude which he also there expressed towards Leibniz's "Reflections on Knowledge, Truth, and Ideas" (originally in Acta Eruditorum, 1684; G iv 422-26).

Leibniz then wrote a second set of remarks (Langley, pp 20-25, G v 20-24), dealing exclusively with the First and Second Books of the Essay. But once again the mediation of Burnet failed to elicit a philosophical response from Locke, who excused himself on the grounds that his affairs allowed him insufficient time to frame a satisfactory reply (see Burnet to Leibniz, 23 October 1700, G iii 273).

The Essay meanwhile quickly passed through three more editions (1694, 1695 and 1700); and in 1700 a French edition

¹For an account of Locke's general unwillingness to present detailed replies to his critics, see ibid.

appeared, based upon the enlarged English fourth edition and translated by Pierre Coste. In September 1700, Leibniz reviewed the French edition for the Monatliche Auszug (Langley, pp 26-37, G v 25-36; he added a brief note the following year; Langley, pp 37-38, G v 36-37), concentrating on the two chapters Locke added in the fourth edition, viz., "Of the association of ideas" (E II xxxiii) and "Of enthusiasm" (E IV xix). The review was favourable, but largely expository.

Coste's translation provided Leibniz, whose understanding of English was on his own admission only passable (see Leibniz to Burnet, 17/27 July 1696, G iii 179-85), with the opportunity of coming to grips with the full force of Locke's thought. He then began writing the New Essays Concerning Human Understanding, an extensive commentary on the Essay in the form of a dialogue between a spokesman of Locke (Philalethe) and a representative of Leibniz (Theophilus). Owing, however, to the fact that a work of this nature required considerable time, much of which was consumed by Leibniz's varied activities and interests, and that the style of Leibniz's French needed polishing, the book was not ready for publication by the time of Locke's death in 1704. And, partly because Leibniz was disinclined to publish a detailed commentary on the work of a dead author, and, perhaps, partly because he eventually learned of Locke's disparaging comments concerning his earlier written remarks on the Essay (see Gerhardt's

introduction and notes, Langley, pp 3-12, G v 3-13), the New Essays remained unpublished until 1765,¹ almost fifty years after his death.

2. The Essay is in large part designed to uncover, in general terms, areas in which human knowledge is impossible, or virtually impossible. It is not solely devoted to such a project, however; for Locke is at the same time concerned with combatting any form of scepticism which completely rejects the understanding's chances of accomplishing anything in or near the field of knowledge. Thus, he is also interested in pointing out areas where human knowledge is possible, and is concerned with whether or not, in those cases where knowledge is impossible, one can at least acquire, say, well-founded opinion. Indeed, he even feels that the negative act of revealing the limits of human knowledge can itself be useful in preventing radical scepticism, since it steers the mind away from those areas where the pursuit of knowledge is hopeless and therefore away from constant failure and disappointment, i.e., away from conditions which could easily generate radical scepticism (see E Intro. 2-7, pp 26-32).

I intend to consider the major points Locke makes in

¹It was then published in Oeuvres Philosophiques latines et françoises de feu Mr. de Leibnitz, ed. R. E. Raspe, Amsterdam and Leipzig.

carrying out such a project and Leibniz's reactions to them. In actually writing the Essay, of course, Locke does not subordinate his whole investigation to the limits and extent of human knowledge. Discussions, e.g., of the ideas of substance, power and personal identity, of primary and secondary qualities, or of the utility of maxims, are sufficiently detailed to command attention on their own. Moreover, since Leibniz's commentary follows Locke very closely and, perhaps, since his philosophical interests while writing the New Essays were relatively varied, he, even more than Locke, does not focus his full attention on the question of establishing a modified scepticism. Nevertheless, taking the extent of human knowledge as a central thread for discussion does, I think, provide a reasonably unified and yet comprehensive point from which to view their positions, especially as given in the Fourth Book of the respective texts. Consequently, that is the course I shall adopt - with the exception that the concluding section represents a brief attempt to see how the terms 'empiricist' and 'rationalist' might be applied to each philosopher in relation to points made in the prior discussion.

One final introductory comment: Leibniz approaches the Essay neither as a completely hostile critic nor as a neutral commentator. His expressed intention is to seek what is worthwhile in Locke's position and to "complete" it in those respects in which it might prove wrong or inadequate (see NE

Pref., pp 41-42, G 41-42) - where many of the acts of completion employ elements from a philosophical system that had largely taken shape in his mind by this time¹ and which eventually was to receive the title of 'monadology'. Such a programme, however, is not always conducive to explaining Locke's position on a given problem in the critical detail it requires and, combined with Leibniz's often cryptic manner of writing, it sometimes creates the need for discussing Locke's view at some length before introducing Leibniz's side.

By now (1686), for instance, knowing that while in the great course of reasoning agreement between the idea of a triangle and the idea of three angles that are equal to two right angles is perceiving (necessary agreement between the idea of the three internal angles of a triangle and the idea of equality to two right angles) (see E IV i 3, p.188).

Leibniz has three preliminary comments to make on such a view:

(1) The word 'knowledge' has another ("more general") sense in which knowledge does not simply consist in knowing the truth-value of such-and-such a proposition (whether it be knowing in Locke's or in a wider sense). Knowledge in this

¹For example, by 1700 Leibniz had written "Reflections on Human Knowledge, Truth, and Ideas" (1684), had corresponded with Arnauld (1686-90), and had written the "New System of the Nature of Substances and of the Communication Between Them, etc." (1695) and "On the Ultimate Origination of Things" (1697).

I

KNOWLEDGE

1. In General

From the premise that "the mind, in all its thoughts and reasonings, hath no other immediate objects but its own ideas, which it alone does or can contemplate", Locke infers (1) "it is evident that our knowledge is only conversant about them", and (therefore) (2) "Knowledge [is] . . . nothing but the perception of the connexion of and agreement, or disagreement and repugnancy of any of our ideas." (E IV i 1-2, p.167; minus italics). For instance, knowing that white is not black consists in perceiving disagreement between the idea of whiteness and the idea of blackness; or knowing that the three internal angles of a triangle equal two right angles consists in perceiving (necessary) agreement between the idea of the three internal angles of a triangle and the idea of equality to two right angles (see E IV i 2, p.168).

Leibniz has three preliminary comments to make on such a view:

(1) The word 'knowledge' has another ("more general") sense in which knowledge does not simply consist in knowing the truth-value of such-and-such a proposition (whether it be knowing in Locke's or in a wider sense). Knowledge in this sense is found "in ideas or terms, before we reach propositions or truths". For instance, a man "who has attentively looked at more pictures of plants and animals, more diagrams of

machines, more descriptions or representations of houses or fortresses, who has read more ingenious romances, heard more curious narratives, this one, I say, will have more knowledge than another, even though there should not be a word of truth in all that which was portrayed or related to him; for the custom he has of representing in his mind many express and actual conceptions or ideas, renders him more fit to conceive what is placed before him; and it is certain that he will be better instructed and more capable than another who has neither seen nor read nor heard anything, provided that in these stories and representations he takes nothing as true which is not so" (NE IV i 1-2, pp 397-98, G 337-38).

In this sense, we know what an x is, but do not necessarily know that an x is such-and-such, at least in any articulate fashion. We can form the idea of an x, can use words to refer to an x (or, as Locke might put it, can use the word 'x'), can understand words used to refer to an x, and thereby are capable of recognising x's, identifying x's, knowing true propositions about x's, etc. Having knowledge in this sense undoubtedly entails having some knowledge that an x is such-and-such (e.g., that an x is not a non-x), but its demands are minimal, and knowing what an x is does not solely consist in such knowledge.

A possible reason for Leibniz's reference to this sense of 'knowledge' (though one he himself does not give) is that

he makes use of the word in this way in attempting to elucidate the Cartesian classification of ideas in terms of clarity and distinctness. For example, in "Reflections on Knowledge, Truth, and Ideas", he writes: "Knowledge is either obscure or clear; clear ideas again are either indistinct or distinct; distinct ideas are either adequate or inadequate, symbolic or intuitive An idea is obscure when it does not suffice for the recognition of things after they have been experienced On the other hand, knowledge is clear when it is sufficient to enable me to recognize the things represented; . . . such knowledge . . . is indistinct as soon as I am not able to enumerate separately the characteristics required to distinguish the thing from others A distinct idea, however, is . . . one based on distinctive characters . . . in a word [of anything] of which we have a nominal definition, which is nothing more than an enumeration of the sufficient distinguishing characters. There is also distinct knowledge of an indefinable term when it is primitive, i.e., when it is unanalyzable In composite ideas . . . if every element included in a distinct concept is again distinctly known, and if the analysis is carried through to the end, then the knowledge is adequate." (Selections, pp 283-85, minus some italics; see also NE II xxix 2, 4, pp 266-67, G 236-37; NE II xxxi 1-2, pp 278-79,

"bare" faculties or powers. Unlike these are only "dispositivae potentiae" which for him seem to involve unconsciousness. See below, pp 117-20.

G 247-48).¹

Thus, the preceding account might be amended slightly to read: Knowledge in this sense is knowledge attendant upon having clear, as opposed to obscure (in the indicated sense), ideas. On the other hand, in order to move up the line from clear to distinct ideas, one must acquire (more) knowledge in the "knowledge of truth" sense.

Aside from either its utility in clarifying Leibniz's own use of 'knowledge', or its intrinsic interest, the distinction between knowledge attendant on (clear) ideas and knowledge of truth is of some importance insofar as it involves a reference to abilities, capacities, being fit, etc., as opposed to "occurrent" mental acts. For, in order to know at time T what an x is - i.e., to be able to form the (clear) idea of an x, or use words to refer to an x, etc. - one need not be having at time T an idea of an x in any "occurrent" sense of 'having an idea'.² And this point directs attention to Locke's distinction between actual and habitual knowledge - a distinction I shall consider below.

¹Leibniz refers to "Reflections on Knowledge, Truth, and Ideas" in NE II xxix 2, p.266, G 236; and in NE III iv 4-7, p.319, G 275; and also in one of the papers he wrote on the Essay prior to writing the New Essays (see Langley, p.14).

²Although one must remember that, for Leibniz, there are no "bare" faculties, abilities or powers. Rather there are only "dispositions or tendencies" which for him seem to involve unconscious acts. See below, pp 117-20.

(2) Given that we are concerned with knowledge in a "knowledge of truth" sense, Leibniz objects that, although "truth is always grounded in the agreement or disagreement of ideas, . . . it is not true in general that our knowledge of truth is a perception of this agreement or disagreement. For when we know truth only empirically, from having experienced it, without knowing the connection of things and the reason there is in what we have experienced, we have no perception of this agreement or disagreement, unless we mean that we feel it in a confused way without being conscious of it. But your examples, it seems, show that you always demand a knowledge in which one is conscious of connection or opposition, and this is what cannot be granted you." (NE IV i 1-2, p.400, G 338-39; see also NE IV ii 14, pp 417, 420, G 353; NE IV vi 13, pp 461-62, G 386-87).

This point is extremely important, e.g., in connection with Locke's views on the extent of human knowledge in a discipline such as physics. As Leibniz suggests, of course, one should avoid a mere "dispute about terms" (NE IV ii 14, p.417, G 353). Nevertheless, even the verbal point - if this is all that is involved - that Locke uses the word 'knowledge' in a sense which is far more restricted than that in which it is ordinarily used is useful for the purposes of clarifying just what claim Locke is making when he denies knowledge to the physicist. (See below, pp 85-96, 200-06).

From Locke's examples - viz., perceiving that white is not black, and that the internal angles of a triangle (necessarily) equal two right angles - Leibniz apparently takes 'perceiving the agreement/disagreement between ideas' to mean perceiving a logically necessary connection, as opposed to discovering (contingent) truth by empirical methods. Now, solely on the basis of the examples Locke gives here, Leibniz is right in viewing perception in this way. But, given certain points which Locke subsequently makes (notably that we can, in the relevant sense, perceive the existence of ourselves, or the existence of any idea which we are having), to confine knowledge=perception to the "seeing" of necessary truths is to limit it more severely than Locke in fact does. The point is a minor one, however, because, restricting the frame of reference to the knowledge of general truths - which is what Leibniz probably is doing here - perception of agreement/disagreement does consist in the (a priori) knowledge of necessary truth.

(3) Finally, Leibniz rightly observes that the proposed "definition"¹ . . . appears only suited to categorical truths, in which there are two ideas, the subject and the predicate; but there is besides a knowledge of hypothetical truths or

¹See below, pp 82-83.

what may be reduced thereto (as disjunctives and others) in which there is connection between the antecedent and the consequent proposition; thus more than two ideas may enter therein." (NE IV i 1-2, p.400, G 339). He therefore qualifies Locke's position as follows: "Let us . . . apply what will be said of the connection of ideas to the connection of propositions, in order to include in one whole the categorical and hypothetical truths." (NE IV i 3, p.400, G 339).¹

¹In a somewhat different context - viz., his discussion of particles - Locke writes: "But besides affirmation or negation, without which there is in words no truth or falsehood, the mind does, in declaring its sentiments to others, connect not only the parts of propositions, but whole sentences one to another, with their several relations and dependencies, to make a coherent discourse." (E III vii 1, p.98).

2. Actual and Habitual Knowledge

After claiming that knowledge consists in perceiving the agreement or disagreement¹ between ideas, Locke turns to consider briefly (some of) "the different acceptations of the word knowledge." For "There are several ways wherein the mind is possessed of truth; each of which is called knowledge." (E IV i 7, 8, p.172). And, in doing so, he tends to loosen slightly (though not intentionally) his initial identification of knowledge with the perception of agreement between ideas.

He distinguishes actual knowledge from habitual knowledge: Actual knowledge is "the present view the mind has of the agreement or disagreement of any of its ideas" (E IV i 8, p.172); whereas one habitually knows a proposition to be true if one has actually perceived the agreement of its ideas and has not forgotten it, so that "whenever that proposition comes again to be reflected on, he . . . assents to, and is certain of the truth of it." (E IV i 8, p.172). Thus, having habitual knowledge is to have knowledge in a non-occurrent sense, since habitually knowing at time T that white is not black does not entail actually perceiving at T that white is not black, or actually asserting at T that white is not black, or

¹Henceforth, unless the context especially demands it, I shall omit references to the negative form of agreement, i.e., to disagreement.

actually judging at T that white is not black. Rather, all that is necessary is that one has actually perceived, and remembers - i.e., does not forget (save, perhaps, for momentary lapses) - that white is not black.

Now, for an account of knowledge in "different acceptations of the word", the introduction of habitual knowledge is important. For, as Locke rightly points out, the human mind could be said to know very little at any given time if 'knowledge' were restricted to actual knowledge. Whereas, in at least one "accepted" sense of 'knowledge', what a man knows at any given time is usually considerably more than what he actually perceives at that time.

Still, even Locke's habitual knowledge is significantly restricted relative to ordinary usage. For, in order to have habitual knowledge, one must have actually perceived agreement between ideas and, to the extent that identifying the acquisition of knowledge with the actual perception of agreement between ideas is a restriction on the ordinary notion of acquiring knowledge, so identifying habitual knowledge with knowledge initially acquired by perceiving is a restriction on the ordinary notion of knowledge. Now, Locke subsequently does slightly loosen the restrictions on 'actual knowledge' to let it include "sensitive knowledge" of the existence of objects "about which our senses are actually employed" (e.g., see E IV ii 14, pp 185-88). Accordingly, he loosens habitual

knowledge to include knowledge initially acquired by "sensation" and remembered - though obviously not habitual knowledge which is "actualised" by "sensing" that such-and-such a particular object existed at such-and-such a time (see E IV xi 11, pp 336-37). Even so, the extension of knowledge to include "sensitive" knowledge - itself a questionable move within the context of Locke's general argument¹ - still leaves knowledge confined to a narrow range.

Moreover, in order to know habitually that p, we must, whenever the occasion presents itself, (roughly) either (a) actually immediately perceive (i.e., intuit) that p, or (b) actually mediately or demonstratively perceive that p via the original or a new set of proofs, or (c) actually remember or recall (i.e., in a sense which involves our actually thinking) that we have once perceived that p and thereby have "perfect certainty" about p (see E IV i 9, pp 172-75). And if this point is taken strictly, the type of remembering which habitual knowledge demands is itself rather limited relative to remembering in the appropriate ordinary sense - with a corresponding limitation on the notion of habitual knowledge.

Not only is habitual knowledge more confined than knowledge in the corresponding ordinary sense, but admitting

¹Since the notion of sensitive knowledge is attended with difficulties, and since any qualifications demanded by it are of no significance in this context, I shall ignore it throughout the rest of this section.

habitual knowledge itself seems to involve admitting forms of knowledge which are not forms of the perception of agreement between ideas, either actual or habitual.

For, in admitting as knowledge the memory that one has perceived that p , Locke is doing the very thing he seeks to avoid in excluding (e.g.) the mere remembering that p - viz., to admit a form of knowledge which does not consist in perceiving a necessary truth, or perceiving an agreement between immediate objects or objects actually present to the senses. After confessing to initial reservations, he defends his move as follows: "upon a due examination I find it comes not short of perfect certainty, and is in effect true knowledge. That which is apt to mislead our first thoughts into a mistake in this matter is, that the agreement or disagreement of the ideas in this case is not perceived . . . by an actual view of all the intermediate ideas whereby the agreement or disagreement of those in the proposition was at first perceived; but by other intermediate ideas He remembers, i.e. he knows . . . that he was once certain [e.g.] of the truth of this proposition, that the three angles of a triangle are equal to two right ones. The immutability of the same relations between the same immutable things is now the idea that shows him, that if the three angles of a triangle were once equal to two right ones, they will always be equal to two right ones. And hence he comes to be certain" (E IV i 9,

pp 173-74). Now, certainly if I have perceived (correctly) that A is B, it necessarily follows that A is B, and therefore, if I know that I have so perceived and if I see the connection between my having so perceived and the truth of 'A is B', then I know (demonstratively) that A is B. But the point is that the purported knowledge of the premise in this case is not itself a form of perception but simply amounts to a form of remembering - and it is therefore difficult to see why Locke should not write this off as an instance of "believing one's memory" as readily as he presumably would an instance of merely remembering such-and-such a necessary truth.¹ This criticism seems to be at least part of the force of the following comment made by Leibniz: "The mediate idea [i.e., the premise that one has once perceived that A is B] of which you . . . speak, presupposes the fidelity of our memory; but it sometimes happens that our memory deceives us, and that we have not made every necessary effort, although we now believe we have" (NE IV i 9, p.402, G 341) - though he might have done better not to complicate matters with the fallibility question here.

¹Parallel points might be made concerning the remembering which Locke admits in complex demonstrations (e.g., see E IV i 9, p.175; E IV ii 7, pp 181-82). Or, indeed, concerning the memory of having perceived that p which for Locke seems to be involved in any case of "actualised" habitual knowledge that p (see E II x 2, p.194, re memory in general).

Leibniz's subsequent remarks raise another point in this connection: "the more care we employ, the more reliance we can place upon past reasonings But unless we remember that we have been absolutely accurate, we cannot have this certainty in the mind. And this accuracy consists in an orderly procedure, the observance of which in each part is an assurance as regards the whole And by this means we have all the certitude of which human things are capable." (NE IV i 9, p.403, G 341-42). For, although there is a sense of 'perception' in which perception is necessarily correct, Leibniz's comments point to the truth that the human mind is fallible even in the area of perceiving necessary truth - i.e., that there is also a sense in which one can misperceive. Now, the sense of 'perceive' relevant to this particular context is such that one must be able to remember that one perceived that A is B without necessarily remembering that A is B - for Locke apparently wants to avoid making knowledge depend upon the latter - and the only sense in which this is possible is that in which misperception is possible.

Consequently, even if remembering that one has perceived such-and-such were a form of perceiving the agreement between ideas, one could not demonstratively perceive that $2+2=4$ from simply the remembered premise that one has perceived that $2+2=4$ - though, as Leibniz points out, if great care has been

taken in one's previous calculations, and a number of checks carried out, one can have very good reasons for concluding that $2+2=4$. Therefore, to include such an inference as a form of knowing on Locke's theory would equally loosen the identification of knowledge with perception, for only deductive inferences can count as perceiving agreement between ideas.

Strictly speaking, as an account of various uses of the word 'knowledge' - "vulgar" or otherwise - Locke's discussion comes nowhere near being complete (He does not mention, e.g., 'knowing how to type' or 'knowing Jeeves'). Furthermore, as an account of an ordinary use of 'knowledge', his notion of habitual knowledge is only to some extent successful. Part of the reason for this, however, is that he does not seriously set himself such ends as a philosopher (though had his "nominalistic" tendencies increased or had he lived in a somewhat different philosophical climate, he might well have directed more attention along such lines). Rather, in introducing actual and habitual knowledge, he seems more concerned with distinguishing between an ordinary sense of 'knowledge' in which knowledge is not an occurrence or act and another (perhaps special - he does not clearly specify) sense in which knowledge is an occurrence or act - possibly to prevent confusion on this point. Having drawn the distinction, however,

he does not expressly state in what sense he is using, or is going to use, 'knowledge', presumably leaving it as a contextual matter and one that is of little concern to him. As far as Leibniz is concerned, although he does introduce another sense of 'knowledge' (the "knowledge of ideas" sense), it is not surprising that he does not take up the indicated linguistic points, in view of his expressed anti-nominalism.

I Identity or diversity: e.g., 'Red is red', 'A cow is not a non-cow', 'White is not black' (see E IV 1 4, p.169). Following Leibniz's suggestion, one might extend the class to hypotheticals: 'If A is B, then A is B', 'If A is B, then it is not the case that A is not B' - or to the corresponding disjunctives and conjunctives (see NE IV 11 1, pp 404-05, G 343).

II Relation: "the relation between any two ideas, of what kind soever, whether substances, modes or any other. For . . . there could be no room for any positive knowledge at all, if we could not perceive any relation between our ideas" (E IV 1 5, p.170): e.g., '2+2=4', 'Two triangles upon equal bases between two parallels are equal'. I take the expression 'positive knowledge' in the quoted passage to mean perception of an agreement which is necessarily not trifling and therefore not identity. Consequently, in this particular context, identity is

¹Since a proposition, for Locke, consists in asserting agreement between ideas (E IV v 2, p.244), the classification of agreement can double as a classification of propositions: "The affirmations or negations we make concerning the ideas we have, may . . . be reduced to these four sorts, viz. identity, co-existence, relation, and real existence." (E IV 11 7, p.198).

3. Agreement

Locke attempts to clarify the notion of agreement between ideas by listing four possible kinds:¹

- I Identity or diversity: e.g., 'Red is red', 'A cow is not a non-cow', 'White is not black' (see E IV i 4, p.169). Following Leibniz's suggestion, one might extend the class to hypotheticals: 'If A is B, then A is B', 'If A is B, then it is not the case that A is not B' - or to the corresponding disjunctives and conjunctives (see NE IV ii 1, pp 404-05, G 343).
- II Relation: "the relation between any two ideas, of what kind soever, whether substances, modes or any other. For . . . there could be no room for any positive knowledge of substance. For Locke expressly extends relation to ideas of any kind of thing - including substance - and he gives no special principle according to which existence must be excluded. I take the expression 'positive knowledge' in the quoted passage to mean perception of an agreement which is necessarily not trifling and therefore not identity. Consequently, in this particular context, identity is

¹Since a proposition, for Locke, consists in asserting agreement between ideas (E IV v 2, p.244), the classification of agreement can double as a classification of propositions: "The affirmations or negations we make concerning the ideas we have, may . . . be reduced to these four sorts, viz. identity, co-existence, relation, and real existence." (E IV iii 7, p.198).

not a species of relation. The other important point here is that the ideas between which relations hold, in the sense in which 'relation' is used in this context, can apparently be ideas of any kind of thing, "whether substances, modes, or any other".

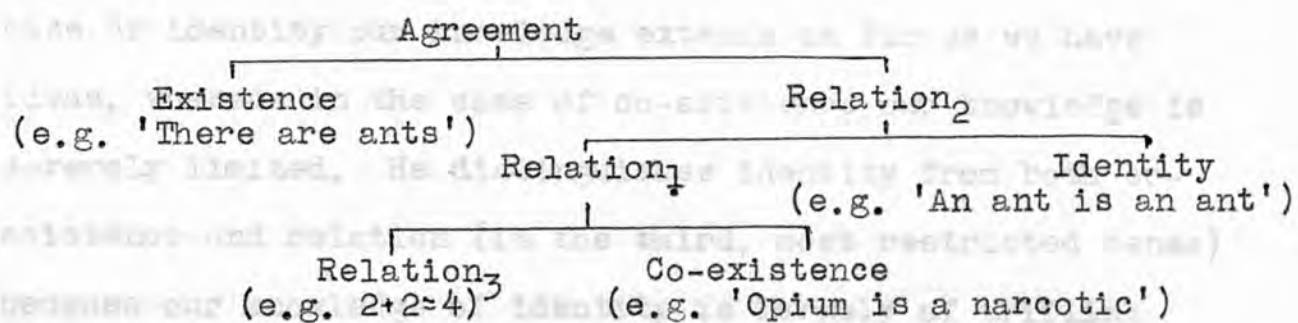
III Co-existence or non-co-existence in the same subject (sometimes referred to as necessary connection or repugnancy): "this belongs particularly to substances" (E IV i 6, p.170) - e.g., 'Hostility co-exists in a substance with rationality and animality', 'Water boils at 100° C'. Confining oneself to the same context, then, it seems that co-existence is a species of relation, i.e., a relation which by definition only concerns ideas of substances. For Locke expressly extends relation to ideas of any kind of thing - including substance - and he gives no special principle according to which co-existence must be excluded.

IV Real existence: 'There are elephants', 'God exists'.

The classification is hardly a rigorous one, however. For one thing, immediately after drawing up the list, Locke admits that "identity and co-existence are truly nothing but relations" (E IV i 7, p.171). Thus, in this sense of 'relation', identity is a species of relation, whereas in the previous sense of 'relation', identity is excluded from the

class of relations. Furthermore, when Locke eventually comes to apply his classification of agreement in discussing the extent of human knowledge, he uses 'relation' and 'co-existence' in such a way that relations and co-existence are mutually exclusive, as well as relations and identity, and co-existence and identity. And it is in this sense of 'relation' that the classification of agreement into (1) existence, (2) relation, (3) co-existence and (4) identity acquires a co-ordinate status.

Thus, marking the three senses of 'relation' with subscripts corresponding to the order in which they are here introduced, Locke's scheme of classification can be put as follows:



The chief reason for his classification not being a particularly tidy one is probably that he is not concerned with classification in itself, but - in addition to his expressed aim of elucidating the general notion of agreement - is primarily interested in introducing a number of concepts of kinds of agreement which he eventually finds useful in discussing the extent of human knowledge. And, since his

classification seems to him sufficiently distinct to serve such purposes, he shows no further concern with logical niceties.

Thus, after admitting that identity and co-existence are each a kind of relation, he defends distinguishing identity and co-existence in his list on the grounds that "they are such peculiar ways of agreement or disagreement of our ideas, that they deserve well to be considered as distinct heads, and not under relation in general; since they are so different grounds of affirmation and negation, as will easily appear to any one, who will but reflect on what is said in several places of this Essay." (E IV i 7, pp 171-72). Briefly, he distinguishes co-existence from identity because in the case of identity our knowledge extends as far as we have ideas, whereas in the case of co-existence our knowledge is severely limited. He distinguishes identity from both co-existence and relation (in the third, most restricted sense) because our knowledge of identity is largely of trifling matters and he is concerned with the possibilities of our knowing the truth of non-trifling propositions. And, he distinguishes existence from relation, identity and co-existence, because our knowledge of existence is also severely limited, but for rather different reasons than our knowledge of co-existence - remembering that the notion of a proposition asserting co-existence, or identity, or relation, is,

for Locke, the notion of a general proposition, where a general proposition is one which does not entail an existential proposition (see E IV ix 1, p.303; E IV xi 13, pp 338-39).

In this connection, one might speculate that a vaguely felt reason for his marking existence off from other types of agreement is to allow for the point that any statement of the form 'All x's exist' or 'Some x's exist whereas other x's do not' or 'Some x's exist' is absurd.¹ Similarly, any statement of the form 'x exists' is redundant. Indeed, Locke might even be prepared to allow that any statement of the form 'There are no x's' or 'There is no x' - including 'There is no God' - can never be self-contradictory, or that any statement of the form 'An x necessarily exists' is necessarily not true. Thus, in the same vein of thought, 'A man is warm-hearted, has two legs, eats meat, is fundamentally lazy, and exists' incorporates making two significantly different kinds of claim - i.e., involves asserting two significantly different kinds of agreement.² On the evidence of Locke's actual writings,

¹This is not to deny that the sentences I am using here could be given an interpretation such that the statements they would be used to make would not be absurd.

²From the fact that asserting '... exists' or 'There is ...' is not to assert an agreement of such-and-such a kind, it does not follow that there is no idea of existence or that the idea of existence is indistinguishable from the idea of what we assert to exist. Otherwise the very notion of the agreement Locke calls 'existence' would be a spurious one.

however, such considerations can certainly be no more than interesting speculations.

There seem to be certain theoretical problems in applying the scheme of classification in the way that he does. For, it seems possible to have cases of co-existence which correspond to (at least many) cases of relations (in the most restricted sense) - e.g., 'The quality of a triangular shape (ideally) co-exists in a substance with the quality of having three internal angles equal to two right angles' corresponds to the relational agreement 'The three internal angles of a triangle are equal to two right angles'¹ - such that the human mind is as capable of perceiving the former as the latter. And what then of the limitations of human knowledge in the area of co-existence? Conversely, it seems possible to have cases of relations which correspond to (at least many) cases of co-existence - e.g., 'Fixedness co-exists with yellowness, fusibility, malleableness, etc.' corresponding to 'Fixedness co-exists in a substance with yellowness, etc.' - such that the mind is as incapable of perceiving the former as the latter.

Now, in order to avoid difficulties of this sort, it

¹One might also introduce, e.g., '2 apples+2 apples=4 apples' corresponding to '2+2=4', but this raises certain questions about the status of numbers and qualities. It also illustrates the rough character of the notions of co-existence and relation.

is useful to view Locke's classification roughly as: (1) identity, (2) existence, (3) co-existence = the type of agreement sought by the natural and social scientist, and (aside from existence) by the metaphysician and theologian, (4) relation = the type of agreement found in mathematics and morality. This comes closer, I think, to the scheme he actually employs in investigating the extent of human knowledge, although it is somewhat different from the one he indicates in theory beforehand.

Leibniz has relatively little to say about Locke's classification. Without making reference to the latter's subsuming identity and co-existence under relation, he sketchily reduces agreement to two kinds, comparison and concurrence: "That of comparison gives diversity and identity, either complete or partial Concurrence contains what you call coexistence, i.e. connection of existence. But when we say that a thing exists or that it has real existence, this existence itself is the predicate The existence of the object of an idea may also be conceived, as the concurrence of this object with the Ego. Thus I believe it may be said that there is only comparison or concurrence" (NE IV i 3-7, p.401, G 339-40; see also, NE II xi 4, p.144, G 129). From comparison, then, he singles out identity, and from concurrence, concurrence with the ego, as "the relations which deserve to be distinguished among others" (NE IV i 3-7, p.401,

G 340) - the former because for Leibniz all necessary agreement reduces to identity, and the latter presumably because of his theory that the created universe consists solely in an infinity of egos or ego-like substances. Unfortunately, he does not elaborate: "More exact and more profound researches might perhaps be made; but I content myself here with making remarks." (NE IV i 3-7, p.401, G 340).

In view of Locke's expressed purpose in introducing his classification - viz., to clarify the general notion of agreement - it is worthwhile, I think, to consider briefly two points which Leibniz does not introduce:

(1) In the sense of 'relation' appropriate to this context - whether it be a relation in any of the three senses indicated above - to assert a relation between ideas is not to assert a relation in the sense in which, e.g., 'Bill is taller than Bob' and 'A dog hates a cat', assert the relations of being taller than and hating. Thus, in asserting a relation between the idea of $2+2$ and the idea of equality to 4, the relation being asserted is not the relation of equality, nor is it a relation in the sense in which ' $2+2=4$ ' asserts the relation of equality. For instance, one can assert a relational agreement by asserting 'White is white' and this does not assert a relation in the indicated more usual sense. And if it is objected that 'White is white' merely consists in

'White is identical with white' and is therefore a concealed relational assertion in the usual sense, one can reply by pointing out that, although 'White is white' is logically equivalent to 'White is identical with white' and although Locke's use of 'identity' seems to cover either assertion, nevertheless the two propositions assert relative agreements of a different kind - a difference which cannot be accounted for if relative agreement (i.e., relation in the sense appropriate to this context) is taken to be a relation in the more usual sense. For, in the appropriate sense of 'relation', 'White is white' asserts the relation of being identical with (white) whereas 'White is identical with white' asserts the relation of having the property of being identical with (white). But, on the argument given in the objection both propositions assert the relation of being identical with. And, if the objector then claims that 'White is identical with white' in reality amounts to 'White has the property of being identical with white' and therefore that there is a difference in the relations being asserted but that they are nevertheless relations in the more usual sense, he can be met with parallel points concerning the distinction between asserting the relation of having such-and-such a property and asserting the relation of having the property of having such-and-such a property - and he must stop somewhere or the infinite regress will generate an impossible relation.

(2) In the course of his discussion of truth, Locke seems to introduce a sense of 'agreement' which is significantly different from that in which identity, relation, co-existence and existence are equally kinds of agreement.

He describes truth in terms of propositions, drawing a distinction between mental and verbal truth which corresponds to a distinction between mental and verbal propositions: "Truth, then, seems to me, in the proper import of the word, to signify nothing but the joining or separating of Signs, as the Things signified by them do agree or disagree one with another. The joining or separating of signs here meant, is what by another name we call proposition. So that truth properly belongs only to propositions: whereof there are two sorts, viz. mental and verbal; as there are two sorts of signs commonly made use of, viz. ideas and words." (E IV v 2, p. 244, minus some italics).

His introduction of a verbal proposition and verbal truth occasions a charge of nominalism from Leibniz (see NE IV v 1-2, pp 450-51, G 377-78) - probably in part because of Locke's prior discussion of essences in which his nominalism is more readily discernible, and in part because there might be some suggestion that the mental proposition that A is B, where it is expressed by a verbal proposition, consists in the mental proposition signified by the verbal proposition 'A is B'. In this particular context, however, such a question

is of no relevance and it might be side-stepped by viewing Locke's distinction as follows: A mental proposition is an assertion of agreement between ideas, whether words are used to do so or not, and a verbal proposition is either simply a sentence or a sentence which is used to assert such-and-such a mental proposition - where the mental proposition that A is B, whether or not it is expressed in words, does not consist in the mental proposition signified by the sentence 'A is B'. Unless otherwise indicated, I have used, and shall continue to use, 'proposition' in the sense of a mental proposition.

Now consider the following description of truth: "When ideas are so put together, or separated in the mind, as they or the things they stand for do agree or not, that is, as I may call it, mental truth. But truth of words is something more; and that is the affirming or denying of words one of another, as the ideas they stand for agree or disagree" (E IV v 6, p.247). For the sake of convenience, I take this to amount to: A proposition is true if either the ideas agree as they are asserted to agree or at least the things for which the ideas stand agree as the ideas are asserted to agree. And, a verbal proposition is true if the proposition it is used to assert is true.

The point of particular interest in this context is that Locke seems to be allowing for the distinction between necessary and contingent truth in his general theory of

truth - the suggestion being that a proposition in which the ideas agree as asserted is a necessary truth whereas a proposition such that only the things for which ideas stand agree as the ideas are asserted to agree is a contingent truth. For instance, if the idea of a man agrees with the idea of an animal, then the proposition that a man is an animal is necessarily true. On the other hand, if only the thing for which the idea of a man stands - viz. a man - agrees with the thing for which the idea of a biped stands - viz. a biped - then the proposition that a man is a biped is contingently true.

If this account of how 'idea A agrees with idea B' is used in this context holds, then the sense in which the expression is used here must be distinguished from the sense in which it is used by Locke to list various forms of agreement, and therefore from the sense in which it is at least sometimes used in 'Knowledge consists in the perception of agreement between ideas'. For instance, if 'Idea A agrees with idea B' entails 'The proposition that A is B is necessarily true', then the notion of existential agreement is absurd. Existential propositions are contingent propositions; even Leibniz - with the exception of 'God exists' - admits this point. Moreover, any other form of agreement which entails an existential agreement would be impossible - e.g., 'Ed is ill', 'Some men like music'. And finally, although for Locke many apparently contingent cases of co-existence are not really contingent,

II

PERCEPTION AND IDEAS

he does not seem prepared to claim that it is impossible to have a contingent co-existence. Thus, although it is quite permissible to use 'agreement' in the stricter sense of necessary agreement, it is important not to confuse it with the looser sense in which agreement receives its four-fold classification. In the looser sense, then, the idea of x agrees with the idea of y if and only if the proposition 'x is y' is true - whether the truth be necessary or contingent. In asserting agreement between the (abstract) idea of a man and the (abstract) idea of being an animal' rather than the more straightforward 'Asserting the proposition that a man is an animal consists in asserting agreement between a man and being an animal'? In short, why are ideas so important for him?

Here again, Leibniz does not expressly raise such questions, partly because he agrees with Locke to a significant degree on the role ideas play in human knowledge. But I think some inquiry along these lines should prove useful, not because any short answers to the indicated questions are so important, but because the points one must consider in order to understand such answers reveal certain central threads in the largely shared background of their respective positions on knowledge.

III

PERCEPTION AND IDEAS

Knowledge for Locke is restricted to perception of
 Why does Locke say 'The knowledge that a man is an
 animal consists in perceiving the appropriate kind of agree-
 ment between the (abstract) idea of a man and the (abstract)
idea of being an animal', instead of saying something like
 'The knowledge that a man is an animal consists in (intellec-
 tually) perceiving the appropriate kind of agreement between
 a man and being an animal'? Similarly, why does he say
 'Asserting the proposition that a man is an animal consists
 in asserting agreement between the (abstract) idea of a man
 and the (abstract) idea of being an animal' rather than the
 more straightforward 'Asserting the proposition that a man is
 an animal consists in asserting agreement between a man and
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is useful to make two

Knowledge for Locke is restricted to perception of agreement between ideas because ideas are, with apparently one exception, the only immediate objects of the mind - the exception being the mind itself and certain of its acts, operations or experiences. Now, he does subsequently loosen the identification of knowledge with perception in admitting "sensitive knowledge" of the existence of external objects "actually present to the senses". But, although sensitive knowledge undoubtedly counts as knowledge for Locke (or even as perception in a looser sense; see E IV iii 2, p.190), it is scarcely credible that admitting sensitive knowledge involves, for him, admitting external material objects as immediate objects in any relevant sense of 'immediate object'. Consequently, I shall view his position as restricting the status of being an immediate object to the self, the particular ideas it has, and some of its acts, operations, etc. Moreover, since the extension of knowledge to include sensitive knowledge itself poses problems of its own, I shall again discuss Locke as if 'knowledge' has not been loosened in this fashion and reserve consideration of the extension until later.

It seems clear, then, that in order to understand the place of ideas in Locke's theory of knowledge, it is necessary to understand his notion of an immediate object. Before tackling this problem, however, it is useful to make two

points:

(a) If 'perceiving agreement between ideas' is used to include both the examination of abstract ideas and the reflective perception (e.g.) that I exist, am having a sensible idea of green, or am thinking about philosophy, then such an expression covers two significantly different things. For instance, perceiving that $2+2=4$ (i.e., perceiving the appropriate kind of agreement between the idea of $2+2$ and the idea of equality to 4)¹ does not consist in perceiving that I am having the abstract idea of $2+2$ or of equality to 4, or any such fact about myself and the ideas I have. Conversely, in perceiving that I am sensing black, I do not seem to be "examining my abstract ideas" in the way that I purportedly am in perceiving that $2+2=4$.

Now, one can perhaps see why Locke describes perceiving that I am sensing black as 'the perception of an agreement between ideas'. For, in such cases of reflective perception, what I perceive, or part of what I perceive, is often that I am having such-and-such an idea. Nevertheless, as just noted, this is not the reason which can be given for characterising

¹One must distinguish between 'perceiving agreement between the ideas of ...' and 'perceiving that ... agrees with ...'. Otherwise, the distinction between, e.g., perceiving that $2+2=4$ and perceiving that the idea of $2+2$ agrees with the idea of equality to 4 could fold. For, perceiving that $2+2=4$ consists in perceiving agreement between the ideas of $2+2$ and equality to 4.

the perception that $2+2=4$ as 'the perception of agreement between ideas'; for perceiving that $2+2=4$ does not consist in perceiving that I am having such-and-such ideas. The suggestion, rather, seems to be that in perceiving that $2+2=4$, I examine my abstract ideas of $2+2$ and of equality to 4 - ideas which are "immediately present" to me - in a way which is presumably analogous to the way I examine myself and my ideas in reflectively perceiving that I have such-and-such ideas.

(b) Leibniz's position on the knowledge of necessary truth seems very similar to Locke's in this respect.¹ For one thing, Leibniz generally accepts Locke's use of expressions like 'perceiving agreement between ideas'. Indeed, he himself does not hesitate to write, e.g., "truth is always grounded in the agreement or disagreement of ideas, but it is not true in general that our knowledge of truth is a perception of this agreement or disagreement." (NE IV i 1-2, p.400, G 338). Furthermore, in arguing for innate principles, he often points out that necessary truths are discovered by looking in the mind (see below, pp 123-28), and he makes little effort to draw a sharp line between looking "inward" in this sense and examining oneself in reflection.

¹In other respects, it is clearly different - e.g., Leibniz holds that all necessary truths have the form of "identicals" and therefore the knowledge of a necessary truth is the knowledge of the truth of an identical proposition.

On the other hand, in the context of his discussion of intuitive knowledge, he does allow for differences in the respect under consideration:¹ "In short, you can say in general that all primitive truths of reason are immediate with respect to an immediateness of ideas. As for the primitive truths of fact, they are the immediate internal experiences of an immediateness of feeling." (NE IV ii 1, p.410, G 347; minus italics). Similarly, concerning 'I exist' he writes: "it is a proposition of fact, based upon an immediate experience, and it is not a necessary proposition, whose necessity is seen in the immediate agreement of ideas." (NE IV vii 7, p.469, G 391-92; see also NE IV ix 2, p.499, G 415).

For Locke, in the broadest sense of 'idea', an idea is "whatsoever is the object of the understanding when a man thinks" (E Intro. 8, p.32). In this case, 'thinks' is used in a highly generic, Cartesian sense to include, e.g., sensation, remembering, recollection, contemplation, reverie, attention, reasoning, judging, and even dreaming and (in a sense) knowing (e.g., see E II xix, "Of the modes of thinking", pp 293-300). Thus, he himself says that 'idea' is used to express "whatever is meant by phantasm, notion, species, or

¹And, of course, he clearly recognises that reflective knowledge is of contingent truth.

whatever it is which the mind can be employed about in thinking" (E Intro. 8, p.32; minus italics). Eventually, in distinguishing ideas from qualities, he expressly refers to an idea as the immediate object of perception, thought or understanding, and something the mind perceives in itself (see E II viii 8, p.169). Thus, on the one hand, there are ideas in the mind - e.g., ideas of solidity, motion, extension - and on the other, qualities in bodies - e.g., solidity, motion, extension - as well as minds, persons, events, nations, groups of bodies, etc.¹

Leibniz shares the view that an idea is an immediate object in the mind; for example, in response to what he presents as Locke's opening remarks in Book II, viz., that "the idea is the object of thought",² he writes: "I admit it, provided you add that it is an immediate internal object, and that this object is an expression of the nature or the

¹See E II viii 9, p.169, where Locke apologises for sometimes talking about ideas as if they were in things themselves, and asks to be understood as meaning "those qualities in the objects which produce them in us"; see also E II viii 22, p.177, where he re-affirms the importance of distinguishing between ideas in the mind and qualities in bodies.

²Locke actually says: "EVERY man being conscious to himself that he thinks; and that which his mind is applied about whilst thinking being the ideas that are there, it is past doubt that men have in their minds several ideas" (E II i 1, p.121), and thereby at least strongly suggests that ideas are "internal" objects.

qualities of things." (NE II i 1, p.109, G 99). For Locke, of course, ideas are representatives of things, although (a) it is important to distinguish the ways or senses in which, say, abstract ideas and sensible ideas might be said to "represent" things, and (b) in the case of sensible ideas, not all ideas copy or resemble things (e.g., see E II viii 7, p.168; E II viii 15, p.173). Leibniz, on the other hand, feels that in those cases where Locke thinks that sensible ideas do not resemble things, i.e., in the case of ideas of secondary qualities, there is still a kind of incomplete or expressive resemblance, or "orderly relation", between the idea and thing (see NE II viii 13, 15, 21, 24, pp 132-35, G 118-21).

Consequently, I think it true to say that both Locke and Leibniz share, at least in substance, what has come to be known as the representative theory of perception,¹ although

¹If required, confirmation of this view can be found, in Locke's case in E IV iv ("Of the Reality of Knowledge"), especially 3-4, pp 228-30; E IV ii 14, pp 185-88 (where he first introduces the notion of "sensitive knowledge"), and E IV xi ("Of Our Knowledge of the Existence of Other Things"), and in Leibniz's case particularly in NE II ix 8, pp 137-38, G 122-23: "When, then, a painting deceives us there is a double error in our judgments; for first we put the cause for the effect, and think we see immediately the cause of the image . . . for, properly speaking, we see only the image, and we are affected only by the rays of light. And since the rays of light require time (however little it be), it is possible for the object to be destroyed in this interval, and for it no longer to exist when the ray reaches the eye, and that which no longer exists cannot be the object present to the sight. In the second place, we further deceive ourselves when we put one cause for

they differ considerably on related points (e.g., on unconscious perception, innate ideas, the importance of sensible ideas as far as the question of the origin of ideas is concerned, the "causes" of sensible ideas, primary and secondary qualities, the "simplicity" of sensible ideas).

Now, in view of the highly variable use to which Locke puts the word 'perception' (Leibniz's usage in this respect is somewhat more uniform) - e.g., it is sometimes used synonymously with the generic 'thought', sometimes used to mean an idea, sometimes used to mean only a sensible idea, sometimes used to mean a sensation (itself an ambiguous term in Locke's hands), sometimes used to mean intuitively and demonstratively "seeing" that such-and-such is necessarily the case, and sometimes used to mean sense-perception in the sense in which seeing, hearing, feeling, smelling and tasting constitute forms of sense-perception - it is important to be clear in just what sense, or senses, the word is being used at any given time. In the discussion which immediately follows, I shall be primarily concerned with perception in the sense of sense-

another, and think that what comes only from a flat picture is derived from a body This confusion of the effect with the cause, whether true or false, often enters into our judgments, moreover, upon other things. Thus we feel our bodies, or what touches them, and we move our arms by means of an immediate physical influence, which we think constitutes the connection of the soul with the body, while in truth we feel and change in that way only what is in us." See also, his remarks in NE IV ii 14, pp 421-22, G 355-56 and NE IV xi 1-10, pp 512-13, G 426.

perception. But even here, certain rough distinctions need to be drawn in order to help understand the positions of both Locke and Leibniz on perception - distinctions which they themselves do not expressly draw, but which I hope do not do injustice to their views.

Perception might consist in perceiving that such-and-such is the case, but not in the sense in which knowledge for Locke consists in perception. For instance, I might walk into a room and see that the Prime Minister is wearing a blue tie or that a chair in the corner is painted yellow, or a blind man might walk over to a table and feel that it has been sand-papered. On a liberal interpretation, someone might even hear over the radio that Germany has just declared war on Russia or see in the newspapers that thirteen purple goats have been found on the moon.

Perception in this sense is distinct from perception in Locke's sense¹ because it consists in neither perceiving a necessary truth nor perceiving that A is B where A and B are necessarily immediate objects. It is not necessarily true that the Prime Minister is wearing a blue tie and the Prime Minister and his blue tie are not immediate objects to me.

¹The situation with Locke is somewhat more complicated than this account might suggest, since he does eventually admit sensitive knowledge. However, in this immediate context, I am taking 'perception' as he uses it in initially describing knowledge - i.e., in the sense in which perception is necessarily tied to immediate objects.



And it seems to be in the sense of 'perceive' introduced in this paragraph that Locke himself refers to someone seeing one man run another man through: "But yet it is evident the author himself knows the proposition to be true, remembering he once saw the connexion of those ideas; as certainly as he knows such a man wounded another, remembering that he saw him run him through." (E IV i 9, p.175).¹

One might also single out perception in a "non-propositional" sense in which, e.g., John's perceiving a dog does not entail John's perceiving what he perceives as a dog. For example, John might be watching a scene being enacted for a film in which one actor (Clark) pretends to run another actor (Yul) through, but not know that Clark and Yul are acting. In such a case, in the sense of 'perceives' introduced here, John sees Clark pretending to kill Yul but thinks that Clark is killing Yul, i.e., John takes Clark to be a murderer and not an actor. On the other hand, one can distinguish perception in a sense in which John cannot perceive something - e.g., a dog, a man running another man through - unless he perceives it as such - i.e., as a dog, or as a man running another man through.² For instance, attending to perception in the two

¹And note also the sense of 'perceive' in which perceiving the existence of an external object can, for Locke, provide a sensitive knowledge of the existence of that object.

²Where 'perceiving as' is neutral with respect to whether or not it is correct.

senses indicated here, one might then say 'In a sense she saw the leader of the revolution because she saw a man in a green hat and he was the leader of the revolution, but in another sense, she didn't see the leader because she didn't see him as such'. And, in the latter sense John does not see Clark pretending to kill Yul. One might distinguish yet another sense of 'perceiving' in which perceiving a so-and-so does not entail perceiving something as a so-and-so insofar as it does not involve perceiving something in a sense which entails that there is something - i.e., in this sense John simply takes there to be a murder, irrespective of whether there are any men doing anything which John takes to be something else - indeed, irrespective of whether or not anything exists (save John and his perception). And one could continue to juggle alternative senses of 'perception' along such lines for quite some time, without further profit to this particular discussion. Rather, what is of central importance here is to distinguish perceiving in any of the senses indicated thus far from perceiving in the following sense.

In this sense, I do not see, e.g., men, chairs, actors, swords, but only see colours of various shapes and sizes, of various shades and illuminations, and in various spatial relationships, undergoing various changes of spatial relationships, etc. Similarly, in this sense, I do not hear automobiles,

horses, radios, but only sounds of varying pitch, tone, loudness, and, perhaps, in various spatial relationships. In this sense, I do not smell cakes, factories or fish, but smell only smells, taste only tastes, feel only texture, extension, motion, heat and cold, etc. Sense-perception in this sense is sometimes referred to by Locke as 'sensation', although as noted above this latter term, like 'perception' (and 'impression'), receives variable employment in his hands (e.g., in the sense of an internal object of sensation, i.e., a sensible idea; in the sense of the process of a sensible idea's being produced; in the sense of an effect in the brain; and in the sense in which it refers to things like hunger,¹ thirst, pain, pleasure, etc.). I shall chiefly refer to it as 'sensing'.²

One can then draw a further distinction, viz., that between the sense in which, e.g., 'John senses an instance of red' entails, and the sense in which it does not entail, 'There exists an instance of red'. Call the former 'the existential sense' and the latter 'the non-existential sense'.

The notion of sensing and the distinction between the existential and non-existential senses of 'sensing' seem to be central to the representative theory of perception, at least

¹And even here one might distinguish hunger sensations from feelings of hunger.

²And I shall henceforth generally use 'perception' to refer to forms of perception other than sensing.

in the form held by Locke and Leibniz. For it is in the case of sensing, and not in the case of perception in other senses, where the mental "representatives" which are capable of copying or resembling the external world, or at least certain elements in it, seem to emerge. Consequently, I shall for the moment concentrate on sensing.

Using 'see' in a sense in which seeing is a form of sensing, both Locke and Leibniz would probably agree that one cannot see a material object, e.g., a chair, because¹ seeing a chair entails seeing at the same time the other side of a chair - which is impossible owing to the demands made by 'the other side'. Similarly, in a sense of 'hear' in which hearing is a form of sensing, one cannot hear, e.g., a cow, because one cannot in this sense hear something which gives milk, has horns and big brown eyes, etc. (or whatever 'cow' means). One can only hear the moo, which is in fact made by a cow, although one does not in this sense hear a cow mooing. Such uses of 'see' and 'hear' may be relatively unusual, or even thoroughly bizarre; but the important question here is whether they are intelligible uses, and whether it is true that we do in fact see and hear, i.e., sense, things in this way. And

¹This is aside from the general point which Locke expressly makes and Leibniz at least implies - that one cannot sense substances of any kind (see E I iii 19, p.107 and Leibniz's comments, in which he traces the idea of substance to reflection; see also NE IV ii 14, pp 421-22, G 355).

for Locke and Leibniz, the reply to both the latter questions (given suitable qualifications) would appear to be 'yes'.

In this context, an important point in connection with sensing is that the existential and non-existential senses are mutually exclusive - e.g., if John senses an instance of red in the existential sense, then he is necessarily not sensing an instance of red in the non-existential sense, and vice versa. This, I think, marks an important difference between sensing and other forms of sense-perception. For instance, if one concentrates on a sense of 'perception' in which perception consists on the one hand in recognising or noticing a so-and-so, and on the other hand in merely taking something to be a so-and-so (though not in a sense which implies error), the result generally is that perception on the former view simply consists in a correct form of perception on the latter view - i.e., that perceiving in the existential sense consists in correctly perceiving in the non-existential sense. Thus, in this case, perceiving in the existential sense entails perceiving in the non-existential sense. But, in the case of sensing, if I am now sensing an instance of green in the existential sense, I am not - indeed, I cannot be - sensing an instance of green in the non-existential sense.¹

¹Certain minor complications can present themselves in this connection insofar as one can construct an existential sense of 'sense' in which, e.g., John's sensing an x in this existential sense would entail John's sensing an x in the non-existential sense. In order to do this, one could let

To apply briefly some of the preceding distinctions to a specific case, consider a situation in which a boy is examining a toy, such that the toy is red but, because of the lighting, it in a sense looks brown to the boy, although because he knows what conditions of lighting are present and the effect they have on how things look, in another sense the toy looks red to him. In this example, the boy senses brown but perceives red (he also perceives a red toy, and might perceive that it in a sense looks brown to him). If, however, the toy had looked brown to him in both senses, then he would have both sensed and perceived brown. On the other hand, the situation might be such that the boy senses red in the existential sense without perceiving the colour at all; for example, if the red toy is in a shop window along side a large eye-catching yellow toy, and the latter attracts the full attention of the child, then the child might sense red out of the "corner of his eye" or "on the periphery" without perceiving it. Or,

'sensing an x' mean sensing an x in a non-existential sense plus the existence of an x plus whatever else might be necessary. And, given Locke's and Leibniz's representative position on perception, this existential sense would be important because it would be the only existential sense of 'sense' in which one does in fact sense anything. Nevertheless, the central point here is that the existential sense of 'sense' indicated in the text, in which existential and non-existential sensing are mutually exclusive, seems to be intelligible, i.e., free from contradiction, and therefore the distinction as outlined stands. Unless otherwise indicated, the existential sense of 'sense' with which I am concerned is the one indicated in the text.

one might sense brown in the existential sense, but perceive it incorrectly as red; for example, consider the case where a rust-brown object moves rapidly across a man's field of vision and he takes the colour to be red, although he does sense brown.

One might also attempt to distinguish sensing from certain other forms of perception by pointing out that, whereas sensing can only be veridical or non-veridical, perceiving can be correct or incorrect, right or wrong.¹ And a point which seems closely connected with this one is that sensing is in some sense passive, whereas perceiving is in some sense active. Such a notion involves complex considerations, however - considerations which cannot be discussed adequately here, partly because of my own inability to frame them clearly, and partly because, even if I were able, such a discussion would take us on too great a tangent. Still, it is useful to note the following points in this connection:

The passive character of sensing must be a well-qualified one if it is to be maintained in even a rough form on behalf of Locke and Leibniz, because, in Locke's view, we can to some extent control what we sense by moving our bodies and the various parts of our bodies, or by altering the "environ-

¹If veridical sensing is identified with sensing in the existential sense, then 'veridical sensing' is ambiguous insofar as 'existential sensing' is ambiguous; the possibility of such an ambiguity, however, seems of little consequence here.

ment" (e.g., changing the lighting conditions, removing fog or mist, wearing glasses or hearing aids), or by caring for the state of our sense-organs, nervous systems, brain cells, etc. And Leibniz would probably agree in substance with a corresponding point - i.e., provided the appropriate expressions were used in the special metaphorical sense demanded by his system of immaterial substances which cannot literally interact or have bodies which they move. Furthermore, Locke suggests that the diversion of one's attention can (though presumably need not) have some effect on what one senses (e.g., see E II ix 4, p.184). And Leibniz certainly agrees with this point to the extent that attention is a determining factor as far as the "distinctness" of what we sense is concerned (e.g., see NE Pref., pp 47-48, G 46-47).

Nevertheless, it is clear that for Locke there is a sense of 'passive' in which sensing is definitely passive (see E II i 25, pp 142-43; E II ix 1, p.183; E II xxi 74, pp 371-72), i.e., in which sensing is the end-product of a causal process involving "impressions" being made (via impulse) on the sense-organs, nervous system, certain areas in the brain, etc.: "sensation; which is such an impression or motion made in some part of the body, as produces some perception in the understanding." (E II i 23, p.141, minus italics and square brackets. For some of his brief excursions into the physical and physiological aspects of this

causal process, see E II viii 4, p.167; E II viii 11-22, pp 171-78). As already suggested, for Leibniz, one can only speak truly of bodily impressions causing the mind to sense things if one uses expressions such as 'bodily impressions' and 'cause' in a special metaphorical way. For, in the ordinary sense of the appropriate expressions, everything in the mind "arises from its own depths" according to the decree of God (e.g., see NE I i 1, p.70, G 66-67; NE II xxi 72, pp 218-19, G 195-96). Even granting the special usage, however, it seems that Leibniz is not prepared to view the mind's sensing things as being quite so passive a business as Locke, if he were to speak Leibniz's language would suggest. Thus, Leibniz writes: "But I should suppose that there is also action in sensations so far as they give us more distinct perceptions and consequently the opportunity of making remarks and so to speak of developing ourselves." (NE II xxi 72, p.220, G 196). But, whatever this point might amount to, he does tend to identify sensible ideas with confused ideas (e.g., see NE II viii 9, p.132; NE I i 11, p.82) and, in turn, to associate having confused ideas in this sense with being passive: "But taking action as an exercise of perception and passion as its contrary, there is action in true substance only when their perception . . . is developed and becomes more distinct, as there is passion only when it becomes more confused" (NE II xxi 72, p.219, G 195; minus italics). In making this point,

however, one might note in passing that he apparently excludes from the list of sensible ideas those ideas which Locke maintains come from more than one sense: "The ideas which are said to come from more than one sense, like those of space, figure, motion, rest, are rather from common-sense, that is to say, from the mind itself, for they are ideas of the pure understanding, but related to externality, and which the senses make us perceive" (NE II v, p.129, G 116). And such a view certainly seems to constitute an important qualification on the distinction between sensing and perceiving, as far as what is sensed is concerned, if it is to be applied to Leibniz.

On the other hand, the sense in which perceiving, as distinct from sensing, might be said to be active, must also be carefully qualified. For, both Locke and Leibniz imply that perceiving cannot be voluntary in the sense that, e.g., going out to buy a pint of milk, or driving an automobile, or pushing a lawn mower, can be voluntary. Thus, Locke, while drawing a comparison between sense-perception and "intellectual" perception (but drawing no distinction within sense-perception between sensing and perceiving), makes the point that, although a man can have control over whether or not he will exercise his perceptual faculties, under what conditions he will exercise them, and how carefully he will exercise them (at least in those cases where being careful is appropriate

in the exercise of the given faculty), once such conditions are settled, "It depends not on his will to see" what he does see (see E IV xiii 1-2, pp 357-58). Leibniz agrees with the point as applied to (the acquisition of) beliefs and implies agreement in the cases relevant to this discussion: "We have . . . established the fact that it does not depend upon man to have this or that opinion in the present state, but it depends upon him to prepare himself to have it or not to have it eventually, and that thus opinions are voluntary only in an indirect manner." (NE IV xiii 1-2, p.528, G 438; see also NE IV i 8, p.402, G 340). In this respect, then, sensing and perceiving seem to be pretty well on an equal footing.

Nevertheless, there does seem to be some sense of 'active' in which someone perceiving something is, whereas someone sensing something is not, active. For what one perceives often depends not only on the state of one's sense-organs or neural and cerebral system, the character of the environment, and the direction of one's attention, but also on what one knows in a broad sense, and not simply insofar as what one knows can influence the direction of one's attention, or lead one to alter the character of the environment or the state of one's sense organs, nervous system, etc. Thus, under certain conditions, one is subject to criticism from a slightly different viewpoint for failing to perceive such-and-such than for failing to sense such-and-such. And, under

certain conditions, successfully perceiving such-and-such can be a mark of intelligence, whereas successfully sensing such-and-such is only a sign of good eye-sight or clear visibility.

Some support for ascribing the core of such a view to the positions of Locke and Leibniz is provided by a distinction they both expressly accept - viz., the distinction between having a sensible idea and "judging". For instance, Locke writes: "When we set before our eyes a round globe of any uniform colour, v.g. gold, alabaster, or jet, it is certain that the idea thereby imprinted on our mind is of a flat circle, variously shadowed, with several degrees of light and brightness coming to our eyes. But we having, by use, been accustomed to perceive what kind of appearance convex bodies are wont to make in us; what alterations are made in the reflections of light by the difference of the sensible figures of bodies; - the judgment presently, by an habitual custom, alters the appearances into their causes. So that from that which is truly variety of shadow or colour, collecting the figure, it makes it pass for a mark of figure, and frames to itself the perception of a convex figure and an uniform colour; when the idea we receive from thence is only a plane variously coloured, as is evident in painting." (E II ix 8, p.186). And again: "sight, . . . conveying to our minds the ideas of light and colours, which are peculiar only to that sense; and also the far different ideas of space, figure,

and motion, the several varieties whereof change the appearances of its proper object, viz. light and colour; we bring ourselves by use to judge of the one by the other. This, in many cases by a settled habit, - in things whereof we have frequent experience, is performed so constantly and so quick, that we take that for the perception of our sensation which is an idea formed by our judgment; so that one, viz. that of sensation, serves only to excite the other, and is scarce taken notice of itself; - as a man who reads or hears with attention and understanding, takes little notice of the characters or sounds, but of the ideas that are excited in him by them." (E II ix 9, p.188). Leibniz heartily agrees with the central point involved here (see NE II ix 8, pp 136-38, G 122-23).

Now, aside from any special questions raised by viewing perception as a form of judgment (e.g., on the grounds that the latter is something which can be either true or false, whereas the former can only be either correct or incorrect), it must be emphasised that neither Locke nor Leibniz recognises the full significance of this distinction for a theory of sense-perception and do not carry the distinction I have marked with the words 'sense' and 'perceive' into contexts which might well profit by its introduction. Thus, concerning the point that a man is often "beholden to experience, improvement, and acquired notions, where he thinks he had not the

least use of, or help from them" (E II ix 8, p.187), Locke writes: "But this is not, I think, usual in any of our ideas, but those received by sight." (E II ix 9, p.188). Leibniz's view, on the other hand, seems somewhat more comprehensive in this respect: "This confusion of the effect with the cause, whether true or false, often enters into our judgments, moreover, upon other things. Thus we feel our bodies, or what touches them, and we move our arms by means of an immediate physical influence, which we think constitutes the connection of the soul with the body, while in truth we feel and change in that way only what is in us." (NE II ix 8, pp 137-38, G 122-23).

At any rate, although the distinction which both Locke and Leibniz draw between having sensible ideas and "judging" does not warrant the claim that they expressly distinguish sensing and perceiving to the extent that it is distinguished here, it nevertheless suggests that the sensing-perceiving distinction can in substance be ascribed to their positions without producing a violent warping effect.

If some such notion of sensing can be secured on behalf of Locke and Leibniz, it seems to generate two different views of an immediate object. On the one hand, whatever the mind senses in the existential sense seems to be an immediate object. For example, if it were the case that the moving spot

of brown I am now sensing were being sensed by me in the ~~And~~ existential sense (which, according to the representationalist, is not the case), then it would be an immediate object to me. In this case, an immediate object is something public - i.e., you can sense the same thing as I am sensing - and is capable of existing independently of anyone's sensing it. And, if one were to draw a distinction between reflective experience and reflective perception (or "reflective judgment"), corresponding to the distinction between sensing and perceiving, one might also say that any object of reflective experience is an immediate object (indeed, is necessarily an immediate object), and in this way account for the mind and certain of its operations being immediate objects. In this case, an immediate object is not something public - you cannot experience my mental operations. Still, for Locke, I can exist without being an object of reflective experience - viz., when I am in a deep sleep (although it is perhaps debatable whether I, as distinct from my mental operations, can be an object of reflective experience, according to Locke's view). And for Leibniz, many of my mental acts are apparently not objects of reflective experience - viz., unconscious perceptions, at least of the kind I have during a deep sleep (see NE II 1 9-19, pp 111-19, G 101-08).

On the other hand, for both Locke and Leibniz, the expression 'an immediate object' also refers to, among other

things, whatever one senses in the non-existential sense. And it is in this sense of 'immediate object' that an idea is an immediate object - a sensible idea being an immediate object of sensing. But - and this seems to be one of the central planks of a representative theory of perception - an immediate sensible object in this second sense is not considered to be as different from an immediate sensible object in the first sense as one might initially expect. For, in the second sense, an immediate sensible object achieves much the same status as an immediate sensible object in the first sense, save that it becomes logically private and, presumably, necessarily mental and therefore mind-dependent - in short, a private mental "representative" of some element in the public, non-mental world. For example, the motion I am now sensing is not in the world but is in my mind; it is not something which exists for you to see as well as me, as the motion of the automobile which just passed by exists; it is not something which exists when I cease to sense it, as the heat of the stove can exist even when I draw my hand away from it and no longer feel it (since heat is a secondary quality for Locke and - though in a slightly different way - for Leibniz, heat in fact is not a mind-independent object; nevertheless, neither philosopher implies that it is impossible for heat to be such an object).

Now, the step from claiming that an immediate sensible

object is what one senses in the non-existential sense to claiming that an immediate object in this sense is an internal mental object of the type roughly indicated in the preceding paragraph, is a questionable one. My concern here, however, is not so much with the pros and cons of such a view, but with trying to understand the position as far as this is possible. With this aim in mind, then, it might be useful to contrast the notion of an immediate object as an internal mental object with a weaker interpretation of the equation 'immediate sensible object = what one senses in a non-existential sense'. On this latter interpretation, to view any value of the 'what' in 'what one senses in a non-existential sense' as an object in any sense of 'object' which allows one to claim it as a private object, or as a mental object, or as an object which is produced by the senses, or as an object which resembles such-and-such a quality, is mistaken. What one senses in the non-existential sense is an object only in the sense that, if x is what one senses, then one senses x - but in no stronger a sense. Thus, if x is what one senses in the non-existential sense, then it is impossible for x to be y unless one senses y in the non-existential sense. And therefore, if one claims that the motion I now sense is an internal, mental object, produced by the senses, and resembling the motion of a body three feet in front of me, on this interpretation, it would follow that I sense in the non-

existential sense something which is internal, mental, produced by the senses, and resembling such-and-such a body. But is this the case? Do I not simply sense motion? Indeed, can I sense the privacy of the motion? Or can I sense its mental character, and what then becomes of the distinction between sensation and reflection? Or can I sense its being produced by the senses?¹ Or can I sense the resemblance between the "internal motion" and the motion of the body in front of me?

Similarly, on this interpretation, the claim that I cannot sense in the non-existential sense the same thing as you incorporates a misconception, insofar as the only sense of 'thing' in which I can sense a thing in the non-existential sense is the sense in which you and I are both sensing the same thing if, e.g., we are both sensing red. The denial that we can sense the same thing - i.e., the claim that the objects of sensing in the non-existential sense are logically private - is made only as a result of accepting the view that one can sense a thing in a stronger sense of 'thing' than

¹In one passage in E IV ii 14, p.188, Locke's expression actually suggests such a view: "So that, I think, we may add to the two former sorts of knowledge [i.e., intuitive and demonstrative] this also, of the existence of particular external objects, by that perception and consciousness we have of the actual entrance of ideas from them"; given the context of his various remarks on "sensitive knowledge", however, interpreting him in this way is open to serious question.

this interpretation allows. Thus, 'John cannot sense the same thing as Mary' - i.e., 'John cannot have the same sensible idea as Mary' - is not false, but absurd, insofar as it presupposes the necessarily false 'John can sense a thing'.

At any rate, whatever difficulties attach to such a view, it is important to realise that Locke and Leibniz do tend to view an immediate sensible object which consists in what one senses in the non-existential sense as an internal mental object, and therefore tend to view an idea as an object in this sense.

Furthermore, both men extend the notion of an immediate object in this sense beyond the confines of experience (i.e., beyond sensation and reflection) to include, among other things, thinking in a more customary sense. Thus, as mentioned above, Locke lets 'idea' mean "whatsoever is the object of the understanding when a man thinks", in a sense of 'thinks' which includes the type of thinking that goes on when, e.g., one is working through a demonstration in mathematics. The objects of the understanding when a man is thinking in this more restricted, and more usual¹ sense, are abstract ideas

¹See E II ix 1, p.183: "PERCEPTION . . . is by some called thinking in general. Though thinking, in the propriety of the English tongue, signifies that sort of operation in the mind about its ideas, wherein the mind is active; where it, with some degree of voluntary attention, considers anything."

(among others¹). In discussing the use of words, Locke explicitly refers to such ideas as "internal conceptions", describing them as follows: "MAN, though he have great variety of thoughts, and such from which others as well as himself might receive profit and delight; yet they are all within his own breast, invisible and hidden from others, nor can of themselves be made to appear. The comfort and advantage of society not being to be had without communication of thoughts, it was necessary that man should find out some external sensible signs, whereof those invisible ideas, which his thoughts are made up of, might be made known to others." (E III ii 1, p.8). What one is thinking of in having thoughts, then, is a private mental object - i.e., an abstract general idea or an idea of a particular - just as what one senses in a non-existential sense is a private mental object - i.e., a sensible idea.²

¹'among others' because one should, I think, at least leave room for the kinds of non-sensible idea one would have if, e.g., during the course of a mathematical proof, one were to introduce a particular example to clarify the situation and thereby think of this particular triangle, or the particular triangle which ... - i.e., the kind of idea one could use a proper name to signify. At times, Locke's position leaves little room for such an idea.

²One big difference here, however, is that in the case of thoughts, there is no corresponding existential sense in which, e.g., 'John thinks of a cow' entails 'There is a cow', where existential and non-existential senses are mutually exclusive. The distinction is certainly not

Leibniz apparently shares Locke's basic view that having thoughts consists in having ideas, i.e., in having private objects in the mind, although again, he differs from Locke on a number of related issues. For instance, he has reservations about accepting Locke's theory of abstraction as an account of the formation of general ideas (see NE III iii 6-7, pp 309-10, G 268-69). He is critical of the occasional suggestion in Locke that having an abstract idea of an x consists in having a certain kind of image of an x (viz., one which is made to represent any particular x. See NE II xxix 13, 15, 16, pp 273-75, G 242-44).¹ And he would presumably be equally critical of the view that the abstract idea of an x consists in a sensible idea of an x which has been somehow "retained", "stripped" of certain of its "parts", and made capable of representing any x (Locke's expression in E III iii 6, pp 16-17, and E II xi 9, pp 206-07, could suggest this somewhat crude view). Further, in arguing for innate ideas, Leibniz constantly emphasises the distinction between the idea as an internal object and the actual conscious consideration of the idea, i.e., the actual thought of so-and-so; for

¹Although, in discussing abstract ideas, Locke does not explicitly describe them as kinds of images, certain of his expressions might suggest such a view; e.g., see E III iii 6-9, pp 16-19 and E III ii 6, p.11, where he uses the expression "those thoughts and imaginations they have within their own breasts". The suggestion is certainly not a clear-cut one, however.

he adopts the position that an idea can exist in the mind without being actually or consciously considered or perceived, and thus lead a "virtual" existence, the object of unconscious perception (see NE Pref., pp 46-53, G 46-52; NE I i, passim; NE II i 9-19, pp 111-19, G 101-08) - and this presumably holds for the objects of thought as well as for sensible ideas. He disagrees with the view that all ideas originate in experience (e.g., see NE Pref., pp 42-43, G 42-43). Indeed, he takes his metaphysics another step further than Locke and tends to view the objects of thought (as well as necessary truths) as being in some way "grounded in" the eternal mind of God, drawing expressly on St. Augustine in doing so (see NE IV xi 13, pp 516-17, G 428-29).

In discussing words and ideas, Locke emphatically makes the point that words can be used to signify only ideas, and that each man can use words to signify only his own ideas (see E III ii, pp 8-13). Now, part of what Locke seems to be getting at with this claim is that words are used to signify only (one's own) ideas in the sense that they are used to communicate only (one's own) ideas, i.e., to let others know only what ideas I have in my mind,¹ in the sense of 'know' in which one knows what someone means by such-and-such words or expressions when one understands what such words or expressions

¹This point is ambiguous, but I have left it as such because the ambiguity can be found in Locke.

mean, i.e., understands what is being said or referred to or described or asked or requested, etc. Thus, in describing the signifying use of words, Locke employs expressions such as "communicating thoughts", "making invisible ideas known to others", "sensible marks of ideas", "stands for ideas", and "speaking in order to be understood" (see E III ii passim). And thus, in a speaker-hearer situation, the successful use of a word as a sign must "excite in the hearer the same idea which it stands for in the mind of the speaker" (E III ix 4, p.105). He therefore distinguishes two ways in which words can be used as signs: either to communicate with others, or to record one's own thoughts as an aid to the memory, and thus "communicate with oneself" at a later date (see E III ii 2, p.9; E III ix 1-3, pp 104-05).

Now, it is of some importance to note that in using words as signs of my ideas and thus letting others know what thoughts I have in my mind by producing "sensible marks" - whether spoken or written words, smoke signals, or certain motions of the hands, etc. - I can only do so in a sense of 'know' which is quite distinct from that in which Locke claims that human knowledge consists in the perception of the agreement or disagreement between ideas. For, not only are the "sensible marks" which I produce cut off from you in the sense that they cannot (in fact) be immediate sensible objects for you - i.e., cannot be sensed by you in the existential sense -

but my ideas are cut off from you in the sense that they are logically private objects - i.e., it is logically impossible for you to experience my ideas in any way. Thus, even if "sensitive" knowledge is accepted as part of Locke's theory, and it is thereby possible for you to know in this way the existence of such-and-such a sound, or written shape, etc. - which I in fact produce, although you do not know this - you cannot know in this way that the given sound signifies such-and-such an idea in my mind, or that, in using this word, I have such-and-such an idea in my mind. For, although Locke does not expressly say so, sensitive knowledge seems to be restricted to the knowledge of the existence of either objects which it is possible to sense in the existential sense (i.e., for Locke and apparently for Leibniz as well, sensible qualities) or objects such that it is possible to sense in the existential sense any quality of the given object, though not necessarily all its qualities simultaneously (and thus include material bodies) - and this excludes ideas. Furthermore, you cannot acquire a sensitive knowledge of the existence of such-and-such a sound and then demonstrate the existence of such-and-such an idea in my mind. For, even waiving the question of your demonstrating the existence of my mind in this way, since the connection between any given word and idea, or between a sensible mark and its being used as a sign of an idea, is a contingent one (see E III ii 1, p.8; E III ii 8, p.12;

and E III ix 4, p.105), the indicated premise does not yield the existence of an idea.

In Locke's strict sense of 'knowledge', then, one cannot make one's thoughts known to others. Indeed, Locke himself, in Book II, provides some support for this point by distinguishing three "sorts" of perception (where perception is the act of the understanding, i.e., where the understanding is the power to perceive): "1. The perception of ideas in our minds. 2. The perception of the signification of signs. 3. The perception of the . . . agreement or disagreement, that there is between any of our ideas." (E II xxi 5, p.314; minus square brackets). Since 2. and 3. are distinct, and since knowledge in the strict sense consists in 3., therefore any sense of 'knowledge' in which knowledge consists in, or includes, 2. must be distinct from the strict sense.

In addition to the use of words for communication, however, Locke seems to be suggesting something else with his claim that words are used to signify only ideas - namely, that words signify only ideas in a sense of 'signify' in which 'the word x signifies M' means that the word x means M - in short, that words mean only ideas in the sense of 'mean' in which it is not unusual to say, e.g., that the word 'constable' means a policeman, as opposed to the idea of a policeman. Thus, concerning definition, Locke writes: "a definition is nothing else but the showing the meaning of one word by several other

not synonymous terms. The meaning of words being only the ideas they are made to stand for by him that uses them, the meaning of any term is then showed, or the word is defined, when, by other words, the idea it is made the sign of, and annexed to, in the mind of the speaker, is as it were represented, or set before the view of another; and thus its signification ascertained." (E III iv 6, pp 33-34; minus italics). According to this element in his theory, then, it seems to be the case that words which prima facie appear to mean things - e.g., 'dog', 'brother', 'red', - really mean the ideas of things - i.e., the idea of a dog, the idea of a brother, or the idea of red.

Now, Locke does not completely abstain from using expressions to the effect that such-and-such a word means such-and-such a thing, as opposed to the idea of that thing. For instance, consider the passage: "They [i.e. words], in every man's mouth, stand for the ideas he has, and which he would express by them. A child having taken notice of nothing in the metal he hears called gold, but the bright shining yellow colour, he applies the word gold only to his own idea of that colour, and nothing else; and therefore calls the same colour in a peacock's tail gold. Another that hath better observed, adds to shining yellow great weight: and then the sound gold, when he uses it, stands for a complex idea of a shining yellow and a very weighty substance. Another adds to those qualities

fusibility: and then the word gold signifies to him a body, bright, yellow, fusible, and very heavy." (E III ii 3, p.10). Here he employs both expressions such as 'calls such-and-such a metal "gold"' or 'the word "gold" signifies a body which etc.' and expressions such as 'applies "gold" only to his own idea' or 'the sound "gold" stands for such-and-such an idea'.

In this connection two points are important:

1. In claiming that words signify only ideas, Locke is in part rejecting a view of language which might fall under the tab 'advocating real meanings' (this also seems to be one of the bones he picks with the advocate of real essences). In other words, he is to some extent attacking the view that the meaning of a word consists in something more than simply what we use the given word to mean (or what the given word is used to mean, or what that particular man uses the word to mean, etc.), where x is, or is a part of, what we use a word to mean if and only if the given word means, or in part means, x - i.e., consists in something which exists in the world, and not necessarily in the mind, independently of our linguistic decisions or habits. But, in doing so, he seems to retain the view that the meaning of a word is still an object in something like the sense in which "the real meaning" of a word is claimed as an object - only in this case, the object is an internal, private conception, i.e., an idea. Thus, a word which "signifies" a kind of thing of which there are no instances - e.g.,

'centaur' - can still have a meaning, insofar as it can be used to signify the appropriate idea - i.e., the idea of a centaur. Consequently, Locke to a certain extent holds on to the view that the meaning of a word consists in something apart from simply what we use the word to mean (in the indicated sense) insofar as the meaning of a word is for him an idea; but he rejects any suggestion that it is anything other than an idea. Thus he writes: "Because men would not be thought to talk barely of their own imagination, but of things as really they are; therefore they often suppose the words to stand also for the reality of things give me leave here to say, that it is a perverting the use of words, and brings unavoidable obscurity and confusion into their signification, whenever we make them stand for anything but those ideas we have in our own minds." (E III ii v, p.11; minus italics). Just how, on his own principles, he can allow the possibility of our letting words stand for anything but those ideas we have in our own minds, and thus perverting their use, is itself difficult to see. But the basic critical question here is whether words stand for, or indeed can stand for, anything - even ideas - in the indicated sense.

2. In accepting the use of expressions such as 'the word "gold" means a metal which ...' while at the same time suggesting that words mean only ideas, Locke seems to have something like the following in mind. The sort of idea which can

be signified by a word, whether a general or a particular idea, has a "representative capacity". A general idea is capable of representing an unlimited number of particulars - e.g., the idea of a horse is capable of representing an unlimited number of particular horses, viz., any horse. A particular idea (e.g., an idea of John Locke as distinct from the particular idea of a man I had three minutes ago), on the other hand, is capable of representing one and only one particular - e.g., the idea of this piece of paper is capable of representing one and only one particular, viz., this piece of paper (e.g., see E III iii 6, pp 16-17; E III iii 11, pp 21-22). Thus words are signs of ideas which, in turn, are "signs" of things (e.g., see E IV v 2, p.244; E IV xxi 4, pp 461-62). And abstract ideas are viewed as internal "patterns" or "forms", under the names of which particulars are ranked or sorted - i.e., classified - according to whether or not they agree or conform with, or are represented by, a given abstract idea (see E III iii 12-13, pp 22-24). Consequently, one might take a clue from Locke's use of expressions such as 'proper and immediate' or 'primary and immediate' to qualify 'signify' in his claim that words signify only ideas (see E III i 6, p.6; E III ii 1, 2, 4, 7, pp 9-11), and distinguish between immediate and mediate signification such that the word 'x' mediately signifies T (where T need not be an idea) if and only if 'x' immediately signifies the idea of T, or (in another

sense) if and only if 'x' immediately signifies the idea of A, and the idea of A represents T (i.e., T is A). And, so the argument might run, one can then account for the ordinary view that words mean things (where a thing may, but need not be, an idea) by reference to mediate signification - i.e., 'x' means T if and only if 'x' mediately signifies T. Whatever detailed form such a reconstruction takes, however, it still incorporates the somewhat shady view that there is an appropriate sense of 'mean' in which words can mean only ideas.

Although Leibniz seems to follow Locke's central line in allowing internal conceptions or objects of thought (i.e., abstract ideas in this sense), in addition to differing from Locke on the related issues indicated above, he refuses to adopt a theory of meaning according to which words can mean only ideas. He does not discuss such a theory at any length, but at least he does reject it: "Substances and modes are equally represented by ideas; and things, as well as ideas, in both cases are indicated by words; thus I see but little difference, save that ideas of substances and of sensible qualities are more fixed. For the rest, it sometimes happens that our ideas and thoughts are the matter of our discourse and constitute the thing itself which we desire to signify, and that reflective notions enter more than we think into those of things. We speak, indeed, sometimes of words in a material way, without in this case being able to substitute

with precision in the place of the word its signification or its relation to the ideas or things. This occurs not only in speaking as a grammarian, but also in speaking as a lexicographer, in giving the explication of the term." (NE III ii 4-6, pp 306-07, G 266).

In this particular context, however, the respects in which Leibniz agrees with Locke are more important than the respects in which he disagrees. For it is because he subscribes to abstract ideas - simply in the sense of internal objects of thought, and not in any sense which necessarily carries with it the view that thoughts are images, or that ideas are formed by abstraction, or that ideas constitute the sole meaning of words - that he agrees with Locke that the knowledge of necessary truth is acquired by perceiving agreement between abstract ideas. And it is presumably because abstract ideas are private mental objects that Locke thinks, and Leibniz agrees, (or at least does not voice disagreement) that the knowledge of necessary truth is sufficiently analogous to the reflective knowledge that, e.g., I exist or am having such-and-such an idea at this moment, to justify calling both sorts of knowledge 'the perception of the agreement between ideas', without fear of being misleading.

Nevertheless, the point remains that knowledge, e.g., that I exist does not consist in the perception of the agree-

ment between the idea which I use, the word 'I' to signify and the abstract idea of existence; rather, it involves reflective attention to myself, as distinct from any such idea of myself. This might be contrasted with the knowledge, e.g., that gold is a metal, which consists solely in the perception of the agreement between the abstract idea of gold and the abstract idea of a metal (or, perhaps, of being a metal) - i.e., it involves neither the empirical observation of particular instances of gold nor the reflective perception that the perceiver has an abstract idea of gold or is asserting that gold is a metal. And, to the extent that bringing both reflective knowledge and the knowledge of necessary truth under the common title of 'perception of agreement between ideas' obscures such a difference, it can be misleading.

In addition, there seems to be a difficulty in connection with the general notion of agreement between abstract ideas. For, it is not the case that (e.g.) the abstract idea of a man agrees with the abstract idea of an animal if and only if one asserts agreement between the abstract idea of a man and the abstract idea of an animal, i.e., if and only if one claims, or asserts, or even simply considers the proposition, that a man is an animal. For one thing, asserting the false proposition that a man is not an animal consists in asserting a disagreement between the abstract ideas of a man and of an animal, where the given abstract ideas agree (e.g., see E IV

v 9, p.249)¹ - which would be impossible if the agreement between abstract ideas mutually entailed the assertion of such agreement. Thus, claiming that one abstract idea agrees with another abstract idea is not like claiming that, e.g., this sensible idea of red "agrees with" this sensible idea of being beside green insofar as I now have a sensible idea of red beside green, i.e., am now sensing an instance of red beside an instance of green. Rather, agreement between abstract ideas is strictly a function of the truth of the relevant proposition, and this is independent of what agreement anyone asserts between the given ideas, or even what agreement is perceived (in a sense in which perception can be mistaken) to hold between the given ideas. On the other hand, however, 'The abstract idea of a man agrees with the abstract idea of an animal' apparently does not simply mean that a man is an animal or that a man agrees with an animal, or that the proposition 'A man is an animal' is true. Consequently, it is at least difficult to see just what agreement between abstract ideas consists in.

Finally, to return to the question which initially prompted the preceding discussion of ideas, it is because Locke restricts knowledge to immediate objects² - in a flexible

¹The point might only extend to necessary falsehoods, however.

²Once again, I am ignoring qualifications attendant upon his admitting sensitive knowledge.

sense¹ in which either ideas or oneself and one's own operations count as immediate objects - that he restricts knowledge to perceiving agreement between ideas, where 'perceiving agreement between ideas' is itself sufficiently flexible to cover either the examination of one's own abstract ideas or reflective perception. For, according to Locke, things other than oneself and one's mental operations or one's own ideas are not immediate objects. *know that all men are mortal, that Germany*

Thus, strictly speaking, he is not simply defining knowledge as the perception of agreement between ideas, because (if for no other reason) he suggests that if, e.g., sensible qualities were immediate objects - a possibility he does not expressly exclude - then one would be able to know that there are such-and-such sensible qualities - something which would be impossible if 'knowledge' meant simply the perception of agreement between ideas. And thus, Leibniz's reference to Locke's claim that knowledge is the perception of agreement between ideas as a definition of knowledge (see NE IV i 2, p.400, G 339) could be misleading if taken out of context.

Leibniz, on the other hand, accepts the view of one's own ideas and oneself (plus one's own mental operations) as immediate objects, and to this extent he shares Locke's position. Moreover, he agrees that things other than oneself and

¹Though neither Locke nor Leibniz would admit it to be as flexible as I have suggested.

III

THE EXTENT OF HUMAN KNOWLEDGE

one's own ideas are not immediate objects. But he does not agree that knowledge is confined to immediate objects. And, even if Locke's extension of knowledge to include the sensitive knowledge of the existence of objects actually present to the senses is taken into account, he still thinks such a view of knowledge is much too narrow. For, prima facie at least, it seems more plausible to claim that, in the relevant ordinary sense of 'know', I know that all men are mortal, that Germany and England fought a war from 1914 to 1918, that water boils at 100° C, or that the telephone downstairs is still black, than to claim that, in the same sense, knowing is necessarily restricted to immediate objects, abstract ideas or otherwise.

only in our minds; and it is only the essences of our own ideas that furnisheth us with that. Truths belonging to essence of things (that is, to abstract ideas) are eternal; and are to be found out by the contemplation only of those essences; the existence of things is to be known only from experience." (E IV iii 31, pp 224-25; see also E IV vi 13, p.263; E IV ix 1, p.303; E IV xi 13-14, pp 333-40).¹

¹The claim that the knowledge of particular truths is acquired only by experience faces a possible problem in connection with 'God exists' and the Ontological Argument; Leibniz expressly accepts a qualified form of such an argument, while Locke, although he does not use it, does not reject it as being invalid in the Essay - see E IV x 7, pp 316-12 and Leibniz's comments, pp 322-34, G 418-19; in his manuscript material, however, there is evidence that Locke does reject it; see Aaron, John Locke, p.342; and see below, pp 165-67.

III

THE EXTENT OF HUMAN KNOWLEDGE

1. Knowledge and Certainty

Tucked away at the end of his chapter on the extent of human knowledge (E IV iii, pp 190-225) is a general boundary set by Locke which deserves more attention in view of points raised in the preceding discussion. In substance, it amounts to the claim that the knowledge of general truth is acquired only by the contemplation of our own abstract ideas, whereas the knowledge of particular truth is acquired only by experience - where (roughly) a particular truth is one which entails an existential proposition and a general truth does not. "So that as to all general knowledge we must search and find it only in our minds; and it is only the examining of our own ideas that furnisheth us with that. Truths belonging to essences of things (that is, to abstract ideas) are eternal; and are to be found out by the contemplation only of those essences: as the existence of things is to be known only from experience." (E IV iii 31, pp 224-25; see also E IV vi 13, p.263; E IV ix 1, p.303; E IV xi 13-14, pp 338-40).¹

¹The claim that the knowledge of particular truths is acquired only by experience faces a possible problem in connection with 'God exists' and the Ontological Argument; Leibniz expressly accepts a qualified form of such an argument, while Locke, although he does not use it, does not reject it as being invalid in the Essay - see E IV x 7, pp 310-12 and Leibniz's comments; pp 502-04, G 418-19; in his manuscript material, however, there is evidence that Locke does reject it; see Aaron, John Locke, p.242; and see below, pp 165-67.

As I have more or less assumed thus far, knowledge acquired solely by examining our abstract ideas is, for Locke, the knowledge of necessary truth. This is clear, I think, from the fact that (a) in discussing the perception of the agreement between ideas, where such ideas are general, Locke sometimes uses the expression 'necessary agreement' (e.g., see E IV i 2, p.168); (more pointedly) (b) in arguing for his thesis that we can have little knowledge of general truth concerning substances because we are unable to perceive (instructive) agreement between the relevant ideas, he rests his argument squarely on the point that we cannot perceive a necessary (instructive) connection between the relevant ideas (e.g., see E IV iii 9-17, pp 199-207; E IV vi 8-10, pp 256-59); and (c) he expressly claims that the type of knowledge consequent upon examining abstract ideas is the knowledge of eternal truth (see E IV xi 14, pp 339-40; E III iii 19, pp 30-31; E IV i 9, p.174; E IV iii 31, p.224).¹

Consequently, for Locke, the knowledge of general truth entails the knowledge of necessary connection - i.e., one cannot know that something general is the case without knowing that it is necessarily so. And, therefore, in addition to the

¹In this connection, Locke sometimes suggests the "nominalistic" position that a proposition's necessary truth depends in some way upon the use of certain words; see also E IV vi 9, p.257; E IV viii, pp 292-302; and see below, pp 149-58.

point that knowledge of "particular" truth must be acquired (at least in part) by empirical means, it follows that any knowledge provided by empirical observation must be of "particulars".

Now, given this, in order (a) to simplify the topography of the following discussion, and (b) to minimise certain debatable issues raised in the preceding examination of perception and ideas (notably in connection with ideas in the technical sense of internal objects), Locke's general theory of knowledge might be put as follows:

(Actual) knowledge is either (1) of necessary truth, or (2) concerning what one immediately experiences in the existential sense, or (3) concerning external objects which are "actually present to the senses", or (4) of any truth strictly demonstrable from premises in (1), (2), or (3). From this, it follows that the knowledge of general truth is necessarily of necessary truth and, given that external objects are not sensed by us in the existential sense, the only knowledge we can have concerning external objects must fall into (3) or (4) - two of the central planks in Locke's platform.

The points at which Leibniz differs from such a view can then be indicated as follows:

The knowledge of general truth need not be restricted to the knowledge of necessary truth, but may include, e.g., "assent" to a general (true) proposition on the basis of strong

evidence - i.e., on the basis of grounds which do not logically entail the given proposition but nevertheless provide strong support for it. And the knowledge of particular truth need not be restricted to immediate objects or objects actually present to the senses (or to truths demonstrable from (1), (2) and (3) above), but may include, e.g., "assent" to a particular (true) proposition in history on behalf of which strong evidence can be adduced by the person concerned.

Now, Leibniz does show some agreement with Locke's position to the extent that he thinks that the knowledge of primitive truth is either the (a priori) knowledge of self-evident necessary truth or the (a posteriori) knowledge of selected facts concerning oneself and one's own ideas (see NE IV ii 1, pp 404-10, G 343-48; NE IV ix 2, p.499, G 415; for Locke's discussion of intuitive and demonstrative knowledge, see E IV ii 1-13, pp 176-85). But, the point remains that he does not confine the knowledge of derivative truth to the extent that Locke does - i.e., does not confine such knowledge to truths which can be logically deduced from premises falling into (1), (2), (3) or (4) above. For, on Leibniz's view, either the premises might not fall into the indicated categories or the argument might not be a deductive one.

It is now worthwhile, I think, to take a slightly closer look at just how Leibniz makes the point that Locke's view of

knowledge is restrictive relative to the relevant ordinary use of 'knowledge'. In the first instance, Leibniz writes: "it is quite true that truth is always grounded in the agreement or disagreement of ideas, but it is not true in general that our knowledge of truth is a perception of this agreement or disagreement. For when we know truth only empirically, from having experienced it, without knowing the connection of things and the reason there is in what we have experienced, we have no perception of this agreement or disagreement, unless we mean that we feel it in a confused way without being conscious of it. But your examples, it seems, show that you always demand a knowledge in which one is conscious of connection or opposition, and this is what cannot be granted you." (NE IV 1 1-2, p.400, G 338-39).

For convenience, I take the central point in this passage to be confined to the knowledge of general truth. Thus, the point seems to be that the knowledge of general truth is not necessarily restricted to the knowledge of necessary truth - and, since Leibniz does not qualify his use of words in making such a claim save to indicate that he is using 'know' in a "knowledge of truth" sense, we can correctly assume that he is here using 'knowledge' in an (appropriate) ordinary sense. Consequently, it seems acceptable to claim, on behalf of Leibniz, that in the (or any) appropriate ordinary sense of 'knowledge', the knowledge of general truth is not restricted

to the knowledge of necessary truth. Thus, he subsequently writes: "Opinion, based on probability, deserves perhaps the name knowledge also; otherwise nearly all historic knowledge and many other kinds will fall." (NE IV ii 14, p.417, G 353; this remark therefore includes the knowledge of particular truths as well). In this case, he comes closer to stating expressly that 'knowledge', in its ordinary sense, is not restricted to the extent that Locke restricts it - i.e., that 'knowledge' in its ordinary sense, can be correctly applied to "opinion based on probability", as well as to intuitive or demonstrative perception and "sensation". Thus, in the same section, he later states: "I also think that to these species of . . . certain knowledge you can add the knowledge of the probable; thus there will be two sorts of knowledge, as there are two sorts of proofs, the first of which produce certitude, and the second end only in probability" (NE IV ii 14, p.420, G 354; minus italics). But, he does not make it completely clear whether he feels that Locke (a) is using 'know' (and cognates) in a special restricted sense relative to ordinary usage, in such a way that the knowledge of general truth is necessarily the knowledge of necessary truth and the knowledge of particular truth is necessarily knowledge concerning immediate objects or objects actually present to the senses, and therefore uses 'know' in such a way that the claims in question are true but not as radical (and perhaps not as interesting)

as they might first appear to be, or (b) is using 'know' in the appropriate ordinary sense, and is therefore mistaken in making certain of the claims under consideration.

Now, Leibniz allows for the possibility of Locke's using 'know' in a special restricted sense by expressly seeking not to "dispute about terms" in this connection (see NE IV ii 14, p.417, G 353). In other words, the suggestion is that if Locke - for some reason or other¹ - wants to use the word 'knowledge' in such a way that 'The knowledge of general truth must be of necessary truth' is analytically true, this is his privilege. Indeed, Locke himself would whole-heartedly embrace this point. But, if he is using 'knowledge' in a special restricted sense when he claims, e.g., that we cannot know the existence of any finite external objects save those actually present to the senses, such a claim amounts to 'In a sense of "knowledge" in which knowledge must fall into one of the categories (1)-(4) indicated above, one cannot know the existence of etc.'. And, if Leibniz were to attempt to argue against

¹e.g., because, in a deductive argument, if the premises are true and the inference valid then the conclusion is necessarily true; whereas, in a non-deductive argument, if the grounds are true and the inference sound, it is not necessarily the case that the conclusion is true - or, at least, in a deductive argument, if one sees that the premises are true and the inference valid, one then sees that it necessarily follows that the conclusion is true; whereas, in a non-deductive argument, if one sees that the grounds are true and the inference sound, one does not see that it necessarily follows that the conclusion is true; see E IV xv 1-3, pp 363-65.

such a claim by using 'knowledge' in the wider ordinary sense, the result would simply be a verbal argument. And this is something he wants to avoid.

Nevertheless, Leibniz does, on occasion, seem to argue against Locke's claim and use 'knowledge' in its wider ordinary sense in doing so (i.e., in NE IV i 2, p.400, G 338-39 or NE IV ii 14, p.420, G 354). Before considering the significance of this fact, however, it is first worth noting that if Locke is using 'knowledge' in a special restricted sense, and gives no indication - even a clear contextual one - that he is doing so, then, on his own principles, he can be criticised for adopting a misleading use of language (e.g., see E III x 6, p.126; E III xi 27, p.164). Leibniz does not carry the point to such lengths, partly, perhaps, because the task he sets himself is not simply to criticise but to "complete" Locke and he might feel that once he has made the point that the knowledge of general truth, in the relevant ordinary sense of 'knowledge', is not necessarily restricted to the knowledge of necessary truth, he has fulfilled his objectives in this respect. Nevertheless, the latter point is of sufficient importance to warrant emphasis - particularly for the purposes of sharpening the issues in the subsequent discussion of the extent of human knowledge in, e.g., physics or metaphysics - and one effective way of doing this is to direct attention to Locke's special use of 'knowledge' by criticising him for

inadequate advertising.

There seems, however, to be something more involved in this case than simply a special and misleading use of the word 'knowledge'. For there seems to be some element of confusion on Locke's part between knowledge in the relevant ordinary sense and knowledge in the more restricted, special sense. Indeed, this is indicated by the fact that Leibniz uses 'knowledge' in the relevant ordinary sense and sets against Locke the claim that the knowledge of general truth is not necessarily the knowledge of necessary truth, and yet cannot be readily accused of entering into simply a verbal argument on this point. Thus, although (e.g.) during the course of his argument that human knowledge concerning substances is severely limited, Locke often uses 'knowledge' in the special restricted sense indicated above (i.e., knowledge becomes "certain knowledge" and one must, analytically, perceive the appropriate agreement in order to know), he does not distinguish with sufficient care knowledge in this sense from knowledge in the more customary sense. Consequently, on occasion at least, he seems to slip into making a claim about knowledge which would be true if (and only if) it were about knowledge in merely the special restricted sense but which, in confusion, covers knowledge in the more customary sense and is (therefore) not true. For instance, consider the passage: "We are not therefore to wonder, if certainty be to be found in very few

general propositions made concerning substances: our knowledge of their qualities and properties goes very seldom further than our senses reach and inform us [presumably he has in mind here the knowledge of particular truths concerning substances]. Possibly inquisitive and observing men may, by strength of judgment, penetrate further, and, on probabilities taken from wary observation, and hints well laid together, often guess right at what experience has not yet discovered to them. But this is but guessing still; it amounts only to opinion, and has not that certainty which is requisite to knowledge. For all general knowledge lies only in our own thoughts, and consists barely in the contemplation of our own abstract ideas." (E IV vi 13, p.263). Now it might be, and probably to some extent is, the case that Locke's use of expressions such as 'guessing' and 'opinion' is loosened relative to ordinary usage in order to fill the gap left by the restrictions imposed on 'knowledge'. Nevertheless, since he uses such expressions in the way that he does in this passage without giving any indication of special usage, it is plausible to claim that he does not clearly see the difference between guessing in the usual sense and guessing in a special sense in which, e.g., my judging that my wife went to work yesterday, that fire burns, or that all men are mortal, are only guesses. In other words, in Locke's own terminology, he does not clearly perceive the disagreement between the abstract

idea signified by 'guessing' in its usual sense and the abstract idea signified by 'guessing' in its special, looser sense. And a corresponding point holds concerning knowledge.

Indeed, one can introduce an ad hominem twist to the argument and note that Locke himself is constantly warning against confusion of this kind, in philosophy as well as in other disciplines. For instance, in discussing maxims he makes the point that employing maxims where our ideas are not "determined"¹ can lead to trouble. He suggests, for example, that an over-reliance on the principle of identity can easily lead one to confuse body in the sense of extension with body in the sense of a solid extended substance and then to argue as follows: A vacuum is extension without body. Body is extension. Therefore, a vacuum is extension without extension. Thus a vacuum is impossible (see E IV vii 12-13, pp 285-87; Locke perhaps does not develop the point in quite this fashion, but it seems to be what he is in part getting at). Other instances of his attack on this and related types of confusion can be found in his discussion of the abuses of words (e.g., see E III x 6, pp 126-27) and of distinct and confused ideas (E II xxix 4-16, pp 487-96). Now, although Leibniz's programme may not demand the ad hominem dimension, it does demand that he make clear just what Locke is claiming, what is wrong

¹See "The Epistle to the Reader", pp 22-24, concerning his introduction of the term 'determined'.

with it, and thereby disclose what is true. And the point that Locke's view of knowledge is to some extent confused is certainly relevant to this project.

A set of roughly parallel points can be made concerning Locke's views on certainty. For, according to his position, one can only be certain about anything if one perceives agreement between ideas - i.e., knows something in his restricted sense. Thus, in distinguishing "certainty of knowledge" from "certainty of truth", he writes: "But that we may not be misled in this case by that which is the danger everywhere, I mean by the doubtfulness of terms, it is fit to observe that certainty is twofold: certainty of truth and certainty of knowledge. Certainty of truth is, when words are so put together in propositions as exactly to express the agreement or disagreement of the ideas they stand for, as really it is. Certainty of knowledge is to perceive the agreement or disagreement of ideas, as expressed in any proposition. This we usually call knowing, or being certain of the truth of any proposition." (E IV vi 3, p.252).

Certainty of knowledge must therefore be sharply distinguished from certainty in simply the sense of being sure or being of firm persuasion. Indeed, Locke directs heavy criticism against "enthusiasts" who "are sure, because they are sure" and who believe that "their persuasions are right,

because they are strong in them" (E IV xix 9, p.434), whereas no such criticism can be directed against anyone who lets certainty be his guide (though both Locke and Leibniz would criticise a man who let only certainty in Locke's strict sense be his guide, to the exclusion of either "assurance" or well-grounded faith - on the grounds that such a person (a) aspires after what he as a mere man cannot attain, (b) demands something which is not necessary for his needs, and (c) refuses something which is both sufficient and necessary for his needs. Thus, Locke predicts an early death for anyone who sincerely demands certainty in all his beliefs and actions, e.g., see E IV xi 8-10, pp 332-36). Enthusiasts, then, are not certain in Locke's sense. Their minds are characterised by an inflexible conviction devoid of any reason whatsoever, and therefore devoid of the perception of agreement between ideas.

Since certainty is (roughly¹) tied to the perception of agreement between ideas, however, it must also be distinguished from mere "assurance" or "confidence" - e.g., from the kind of conviction we can have in the truth of a proposition in physics for which there is strong support, or a proposition in a law-court ascribing a crime to a particular man and on behalf of which there is very strong evidence; for in neither case do we perceive agreement between the relevant ideas (e.g., see E IV

¹'Roughly' because of Locke's admission of sensitive knowledge.

xvi 6-8, pp 375-76). And it is at this point that Locke's use of 'certainty' tightens up relative to the, or at least a, corresponding ordinary use. For, in the, or at least a, relevant ordinary sense (waiving any objections that ordinary uses of 'being certain' are not as sensitive to the distinction between being certain and simply being sure as this discussion might suggest), a scientist, e.g., can be certain about the truth of a given proposition without seeing that it is necessarily true, or a man can be certain about a particular truth even though the particulars involved are neither immediate objects to him nor actually present to his senses, and have not been immediate objects or actually present to his senses. Moreover, as in the case of knowledge, Locke is not always too clear on the distinction between certainty in his restricted sense and certainty in the looser sense. Thus Leibniz at one point comments: "But if experience justifies these consequences in a constant manner, do you not find that you can acquire certain propositions by this means? Certain, I say, at least as those which assert, for example, that the heaviest of our bodies is fixed and that the one which is after it the heaviest is volatile, for it seems to me that the certainty (understanding it as moral or physical), but not the necessity (or metaphysical certainty) of these propositions which are learned by experience alone and not by analysis and the bond of ideas, is established among us and with reason."

(NE IV vi 13, pp 461-62, G 386-87; see also NE IV vi 8, p. 460, G 385-86, where he speaks of "experimental certainty"; and NE IV xi 1-10, p.513, G 426, where he distinguishes between "luminous" and practical certainty). No doubt there is, in (at least technical) ordinary usage, a sense of 'certain' as applied to propositions in which a general proposition is certain if and only if it is necessarily true. Thus, Leibniz himself contrasts certitude or certain knowledge (i.e., knowledge of propositions which are certain) with probability and knowledge of the probable (NE IV ii 14, p.420, G 354). Nevertheless, it need not follow that because, in ordinary usage, a general proposition is certain if and only if it is necessarily true, therefore, in ordinary usage, a man is certain of a general truth if and only if he "sees" that p (where p is a general proposition) and it is necessarily true that p. And, even if it were to follow, or aside from this argument, even if it is the case that there is in ordinary usage a sense of 'certain' in which certainty about general truths entails the knowledge of necessary truth, the important point here is that Locke uses 'certain' in this way and on occasion confuses certainty in this sense with certainty in a looser sense.

Before moving on to the next general limitation on knowledge, however, it might prove worthwhile to note briefly a

possible reason for Locke's restricting certainty and knowledge in the way that he does. In general, the reason would appear to be that, in those cases which fall inside the scope of knowledge for Locke, there are fewer possible ways of going wrong than in those cases falling outside. For instance, in the case of consenting to a general contingent proposition on the basis of evidence, one can either (1) go astray on the evidence itself, or (2) make a mess of drawing the inference (or both), or (3), given sound evidence and an equally sound argument, still be wrong simply by virtue of the fact that the conclusion supported by the given evidence is false. On the other hand, in the case of assenting to a necessary truth, if the perception is intuitive (a mode of "perception" which is presumably impossible in the case of contingent general truths), then the only way of going astray is by misperceiving. If the perception is mediate, however, then one can either introduce false premises (and here the fallibility of memory is an important factor for Locke, though it equally applies to non-deductive inferences) or make an invalid inference; but given true premises and a valid inference, one cannot be mistaken as far as the conclusion is concerned, unlike cases of non-deductive inferences. A point such as this could perhaps explain why Locke loosens his identification of knowledge with the perception of the agreement between ideas to include sensitive knowledge. For, although in believing that there is

now a round "red" object in front of me, given the fact that I now sense (in the non-existential sense) a round red object, i.e., that I now have a sensible idea of a round red object, and to that extent have not gone wrong, I can still go wrong insofar as I might be having a sensory illusion or hallucination in this respect, and to this extent a belief or "perception" concerning an immediate object has an advantage over a belief concerning an object which is merely actually present to the senses - although all this is true, nevertheless, beliefs concerning objects actually present to the senses themselves have an advantage insofar as a belief which concerns objects neither immediately present nor actually present to the senses might be right as far as what is sensed is concerned and as far as what is veridically sensed is concerned (i.e., the reasons one has for holding such a belief might be sound in this respect), and yet still be wrong. For, even though I suffer no sensory illusion, I might still be mistaken concerning the area beyond my senses.

Nevertheless, if there is something in this point it can easily be taken to extremes. For instance, one might claim a "level" or "degree" of knowledge - say intuition - where there is no possible way of going wrong, i.e., where the human mind is infallible. Thus, Locke describes as follows the (intuitive) perception of identity or diversity between ideas: "By this the mind clearly and infallibly perceives each idea to agree

with itself, and to be what it is; and all distinct ideas to disagree, i.e. the one not to be the other; and this it does without pains, labour, or deduction; but at first view, by its natural power of perception and distinction A man infallibly knows, as soon as ever he has them in his mind, that the ideas he calls white and round are the very ideas they are; and that they are not other ideas which he calls red or square This then is the first agreement or disagreement which the mind perceives in its ideas; . . . and if there ever happen any doubt about it, it will always be found to be about the names, and not the ideas themselves, whose identity and diversity will always be perceived, as soon and clearly as the ideas themselves are; nor can it possibly be otherwise." (E IV i 4, pp 169-70). Indeed, the fact that Locke admits demonstration to be less "perfect" than intuition because demonstration, particularly in complex cases, often requires remembering the truth of the premises employed, and that, save for some decrease in clarity, he acknowledges no other reason for its relative imperfection, tends to reinforce the view that, for him, "pure" perception itself is free from possible error (see E IV ii 6-7, pp 180-82). Error, rather, seems to lie largely in incorrect judgment, assent, belief, etc.

Now, in one sense of 'perception' (and related terms), perception does necessarily carry correctness with it. In this sense, perception simpliciter is knowledge. Nevertheless,

(a) the fact that one cannot perceive incorrectly in this sense does not imply that the human mind has a power of infallible perception in the sense with which we are here concerned; rather, (b) the very possibility of perception in a sense in which it has correctness written into it implies that perception, in the sense with which we are concerned, is fallible. For, all that, e.g., John's so-called infallible perception that $2+2=4$ can amount to is something like 'John sees that $2+2=4$ ' in a sense which presupposes ' $2+2=4$ ', and this implies that John perceives that $2+2=4$ in a sense in which '... perceives that $2+2=4$ ' does not presuppose that $2+2=4$, i.e., in a sense in which it is possible for him to misperceive. And it is in the latter sense of 'perception', and only in the latter sense, that the question of the fallibility of perception is relevant to the question of whether the human mind is ever incapable of mistake.

Without becoming too involved, however, there seems to be a second way in which Locke's position can be taken too far - viz., to suggest that in any given case of, say, perception of necessary truth - either immediate or mediate- one has greater "evidence", or stronger reasons, or firmer grounds, for one's belief, assent, claim, or what have you, than in any possible case of, say, judging that such-and-such a proposition is true on the basis of (logically inconclusive) evidence, or even of "perceiving" that such-and-such a material object

exists in front of me right now. Such a view seems deeply ingrained in Locke's notion of "degrees" of knowledge or certainty, and in the line he draws between knowledge and certainty on the one hand and mere judgment and assurance on the other. And it lends some support to the suggestion that Locke feels the claims he makes concerning knowledge hold for knowledge in the relevant ordinary sense - for otherwise, the line might not have been drawn so sharply.

Against such a view, one might introduce the following example where John has "seen" that such-and-such a mathematical proposition is true, but (1) at the time was suffering imperfect health, (2) he has not been able to "see" its truth since, and (3) generally speaking, he is not a very good mathematician. Nevertheless, there is no room for doubting John's memory that he did "see" the truth of the given proposition because (i) his memory on this point is extremely clear; (ii) there are several witnesses to attest to the expression of 'Eureka!' at the time, though they are now unfortunately unable to bring about his vision once more; and (iii) his notebook also records the fact, but contains nothing to prompt his "seeing" its truth again. On the other hand, (and the following factors are known to John), a number of acknowledged, outstanding mathematicians have gone on record as flatly denying the truth of the proposition in question and there is no recorded case of anyone else claiming its truth; unfortunately, however, any

proofs which such mathematicians might possess are not accessible to John. In such a case, then, the defence of the proposition, from John's viewpoint, seems in a weaker position than Locke's account of the degrees of knowledge appears to allow. Similarly, concerning the alleged superiority of intuition over demonstration, one might introduce cases where one immediately perceives a given proposition to be true, but subsequently mediately perceives it to be false, where the latter is more "evident" than the former.

The second point would obviously receive considerable support from the first point if the latter could be sustained (a fact which provides a further reason for ascribing the first point to Locke's position). For, if "pure" perception were infallible, then no form of fallible perceiving or judging or assent, etc. could ever occupy a superior position to pure perception.¹ For instance, in the above example, John's having (purely) perceived the truth of the given mathematical proposition would necessarily clinch the issue. If anything, however, the first point is standing in a worse position than the second.

¹A separate case would then have to be made out for the privileged status of "sensitive knowledge", or remembering, or even "impure" perception.

2. The Origin of Ideas

Knowledge is impossible without ideas. For instance, one cannot know that $2+2=4$ or that red is not white unless one can form the abstract ideas of $2+2$, equality to 4, red, or white. Locke's theory of the origin of ideas therefore becomes significant in the context of a discussion of the extent of human knowledge. For, according to this theory, one cannot have an idea unless it originates in experience - i.e., unless it is either provided by sensation or reflection or derived from ideas which are so provided (see E II i 5, pp 124-25; E II i 24, p.142; E II xii 8, pp 216-17; E II xvii 22, p.293).

For our purposes, the force of saying that an idea is derived from ideas provided by experience can at least initially be put as follows: an idea is derived from experience if and only if it is of something which has already been experienced or can be broken down into component ideas of things which have already been experienced. For instance, the abstract idea of red is derived from experience if one has previously sensed red, or the image of a mermaid is derived from experience if one has previously experienced "mermaid-components".

According to Locke's position, then, one cannot have an abstract idea of a so-and-so unless one has previously experienced a so-and-so or the relevant components (a corres-

ponding point, therefore, applies to being able to use words to refer to a so-and-so). Consequently, one cannot know anything about colours, houses, metals, etc., without having had the appropriate experience (this must be carefully distinguished from the claim that one cannot know anything except by empirical observation or by inference from such observations).

For further clarification of his view on the origin of ideas, the following points might be kept in mind:

As far as Locke is concerned, his theory demands the temporal priority of the relevant experience, and not simply what might be called its "logical priority". In other words, he attempts to establish the point that any idea of x which is not provided by experience is temporally preceded (in the same mind) by an idea of x, or by ideas of the components of x, which is, or are, provided by experience - and not simply the point that any idea of x not provided by experience is such that it is possible to experience x or the components of x (see E II i 1-8, pp 121-27; E II i 20-24, pp 139-42). Admittedly, the following excerpted passage might suggest otherwise: "the order wherein the several ideas come at first into the mind is very various, and uncertain also; neither is it much material to know it." (E II ix 7, p.185). Nevertheless, the context makes it clear that the order of ideas in which Locke here disclaims interest is the order of sensible

ideas which the child first has - e.g., the sensible idea of light, or sensible ideas which are unaccompanied by pain - and not whether or not ideas not provided by experience are preceded by the appropriate ideas provided by experience.

Also, although he implies such a view, he is not solely concerned with maintaining the linguistic thesis that one can use a word to refer to x (i.e., to signify the idea of x) only if one has experienced x or x-components. Further, it follows from points made in the preceding paragraph that he is not satisfied with simply claiming that one can use a word to refer to x only if it is possible to experience x or x-components.

He does not, however, go so far as to claim that it is logically impossible for anyone to have an abstract idea without having had the correlative empirical idea(s), nor, therefore, does he imply that it is logically impossible to use a word to refer to x where one has not previously experienced x or x-components. Two points support this comment: (i) He constantly appeals to experience on behalf of his claim, whereas, as he himself clearly recognises, if his claim were intended as a necessary truth, the empirical appeal would be logically out of place (e.g., see E II i 1, p.121: "for which I shall appeal to every one's own observation and experience"; E II i 5, p.125: "Let any one examine his own thoughts, and thoroughly search into his understanding"; and E II xi 15-17, pp 211-12). (ii) In discussing faith and the word of God, he

admits the possibility of God communicating to a man a simple abstract idea with no empirical correlate (see E IV xviii 3, pp 416-17).

In claiming that all ideas originate in experience, Locke roughly implies a theory of the ("descriptive or cognitive") meaningfulness of sentences - viz., that a sentence is meaningful if and only if it is used to express a proposition all the component ideas of which originate in experience.¹ Such a theory, however, is somewhat more generous than at least most of the various forms a verifiability criterion of meaning might take. For instance, his position, at least as far as he is concerned, readily admits claims such as 'God created matter as well as minds', and 'There is an eternal, most powerful, and most knowing Being' (see E IV x, pp 306-24) - claims which are neither analytic nor verifiable in experience. It also admits as meaningful sentences which he himself uses to introduce various speculations concerning angels (e.g., see E II x 9, pp 199-200; E II xxiii 13, pp 404-05; E II xxiii 36, pp 421-22). Indeed, many of the propositions he would consider to be "above reason" (see E IV xvii 23, pp 412-13; E IV xviii, pp 415-27, passim) would probably fall outside the

¹For Locke's brief discussion of propositions, see E IV v 1-6, pp 244-47; and see E I iii 1, p.92, where he refers to ideas as "the parts out of which . . . propositions are made".

scope of meaningful sentences as generally conceived by logical positivists. From Locke's viewpoint, then, ideas of God, creation, matter, mind, eternity, power, knowing, being, angels, etc. are all either originally provided by experience or derived from ideas so provided, and this is all that is necessary as far as the possibility of asserting such propositions is concerned.

Finally, in his brief remarks concerning the origin of relational ideas, he suggests the need for a qualification on his notion of 'derived from experience'. For, he occasionally suggests that a relational idea is derived from experience if (though not only if) it "terminates in" ideas which, or ideas the components of which, have been originally provided by experience. For instance, if, for the sake of argument, the relational idea of a father can be broken down into the idea of a man who is R to a baby (where R is a "pure" relation), then if the idea of R terminates in ideas which originate in experience, i.e., if the ideas of man and baby originate in experience, then the idea of a father is derived from, and therefore originates in, experience (see E II xxv.9, 11, pp 431-43).

Locke is far from clear on this point, however. Thus, in another context he discusses "termination" as follows: "all relation terminates in, and is ultimately founded on, those simple ideas we have got from sensation or reflection:

so that all we . . . would signify to others, when we use words standing for relations, is nothing but some simple ideas, or collections of simple ideas, compared one with another. This is so manifest in that sort called proportional, that nothing can be more. For when a man says 'honey is sweeter than wax,' it is plain that his thoughts in this relation terminate in this simple idea, sweetness; which is equally true of all the rest: though, where they are compounded, or decomposed, the simple ideas they are made up of, are, perhaps, seldom taken notice of" (E II xxviii 18, p.483). In this passage, then, Locke suggests that an idea of a relation terminates in a simple idea in the sense that the idea of sweeter than terminates in the simple idea of sweetness - and this is, or at least could be, a somewhat different notion of termination than the one sketched above, i.e., he could be taking literally the view that ascribing a relation is a matter of "comparing" ideas. If this is the notion he is employing in claiming that all relational ideas terminate in simple ideas, however, his thesis loses its plausibility as far as "non-proportional" relational ideas such as that of being beside, or moving something, or loving someone, are concerned. For, is there anything simple corresponding to being beside, or moving, or loving, as sweetness corresponds to being sweeter than? Such a question therefore hangs over Locke as he continues: "v.g. when the word father is mentioned: first,

there is meant that particular species, or collective idea, signified by the word man; secondly, those sensible simple ideas, signified by the word generation; and, thirdly, the effects of it, and all the simple ideas signified by the word child." (E II xxviii 18, p.483; and see also his analysis of 'friend' in the remainder of the passage). Does the word 'generation' signify a set of simple ideas in the special sense in which the expression 'being sweeter than' might be said to signify the simple idea of sweetness? As is often the case with Locke, however, it is prudent not to put too fine a point on this.

His promised investigation of the empirical origins of the relational idea of cause-effect sheds little light on the question at hand (see E II xxvi 1-2, pp 433-35), although he does suggest that we can observe one being bringing about a change in, or bringing about the existence of, another being, and he does not add that the idea of production terminates in some simple idea(s) in the way that the idea of being sweeter than terminates in the idea of sweetness. As a summary, he is content with the vague: "the notion of cause and effect has its rise from ideas received by sensation or reflection; and . . . this relation, how comprehensive soever, terminates at last in them. For to have the idea of cause and effect, it suffices to consider any simple idea or substance, as beginning to exist, by the operation of some other, without knowing

the manner of that operation (E II xxvi 2, p.435; see also, E II xxi 1-2, pp 308-10).

Finally, while discussing active and passive power, in claiming that "bodies, by our senses, do not afford us so clear and distinct an idea of active power, as we have from reflection on the operations of our minds" (E II xxi 4, p.311), he suggests that the idea, e.g., of my moving my hand, as distinct from the idea of myself and of my hand, is provided by experience (reflection alone?), and does not terminate in a simple idea in the way that the idea of sweeter than terminates in the simple idea of sweetness, or (if there is a difference) in the way that the idea of father terminates in the ideas of man and baby (components). And a corresponding point might be made concerning the claim: "We are abundantly furnished with the idea of passive power by almost all sorts of sensible things. In most of them we cannot avoid observing their sensible qualities, nay, their very substances [!], to be in a continual flux." (E II xxi 4, p.311).

Precisely what Locke is claiming with respect to the notion of a relational idea terminating in experience is thus difficult to tell. But, even if we adopt a flexible criterion in the face of vagueness and say on his behalf that (roughly) a relational idea terminates in experience either (a) if it or its components have been originally provided by experience (where relational and non-relational ideas can equally count

as components), or (b) if the ideas of any relata involved, or their components, have been originally provided by experience, or (c) if the non-relational components originate in experience and the relational components terminate in non-relational ideas which originate in experience in the sense that the relational idea of sweeter than terminates in the non-relational idea of sweetness, such a claim still constitutes a qualification on his theory of the origin of ideas as he initially, and for the most part, presents it. Indeed, in his various general statements of the theory - i.e., aside from the specific application of the theory to relational ideas - the only clue he gives to such a notion of 'derived from experience' in the Essay is contained in an alteration made in the fourth edition to the following passage, from "and the compositions made out of them" to "combinations and relations": "These [i.e., ideas of sensation and reflection], when we have taken a full survey of them, and their several modes, [combinations, and relations,] we shall find to contain all our whole stock of ideas" (E II i 5, p.124; the second set of square brackets are Locke's). Otherwise, the notion of derivation he conveys is that according to which an idea derived from experience is simply either originally provided by experience or composed of ideas originally provided by experience (where the component ideas may be relational or non-relational).

Before introducing and developing his theory of the origin of ideas, Locke feels it is first necessary to criticise in some detail the view that ideas and principles are innate - in the literal sense in which an innate idea is "received by the mind in its very first being" (see E I pp 37-118). Thus, in this sense of 'innate', even the sensible ideas of warmth and hunger had by a baby in the womb fail to count as innate ideas (see E II ix 5-7, pp 184-85).

In passing, one might note that the fact that he feels compelled to reject innateness in this sense lends further support to the view that he is concerned with the origin of ideas in a temporal sense - i.e., that he is arguing that ideas or their components are not (temporally) first had at the moment of creation but, rather, are (temporally) first had in sensation or reflection (see E II i 1-2, pp 121-22). For, if he were only concerned with establishing, on the positive side, that all our ideas are such that it is possible to experience what each idea is of, then the question of their innateness would be of far less importance - since an innate idea which is of some possible object of experience itself seems quite possible, whereas an innate idea which originates in experience in the temporal sense is impossible, given that one is not having the relevant experience at the moment of creation.

He is careful to point out that he is not contesting

innate principles or ideas in any "dispositional" sense, in which an idea or principle is innate if one has the capacity at the moment of creation to frame (eventually) the given idea or see the truth of the given principle (see E I i 5, p.41; E I i 22, p.56). In this connection, he also points out that one's use of 'innate' in this sense can be misleading; and he highlights a possible confusion by noting that the claim for innate ideas in this sense implies that any truth a man comes to know is innate and that several truths he will in fact never come to know are innate (i.e., because he still has the capacity to know them) - consequences which advocates of innate ideas in this sense might find unpalatable because they fail to distinguish clearly innateness in the dispositional sense from innateness in the literal sense.

Leibniz differs from Locke's position on some very fundamental points.

He holds that all ideas are innate in a literal sense, but is careful to distinguish the idea, as object of perception, from the act of perception and to point out that the ideas we have at the moment of creation are unconsciously or confusedly perceived. Thus, although ideas are innate, the actual conscious perception (apperception) of them is not: "when you say that ideas come to us from one or the other of these causes, I understand the statement to mean their actual

perception, for I think I have shown that they are in us before they are [ap]perceived" (NE II i 2, p.111, G 101). "I distinguish only between ideas and thoughts; for we always have all pure or distinct [?] ideas independently of the senses; but thoughts always correspond to some sensation." (NE II i 23, p.119, G 108). "If the idea were the form of thought, it would spring up and cease with the actual thought to which it corresponds; but being the object it may exist previous to and after the thoughts." (NE II i 1, p.109, G 99). "I agree that the knowledge, or better, the actual consideration (envisagement), of ideas and truths is not innate, and that it is not necessary that we have distinctly known them in a former state of being, according to Plato's doctrine of reminiscence. But the idea being taken for the immediate internal object of a notion, . . . there is nothing to prevent its always being in us, for these objects can subsist when they are not [ap]perceived." ("Specimen of Thoughts upon the First Book of the Essay on Human Understanding", Langley, p.21, G 21).¹

As far as the question of innate capacities is concerned,

¹For his defence of the notion of unconscious perception and its application to the innateness question, see especially his criticism of Locke's claim that the mind does not always think, NE II i 9-23, pp 111-19, G 101-08, and his remarks in the Preface indicating the explanatory force of the notion, pp 47-53, G 46-52, as well as the general discussion in NE I i-iii, pp 64-108, G 62-98.

he diverges from Locke in holding that there are no bare capacities or powers for framing ideas, forming propositions, seeing truth, etc. Rather, the capacity for framing an idea seems to involve some "action", i.e., to involve having the idea "virtually" - which, presumably, involves unconscious or confused perception. Roughly, then, innate mental capacities involve innate mental (unconscious) acts: "You may perhaps reply that this tabula rasa of the philosophers means that the soul has by nature and originally only bare faculties. But faculties without some act, in a word the pure powers of the school, are also only fictions, which nature knows not, and which are obtained only by the process of abstraction. For where in the world will you ever find a faculty which shuts itself up in the power alone without performing any act?

There is always a particular disposition to action, and to one action rather than to another. And besides the disposition there is a tendency to action, of which tendencies there is always an infinity in each subject at once; and these tendencies are never without some effect." (NE II i 2, p.110, G 100).

"And is it the same thing to have a thing without using it as to have only the faculty of acquiring it? If that were so, we should never possess anything but the things which we enjoy; instead of which, we know that, besides the faculty and the object, some disposition in the faculty or in the object, or in both, is often necessary, that the faculty may exercise

itself upon the object." (NE I i, p.80, G 75). "For if the soul resembled these blank tablets, truths would be in us as the figure of Hercules is in the marble, when the marble is wholly indifferent to the reception of this figure or some other. But if there were veins in the block which should indicate the figure of Hercules rather than other figures, this block would be more determined thereto, and Hercules would be in it as in some sense innate, although it would be needful to labor to discover these veins Thus it is that ideas and truths are for us innate, as inclinations, dispositions, habits, or natural potentialities, and not as actions; although these potentialities are always accompanied by some actions, often insensible, which correspond to them.

"It seems that our clever author claims that there is nothing virtual in us, and indeed nothing of which we are not always actually conscious; but he cannot take this rigorously" (NE Pref., p.46, G 45; I quote liberally because the use of 'disposition', among other things, makes the interpretation adopted here to some extent debatable.¹ See also, NE I i,

¹In this connection, one could distinguish dispositions or tendencies from simple abilities or faculties in a sense (or senses) of 'disposition' in which dispositions do not entail (concurrent) acts. But if this is the distinction, or the sole distinction, on which Leibniz bases his point, then - aside from any question of the truth of his claim - in claiming there are innate ideas in the sense that there are the appropriate innate dispositions, (a) he is not using 'innate' in Locke's sense, and (therefore) (b) is entering into a largely verbal disagreement in this respect, and (c) is leaving himself open to a Lockean charge of a misleading use of 'innate' and of some confusion on this issue.

pp 72-84, G 68-80, passim; NE II xxi 1, pp 174-75, G 155-56). Thus, in constantly bringing against Locke the point that ideas are innate because the mind is from the start "disposed" to form such-and-such ideas, or to see such-and-such truths, Leibniz is not simply entering into a verbal disagreement. Moreover, he is prepared to admit that ideas the mind eventually consciously frames, or truths the mind eventually comes to know consciously, or many (indeed, perhaps, even all) truths the mind does not in fact come to know consciously, are innate in the dispositional sense, and to claim that they are therefore innate in an occurrent sense (granting their "virtual" status).

Confining the point to apperceived ideas, however, Leibniz is willing to accept Locke's thesis that there are no innate ideas, but he cannot accept the further claim that all ideas originate in experience. For, his system of immaterial, mental substances acting in accordance with a pre-established harmony demands that nothing can literally act upon, or cause anything to happen in, the mind. Indeed, in reality, there are no sense-organs or external physical objects. Consequently, strictly speaking, it is not true to claim that any ideas are produced by the action of external physical objects on our sense organs: "taking action in metaphysical strictness as that which takes place in substance spontaneously and from its own depths, that alone is, properly speaking, a substance

which is active, for all arises for it from itself after God; it being impossible for one created substance to have influence upon another As for motion, it is only a real phenomenon, because matter and mass to which motion belongs is not properly speaking a substance. But there is an image of action in motion as there is an image of substance in mass I allow bodies only an image of substance and action, because that which is composed of parts cannot pass, to speak accurately, as one substance, any more than a flock" (NE II xxi 72, pp 218-19, G 195-96).

Nevertheless, since Leibniz does admit that things like motion, mass, body, and physical influence are "well-founded" phenomena, he accepts an analogical sense of expressions such as 'bodies acting upon the sense-organs to produce ideas in the mind', in which one can truly claim that some ideas are produced by the senses, and therefore that some ideas originate in experience (see the parts omitted from the passage quoted above from NE II xxi 72, pp 218-19, G 195-96). Even given this, however, he refuses to allow that all ideas originate in experience: "I believe even that all the thoughts and acts of our soul come from its own depths, with no possibility of their being given to it by the senses But . . . accommodating myself to the received expressions, since in fact they are good and tenable, and one can say in a certain sense that the external senses are in part causes of our thoughts,

I shall consider how . . . one must say even in the common system (speaking of the action of bodies upon the soul, as the Copernicans speak with other men of the movement of the sun, and with cause), that there are some ideas and some principles which do not come to us from the senses, and which we find in ourselves without forming them, although the senses give us occasion to perceive them." (NE I i 1, p.70, G 66-67).

Thus, he says things like "The ideas which are said to come from more than one sense, like those of space, figure, motion, rest, are rather from common-sense, that is to say, from the mind itself, for they are ideas of the pure understanding, but related to externality, and which the senses make us perceive [i.e., which the senses "occasion"]; they are also capable of definition and demonstration." (NE II v, p. 129, G 116). Such ideas, combined with those provided by reflection, he often refers to as intellectual or intelligible ideas, opposing them to (confused) sensible ideas, and linking them with necessary truths: "The intellectual ideas, which are the source of necessary truths, do not come from the senses; and you admit that there are some ideas which are due to the reflection of the mind upon itself. For the rest, it is true that the express knowledge of truths is subsequent . . . to the express knowledge of ideas; as the nature of truths depends upon the nature of ideas, before we expressly form one or the other, and the truths, into which enter ideas

which come from the senses, depend upon the senses, at least in part. But the ideas which come from the senses are confused, and the truths which depend upon them are likewise confused, at least in part; while the intellectual ideas, and the truths dependent upon them, are distinct, and neither the one nor the other have their origin in the senses, although it may be true that we would never think of them without the senses." (NE I i 11, p.82, G 77). The importance of the link with necessary truths apparently consists in the fact that, because the knowledge of necessary truth is not acquired by empirical forms of inquiry but is acquired by "looking within the mind itself", therefore the ideas involved do not originate in sense-experience¹ - although he admits that the apperception of such ideas is "occasioned" by the senses, i.e., "that we would not consider the ideas in question if we had never seen or touched anything" (NE I i, p.78, G 74).²

Still, things are not quite as neat and tidy with Leibniz's commentary as they might at first appear. For

¹Indeed, in their "virtual" form, they must therefore be innate as well, according to Leibniz.

²The link between necessary truths and "intellectual (distinct, non-sensible) ideas" might account for his questionable treatment of, e.g., 'The sweet is not bitter' as a "sensible truth" to which an a priori axiom is applied; see NE I i 11, p.84, G 79; and "Specimen of Thoughts upon the First Book of the Essay on Human Understanding", Langley, p.23, G 23. For the argument from the knowledge of necessary truth to intelligible ideas and their innateness, see NE I i, pp 78-81, G 73-76.

instance, he does not always sufficiently credit Locke with the point that the knowledge of necessary truth is not acquired via empirical means, but is, rather, acquired solely by examining one's abstract ideas (e.g., see Leibniz's remarks in his Preface, pp 43-45, G 42-44, which even tend to suggest that Locke does not recognise the point at all). Now, if I understand Leibniz's argument correctly, his view is (roughly) that because necessary truths are (known) a priori,¹ therefore the ideas involved (a) do not originate in experience and (b) are innate (he also variously applies the argument to truths and knowledge, but we are not concerned with such variations). Consequently, according to his view, the point that some truths are necessary truths and therefore known a priori is extremely relevant to the question of the origin and innateness of ideas. Therefore, he is fully entitled to suggest that Locke does not attach sufficient importance to the point in question while discussing origin and innateness. Nevertheless, he is not entitled to suggest that Locke does not attach sufficient importance to the point outside this context (indeed, as has been suggested, Locke relies heavily on just such a point in restricting the possibilities of knowledge in the natural sciences, metaphysics, etc.), and, because Locke does clearly recognise the point but feels that

¹See, e.g., NE IV ix 2, p.499, G 415, for his use of this expression.

it is not incompatible with his position on origin and innateness, it is therefore incumbent upon Leibniz to produce arguments to show such an incompatibility - arguments which he does not produce. Indeed, the way he presents his case often exposes him to the charge of confusing the question of the origin of knowledge in the sense of 'How do we know such-and-such a truth (viz., a posteriori or a priori)?' with the question of the origin of knowledge in the sense of 'How do we originally come by the ideas involved in such-and-such knowledge (viz., experience or otherwise)?'. As the preceding discussion indicates, I hope, to rest a criticism of Leibniz merely on the ascription of this confusion would constitute a gross oversimplification of his views; but the fact that such a charge can with some plausibility be brought against him is symptomatic of the basic point that his argument from the a priori character of the knowledge of necessary truth to ideas which do not originate in experience needs developing.

In this connection, it is also interesting to note that, in introducing the knowledge of necessary truth, Leibniz makes no attempt to show that the idea of logical necessity - and therefore the related idea of an essence - cannot originate in experience, given the principle that Locke himself sanctions, viz., that no type of empirical inquiry can provide the perception of (logically) necessary connection. Such a criticism, of course, would eventually involve coping with Locke's theory

of essences (notably, that the essences we know are merely abstract ideas, which, in turn, are what general terms signify), and his suggested theory of necessary truth (particularly the suggestion that necessary truths, as in the case of nominal essences, depend upon what abstract ideas we use our general terms to signify), but it would also enrich a consideration of the origin of ideas in relation to the knowledge of necessary truth.

Another respect in which Leibniz's commentary weakens to some extent concerns the way in which he introduces ideas of reflection. For, he does not emphasise the point that such ideas do not prima facie constitute counter-examples to anything claimed by Locke - indeed, they are clearly demanded by his theory of the origin of ideas. Thus, in simply referring to ideas of reflection as 'intellectual ideas', Leibniz does nothing to "improve" Locke's position. Moreover, in making a statement such as the following, he does not make things any better: "Perhaps our clever author will not wholly differ from my view. For after having employed the whole of his first book in rejecting innate intelligence, taken in a certain sense, he nevertheless . . . admits that ideas, which do not originate in sensation, come from reflection. Now reflection is nothing else than attention to what is in us, and the senses do not give us what we already carry with us. That being so, can it be denied that there is much that is innate

in our mind, since we are innate, so to speak, in ourselves? and that there is in us: being, unity, substance, duration, change, action, perception, pleasure, and a thousand other objects of our intellectual ideas? And these objects being immediate to our understanding and always present . . . what wonder that we say that these ideas with all depending upon them are innate in us?" (NE Pref., p.45, G 45). For one thing, in admitting that an idea such as that of substance is provided by reflection (see also NE I iii 18, p.105, G 96; "Specimen of Thoughts upon the Second Book", Langley, pp 23-24, G 23), unless further arguments are introduced to show that ideas of reflection could not consistently be considered as originating in experience - i.e., that Locke's theory itself is internally incoherent in accepting reflection as a form of experience - Leibniz is in effect removing a possible troublemaker for such a theory - and a troublemaker which Locke himself is not eager to dismiss quite so easily (see E I iii 19, pp 107-08; E II xiii 17-20, pp 228-31; E II xxiii 2, 3, pp 391-94). Secondly, much more than simply saying it is so is required to show that an idea of reflection is necessarily innate in the sense in which Locke is rejecting innate ideas - if this is what Leibniz is driving at. At the very most, Locke might accept the thesis that from a certain indeterminate point in the womb, the foetus has certain experiences - e.g., of motion, warmth (see E II ix 5-7, pp 184-85) - and,

insofar as these are conscious experiences (see his suggestion that all experience is conscious, E II i 19, pp 138-39), that it has "reflective ideas"¹ of itself and certain of its operations. But he would probably reject the claim that, at the very first moment of creation, the foetus undergoes any form of experience. And, even if he were to accept highly rudimentary forms of experience right from the very start and to accept corresponding "reflective ideas", admitting innate ideas of this type would imply neither the innateness of principles nor the innateness of ideas to the extent that Leibniz seems to want them. Moreover, such "innate" ideas would ex hypothesi originate in experience. And, thirdly, taking a clue from the expression "so to speak", if Leibniz is simply claiming that the indicated ideas are innate in the sense that they are ideas of reflection, the point amounts to little more than the idle 'Ideas of reflection are ideas of reflection', and points of the kind which Locke himself brings against those who claim there are innate ideas while simply using 'have innate ideas' to mean having an innate capacity to form ideas are not without application here.

¹Where a reflective idea must be distinguished from the type of idea involved in "attending" to oneself and therefore from an idea of reflection in this sense; Locke makes no effort to draw such a distinction, however. With the possibility of such a distinction in mind, a comparison of E II i 8, pp 126-27, where he demands attention and effort as a condition of reflection, with E II i 25, pp 142-43, where he claims that all "simple" ideas - presumably of sensation and reflection alike - are completely passive, is interesting.

Leibniz himself, prior to writing the New Essays, points out that the possibilities of ambiguities in any discussion of innateness are high (see "Specimen of Thoughts upon the First Book of the Essay on Human Understanding", Langley, p.22, G 21), and it is to be regretted that he does not put more effort into sorting out the relevant distinctions - indeed, the very distinction between the claim that all ideas originate in experience and the claim that no ideas are innate could use sharpening. Part of the reason for his shortcomings in this respect, however, might rest in the fact that he also feels that the question of innateness is not a preliminary one in philosophy - in the sense that it requires considerable investigation of other questions before it can be settled (see "On Locke's Essay on Human Understanding", Langley, p.15, G 15-16; one can see why he feels this in view of the somewhat complicated position he does adopt). In other words, he often seems to be more concerned with investigating what he considers to be preliminary questions - e.g., unconscious perception and the distinction between the way we know necessary and contingent truths - than with dealing with innateness and the origin of ideas in a more direct fashion, feeling, perhaps, that once the former are settled the latter readily fall into place. In this respect, however, the situation is even more complicated than he allows; for innate ideas do not readily fall into place.

Given the philosophical perspective from which Leibniz is writing, it is not surprising that he does not consider a contention such as, 'Since knowing how to apply the word "x", or (at least) knowing how to apply words correctly to x, or knowing how to apply correctly words which mean x, is sufficient for having the idea of x, therefore one need not, e.g., see a colour in order to have the idea of a colour - i.e., a blind man can then have the idea of red, given that he can apply words correctly to red'.¹ Nevertheless, he might have been expected to take some of the counter-examples he introduces against Locke's position - e.g., the idea of absolute infinity and the suggestion that "the origin of the notion of the infinite comes from the same source as that of necessary truths" (NE II xvii 16, p.164, G 146) - and to attempt to demonstrate with greater force their status as genuine counter-examples.

¹On the other hand, it would not have been too surprising had Locke, with his concern for words and his view that abstract ideas are what words signify, considered such a claim - though, if consistent, he would probably have opposed certain elements in it.

3. Identity and Relation

At the beginning of Chapter iii of Book IV, Locke makes two general points which directly follow from his theory of knowledge: (1) "we can have knowledge no further than we have ideas" (E IV iii 1, p.190), and (2) "we can have no knowledge further than we can have perception of . . . agreement or disagreement" (E IV iii 2, p.190; where 'perception of agreement or disagreement' includes sensitive knowledge).

Because of (1), anything which limits human ideas limits human knowledge, and the preceding section in part considered Locke's theory of the origin of ideas in this light. In Book IV, in accordance with this theory, he adopts the view that knowledge falls short of the "reality of things" because our ideas are tied down to what we experience (see E IV iii 6, pp 191-92). Two distinguishable points are involved in such a view, however: (a) There are many possible ideas which we cannot in fact have because our experience is so limited. (b) There are many kinds of existing things of which we cannot have ideas because our experience falls short, not only of the way things could be, but also of the way things in fact are. That Locke holds both views is clear from the following remarks (remembering that (b) entails (a)): "all the simple ideas we have are confined . . . to those we receive from corporeal objects by sensation, and from the operations of our own minds as the objects of reflection. But how much these few and

narrow inlets are disproportionate to the vast whole extent of all beings, will not be hard to persuade those who are not so foolish as to think their span the measure of all things He that will consider the infinite power, wisdom, and goodness of the Creator of all things will find reason to think it was not all laid out upon so inconsiderable, mean, and impotent a creature as he will find man to be; who in all probability is one of the lowest of all intellectual beings And we may be convinced that the ideas we can attain to by our faculties are very disproportionate to things themselves, when a positive, clear, distinct one of substance itself, which is the foundation of all the rest, is concealed from us. But want of ideas of this kind . . . cannot be described. Only this I think I may confidently say of it, That the intellectual and sensible world are in this perfectly alike: that that part which we see of either of them holds no proportion with what we see not; and whatsoever we can reach with our eyes or our thoughts of either of them is but a point, almost nothing in comparison of the rest." (E IV iii 23, pp 213-14; see also E II ii 3, p.146. In this connection, one might add that the human situation also receives poor marks from the other side of the fence since a whole range of those ideas we do possess - viz., ideas of secondary qualities - are without counterparts in the world; see E II viii 9-26, pp 169-82).

Allowing for the fact that his appeal to the infinite power, wisdom and goodness of God as a reason for this view could well suggest otherwise, Locke would probably claim that his "confidence" in this point is at the most only a matter of assurance (hence his use of the expression 'in all probability') and not a case of certainty, in his sense of 'certainty' - for, according to his theory of knowledge he could not know the truth of such a contention. In this respect, then, the situation is somewhat parallel with his theory of the origin of ideas (though the type of evidence in each case is significantly different).

Because of (2) above, not only does our knowledge fall short of the "reality of things" but it even falls short of those ideas which we are capable of having; for there are limits beyond which the human capacity for perceiving agreement or disagreement cannot extend - limits which Locke proposes to discuss by considering four kinds of perception, differentiated in terms of the four types of agreement he outlines near the beginning of his inquiry. Briefly, his position is: In the case of identity, our knowledge extends as far as we have ideas (see E IV iii 8, p.199). In the case of relations, given the necessary ideas, the possibilities are virtually unlimited, or at least limits are not readily discernible (see E IV iii 18, p.207). In the case of co-existence, however, our powers of perception are "very short" (see E IV

iii 9, p.199). And, in the case of existence, we are limited to the perception of (a) our own existence, (b) God's existence, and (c) the existence of objects actually present to the senses (see E IV iii 21, p.212).

Although he disagrees in a number of ways with Locke's theory of the origin of ideas, Leibniz does not express, and presumably has no desire to express, any distaste for the view that our (conscious) ideas fall short of the "reality of things" (though he objects to Locke's tendency to degrade man among intellectual beings a bit too much; see NE IV iii 23, p.439, G 369). But he does disagree - or at least implies disagreement - with a number of things Locke claims concerning the extent of human knowledge in the four indicated areas. Consequently, in the following discussion, I shall more or less follow the pattern set by Locke - beginning with the knowledge of identity and relations.

The knowledge of identity or diversity - e.g., the knowledge that black is black, or that white is not non-white, or that white is not black - is "so absolutely necessary, that without it there could be no knowledge, no reasoning, no imagination, no distinct thoughts at all" (E IV i 4, p.169). Nevertheless, the knowledge of the truth of identical propositions, at least of the form 'A is A' (or, presumably for Locke as well as for Leibniz, 'If p then p', or 'Either it is the

case that p or it is not the case that p'), does not carry us very far, as far as Locke is concerned. For, although all such propositions are "equally true, equally certain, and equally self-evident" they "teach nothing but what every one who is capable of discourse knows without being told" (E IV viii 3, p.294). In this sense, then, such propositions are trifling: "they add no light to our understanding; bring no increase to our knowledge" (E IV viii 1, p.292).

One must exercise some care in allocating cases to the class of identical propositions on Locke's behalf. For he expressly and emphatically makes the point that he is using the expression 'identical proposition' to mean "only such wherein the same term, importing the same idea, is affirmed of itself But if men will call propositions identical, wherein the same term is not affirmed of itself, . . . all that they say of propositions that are not identical in my sense, concerns not me nor what I have said; all that I have said relating to those propositions wherein the same term is affirmed of itself." (E IV viii 3, p.295). Consequently, at least in this context, 'identical proposition' is not used in a loose sense to include, e.g., 'White is not non-white' or 'White is not black' - i.e., is not used in the way in which Leibniz uses 'identical' to cover negative as well as positive identicals (e.g., 'Black is not non-black' as well as 'Black is black') and, amongst negative identicals, "disparates" (e.g.,

'Black is not white'; see NE IV ii 1, pp 404-06, G 343-44). Nor does it include all those propositions which for Locke assert identity or diversity. Therefore, his claim that identical propositions are trifling does not strictly imply that propositions such as 'Black is not non-black' or 'Black is not white' are trifling. Granting this, however, in view of his discussion of trifling propositions, there is no apparent reason for Locke not to claim that negative contradictory "identicals" (using 'identical' in the looser Leibnizian sense) are just as trifling as positive identicals - although he might well have reservations about dismissing all propositions in the form of "disparates" on this score. Consequently, on the basis of his actual discussion of trifling propositions, one can say that, for Locke, the knowledge of identity and diversity is of trifling truths, with the possible rider that 'diversity' be confined to contradictories and not extended to include disparates.

Locke does not confine the charge of trifling to identical propositions in this sense, however: "Another sort of trifling propositions is, when a part of the complex idea is predicated of the name of the whole; a part of the definition of the word defined. Such are all propositions wherein the genus is predicated of the species, or more comprehensive of less comprehensive terms." (E IV viii 4, p.296; minus italics). For instance, the proposition 'A soft metal is a metal' - what

Leibniz sometimes calls 'a partial identical' or 'a semi-identical' - is as trifling as 'A metal is a metal'. Now, it is significant to note that in this class Locke also includes propositions such as 'Lead is a metal' or 'Every man is an animal' - i.e., propositions in which the verbal expression used to express the subject is not partially repeated in the verbal expression used to express the predicate. It is therefore sufficient that the idea signified by the predicate-expression is a part of the idea signified by the subject-expression, irrespective of whether the sentence used to express the (mental) proposition is characterised by the indicated verbal repetition - e.g., the proposition 'A material object is extended' belongs to this class despite the fact that the expression 'A material object' is not repeated in part in the predicate expression 'is extended'. In other words, in singling out propositions of this type - eventually to be classified as trifling - Locke does not seem to be concerned with the form of the sentence used to express the relevant mental proposition, but seems only concerned with whether the idea of the subject of the mental proposition contains the idea of the predicate - as in (e.g.) 'A male sibling is male'. Thus, in the preceding sentence, instead of the sentence 'A male sibling is male' I could have used the sentence 'A brother is male' to introduce the mental proposition that a male sibling is male without detracting from the "semi-identical" and

therefore trifling character of my example.

Now, if his explanation of a completely identical proposition (e.g., 'A man is a man') is taken strictly, the class of completely identical propositions is not so loose in this respect. For, as previously noted, a completely identical proposition is one in which a word is "affirmed of itself", where the word in each case signifies the same idea. And this could, theoretically, exclude from the class of completely identical propositions a proposition in which the idea of the subject and the idea of what the subject is asserted to be are the same, but where different words are used to express the idea in each case - e.g., 'Gold is a malleable, yellow metal' where 'gold' means a malleable yellow metal, or 'An animal is a brute' where 'animal' simply means a brute.

Once again, however, in view of his treatment of semi-identicals there seems no reason for Locke to deny that the latter type of proposition is trifling. Indeed, in his discussion of semi-identicals, he makes the following remarks: "suppose a Roman signified by the word homo all these distinct ideas united in one subject, corporietas, sensibilitas, potentia se movendi, rationalitas, risibilitas; he might, no doubt, with great certainty, universally affirm one, more, or all of these together of the word homo, but did no more than say that the word homo, in his country, comprehended in its signification all these ideas." (E IV viii 6, p.297; my

emphasis of 'or all of these together')¹ - remarks which indicate that any distinction between, e.g., 'A man is a man' and 'A man is a rational, sensitive animal' where 'man' means a rational, sensitive animal, is irrelevant in this context - i.e., is irrelevant from the viewpoint of picking out trifling propositions - whether 'A man is a rational, sensitive animal' counts as an identical proposition or falls under some other name.

Thus, it is true to say, I think, that Locke views any proposition of identical or semi-identical form as trifling, where (a) such a form is independent of whether or not there is a corresponding verbal repetition in the sentence used to express the given proposition, and (b) where 'identical' covers negative as well as affirmative varieties, provided (perhaps) that 'negative identical' does not include disparates. Consequently, although it is true that the knowledge of identity or diversity "extends as far as our ideas", such knowledge (save, perhaps, for the knowledge of disparates) concerns only trifling propositions and is thus limited in this sense. It can therefore be contrasted with the "real instructive" knowledge of relations to be found in (e.g.) mathematics (see E IV

¹Locke's "nominalistic" tendencies are here illustrated by the suggestion that 'A man is rational' simply amounts to 'The word "man" in part means being rational'; see below, pp 149-58.

viii 8, pp 298-99).¹

Now, this whole discussion gains its full significance from the fact that Leibniz believes that (a) all necessary truths are identical in form (where 'identical' includes propositions of the form 'A is not non-A', disjunctives and semi-identicals), and (b) (therefore) it is in theory possible to demonstrate the truth of any necessary proposition by using as premises only the principle of identity or contradiction plus the appropriate definitions (e.g., see NE IV xii 4-6, pp 521-24, G 432-34; NE IV vii 1, p.464, G 388; NE IV vii 11, p.473, G 395-96; NE IV viii 3, p.491, G 410).

For, if Leibniz is to retain this view and accept Locke's (implied) thesis that, with the possible exception of disjunctives, all identical propositions² are trifling, then he must admit that the knowledge of necessary truth - including mathematical truth - is in large part concerned only with

¹Real knowledge in this sense can be distinguished from the sense in which the knowledge that A is B is real if and only if there are instances of A and B, and the sense in which the knowledge that A is B is real if and only if, either given that one is concerned with existing things, there are instances of A and B, or, if one is not concerned with existing things, then the ideas of A and B are free from incompatibilities (i.e., in Locke's terminology, in the latter case the ideas are their "own archetypes" and the "reality" of any knowledge acquired depends only on the internal coherence of the ideas involved; see E IV iv pp 226-43; also E IV v 7-8, pp 247-49).

²i.e., using 'identical' in Leibniz's loose sense.

trifling matters. Unfortunately, however, Leibniz does not see - at least in any clear way - the consequences of such a combination, and therefore does not attempt to criticise Locke's theory from this viewpoint. For instance, had Leibniz followed the line of thought which surrounds his notion of a distinct idea as an idea of something the distinguishing characteristics of which can be given, or an idea the definition of which can be given (e.g., see NE II xxix 4, pp 266-67, G 237; also, "Reflections on Knowledge, Truth, and Ideas"), he might have adopted a course of reasoning like the following:

Consider a case where John is discussing a logical point and claims that one proposition (p) contradicts another proposition (q) in the sense of 'contradicts' in which p contradicts q if and only if p entails \bar{q} (i.e., as distinct from any sense which allows that p contradicts q if p entails neither-q-nor- \bar{q}). In such a case, it would be possible for John to have an idea of contradiction without knowing that contradiction consists in implying the negation of some proposition, and that it is therefore distinct (e.g.) from contradiction in any sense which allows 'p contradicts q if p entails neither-q-nor- \bar{q} ', despite the fact that 'contradiction' simply means entailing the negation of a proposition. In this case, then, John does not know that contradiction is entailment of negation, despite the fact that the form of 'Contradiction is entailment of negation' is identical and that he does know that entailment of negation

is entailment of negation. Thus, in discovering that contradiction is entailment of negation John acquires a distinct, as opposed to simply a clear, idea of contradiction and he then knows (in Leibniz's terminology) a definition of the idea of contradiction, or (in Locke's) a definition of any word used to signify the idea of contradiction or to mean contradiction: in other words, the process of elucidation, explication, clarification, analysis. Thus, simply the identical form of a proposition - as determined by what the words in the sentence used to express the proposition mean, as distinct from (in a sense) what the words in the sentence are used to mean¹ - does not itself entail that the proposition is trifling.²

Leibniz definitely does not think that "trifling" identicals - notably the principles of identity or contradiction - are trifling in any sense which implies that they cannot be

¹The distinction which is possible and important to draw here is that between a word, as used by a particular person John, meaning such-and-such and John's knowing that the given word means such-and-such. If there are appropriate senses in which this distinction holds, then I think the argument given in the text - or one sufficiently like it - has something in it.

²Unless, of course, 'identical form' simply has the trifling character of the given proposition written into it - e.g., something like: A proposition has an identical form if and only if the words used to express it are used (knowingly) to express a proposition of the form 'A is A' or 'AB is A'.

fruitfully used in demonstrations.¹ Indeed, as previously noted, he feels that the principles of identity or contradiction can in theory be used, in conjunction with suitable definitions, to demonstrate any necessary truth. A basic difficulty in such a programme, however, is that an argument of a type which is particularly important in this context and which purports to employ solely identicals and "definitions" to demonstrate the truth of a necessary proposition is either circular or invalid: e.g., consider the argument: (S₁) A man is a rational animal. (S₂) A man is a man. (S₃) Therefore a man is a rational animal. In this case either S₁ is simply a contingent statement concerning the meaning of the word 'man' and then the argument does not hold, or S₁ is a necessary truth about a man and then the argument is circular.² This is a point which could be at the back of Locke's mind in his claim

¹He clearly admits that the principles of identity or contradiction are trifling in the sense of 'uninstructive': "The primitive truths of reason are those which I call by the general name of identical, because they seem only to repeat the same thing without giving us any information." (NE IV ii 1, p.405, G 343). There are dangers, however, in linking too readily the notions of repeating the same thing and being uninformative.

²This is not to say that identicals - especially where the term is taken liberally to include, e.g., 'Either it is the case that p or it is not the case that p' (indeed, Leibniz includes the stronger 'It is impossible for a proposition to be neither true nor false') or 'A proposition cannot be both true and false' (see NE IV ii 1, p.405, G 343) - are of no possible use in (e.g.) formal logic. Thus, see NE IV ii 1, pp 406-10, G 344-47.

that maxims are of no "use to help men forward in the advancement of sciences, or new discoveries of yet unknown truths" (E IV vii 11, p.279). Unfortunately he does not restrict it to the axioms of identity or contradiction: "And I would be glad to be shown where any such science, erected upon these or any other general axioms is to be found: and should be obliged to any one who would lay before me the frame and system of any science so built on these or any such like maxims, that could not be shown to stand as firm without any consideration of them." (E IV vii 11, p.278; and see Leibniz's comments, NE, p. 473, G 395-96; also NE IV vii 6, pp 467-69, G 390-91). And it is perhaps because Locke makes such an extreme claim that Leibniz does not consider the point as applied solely to arguments from 'A is A' identicals and definitions.

Although Locke implies that all identical propositions (excluding disjunctives) are trifling and Leibniz admits that in some cases identical propositions are trifling, both men allow that trifling propositions can have their uses. For instance, both agree that contradictory propositions can be useful in reductio ad absurdum arguments (e.g., see E IV vii 11, pp 283-84; NE IV viii 2-3, p.490, G 409; NE IV ii 1, p.406, G 344). And both point out that identicals may be used to teach someone how to use words (see E IV viii 4-7, pp 296-98; NE IV viii 9, p.493, G 411; in view of the preceding discussion, there is

the possibility of an important ambiguity here). Leibniz also mentions the possible function of semi-identicals as reminders of what we know at a time when the application of such knowledge is particularly useful (see NE IV viii 4-5, p.492, G 410). Nevertheless, the point can still remain that such propositions are trifling in the indicated sense - i.e., that they are incapable of being instructive on their own - and the question therefore still arises of whether all identical propositions (save disjunctives) are trifling, particularly in view of Leibniz's suggestion that all necessary truths are identicals. Simply pointing out other uses of trifling propositions does not make them any less trifling in this sense.

Leibniz does not argue at any length for the view that all necessary truths have the form of identicals. He admits that any actual reduction of, e.g., geometry to the primitive principles of contradiction/identity is in practice at least beyond us at the moment. In this connection, he does show how a truth such as $2+2=4$ can be demonstrated by using definitions and general principles:

Definitions: (1) $2 = 1+1$

(2) $3 = 2+1$

(3) $4 = 3+1$

Axiom: Putting equals for equals, the equality remains.

Demonstration: $2+2 = 2+(1+1)$ Def. (1)

$$(2+1)+1 = 3+1 \quad \text{Def. (2)}$$

$$3+1 = 4 \quad \text{Def. (3)}$$

$$\therefore 2+2 = 4 \quad \text{Axiom.}$$

(NE IV vii 10, p.472, G 394; he does not, however, point out that the demonstration also invokes the principle of association - which sanctions the step from $2+(1+1)$ to $(2+1)+1$). But he does not expressly claim this as a demonstration of the identical form of $2+2=4$ - i.e., as a pure demonstration from primitive identicals and definitions.

In view of the vast amount of literature which has emerged in this century on this and related points, and because Leibniz makes no attempt (at least in the New Essays) to defend this thesis in any comprehensive or systematic fashion, and also because Locke makes no attempt to argue for the contrary view in any rigorous manner, even if I were able, it would be both imprudent and unfitting on my part to enter into a lengthy discussion of such a subject. Nevertheless, three brief points might be made: (a) Both Locke and Leibniz believe that mathematical truths are necessary truths demonstrable from premises (in Leibniz's case, axioms) which themselves are necessarily true. They definitely do not hold any view of mathematical "truths" as theorems deducible from a given set of postulates, where such postulates are not necessary truths - indeed, are not truths at all in this sense - but are subject to alteration (thus the possibility, e.g., of alternative

geometries), and "receive" a truth-value only in virtue of the calculus being interpreted in empirical terms.

(b) In considering definitions, Leibniz frequently makes the point that a real definition of x not only provides the appropriate differentiating properties of x but also makes known the possibility of x (e.g., see NE III iii 15, p.315, G 272-73; NE IV viii 12, p.497, G 413). Now, because of his view that necessary truths are reducible to identicals by introducing the appropriate definitions, he might have been expected to consider truths of the form 'x is possible' in this light - i.e., truths which for him can be revealed by definitions. For, truths of this form seem both necessary and yet themselves not reducible to identicals.

(c) In examining Locke's distinction between real and nominal essences, Leibniz does not consider as a possible interpretation of this distinction the view that a proposition asserting the nominal essence of an x is simply an identical proposition (since 'E is the nominal essence of an x' only if 'The abstract idea of an x is of E'), whereas a proposition asserting the real essence of an x is not an identical proposition but nevertheless is a necessary truth. Consequently, he does not reject real essences (in this sense) - as he would consistently have to - but instead attacks Locke's conjoined suggestion that essences can be variable or created by the mind - i.e., that they are merely man-made abstract ideas or

the signification of words (see below, pp 209-16).

(d) Locke holds the view that general moral truths are necessary truths and, moreover, that "genuine" moral propositions are not simply identical in form (and therefore not trifling). Consequently, in discussing relations, he places "morality amongst the sciences capable of demonstration: wherein I doubt not but from self-evident propositions, by necessary consequences, as incontestible as those in mathematics, the measures of right and wrong might be made out, to any one that will apply himself with the same indifference and attention to the one as he does to the other" (E IV iii 18, p.208; minus italics; see also E III xi 15-18, pp 156-58; E IV iv 7-9, pp 232-35). Unfortunately, however - save to indicate reasons why morality has often been thought incapable of demonstrative certainty (viz., (1) one's passionate interests interfere too much; (2) one cannot use diagrams as in many areas of mathematics; and (3) ethical ideas are generally rather more complex and therefore more uncertain, confused, etc., than mathematical ideas) - he does not develop an elaborate defence of such a view.¹ As an example of a "genuine" moral truth, he introduces 'Where there is no property there is no injustice', but in arguing for this, writes, "for the

¹Although see E I ii 4-13, pp 68-78, where he gives some indication of how the idea of God is central to demonstrating moral truths.

idea of property being a right to anything, and the idea to which the name 'injustice' is given being the invasion or violation of that right" (E IV iii 18, p.208) - which implies that, as far as Locke is concerned, the illustration simply amounts to the identical 'Where there is no right to anything, there is no violation of a right'. Similarly, the second example he introduces - 'No government allows absolute liberty' - on the definitions of 'government' and 'absolute liberty' which he gives, becomes the at least virtually identical 'No establishment of society upon laws demanding conformity allows any one to do whatever he pleases' (E IV iii 18, pp 208-09).

In discussing the use of trifling propositions to teach the use of words, Locke appears to overstate the case and suggest that a semi-identical trifling proposition simply amounts to an assertion of the meaning of such-and-such words. Thus, consider again the passage: "suppose a Roman signified by the word homo all these distinct ideas united in one subject, corporietas, sensibilitas, potentia se movendi, rationalitas, risibilitas; he might . . . universally affirm one, more, or all of these together of the word homo, but did no more than say that the word homo, in his country, comprehended in its signification all these ideas." (E IV viii 6, p.297). Nevertheless, since Locke in this context is constantly making the point that a trifling proposition can only be used to

teach the meaning of words, to take without further reason "he did no more than say that . . ." as anything other than something like 'he taught no more than that . . .', as distinct from 'he claimed or asserted no more than that . . .', would be treading on loose ground.¹ And this is perhaps why Leibniz does not take up the point in this context.

In other contexts, Locke suggests in slightly stronger tones that at least certain kinds of necessary truth depend upon what such-and-such words mean, i.e., depend upon the truth of propositions describing the use of words. For instance, "the doctrine of the immutability of essences proves them to be only abstract ideas; and is founded on the relation established between them and certain sounds as signs of them; and will always be true, as long as the same name can have the same signification." (E III iii 19, p.31; my emphasis). And: "For names being supposed to stand perpetually for the same ideas, and the same ideas having immutably the same habitudes one to another, propositions concerning any abstract ideas that are once true must needs be eternal verities." (E IV xi 14, p.340; partly my emphasis). But here again, the suggestions are without elaboration and receive no attention from

¹But see also E IV vi 9, p.257, concerning 'All gold is malleable': "It is a very certain proposition, if malleableness be a part of the complex idea the word gold stands for. But then here is nothing affirmed of gold, but that that sound stands for an idea in which malleableness is contained".

Leibniz.

During the course of his discussion of essences, however, Locke adopts a general standpoint which supports in a more discernible fashion the view that necessary truths at least depend upon verbal truths. Although the standpoint itself is not presented in any crystal-clear fashion, it does seem to be one thread which weaves its slightly cluttered way through his thought.

Basically, it consists in the view not only that the (nominal) essence of a so-and-so is literally the abstract idea of a so-and-so¹ but further that there is no important distinction to be drawn in this context between, e.g., the abstract idea of a man and the abstract idea signified by the word 'man'.

Thus, he suggests that a (nominal) essence is "the workmanship of the understanding" and variable, just as what abstract idea a given specified word signifies depends upon human decision or habit and is variable from man to man or occasion to occasion: "Nor will any one wonder that I say these essences, or abstract ideas (which are the measures of name, and the boundaries of species) are the workmanship of

¹Although this sometimes becomes the point that the (nominal) essence of a so-and-so is what the abstract idea of that so-and-so is an idea of - see especially E III iii 19, pp 29-31 where he discusses the "immutability" of (nominal) essences and which ends with the passage quoted in the text, p.150.

the understanding, who considers that at least the complex ones are often, in several men, different collections of simple ideas; and therefore that is covetousness to one man, which is not so to another. Nay, even in substances, where their abstract ideas seem to be taken from the things themselves, they are not constantly the same; no, not in that species which is most familiar to us, and with which we have the most intimate acquaintance: it having been more than once doubted, whether the foetus born of a woman were a man . . . which could not be, if the abstract idea or essence to which the name man belonged were of nature's making; and were not the uncertain and various collection of simple ideas, which the understanding put together, and then, abstracting it, affixed a name to it." (E III iii 14, pp 24-25; see also E III iii 12-13, pp 22-24; E III vi 26, pp 75-77).¹

Now, for Locke, since essences are in a sense variable, therefore necessary truths are in a corresponding sense

¹Broadly speaking, in developing his theory of essences, Locke fails to distinguish with sufficient force:

The abstract idea of an x.

What the abstract idea of an x is an idea of.

What the essence of an x is. Or, in a slightly special sense of 'essentially', what an x essentially is.

What (abstract idea) the word 'x' signifies.

What any word which signifies (the abstract idea of) an x signifies.

Criticism on this point, however, must be tempered by the fact that he is here working on what for him is something "new and a little out of the way" (see E III v 16, pp 53-55).

variable - i.e., their truth is subject to the meaning of the appropriate specific words. Consequently, their necessary or immutable or eternal character is a "conditional" one - i.e., is contingent or dependent upon "the same name having the same signification".

The point should be emphasised, however, that Locke does not adopt a nominalistic view in any clear-cut manner. That he does not do so can be seen, e.g., from: "But yet for all this, the miscalling of any of those ideas, contrary to the usual signification of the words of that language, hinders not but that we may have certain and demonstrative knowledge of their several agreements and disagreements, if we will carefully, as in mathematics, keep to the same precise ideas, and trace them in their several relations one to another, without being led away by their names. If we but separate the idea under consideration from the sign that stands for it, our knowledge goes equally on in the discovery of real truth and certainty, whatever sounds we make use of." (E IV iv 9, p.235).¹ Were he to develop the full implications of such a point in presenting his theory of essences or in his remarks about eternal truths and the signification of words, his nominalistic

¹See also his praise of the mathematician's practice of "abstracting their thoughts from names, and accustoming themselves to set before their minds the ideas themselves that they would consider, and not sounds instead of them" (E IV iii, 30, p.223; also E IV v 4, pp 245-46).

tendencies would no doubt vanish."

Leibniz stands squarely opposed to any nominalistic position on essences (and therefore on necessary truth): "the fact that men unite these or those ideas, or even that nature actually unites them or not, makes no difference as regards essences, genera, or species, since the question only concerns possibilities, which are independent of our thought." (NE III iii 14, p.314, G 272). "I agree that the name serves to call attention to things and to conserve the memory and the actual knowledge of them; but that . . . [does not] render the essences nominal; and I do not understand why you gentlemen absolutely require that the essences themselves should depend upon the choice of names." (NE III v 10, pp 328-29, G 282; see also his criticism of the suggestion that ideas are arbitrary and the point that only the word-idea connection is arbitrary, NE III iv 17, p.325, G 279; NE III v 2-3, p.326, G 279-80¹).

Indeed, he brings much the same point to bear on certain features of Locke's theory of truth in general: "But what I find least to my taste in your definition of truth is that you seek truth in words. Thus the same sense expressed in Latin, German, English, French, will not be the same truth,

¹For a sense of 'arbitrary' in which Leibniz admits that ideas can be arbitrary, see NE III v 9, p.328, G 281-82; NE III vi 27, p.353, G 300.

and it will be necessary to say with Hobbes, that truth depends on the good pleasure of men; which is to speak in a very strange manner. You attribute, indeed, truth to God, who . . . has no need of signs. Finally, I have been astonished already more than once at the disposition of your friends who are pleased to make essences, species, and truths nominal." (NE IV v 1-2, pp 450-51, G 377). After making this point, he does go on to credit Locke with introducing mental as well as verbal truths, but the fact that he still remarks: "It were then better to place truths in the relation between the objects of ideas which causes the one to be or not to be included in the other. That does not depend upon languages, and is common to us with God and the angels It is, then, in this relation that truth must be placed, and we can distinguish between the truths which are independent of our good pleasure, and between the expressions which we invent as seems good to us." (NE IV v 1-2, p.451, G 377-78) indicates he feels that Locke's admission of mental truth does not invalidate the charge of "nominalism" (though it does seem to meet the charge of not admitting, e.g., 'The dog is black' and 'Le chien est noir' as the same (mental) proposition, as distinct from the same sentence or "verbal" proposition).

Roughly, then, Leibniz is accusing Locke of the following kind of mistaken reasoning: The proposition 'Opium is a narcotic' is (in fact) true. But if the word 'narcotic' meant a

liquid, then 'Opium is a narcotic' would be false, or if 'narcotic' meant a crocodile, then 'Opium is a narcotic' would be absurd. Therefore, the truth-value of the proposition 'Opium is a narcotic' depends upon the meaning of the word 'narcotic'.

The mistake basically lies in concluding that the truth-value of the given mental proposition 'Opium is a narcotic' - as distinct from the sentence or verbal proposition 'Opium is a narcotic' - changes when the meaning of 'narcotic' changes. For it is the (mental) proposition expressed by the sentence 'Opium is a narcotic', and thus the proposition under consideration, which changes when the meaning of 'narcotic' is altered - e.g., when 'narcotic' means a liquid, then the mental proposition is 'Opium is a liquid', and when 'narcotic' means a crocodile, then the mental proposition is 'Opium is a crocodile' - and not the truth-value of the initially given mental proposition 'Opium is a narcotic' (where 'narcotic' as I am in this instance using it means a soporific).

Now, in his discussion of truth and propositions (E IV v, pp 244-50), Locke says nothing which indisputably commits him to nominalism. Nevertheless, in view of the fact that he does not make it absolutely clear that a verbal proposition is simply a sentence or a sentence which is used to assert such-and-such a mental proposition, where the given mental proposition is completely independent of what words are used to

assert it (indeed, the very use of 'verbal proposition' could easily obscure this point), and that he does adopt the indicated position on essences and necessary truth, Leibniz's criticism is not unfounded.

In general, then, for Locke, necessary truth - and perhaps contingent truth as well - at times seems to depend upon the way words are used, whereas for Leibniz there is no such dependence in either case. But, for at least a Locke-like position, there is an important difference between necessary and contingent truths in this respect. For, in the case of necessary truth, it is also the case that, if the words are used in the appropriate way, then it follows that the given proposition is true (e.g., if the word 'man' means a rational animal, then 'A man is an animal' is necessarily true), but in the case of contingent truths, if the words are used in such-and-such a way, it does not necessarily follow that the given proposition is true (or that the given proposition is false, as the case may be) because the way the world in fact is - in Locke's words, the way "things agree or disagree" - must also be taken into account (e.g., if the word 'hostile' means being a war-monger, it does not necessarily follow that 'A man is hostile' is true; for it also depends upon the way things in fact are - in this case, whether or not a man in fact is a war-monger). And, if one objects that, in the case of necessary truth, one must take into account the way ideas

agree or disagree, the Lockean reply on this tack would be that the way ideas agree or disagree is itself determined by what the words we use signify (e.g., whether or not the ideas of a horse and of an animal agree is determined by what ideas the words 'horse' and 'animal' signify).

Given this line of reasoning, it is then a very short step to conclude that our knowledge of necessary truth - as distinct from our knowledge of contingent truth - depends upon, or even solely consists in, the knowledge of what words signify or mean, and to claim that, at least from the point of view of what we know, the difference between 'A man necessarily is ...' and 'The word "man" signifies ...' is of little significance, particularly in those cases where 'A man necessarily is ...' is identical in form. And Locke's position is not completely free from suggesting such a view - although certainly not to the extent that his philosophical practice is significantly affected by it.

For Leibniz, on the other hand, there is no such dependence between necessary truth and the use of words, running in either direction, and therefore no tendency to limit in this way our knowledge of necessary truth in terms of our knowledge of the use of words.

4. Existence

Locke restricts our knowledge of existence to three things: (a) oneself (intuitive, in the case of one's present existence) - where this can be understood broadly to include the existence of one's own (past or present) ideas, and certain of one's own mental operations: thus, in addition to claiming, "As for our own existence, we perceive it so plainly and so certainly, that it neither needs nor is capable of any proof." (E IV ix 3, pp 304-05), he also claims "There can be nothing more certain than that the idea we receive from an external object is in our minds: this is intuitive knowledge." (E IV ii 14, pp 185-86);¹ and, "if I know I feel pain, it is evident I have as certain perception of my own existence, as of the existence of the pain I feel: or if I know I doubt, I have as certain perception of the existence of the thing doubting as of that thought which I call doubt." (E IV ix 3, p.305)² - which implies that I can intuitively know that I feel a pain or that I am casting doubt on such-and-such a proposition, as

¹One must qualify this passage with the point that, on his theory, we cannot intuitively know that the idea is received from an external object.

²This also could be the point of the somewhat puzzling last sentence in the same paragraph - "In every act of sensation, reasoning, or thinking, we are conscious to ourselves of our own being; and, in this matter, come not short of the highest degree of certainty" - i.e., that in every case of our being conscious of, i.e., perceiving, our own acts of sensation, reasoning, or thinking, we are conscious of our own being.

well as that I exist. On the other hand, my knowing, e.g., that I am poorer than most people in the Western world, or my intuitively knowing, e.g., that I am moving a pen at this moment, is presumably excluded on Locke's account.

(b) God (demonstrative).

(c) Those objects which are (or have been) actually present to one's own senses (sensitive).

Now, although Leibniz expresses full agreement with Locke's position on existence (see NE IV iii 21, p.439, G 368¹), it is chiefly with the view that we know the existence of ourselves intuitively and the existence of God demonstratively. For, Leibniz definitely does not think that our knowledge, in the relevant ordinary sense of 'knowledge', of the existence of other things is confined to those things actually present to the senses (see NE IV ii 14, pp 421-22, G 355-56; NE IV xi 1-10, pp 512-13, G 426).

For both Locke and Leibniz, my knowledge that I exist is intuitive - indeed, it is knowledge of a primitive or immediate truth, in Leibniz's sense of a truth which I cannot prove by anything more certain or evident as far as I am

¹In this particular section, he does not represent Locke as confining the knowledge of the existence of external objects to sensitive knowledge, but has him simply claim that we do have sensitive knowledge of the existence of external objects.

concerned and which therefore is, in this sense, incapable of being proven by me: "it neither needs nor is capable of any proof. For nothing can be more evident to us than our own existence" (E IV ix 3, p.305); "this proposition I exist, is of the highest evidence, being a proposition which cannot be proved by any other, or rather an immediate truth." (NE IV vii 7, p.469, G 391). Leibniz also extends a primitive status to truths of the form 'I am thinking of A' (see NE IV ii 1, p.410, G 347-48) and, although Locke does not expressly say so, since he seems to accept such truths as being self-evident or intuitive and in general suggests that all intuitive truths are primitive in Leibniz's sense (or at least does not clearly allow for the possibility of an intuitive truth which is not primitive; see E IV ii 1, pp 176-78), he roughly implies agreement on this point.

Thus, both men adopt the position that any appearance of a demonstrative element in an 'I think therefore I am' line of thought is misleading - for it is no more evident to me that I think than that I am; indeed, it cannot be evident to me that I think unless it is at first as equally evident to me that I am (see NE IV vii 7, p.469; and E IV ix 3, p.305).

Locke also refers to the infallible perception that I exist, but Leibniz does not take up this point. The latter explicitly classifies 'I exist' as "a proposition of fact, based upon an immediate experience, and . . . not a necessary

proposition, whose necessity is seen in the immediate agreement of ideas" (NE IV vii 7, p.469, G 392), but he does not discuss the self-guaranteeing aspect of 'I exist' - i.e., the self-refuting character of 'I do not exist' - nor, therefore, the point that although it is possible for there to have been no me and 'I exist' is in this sense contingent, owing to the fact that the very assertion of 'I exist' on my part secures the truth of what I assert because it is my assertion, I cannot mistakenly assert or perceive that I exist, and thus in this sense it is necessarily the case that the proposition 'I exist' (i.e., where the expression 'the proposition "I exist"' is confined to propositions with a reflexive element written into them - as opposed, e.g., to 'Odegard exists') is true. Consequently, the so-called "infallibility" of my perceiving my own existence does not follow from demands made by the notion of perception but, rather, from the circumstances of perception in this type of case - and there are therefore no grounds for inferring a human power of infallible perception exercised in this situation. Indeed, the only "infallibility" that seems to be involved here is a conditional variety which amounts to 'If I perceive that I exist, then I necessarily cannot be wrong', and which is equally involved in the perception of a necessary truth - e.g., 'If I perceive that $2+2=4$ then I necessarily cannot be wrong'.

Leibniz does not introduce in this context an interesting

point he makes elsewhere - viz., "that reflection suffices to discover the idea of substance within ourselves, who are substances" (NE I iii 18, p.105, G 96). For, Locke expressly asserts that "if I know I doubt, I have as certain perception of the existence of the thing doubting, as of that thought which I call doubt" (E IV ix 3, p.305) - and, since (a) he is talking of intuitive perception here, (b) the intuitive perception of contingent truths entails the immediate presence of the object(s) involved, and (c) nothing further is prima facie written into the notion of a substance than that of a thing which is such-and-such, then, taken at face value, this claim implies that I do reflectively experience a substance in experiencing myself performing or undergoing certain mental "operations". Thus, the claim excludes viewing the situation as mediately perceiving the existence of a substance which thinks from the premises that (1) such-and-such thoughts exist and (2) no thought can exist without some "support".

Both Locke and Leibniz feel we can have a demonstrative knowledge of the existence of God - Locke restricting himself primarily to a form which employs the empirical premises that I exist, think, and have certain intellectual powers, in addition to a number of purportedly necessary principles having to do with causes. Leibniz, on the other hand, is prepared to accept a wider range of proofs - indeed "that nearly all the

means which have been employed to prove the existence of God are good and might be of service, if we would perfect them" (NE IV x 7, p.505, G 420).¹

To defend his view, Locke tables (roughly) the following proof (see E IV x 1-6, pp 306-10):

A. (1) I exist.

(2) No thing can be produced by nothing.

(3) Whatever has a beginning has a cause.

Therefore from eternity there has been something - i.e., there is an eternal cause of all being.

B. (1) A cause must contain at least as much perfection as its effect.

(2) There is power.

(3) There is knowledge.

Therefore the eternal source of all being must be the most powerful and most knowing of all beings. Thus, there is an eternal, most powerful, and most knowing Being; i.e., God exists.

Leibniz (rightly) objects to this particular proof-
"solely in order to give [Locke] . . . an opportunity to fill

¹And thus note Leibniz's transformation of the teleological argument, traces of which can be found in Locke, into an argument for God's existence as the necessary omniscient and omnipotent author of a universe characterised by Pre-Established Harmony - a transformation which, according to him, changes it from a morally certain to a metaphysically certain argument (NE IV x 9-10, pp 507-08, G 421-22).

up the void" - on the grounds that Locke's premises do not strictly entail that "there has always been a certain thing, i.e. an eternal being", as distinct from the broader conclusion "that there never has been any time in which nothing existed" (NE IV x 2-6, pp 500-01, G 417; minus italics).

As far as the Ontological argument is concerned, in the Essay Locke is content¹ with the point that it is wrong to claim it as the only effective means of proving God's existence, partly because the type of argument he himself presents is "evident and incontestable", provided one gives it suitable attention, and partly because the idea of God in many men's minds is not adequate to the rigorous demands made on it by the Ontological argument (E IV x 7, pp 310-11). In the latter connection, however, it is interesting to note that he suggests that arguing from the idea of God to His existence is impractical because some men have no idea of God and many have

¹See Aaron's reference in John Locke, p.242, to a paper entitled Deus, in which Locke is apparently not so content. But see also E II xxiii 34-35, p.420, where, in discussing the empirical origin of the idea of God, he writes: "The degrees or extent wherein we ascribe existence, power, wisdom, and all other perfections (which we can have any ideas of) to that sovereign Being, which we call God, being all boundless and infinite", and "For it is infinity, which, joined to our ideas of existence, power, knowledge, &c., makes that complex idea, whereby we represent to ourselves, the best we can, the Supreme Being. For, though in his own essence . . . God be simple and uncompounded; yet I think I may say we have no other idea of him, but a complex one of existence, knowledge, power, happiness, &c., infinite and eternal."

very different ideas - the suggestion being that some men signify nothing, and many signify something different, by the word 'God' (see also E I iii 9-17, pp 98-106) - and if taken strictly, this point holds equally against the type of argument he himself presents. For, if the word 'God' means nothing to Peter or means something different to Peter than it does to Locke, then Peter will not understand, or not understand correctly, Locke's use of the word 'God', and therefore cannot be convinced by Locke of God's existence, at least so long as Locke uses 'God' to conduct his argument. Now, if it is simply Peter's ignorance of the use of the specific word 'God' which stands in the way, then Locke could either teach Peter what he means by the word 'God' and then present his argument by using 'God', or avoid the use of 'God' and in his argument use whatever words which (a) mean what he in fact uses 'God' to mean and (b) Peter does understand. But this alternative is equally open to anyone employing the Ontological argument. On the other hand, if Peter cannot understand (correctly) any words which are used to signify what Locke is using 'God' to signify - viz. God - i.e., if Peter is incapable of framing the idea of God, then neither Locke nor the ontologist can prove to Peter that God exists ("knowledge is impossible without ideas"). As far as Locke's discussion of proving God's existence is concerned, the point is a relatively minor one, but it is connected with his "nominalistic" tendency to confuse

the idea of x with the idea signified by the word 'x'¹ and is at least interesting in this respect.

Leibniz is an expressed advocate of the Ontological argument, but in an "improved" form - the amendment consisting in an initial demonstration of the possibility of God, a possibility which he does not demonstrate in the New Essays² (see NE IV x 7, pp 502-05, G 418-20). The merits of such an argument aside, the fact that Leibniz holds that 'God exists' is a necessary truth is of some significance in view of his thesis that all necessary truths are identical in form. For, even admitting that 'God exists' is a necessary truth, and admitting that an identical proposition (in the appropriate wide sense which includes semi-identicals and does not demand that the sentence used to express the proposition has a "repetitive" structure - i.e., does not have to be a sentence like 'A man is a man' or 'If a boy is noisy and nasty then a boy is nasty' or 'A cow is not a non-cow') is not necessarily trifling, it is difficult to see how 'God exists' could be identical in form. For, if 'God exists' were a proposition of the form 'A being which exists and which is omnipotent,

¹ as distinct from any nominalism which might attempt to reduce ideas simply to words - or to the uses of (specified) words where 'word-use' excludes private mental objects.

² See Langley's references, p.504, note 2; also "That the Most Perfect Being Exists" (Langley, pp 714-15, G vii 261-62), part of which Leibniz read to Spinoza.

omniscient . . . exists', then it is hard to see what this could amount to (remembering that, according to the claim being considered, it must be both identical and equivalent to 'God exists') save 'If there exists a being which is omnipotent, omniscient . . . then such a being exists'.¹ But then 'God exists' would be a conditional proposition leaving the question of the existence of such a being - indeed, the existence of any being - open. And whatever else 'God exists' may be, in the sense of 'God exists' which concerns us, 'God exists' does not leave the question of the existence of any being open.²

On the other side of the fence, aside from any further question of the validity of his proof, if Locke were to adopt the position that 'God exists' is only a contingent truth, and if he holds seriously to his claim that 'God exists' is "so fundamental a truth, and of that consequence, that all religion and genuine morality depend thereon" (E IV x 7, pp 311-12; cf NE IV viii 9, pp 495-96, G 413), then it is difficult

¹Alternatively, if 'An existing being which is omniscient, omnipotent, etc. exists' is such that it is a categorical which presupposes 'There is a being which is omnipotent, etc.', then it cannot be a necessary truth, since a necessary truth cannot entail a contingent truth and 'There is a being which is omniscient, etc.' is contingent.

²It should be kept in mind that this is not intended as an inquiry into the Ontological argument in general, but is only concerned with any version of it which represents 'God exists' as an identical proposition.

to see how he can consistently hold that propositions of "genuine morality" are all necessary propositions. To put the point in somewhat different terms, if there is no necessary agreement between the idea of God and the idea of existence, and if the existence of God - as opposed to simply the idea of God - is a necessary ground for demonstrating "genuine" moral truths, then not all moral truths are truths which can be discovered simply by examining our abstract ideas.¹ Now, in certain of his references to the possibility of a demonstrative science of morality, he appeals only to the idea of God in indicating moral starting-points. Thus: "The idea of a supreme Being, infinite in power, goodness, and wisdom, whose workmanship we are, and on whom we depend; and the idea of ourselves, as understanding, rational creatures, . . . would, I suppose, if duly considered and pursued, afford such foundations of our duty and rules of action as might place morality amongst the sciences capable of demonstration." (E IV iii 18, p.208). Nevertheless, in discussing the innateness of practical principles, Locke argues: (1) where a moral rule is constantly being broken by someone, he does not know such a rule (and therefore it is not innate, since innateness entails universal consent) because if he did know such a rule, then

¹Although it does not follow from this that we cannot, on Locke's theory of knowledge, know moral truths. For, according to this theory, we can know that God exists.

he would know that he would not escape God's punishment for breaking it, and since it is unlikely that he would break the rule knowing the latter, therefore it is unlikely he knows the rule (see E I ii 13, pp 76-78). And, whatever else this argument might imply, it does suggest that the knowledge of a moral truth depends upon the knowledge of God's existence and not simply on having the idea of God. Thus, Locke prefaces the preceding argument with: "'Parents preserve your children' . . . is no truth at all: it being a command, and not a proposition, and so not capable of truth or falsehood. To make it capable of being assented to as true, it must be reduced to some such proposition as this: 'It is the duty of parents to preserve their children.' But what duty is, cannot be understood without a law; nor a law be known or supposed without a lawmaker, or without reward and punishment;¹ . . . [or, therefore,] without supposing the ideas of God, of law, of obligation, of punishment, of a life after this" (E I ii 12, p.76).

Locke restricts our knowledge of the existence of finite things other than ourselves to those objects which are or have been² actually present to the senses, where being actually

¹And hence, for Locke, the force of: "there cannot any one moral rule be proposed whereof a man may not justly demand a reason" (E I ii 4, p.68; minus italics).

²For his discussion of habitual sensitive knowledge, see E IV xi 11, pp 336-37. Henceforth, I shall ignore qualifications attendant upon including habitual sensitive knowledge.

present to the senses is to be sharply distinguished from being an immediate object. Roughly, the notion of being actually present to the senses¹ covers those objects which at a given time have some effect on my sense-organs, nervous system and brain processes and thereby produce a sensible idea in my mind - an idea which is immediately present to me. And, when an object does produce such an idea in my mind, I thereby notice² the object and thus know that it at that time exists. I can then be said to have a sensitive knowledge of its existence: "when our senses do actually convey into our understandings any idea, we cannot but be satisfied that there doth something at that time really exist without us, which doth affect our senses, and by them give notice of itself to our apprehensive faculties, and actually produce that idea which we then perceive But this knowledge extends as far as the present testimony of our senses, employed about particular objects that do then affect them, and no further." (E IV xi 9, pp 333-34; see also E IV xi 2, pp 326-27; E IV ii 14, pp 185-88).

¹For Locke's use of this expression, see E IV iii 5, p.191: "Sensitive knowledge reaching no further than the existence of things actually present to our senses".

²Locke occasionally uses the term 'sensation' to refer, or in such a way that it could be referring, to this type of noticing (E IV iii 2, p.190; E IV xi 1, p.325) - a use which must be distinguished from its use to refer to a sensible idea, or to a physical impression on the brain, nervous system or sense-organs, or to the whole process of a sensible idea's being produced.

The point of central interest in this case is that, despite the fact that external objects which are present to the senses are not immediate objects, and despite the fact that Locke initially confines knowledge to the perception of agreement between ideas because only ideas (and the self and certain of its operations) are immediate objects, he nevertheless admits sensitive knowledge. And the question is, for what reasons? - reasons which (a) must justify such a move and (b) do not equally admit other forms of purported knowledge which Locke is unwilling to admit.

Before dealing with this question, however, there are a number of smaller points to get out of the way. In his description of sensitive knowledge, Locke gives the impression that not only do we thereby know the existence of other things but that we also know that the other things in any given situation are producing sensible ideas in our minds - though we do not know how they do it: "the actual receiving of ideas from without . . . makes us know, that something doth exist at that time without us, which causes that idea in us; though perhaps we neither know nor consider how it does it" (E IV xi 2, p. 326; minus italics); "we cannot but be satisfied that there doth something at that time really exist without us, which doth affect our senses, . . . and actually produce that idea which we then perceive" (E IV xi 9, pp 333-34); "we may add to the two former sorts of knowledge [viz., intuitive and demonstrative]

this also, of the existence of particular external objects, by that perception and consciousness we have of the actual entrance of ideas from them" (E IV ii 14, p.188). Briefly, the problem with this suggestion is that: (a) from one viewpoint, sensitive knowledge seems to be the knowledge of the existence of x such that I am sensing an x at the time (although this too is complicated by the theory of secondary qualities) and I therein notice or (in a sense) perceive an x and thus take there to be an x or acquire a belief in the existence of an x, i.e., in this sense perceive¹ that there is an x; (b) while from another viewpoint, sensitive knowledge includes the knowledge that this particular object is producing this particular sensible idea in my mind; (c) but I cannot be having a sensible idea of an object producing a sensible idea in my mind; (d) nor does there seem to be any form of experience - whether or not it can be correctly called 'sensing' - in which I experience an object producing a sensible idea in my mind. On the other hand, if sensitive knowledge is intended to include a form of knowledge which is not guided so strictly by what we sense or otherwise experience, then it is not clear just what kind of thing it is intended to include in addition to this, and that what it does include in addition to this does not fall into Locke's category of mere

¹"By sensation, perceiving the existence of particular things."
(E IV iii 2, p.190)

"judgment of probability".

Another suggestion in Locke's description of sensitive knowledge is that an external object's operating on the senses to produce a sensible idea in our mind causes us to know that the external object exists in a sense which is stronger than the claim that the production of the sensible idea enables us to know that the external object exists. Hence, he uses the expression "the actual receiving of ideas from without . . . makes us know, that something doth exist at that time without us" (E IV xi 2, p.326; my emphasis of 'makes us know'), and also writes: "we cannot so far distrust their testimony, as to doubt that such collections of simple ideas as we have observed by our senses to be united together, do really exist together." (E IV xi 9, p.334; my emphasis of 'cannot'). In other words, his account seems to deny the possibility of, e.g., John sensing a spot of red but not taking there to be any red existing in front of him - i.e., in this sense, not noticing or perceiving a spot of red or that a spot of red exists - perhaps because he believes that the situation he finds himself in is conducive to producing sensory illusions or hallucinations with respect to colours and particularly with respect to red. Indeed, the very possibility of our not being misled by sensory illusions or hallucinations seems to be denied by this. Moreover, the possibility of seriously holding to a theory of secondary qualities, which demands that one does not believe

in the existence of, e.g., red in the sense of 'red' in which one senses red, is denied by Locke's suggestion on this point.

Now, I think it is because of his adherence to secondary qualities that he phrases his description of the following example in the way that he does: "v.g. whilst I write this, I have, by the paper affecting my eyes, that idea produced in my mind, which, whatever object causes, I call white; by which I know that that quality or accident (i.e. whose appearance before my eyes always causes that idea) doth really exist, and hath a being without me. And of this, the greatest assurance I can possibly have, and to which my faculties can attain, is the testimony of my eyes, which are the proper and sole judges of this thing; whose testimony I have reason to rely on as so certain, that I can no more doubt, whilst I write this, that I see white and black, and that something really exists that causes that sensation in me, than that I write or move my hand" (E IV xi 2, pp 326-27). For he seems to want only to say that in having the sensible idea of white I know that the object (primary quality) which causes me to have the idea of white (secondary quality) - and which I therefore call 'white' in a derivative sense - does exist, i.e., I know that there is such an object. But, as pointed out above, this is to turn sensitive knowledge into something quite different from perceiving that an instance of white exists while sensing white (where 'white' means the same in both cases). It then becomes

a matter of believing that such-and-such a (primary) quality exists because one has such-and-such ideas and one knows that such ideas are produced by such a quality. And the testimony that the senses (at a given time) have to offer on this account is then diminished. They can no longer be "the proper and sole judges of this thing", for ex hypothesi one is not sensing what one perceives to exist. One either infers the existence of such an object or knows that it exists as a result of having made such inferences. Furthermore, in addition to this transformation in the notion of sensitive knowledge, it still is not the case that the production of the sensible idea of an *x* by a primary quality *y* will necessarily make anyone know that *y* exists - indeed, it is even less likely in this case, for (a) exponents of secondary qualities among ordinary men are relatively few and (b) even in the case of such exponents, they might not know what primary qualities produce what ideas of secondary qualities. Finally, in view of Locke's own expressed disavowal of knowledge of the connection between primary qualities and ideas of secondary qualities (see E IV iii 12-13, pp 201-02), it is difficult to see how he could consistently view sensitive knowledge as the knowledge of the existence of the specific causes of our sensible ideas.

The final minor point to register is that Locke is not very tidy in this context about the question of knowing the existence of substances as distinct from qualities. In one

of the passages quoted above, he does seem to restrict his reference to the existence of a collection of sensible qualities:¹ "we cannot . . . doubt that such collections of simple ideas as we have observed by our senses to be united together, do really exist together" (E IV xi 9, p.334), but even here he goes on to say "For if I saw such a collection of simple ideas as is wont to be called man, existing together one minute since" (E IV xi 9, p.334), and one might reasonably raise a question about the exact force of 'as is wont to be called man' and 'collection of simple ideas'. Furthermore, he does say things like "the confidence that our faculties do not herein deceive us, is the greatest assurance we are capable of concerning the existence of material beings" (E IV xi 3, p.328; my emphasis), without attending to the possibility of distinguishing material substances from material properties. Now if, in the face of such a question, Locke were to admit sensitive knowledge of the existence of material substances simpliciter, then, according to his position,² he would be admitting knowledge of the existence of something which cannot

¹Remembering that, whenever he talks about the complex ideas of substances, he often uses 'idea' in the sense of quality or power or property - a habit which he himself admits to in E II viii 8, p.169 and which Leibniz points out in NE II xxvi 1-2, p.237, G 212.

²Substances, for Locke, cannot be experienced: "the idea of substance; which we neither have nor can have by sensation or reflection" (E I iii 19, p.107), where 'sensation' means simply having sensible ideas.

be sensed and, in doing so, would be extending the area of possible knowledge to a degree that could make it arbitrary or at least uncomfortable for him to exclude assurance on the basis of strong, but logically inconclusive, reasons. On the other hand, if he were to admit knowing that material substances exist but, in doing so, were to draw upon a principle which he himself suggests¹ and employs more forcefully in his correspondence with Stillingfleet - viz., that it is impossible for qualities to exist without some support - and claim that one perceives that substances exist when one merely senses qualities because one knows that qualities must subsist in a substance,² then sensitive knowledge takes on a significantly different shape than the one Locke paints in describing it. For, the need to have such an a priori reason for what one believes, or comes to believe, in order to acquire sensitive knowledge of the existence of at least some kinds of object (viz., substances as opposed to qualities) receives no mention. And - aside from any question of the merits of the principle - it is perhaps then questionable whether sensitive knowledge of the existence of objects is as common as it might at first

¹In the Essay, the suggestion is a relatively tenuous one: "not imagining how these simple ideas can subsist by themselves, we accustom ourselves to suppose some substratum wherein they do subsist" (E II xxiii 1, pp 390-91).

²Presumably where one knows this by examining the abstract ideas of qualities and of subsistence in a substance.

appear to be - in short, does not such a demand in fact limit the knowledge of the existence of material substances virtually as completely as denying the very possibility of sensitively knowing that material substances exist? Finally, as far as the existence of mental substances - as well as mental operations - other than ourselves is concerned, even manoeuvres such as appealing to the necessary dependence of qualities on substances cannot work; for we cannot sense mental operations nor can we otherwise experience any mental operations save our own. On the possibility of knowledge in this case, Locke has nothing directly to say, but by implication his position excludes it completely. Consequently, in the passage, "I presume it will be easily granted me, that there are such ideas in men's minds: every one is conscious of them in himself; and men's words and actions will satisfy him that they are in others" (E Intro. 8, p.33), the "satisfaction" he refers to falls short of knowledge. And a similar point applies to, "That there are minds and thinking beings in other men as well as himself, every man has a reason, from their words and actions, to be satisfied" (E IV iii 27, p.219).

I can now turn to the central question, viz., What justification has Locke for admitting sensitive knowledge but excluding the cases of apparent knowledge which he does exclude?

Locke does not defend his position by saying something

like: "I admit sensitive knowledge but exclude other cases of sense-perception because in the case of, e.g., Sam's perceiving that there is an instance of motion which etc., where he senses an instance of motion which etc., if Sam is not suffering sensory illusion or hallucination in this respect, then his perception is correct; whereas in the case of Sam's perceiving that an automobile with thirteen passengers exists, where he cannot sense an automobile with thirteen passengers, even if his senses were impeccable in this respect, Sam can still be mistaken. Furthermore, I exclude cases where one non-deductively infers propositions from premises which may or may not describe what I sense, because here again one may sense veridically and yet still be wrong (and, of course, the truth of such propositions cannot be perceived solely by examining my abstract ideas)."

Rather, he chooses to justify his actions in the following way:

Although it is true that "men may have such [sensible] ideas in their minds, when no such thing exists, no such object affects their senses", nevertheless "we are provided with an evidence that puts us past doubting." (E IV ii 14, p.186).

For (1) there is an unmistakable difference between seeing the sun and merely thinking about it, or smelling a rose and only thinking of such a smell. Similarly, there is a manifest difference between having a sensible idea of red

and reviving the idea of red in our memories (see E IV ii 14, p.186; E IV xi 5, p.329). Leibniz replies to this point with: "you are right in saying that there is ordinarily some difference between feelings and imaginations; but the Sceptics will say that the more or less does not alter the species. Besides, although feelings are wont to be more vivid than imaginations, it is nevertheless a fact that there are cases where imaginative persons are impressed as much or perhaps more by their imaginations than another is by the truth of things" (NE IV ii 14, p.422, G 355). Basically the central criticism is that, although sensible ideas are discernible from, say, images or objects of thought, the question remains whether sensible ideas correspond with any external objects or have any external causes and whether we can know this on Locke's theory - or, if the use of 'sensible idea' itself has the idea's being caused by an external object analytically written into it, whether those ideas we now refer to as sensible ideas have any external objects to which they correspond, etc. For, it remains true to say that it is possible for such an idea not to correspond with any external object. Consequently, when Locke remarks, "And therefore he hath certain knowledge that they [i.e., the two kinds of idea] are not both memory, or the actions of his mind, and fancies only within him; but that actual seeing hath a cause without" (E IV xi 5, p.329), he is to some extent assuming what he

has to show,¹ viz., that because sensible ideas are distinguishable from ideas revived in the memory or from thoughts or images, therefore they are not "fancies only within him".

Moreover, a type of question raised in the preliminary discussion might be introduced here. For, is Locke suggesting that sensitive knowledge itself either involves inferring the existence of an external object from the fact that we have a sensible idea of an x, as distinct from a thought or image, or involves having the principle or general point underwriting such an inference as a reason for believing that such-and-such an object exists? In this case, not only is the inference a shaky one, but sensitive knowledge becomes a relatively infrequent possession. Or is he suggesting that sensitive knowledge involves no such thing, but that we know there are such-and-such external objects by such means and are therefore prepared to accept sensitive "perception" as knowledge, irrespective of what "evidence" such a form of perception brings along with it? But then it is questionable whether sensitive knowledge could not be admitted if we simply believed unreservedly that what is taken to exist in a given case of sensitive perception does in fact exist. In other words, given that p is true, what

¹I say 'to some extent' because this particular conclusion also draws upon the argument that because sensible ideas are passive, i.e., are not made by us and cannot be avoided by us, therefore they have external causes - an argument I consider later.

else has our knowing that p in this way got to do with whether or not sensitive perception that p is a genuine case of knowledge? Finally, in either case, the argument which Locke here presents by itself provides no "evidence which puts us past doubting" that sensible ideas correspond with external objects, and thus functions as a poor guide for extending his notion of sensitive knowledge.

He also introduces in his defence the point that many sensible ideas are accompanied by pleasure or pain (see E IV ii 14, p.188; E IV xi 3, p.328; E IV xi 6, p.330), but as an argument for the thesis that sensible ideas correspond with external things, it brings no more "evidence" than the preceding one, and as a justification for his admitting sensitive knowledge, is subject to a parallel set of questions. Concerning the former point for instance, it is not impossible for a sensible idea which does not correspond with an object to be accompanied by pleasure or pain - e.g., in a "phantom limb" case. And, if the argument is that because pain is occasioned by the bodily disorder caused by the external object, therefore a sensible idea accompanied by pain corresponds with the external object (see E IV xi 6, p.330) - waiving the point that all bodily disorders need not be caused by external objects - the objection remains that knowing that a bodily disorder occasions pain, or that such-and-such a bodily disorder occasions such-and-such a pain, itself poses just as

much a problem as knowing that an external object produces a sensible idea. Moreover, even if the fact that pain accompanies such-and-such a sensible idea were an indication that the sensible idea corresponds with an external object - an indication which entitles us to the status of knowing there is an external object when we have the sensible idea and the accompanying pain - we still do not therein know what sort of external object exists. We are thus left with knowledge of the existence of other things but what these other things are we do not know. And if sensitive knowledge extends no further than this, then its limitations are much more severe than Locke generally acknowledges.

Thus, regarding Locke's notion of sensitive knowledge and his defence of admitting it as knowledge, two basic points are clear: (a) the arguments he gives on behalf of the claim that there are external objects themselves do not measure up to his standard of demonstrative knowledge, and, aside from such a standard, in themselves provide little ground for affirming an external world; and (b) even if they themselves had some plausibility it is not clear how they would justify his admission of sensitive knowledge - for they themselves seem to appeal to general considerations (i.e., 'A sensible idea is distinct from an idea revived in memory and therefore corresponds with an external object', or 'A sensible idea is often accompanied by pain or pleasure and therefore corresponds

with an external object') and it is hard to see what part, if any, such considerations would have to play in the sensitive perception of external objects which for Locke constitutes sensitive knowledge.

In addition to the alleged "assurance we have from our senses themselves . . . of the existence of things without us" (E IV xi 3, p.328), Locke introduces "concurrent reasons" to confirm our assurance on this point. In this case, then, he does not seem to be defending his admission of sensitive knowledge so much as giving arguments in defence of the general claim that there are external objects which operate on our senses to produce sensible ideas in us - arguments which purportedly stand or fall independently of our perceiving the existence of external objects as a result of (though not solely as a result of) sensing such-and-such objects, and therefore arguments which support only in this way our claims to know that such-and-such an object exists on the basis of the sensitive perception of such an object. It should be added, however, that this distinction is not applicable to Locke's thought in any clear-cut way.

His first argument is: Since having sense-organs is a necessary but not a sufficient condition for our having sensible ideas, and since we do have sensible ideas, therefore there must be external objects operating on our sense-organs

to produce sensible ideas (E IV xi 4, p.328). But (a) the very reference to sense-organs incorporates a reference to external objects and (b) how do we know that sense-organs are necessary conditions of our having sensible ideas (unless, as mentioned previously, 'sensible idea' itself has this condition written into it and then the question becomes 'How do we know we have sensible ideas?'). Granted, the force of 'concurrent reasons' in this context suggests that Locke is not attempting to demonstrate the existence of external objects but is simply trying to provide good grounds for claiming an external world - at least one within the present and past causal range of our sense-organs - and that he is operating not in the field of knowledge as conceived by him but in the area of mere assurance and probability. Nevertheless, even if he is limiting himself to such a programme, it is still incumbent upon him to provide grounds for his non-demonstrative inference which consist in propositions that we either know to be true or can themselves be supported by us on grounds which we know to hold, etc. And, in the given case, (a) we do not know, on Locke's theory, that there are sense-organs or that they are necessary for our having sensible ideas, and (b) the type of argument necessary to support such claims is the very type of argument he is attempting to give by using them as grounds.

The second reason is that because sensible ideas are unavoidable and cannot be made by us in the sense that thoughts

and certain of our images can be made by us, therefore they are produced by external objects (E IV xi 5, pp 328-29; also E IV iv 4, pp 229-30) - a line of reasoning which comes close to introducing the principle, employed by Locke in his proof of God's existence, that everything which has a beginning has a cause. Now, if this argument is accepted within the terms of reference of what he is trying to do, it does no more than secure the point that external causes (or an external cause) exist(s) and has nothing to offer about what the nature of such causes is. Thus, if we introduce Leibniz's point that "God has ideas before creating the objects of these ideas, and nothing prevents Him from being able also to communicate such ideas to intelligent creatures" (NE III iv 2, p.318, G 275) and shape it so that it applies in a suitable way to sensible ideas, in the given argument, Locke provides no reasons - logically conclusive or otherwise - for claiming that Leibniz's supposition is not the case. Similarly, one might point out that certain types of images are in fact just as unavoidable and independent of our wishes as sensible ideas and (given that such images are produced by things other than oneself though not necessarily things external to one's own body) that Locke's argument does nothing to exclude an external world composed solely of the kind of objects which produce such images. Now, there might be arguments available to single out what the character of the external world is - both from a

general viewpoint (e.g., arguments which support a primary-secondary quality distinction) and in particular cases (e.g., arguments which show that there is at the moment a hard, brown, rectangular-shaped object in front of me) - but the point here is that Locke's reasoning thus far fails to provide such arguments.

Another reason Locke introduces is that, since sensible ideas are often accompanied by pleasure/pain, therefore they correspond with external objects - but I need add nothing to what has already been said on this point. A final reason he gives, however, does seem to come closer to satisfying the requirements he intends his various arguments to fulfil. Moreover, it also directs attention to the course Leibniz himself adopts in claiming the existence of an external world. And, finally, it might even indicate - in a way the previous arguments do not - some support for accepting sensitive knowledge.

Basically, the reason consists in: "Our senses in many cases bear witness to the truth of each other's report, concerning the existence of sensible things without us. He that sees a fire, may, if he doubt whether it be anything more than a bare fancy, feel it too; and be convinced, by putting his hand in it." (E IV xi 7, pp 330-31). Thus, framing the example to avoid the difficulty that I cannot see heat or feel red, where seeing and feeling are forms of sensing, the point is that because I both see and feel a long thin object, there

to this extent probably is a long thin object - i.e., the fact that I see and feel the same thing provides a reason for believing that there is such a thing. Now, in this case, the reason introduced does consist in something we can know to be the case according to Locke's view of knowledge - for I can know that I am sensing such-and-such. Moreover, it offers something more than simply a reason for claiming there are external objects but of what kind remains unknown - thus, in the above example, it offers a reason for claiming the existence of a long thin object.

Finally, it approaches, though only approaches, a justification of Locke's admission of sensitive knowledge; for in a case of sensitive perception I might well be sensing the same thing (an x) in two different ways and thereby have a reason for taking there to be an x - and thus be entitled (when correct) to the tab 'knowledge'. But, because one who has sensitive knowledge need not be sensing something in two different ways, an appeal to the value of corroboration cannot in itself justify sensitive knowledge. In this connection, however, he also suggests that in seeing and feeling the same thing, I have an additional reason for thinking there is such a thing - which implies that insofar as I simply sense, e.g., a spot of red, I have a reason for thinking there is a spot of red: i.e., that in this sense sensible ideas offer a "testimony" to the existence of external objects - though not,

as Locke sometimes suggests, a testimony which in each particular case is the "sole judge"¹ on the matter - for instance, one must allow for the possibility of different types of testimony, the conflict of various testimonies, the assessment of conflicting testimonies in terms of stronger and weaker grounds, etc., and this would be seriously limited by any claim that having such-and-such a sensible idea of red at time T is the sole arbiter of whether or not there is (or was) an instance of red at T. Indeed, otherwise there would be no room for having an additional reason in sensing the same thing in two different ways.

As far as applying the point to sensitive knowledge is concerned, there are two considerations of particular importance: (1) If sensitive knowledge is accepted as such because in sensing an x one has a reason for believing that there is an x, if it is simply on the basis of the strength of this reason, or the strength of the evidence my sensing an x provides for the belief adopted, then it will be difficult for Locke to confine knowledge of the existence of externals to sensitive knowledge. For, it seems possible to have specific cases of other types of belief in existence (i.e., where such a belief is not confined to objects actually present to the

¹See also his remarks: "the assurance we have from our senses themselves, that they do not err in the information they give us of the existence of things without us" (E IV xi 3, p.328; my emphasis).

senses¹) where the reasons one has provide stronger grounds or evidence for the belief one holds than the grounds provided simply by one's sensing an x for the belief that an x exists. Indeed, sensitive knowledge thus conceived seems to stand on a relatively slim ground in general. And, if it be objected that sensing an x is not the only reason one must have in order to qualify for having sensitive knowledge of the existence of an x, then the problem remains of what else is necessary and whether the necessary supplement can justify Locke's restriction of the knowledge of the existence of external objects to those actually present to the senses.

(2) If the point is to be applied to sensitive knowledge and if the notion of sensitive knowledge is to have any widespread application, it must not be made a necessary condition that one actually goes through the process of inferring 'There is an x' from 'I sense an x'. Rather, the notion of having a reason, as opposed to that of giving a reason, would have to be emphasised, and even here the demands made by 'having a reason' should not be overly elaborate in terms of the ability to articulate one's reasons and therefore the ability to describe what one senses.

Leibniz, on the other hand, adopts a position (a) which accepts that the connection between visible and tangible ideas, in those cases where I see and feel the same thing, is important,

¹Or, of course, to oneself and God.

as one kind of connection among others, but (b) which claims the existence of external objects that are not actually present to the senses, and (c) which also claims that we can know that such objects exist. For him, "the truth of sensible things is justified by their connection" (NE IV xi 1-10, p.512, G 426; also NE IV ii 14, pp 421-22, G 355-56; NE IV iv 1-5, p.445, G 373), the justification consisting in the fact that what we sense follows (for the most part) an orderly pattern the order of which we can effectively explain and predict by reference to external objects corresponding to our sensible ideas. This provides us with as much certainty as we need and can have on such matters: "And as these reasons and observations give us the means of judging the future as related to our interest, and as success corresponds with our rational judgment, we could not demand, nor have indeed, a greater certainty regarding these objects." (NE IV xi 1-10, p.513, G 426).

Whatever such a view might amount to in detail,¹ Leibniz introduces a related, but slightly different, approach in the following passage: "I believe that we might extend the appellation of knowledge and of certainty beyond actual sensations,

¹Generally speaking, Leibniz does not provide the detail he might have been expected to on this point, either in the New Essays or, indeed, in his earlier discussion with Foucher to which he refers in the New Essays (NE IV ii 14, p.420, G 354-55; and see Langley's references) or in "On the Method of Distinguishing Real from Imaginary Phenomena" (Langley, pp 717-20, G vii 319-22).

since clearness and manifestness go beyond, which I consider as a species of certainty; and it would undoubtedly be folly seriously to doubt whether there are men in the world when we do not see any. To doubt seriously is to doubt in relation to the practical, and we might take certainty as a knowledge of truth which we cannot doubt in relation to the practical without madness; and sometimes we take it still more generally, and apply it to cases where we could not doubt without deserving to be severely blamed. But evidence would be a luminous certainty, i.e. where we do not doubt because of the connection we see between ideas. According to this definition of certainty, we are certain that Constantinople is in the world, that Constantine, Alexander the Great, and Julius Caesar lived. It is true that some peasant of Ardennes might justly doubt about these, for lack of information; but a man of letters and of the world could not do so without great derangement of mind" (NE IV xi 1-10, p.513, G 426).

The basic and interesting point here is that, according to Leibniz, although it is true that we cannot strictly demonstrate the existence of external objects corresponding to our sensible ideas - either those which are or have been actually present to the senses or those which are not or have not been so present - from premises which either refer only to the existence of immediate objects (i.e., oneself or one's own

ideas) or are themselves necessary truths,¹ we can have good reasons for believing in the existence of such objects, reasons which can ultimately be based in the "connections" there are amongst our sensible ideas, and thus reasons of the type Locke gives in pointing out that we often see and feel the same thing (as well as implying the general point that, after all, having sensible ideas is to sense something). Indeed, in this light, it is interesting to note Locke's conjoined suggestion that because I can often tell beforehand what sensible ideas I shall have in those cases where I adopt some course of bodily action - e.g., to write such-and-such words on a piece of paper - I therein have a reason for claiming that the external objects involved in my successfully performing such an action do in fact exist - i.e., that I have in fact written such-and-such words on a piece of paper (see E IV xi 7, pp 331-32). Consequently, to doubt seriously the existence

¹Thus, see NE IV ii 14, p.422, G 355: "It must, however, be admitted that none of this certitude is of the highest degree, as you have well recognized. For it is not impossible, metaphysically speaking, that there may be a dream continuous and lasting like the life of a man"; NE III iv 2, pp 318-19, G 275: "there is also no exact demonstration proving that the objects of our senses and of the simple ideas which the senses present to us are outside us"; also "On the Method of Distinguishing Real from Imaginary Phenomena". Locke's view that sensitive knowledge is "not altogether so certain as our intuitive knowledge, or the deductions of our reason employed about the clear abstract ideas of our own minds" (E IV xi 3, p.327; see also E IV ii 14, p.185) implies this, but during the course of his discussion of sensitive knowledge he sometimes seems to waver and try for something stronger.

of an external world - and therefore to doubt in any way that could affect one's behaviour - would simply be a case of madness, mental derangement, etc., i.e., a complete loss of reason. And, if the doubter has any control over his faculties, he is subject to heavy criticism for embracing such doubts. Furthermore, this point can hold for cases where the external objects involved are not (or have not been) actually present as well as for cases where the external objects are (or have been) actually present. Thus, it would be extremely unreasonable for us to doubt of the existence of Constantinople, Alexander the Great, or Julius Caesar - though it would not be so for a peasant who lacked the information at our command.

Now, Locke himself urges not only that we have good reasons for believing in the existence of external objects actually present to the senses, but also that we have good reasons for claiming the existence of external objects beyond such a radius: "And, therefore, though it be highly probable that millions of men do now exist, yet, whilst I am alone, writing this, I have not that certainty of it which we strictly call knowledge; though the great likelihood of it puts me past doubt, and it be reasonable for me to do several things upon the confidence that there are men . . . now in the world; but this is but probability, not knowledge.

"10. Whereby yet we may observe how foolish and vain a thing it is for a man of a narrow knowledge, who having reason

given him to judge of the different evidence and probability of things, and to be swayed accordingly; how vain, I say, it is to expect demonstration and certainty in things not capable of it; and refuse assent to very rational propositions, and act contrary to very plain and clear truths, because they cannot be made out so evident, as to surmount every the least (I will not say reason, but) pretence of doubting." (E IV xi 9-10, pp 334-35; I quote at length because this passage represents certain elements in Locke's thoughts which are not always clearly brought out).

But, as this quotation shows, he apparently feels that, in any case of perceiving the existence of objects actually present to the senses, one has stronger reasons for adopting a belief in the existence of such an object than one can have in any case of believing in the existence of an external object which is not actually present to the senses or in any case of judging on the basis of evidence that an external object exists - e.g., that Julius Caesar or Alexander the Great existed. And this is what Leibniz is not prepared to allow. Thus, not only is Leibniz bringing the point to bear that in the relevant ordinary sense of 'know', one can know of the existence of external objects, insofar as one can have good reasons for believing in the existence of external objects, but he is also suggesting that one can have just as strong a set of reasons for believing in the existence of an

object which is not present to the senses as for believing in the existence of one which is present to the senses, and, therefore, that in admitting the possibility of sensitive knowledge, one can give no grounds, in terms of the relative strength of evidence attendant upon all cases of sensitive perception, for excluding the possibility of knowing the existence of objects not present to the senses.

From the viewpoint of Leibniz's over-all philosophical position, however, the situation is somewhat more complicated than this - notably in view of his suggestion that the material world is only an appearance - albeit in varying degrees a "well-founded" one - and that the universe in reality consists in an infinity of immaterial, mental substances.¹ For, in order to know this position to be true, one must, according to Leibniz's views on knowledge, have reasons which are sufficiently strong to modify the evidence provided by the connections between our sensible ideas and the truths supported by such connections. Consequently, this would seem to be at least

¹For instance, see NE IV iii 1-6, p.428, G 359: "We must consider that matter taken as a complete being (i.e. secondary matter in distinction from the primary, which is something purely passive and consequently incomplete) is only a mass, or that which results therefrom, and that every real mass supposes simple substances or real unities, and when we further consider what belongs to the nature of these real unities, i.e. perception and its consequences, we are transferred so to speak into another world, that is to say into the intelligible world of substances while before we have been only among the phenomena of the senses." (minus italics).

part of the force of his adding, in his appeal to the connections between sensible ideas as a justification for believing in an existing external world, a clause like "insofar as they conform to the truths of reason": "I think the true criterion concerning the objects of the senses is the connection of the phenomena, i.e. the connection of that which takes place in different places and times, and in the experience of different men who are themselves, each to the others, very important phenomena in this respect. And the connection of the phenomena which guarantees the truths of fact in respect to sensible things outside of us, is verified by means of the truths of reason; as the phenomena of optics are explained by geometry."^m (NE IV ii 14, p. 422, G 355; unfortunately, he does not elaborate on the analogy with geometry and optics). This notion might have some connection with his view that sensible ideas are simply confused ideas which by analysis theoretically can be broken down into distinct components (e.g., see NE II ii 1, pp 120-21, G 109)¹ - components which no doubt represent reality much more effectively than the confused composites and the sorting out of which is partly in the realm of truths of reason. But it seems more easily connected with the fact² that

¹Hence, sensible ideas of Locke's so-called secondary qualities have, for Leibniz, some correspondence with external reality. See NE II viii 13, 15, 21, pp 132-34, G 118-20.

²Whatever the connections between this fact and his view that sensible ideas are confused complex ideas may be.

1. Co-existence

a number of definite general propositions underline Leibniz's views on what exists, propositions such as 'Nature makes no leaps', or 'The difference between two individuals is always more than numerical', or 'God creates in accordance with the richest possible variety combined with the simplest hypotheses', and propositions which he sometimes offers as "truths of reason". Both points will be raised again in the next section.

of 'metaphysics' In a sense, however, they are not equal parts, particularly because Locke and Leibniz have generally been regarded as representing different views of knowledge in natural philosophy.

... claims to this knowledge are extremely limited. The truths we can come to know in this case "are a few, and of so little moment, that we may justly look on our certain general knowledge of substances as almost none at all." (W IV vi 10, p. 522). Basically, his reason for adopting such a view is that for the

Leibniz was more explicit in his claim that science could be made without knowledge of God (see above). He also made his claim that he would not have been made a scientist (W IV vi 10, p. 522; also W IV vi 11, p. 523). Leibniz occasionally distinguished his use from Locke's (W IV vi 10, p. 522, 523).

5. Co-existence

For the sake of convenience I shall divide the following discussion into two parts: A. Concerning the possibilities of knowledge in "natural philosophy", where the latter expression is used loosely to cover what would now be called natural science;¹ and B. Concerning the possibilities of knowledge in metaphysics, where not too fine a point can be put on the use of 'metaphysics'. In a sense, however, they are not equal parts, primarily because Locke and Leibniz have generally more to say about the possibilities of knowledge in natural philosophy than in metaphysics.

A. Natural Philosophy

In general, Locke feels that the possibilities of human knowledge in this area are extremely slim. Indeed, the truths we can come to know in this case "are so few, and of so little moment, that we may justly look on our certain general knowledge of substances as almost none at all." (E IV vi 15, p.266). Basically, his reason for adopting such a view is that for the

¹Locke himself uses the word 'science' in a more restricted way, such that science is impossible without knowledge or certainty (as conceived by him) - thus his claim that "natural philosophy is not capable of being made a science" (E IV xii 10, p.350; minus italics). Leibniz occasionally seems to use 'science' in a rather less strict way, although he does not sharply distinguish his use from Locke's (e.g., see his comments in NE IV xii 9-10, p.525, G 435).

most part we cannot acquire the knowledge of necessary truth in natural philosophy - i.e., we cannot perceive a necessary connection between the ideas of qualities co-existing in corporeal substances (e.g., see E IV iii 10, p.200). The examples which he gives (or suggests) of the few possible exceptions to our ignorance are 'Figure necessarily supposes extension',¹ 'Receiving or communicating motion by impulse supposes solidity' (E IV iii 14, p.203), 'No subject can in the same respect have more than one determinate of the same determinable, e.g., nothing can be both red and green in the same respect' (E IV iii 15, p.204), 'Two bodies cannot be in exactly the same place'² (E IV vii 5, p.272), 'One and the same thing cannot simultaneously occupy two different places' (E II xxvii 1, pp 439-40), 'Whatever has a beginning has a cause' (E IV x 3, p.308). Beyond these truths and some few more our faculties do not extend.

As indicated above, Leibniz does not share Locke's narrow view of knowledge and therefore holds that, in the relevant ordinary sense of 'know', the human mind can know a great many truths in natural philosophy - although he admits that, in many cases, we cannot perceive a necessary agreement between the relevant ideas, i.e., that we do not thereby

¹This would, I think, be more suitable for his purpose if reversed to read 'Extension supposes figure'.

²Leibniz raises a possible objection to this particular proposition - see NE IV vii 5, p.466, G 389; also NE II iv 1, p.124, G 112-13.

possess a knowledge of necessary truth (e.g., see NE IV vi 8, 13, pp 460-62, G 385). Now, except for the fact that (a) Locke does not clearly distinguish knowledge as conceived by him from knowledge in the relevant ordinary sense, and (b) in severing knowledge on his strict view from mere judgment or opinion, he tends to think that we cannot have as strong a case for holding to any general contingent truth as we can for holding (as a result of perceiving it) to a necessary truth - i.e., except for such elements in Locke's general view of knowledge, the non-verbal differences between him and Leibniz on the question of the extent of human knowledge in natural philosophy might seem very few. For, on occasion at least, Leibniz might seem to be claiming that the possibilities of the knowledge of necessary truth in natural philosophy (i.e., knowledge in Locke's sense) are relatively slim, whereas the possibilities of knowledge in the relevant ordinary sense are wide open.

Moreover, if one takes certain remarks which Locke makes concerning the "judgment of probability" - viz., (1) "most of the propositions we think, reason, discourse - nay, act upon, are such as we cannot have undoubted knowledge of their truth: yet some of them border so near upon certainty, that we make no doubt at all about them; but assent to them as firmly, and act, according to that assent, as resolutely as if they were infallibly demonstrated, and that our knowledge of them was

perfect and certain" (E IV xv 2, p.364); and (2) "the mind, if it will proceed rationally, ought to examine all the grounds of probability, and see how they make more or less for or against any proposition, before it assents to or dissents from it; and, upon a due balancing the whole, reject or receive it, with a more or less firm assent, proportionably to the preponderancy of the greater grounds of probability on the one side or the other. For example . . . [if someone] tells me he saw a man in England, in the midst of a sharp winter, walk upon water hardened with cold, this has so great conformity with what is usually observed to happen, that I am disposed by the nature of the thing itself to assent to it; unless some manifest suspicion attend the relation of that matter of fact. But if the same thing be told to one born between the tropics, who never saw nor heard of any such thing before, there the whole probability relies on testimony: and as the relators are more in number, and of more credit, and have no interest to speak contrary to the truth, so that matter of fact is like to find more or less belief. Though to a man whose experience has always been quite contrary, and who has never heard of anything like it, the most untainted credit of a witness will scarce be able to find belief" (E IV xv 5, pp 366-67) - knowledge in the relevant ordinary sense of 'knowledge' becomes indistinguishable from certain forms of so-called "judgment of probability".

Thus, he himself considers the ability to perceive necessary agreement between ideas, and the ability to estimate the strength of evidence for a general contingent truth, sufficiently similar to write: "In both these cases, the faculty which finds out the means, and rightly applies them, to discover certainty in the one, and probability in the other, is that which we call reason. For, as reason perceives the necessary and indubitable connexion of all the ideas or proofs one to another, in each step of any demonstration that produces knowledge; so it likewise perceives the probable connexion of all the ideas or proofs one to another, in every step of a discourse, to which it will think assent due." (E IV xvii 2, p.387). In the relevant ordinary sense of 'knowledge', then, the distinction Locke draws between "knowledge and non-knowledge" actually falls between "certain" knowledge or "true" knowledge - i.e., the knowledge of necessary truth - on the one hand, and other forms of knowledge, plus whatever else might fall under "judgment", on the other¹ (although he himself does not clearly see this).

Therefore, in advocating the widespread search for

¹Indeed, the very fact that he often uses expressions like 'certain knowledge' or 'true knowledge' - or, similarly, 'real certainty' - indicates this. Thus, his use on one occasion of the expression "would serve us only for experimental (not universal) knowledge" (E IV vi 7, p.256) tends to represent his position more accurately in terms of ordinary usage.

probability via empirical methods in natural philosophy, he is in effect allowing for the possibility of widespread knowledge in the ordinary sense of 'knowledge'. Thus, note the following addition he makes in the second edition of the Essay, an addition which has a slightly "sore thumb" effect when set beside his general theory of knowledge: "Experience is that which in this part we must depend on. And it were to be wished that it were more improved. We find the advantages some men's generous pains have this way brought to the stock of natural knowledge. And if others . . . had been so wary in their observations, and sincere in their reports as those who call themselves philosophers ought to have been, our acquaintance with the bodies here about us, and our insight into their powers and operations had been yet much greater." (E IV iii 16, p.206). And given this point, his position in relation to Leibniz seems even closer still. Thus, there seems to be no reason for Locke not to agree with Leibniz's suggestion that, in natural philosophy, one can frame hypotheses from which a wide variety of mutually independent consequences can be drawn, and, if the latter are verified by reference to empirical phenomena, then the given hypothesis is highly probable - and that one can in this sense explain observed connections (see NE IV xii 4-6, pp 520-21, G 431-32; NE IV xvii 5-6, pp 565-66, G 466). Nor, presumably, would Locke object to the point that mathematical necessary truths can be extremely useful to the

natural philosopher in developing his hypotheses. Nor does his position exclude the use that analytic points might have for a discipline such as psychology - although his views on trifling propositions might make him somewhat less enthusiastic than Leibniz would be in this respect.

Nevertheless, Leibniz does seem, at least on occasion, to differ from Locke's view in one very important respect - viz., in suggesting that we can have more knowledge in natural philosophy than Locke is prepared to allow, where knowledge is to be understood as Locke conceives it, i.e., as the knowledge of necessary truth. Before developing this point - in an admittedly tentative way because I do not find the detail of Leibniz's thought very clear in this respect and the fault is not necessarily his - the following observations are of some value.

Locke is concerned with the possibilities of real knowledge in natural philosophy not only in the sense of 'real knowledge' which demands the knowledge of necessary truth, but also in the sense which demands that what is known is not simply an identical truth (see E IV vi 9, p.257). Indeed, representing his concern as being one with whether or not we can perceive a necessary connection between the ideas of qualities co-existing in substances, itself implies such a view. Now, although he feels that, for the most part, the possibilities

of our knowing such non-identical truths are nil, he often suggests that the propositions about substances which we do consider and which we can manage to confirm or disconfirm via empirical methods are in reality necessarily true or false.¹ For, our not knowing *p* to be necessarily true does not entail that *p* is not necessarily true, or in Locke's terminology, our not perceiving a necessary agreement between ideas does not entail that such ideas do not necessarily agree (and thus his distinction between certainty of knowledge and certainty of truth; E IV vi 3, p.252). And, he suggests, substances do (in a sense) have real essences from which their properties flow; but, from our limited viewpoint, we simply cannot perceive them.

Leibniz agrees with the point that in natural philosophy we often cannot know that a given proposition is necessarily true, although such a proposition is in fact necessarily true (e.g., see NE IV i 1-2, p.400, G 338-39).² But, as indicated

¹Thus a natural philosopher, in making his "judgments of probability", would often have to use 'It is probably the case that ...' in such a way that it does not imply 'It is possibly the case that not ...', in order to be completely accurate.

²Such a view could well receive support from the following remarks on truth: "It were then better to place truths in the relation between the objects of ideas which causes the one to be or not to be included in the other" (NE IV v 1-2, p.451, G 377). If taken to extremes, however, the possibility of a contingent truth, and therefore the possibility of the necessary/contingent truth distinction itself, at least as applied to general truths, would be dismissed. Similarly, if his better known claim - 'A true proposition

above, in theory at least, he is opposed to the view that a necessary truth can have a non-identical form (using 'non-identical' in a reasonably wide and flexible sense). Now, waiving the points (a) that the examples which Locke gives of necessary truths which we do know in natural philosophy, and which Leibniz for the most part accepts, do not seem to have identical forms, and (b) that the propositions which according to Locke are necessarily true but which we do not know to be necessarily true, and which are accepted by Leibniz as such, are even more implausible as candidates for identicals, there seems to be a certain amount of friction between admitting that a given affirmative proposition in natural philosophy can be confirmed by empirical techniques and yet claiming that such a proposition has the form of an identical (but see below, pp 219-26). Moreover, if he is suggesting with Locke that a proposition which asserts that such-and-such qualities co-exist in substances (where 'A co-exists with B' does not entail 'A (or B) exists') can be a necessary truth, then on this point too his "identicism" wobbles. In this light, consider: "We know almost as certainly that the heaviest of all bodies known here below is fixed, as we know certainly that it will be light to-morrow. This is because we have tried it a hundred

is one in which the predicate is contained in the subject' - were taken to extremes, the possibility of propositions which could be either true or false and therefore contingent in this sense, also seems to be rejected.

thousand times; it is an experimental certainty, and of fact, although we do not know the bond which unites the fixity with the other qualities of this body." (NE IV vi 8, p.460, G 385; my emphasis).

To see in what way and to what extent Leibniz seems to opt for the knowledge of necessary truth in natural philosophy, it is useful to consider Locke's development of his argument in terms of real essences and note Leibniz's general reactions.

In adopting a critical attitude towards real essences,¹ Locke appears to level his guns at a number of different things - things which he himself does not always carefully set apart. He does, however, distinguish real from nominal essences, such that the nominal essence of a so-and-so is the abstract idea of that so-and-so: "it being evident that things are ranked under names into sorts or species, only as they agree to certain abstract ideas, to which we have annexed those names, the essence of each genus, or sort, comes to be nothing but that abstract idea which the general, or sortal . . . name stands for." (E III iii 15, pp 26-27). Now, as previously indicated, his view of a nominal essence suggests not only that, e.g., what a man essentially is is the idea of a man, but also that what a man essentially is is the idea signified by the word

¹See E III iii-vi, pp 14-97.

'man' - views which are unacceptable to Leibniz and which are unacceptable full stop. To avoid such difficulties, then, it is worthwhile to consider Locke's view as: the nominal essence of an x is N if and only if the abstract idea of an x is the idea of N. In this sense, the nominal essence of a so-and-so can be said to be "solely determined" by the abstract idea of that so-and-so rather than saying that it literally is such an abstract idea. Furthermore, the abstract idea of N is not to be confused with the abstract idea signified by the word 'N'.

Locke also distinguishes "two opinions" concerning real essences (of corporeal substances at least): "The one is of those who, using the word essence for they know not what, suppose a certain number of those essences, according to which all natural things are made, and wherein they do exactly every one of them partake, and so become of this or that species. The other and more rational opinion is of those who look on all natural things to have a real, but unknown, constitution of their insensible parts; from which flow those sensible qualities which serve us to distinguish them one from another, according as we have occasion to rank them into sorts, under common denominations." (E III iii 17, pp 27-28).

Now, the first "opinion" which Locke introduces here seems to incorporate a number of different views, views which he himself rejects: (a) The (real) essence of a sort is created by nature and has nothing to do with what the idea of that sort

is of (this is related to the claim to real meanings, where the meaning of a word is purported to be something created by nature and not something created by the human mind). (b) There are only a relatively small number of such essences, in (at least) one of which any existing substance must "partake". (c) There is no theoretical question of whether or not a given individual does or does not "partake" in such-and-such an essence, although in our ignorance we cannot in fact allocate individuals to their correct essences. (d) Indeed, such essences, instead of being of sorts of things, or perhaps in addition to being of sorts of things, are of particular things¹ and even, perhaps, are had by particulars in the sense that particulars have properties (for Locke's attack on such a set of views, see especially E III vi, pp 56-97).

The second notion of a real essence, and one which he finds "more rational", is that which considers the real essence of an x to be the "logical ground" of both the defining

¹And thus, perhaps, the initial reason for Locke to turn to a consideration of essences. For he embarks on such a journey during the course of a discussion of general terms and abstract ideas which is in part designed to secure the claim that all things that exist are only particulars (see E III iii 6, p.16; E III iii 1, p.14). And if essences were accepted in a sense in which they are not abstract ideas or determined by abstract ideas (which for Locke are particulars in the relevant sense) and in which they are not of sorts of particulars but are of particulars themselves and had by particulars, then they might well pose a threat to the claim that all things are particular.

properties of an *x* and whatever essential properties an *x* might have other than its defining properties. Thus: "By this real essence I mean, that real constitution of anything, which is the foundation of all those properties that are combined in, and are constantly found to co-exist with the nominal essence But essence, even in this sense, relates to a sort, and supposes a species v.g. supposing the nominal essence of gold to be a body of such a peculiar colour and weight, with malleability and fusibility, the real essence is that constitution of the parts of matter on which these qualities and their union depend; and is also the foundation of its solubility in acqua regia and other properties, accompanying that complex idea." (E III vi 6, pp 61-62; see also E III vi 2-3, pp 57-58). In this sense of 'real essence', the real essences of modes and simples are identical with their nominal essences and are therefore knowable by us (e.g., see E III iv 3, p.32; and thus the possibility of real knowledge in mathematics).¹ In the case of substances, however, real and nominal essences are generally distinct and the real essence is generally unknown to us (and thus the relative impossibility of knowledge in natural philosophy). It is in this sense of 'real essence', therefore, that real essences concern us.

In this connection, it is important to bear two distinc-

¹In this connection, he does not consider the need for axioms and postulates, in addition to definitions, in geometry.

tions in mind: (1) In referring to the real but unknown constitution of a substance, Locke is referring to something distinct from the 'I know not what' character of substance in general (see E II xxiii 1-4, pp 390-95). For the real constitution of a substance referred to here is of a sort of substance and not of substance in general (although he might be prepared to make the point that the character of substance in general of which we are ignorant - namely, what it is in non-relational terms - does count as the real essence of substance in general).

(2) In discussing the real essence or constitution of a substance, Locke often refers to the internal, insensible structure of a substance, and, in the case of a material substance, eventually identifies it as the primary qualities of its minute, insensible parts, in accordance with "the corpuscularian hypothesis" (see E IV iii 11, pp 200-01; E IV iii 16, p.205). Now, if we refer to the primary qualities of the insensible parts of a substance as its corpuscular structure, although he suggests that the real essence of a (material) substance is its corpuscular structure, the real essence of a substance, in the sense of 'real essence' which concerns us here, is not logically identical with the corpuscular structure of that substance. In other words, what he means by 'the real essence of a substance' in this sense is not the corpuscular structure of a substance; i.e., the general idea of the real essence of a

substance is not the idea of the corpuscular structure of a substance. For 'the corpuscular structure of a substance' does not mean the logical ground from which the defining and non-defining necessary properties of such-and-such a sort of substance follow, despite the fact that the corpuscular structure of a substance may well be just such a ground. Thus, the way is open for Locke to suggest that the real essence of a substance might be "yet more remote from our comprehension" than its corpuscular structure (E IV iii 11, p.200), and to write: "I have here instanced in the corpuscularian hypothesis, as that which is thought to go furthest in an intelligible explication of those qualities of bodies; and I fear the weakness of human understanding is scarce able to substitute another, which will afford us a fuller and clearer discovery of the necessary connexion and co-existence of the powers which are to be observed united in several sorts of them. This at least is certain, that, whichever hypothesis be clearest and truest, (for of that it is not my business to determine,) our knowledge concerning corporeal substances will be very little advanced by any of them, till we are made to see what qualities and powers of bodies have a necessary connexion or repugnancy one with another." (E IV iii 16, pp 205-06). Indeed, at one point he even suggests with considerable confidence that the properties which constitute the real essence of an x may well not all be properties which contain no reference

to other things: "This is certain (!) : things, however absolute and entire they seem in themselves, are but retainers to other parts of nature, for that which they are most taken notice of by us. Their observable qualities, actions, and powers are owing to something without them; and there is not so complete and perfect a part that we know of nature, which does not owe the being it has, and the excellences of it, to its neighbours; and we must not confine our thoughts within the surface of any body, but look a great deal further, to comprehend perfectly those qualities that are in it." (E IV vi 11, p.262).

In passing one might also note that not only is Locke's proposal of corpuscular structure as the real essence of a substance tentative because primarily designed to provide an example of what the real essence of corporeal substances might be, but his claim that the human mind is incapable of acquiring knowledge of such essences (a) is not made completely without reservation and (b) is intended as a general contingent statement about human faculties - i.e., one which presumably asserts a factual but not a logical impossibility: "what qualities and powers of bodies have a necessary connexion or repugnancy one with another; which in the present state of philosophy I think we know but to a very small degree: and I doubt whether, with those faculties we have, we shall ever be able to carry our general knowledge . . . in this part much

further" (E IV iii 16, p.206); "This way of getting and improving our knowledge [of particular truths?] in substances only by experience and history, which is all that the weakness of our faculties in this state of mediocrity which we are in in this world can attain to, makes me suspect that natural philosophy is not capable of being made a science Experiments and historical observations we may have, . . . but beyond this I fear our talents reach not, nor are our faculties, as I guess, able to advance." (E IV xii 10, p.350).

Now, given the interpretation of real and nominal essences outlined above - viz., that a nominal essence of a sort is solely determined by the abstract idea of that sort, and that a real essence is the logical ground of both the nominal essence and "propria" of that sort - to be consistent, Leibniz ought to reject real essences and claim that all essences are nominal. For, admitting real essences entails admitting non-identical necessary truths. But, Leibniz does not view Locke's position on essences in quite this way and, as I have indicated, he is to some extent right in doing so. For, Locke's notion of a nominal essence also has a nominalistic thread woven in it, a thread which Leibniz cannot accept and one which therefore tends to obscure from his view the threads unravelled in the preceding discussion. Consequently, the thing to do now is to see to what extent he agrees or disagrees with Locke's position

on essences as I have represented it¹ and not precisely as Locke himself actually puts it or as Leibniz understands it, and to see whether he feels that the natural philosopher qua natural philosopher acquires, or can acquire, a knowledge of essences.

Leibniz proposes his own distinction between real and nominal definitions as more or less a reconstruction of what Locke calls 'real and nominal essences': "It seems to me that our language makes extreme innovations in the method of expression. We have indeed spoken hitherto of nominal and causal or real definitions, but not within my knowledge of essences other than real Essence is at bottom nothing less than the possibility of that which we think. What we assume as possible is expressed by the definition; but this definition is only nominal when it does not express at the same time, possibility; for then we may doubt whether this definition expresses anything real, i.e. possible, until experience comes to our aid to make us know this reality a posteriori, when the thing is actually found in the world; and this suffices for the defect of the reason, which made us know the reality a priori by exposing the cause or the possible generation of the definite thing." (NE III iii 15, p.315, G 272-73).

This statement suggests to me the following position:

¹And in the sense of 'real essence' appropriate to this discussion.

(1) In the sense of 'definition' relevant here, a definition is of a sort of thing and not of a word, and it therefore has a truth-value.

(2) The nominal definition of an *x* consists in a statement of the distinguishing or defining properties of an *x*, but in such a way that it does not "express" the possibility of an *x*. On this view, the nominal definition of an *x* provides a statement of the nominal essence of an *x*.

(3) The real definition of an *x* consists in a statement of the distinguishing or defining properties of an *x*,¹ but in such a way that it does "express" the possibility of an *x*. On this view, the real definition of an *x* also provides a statement of the nominal essence of an *x*, but does it in such a way that we can see the possibility of an *x*.

But Leibniz says a number of things which seem, in varying degrees, to run contrary to such an interpretation. For instance: "there is only one essence of the thing, but . . . there are many definitions which express one and the same essence, as the same structure or the same city may be represented by different scenographies according to the different sides from which it is regarded." (NE III iii 15, p.316, G 273). If Leibniz is here suggesting that there may be a number of definitions of the same thing which differ as far as what they

¹For the moment, I am ignoring any qualifications which might be demanded by the notion of a "real causal" definition.

assert is concerned, then his use of 'definition' becomes puzzling and the above interpretation does not hold. He might, however, here have in mind differences with respect to the clarity of the definition, or with respect to the fact that one definition does, whereas another does not, display the possibility of the thing defined (see below, pp 220-22).

Or: "I should prefer to say, in accord with received usage, that the essence of gold is that which constitutes it and which gives it these sensible qualities, which make it known and which make its nominal definition, while we should have the real and causal definition if we could explain this contexture or internal constitution." (NE III iii 18, p.316, G 273). In this case, Leibniz seems to come very close to Locke's position as I have represented it. For the essence or internal constitution of gold seems to correspond to Locke's real essence of gold and the sensible qualities given by a nominal definition of gold seem to correspond to those qualities which make up Locke's nominal essence of gold. And if this is the case, then the preceding interpretation of Leibniz's position is clearly wrong. For then a real definition no longer need state merely the nominal essence of a sort.

Some "resolution" of the friction in this respect might be achieved, however, by drawing upon Leibniz's theory that sensible ideas - even apparently simple ones like those of colours or heat - are in reality all highly complex but

confused ideas:¹ "simple terms cannot have nominal definitions; but . . . terms, when they are simple only as regards us (because we have no means of analyzing them so as to reach the elementary perceptions of which they are composed), as heat, cold, yellow, green, can receive a real definition which would explain their cause. Thus, the real definition of green is that of an entity composed of blue and yellow thoroughly mixed, although green is no more susceptible of a nominal definition by which we may recognize it than blue or yellow." (NE III iv 4-7, pp 319-20, G 275; see also NE II ii 1, pp 120-21, G 109). But such a "resolution" can be achieved only by dropping some of the assumptions which underly the real/nominal essence distinction drawn above.

Briefly, it might be developed along the following lines: On this view, the nominal definition of an x (where x is a material object, or a property of a material object) seems to be a statement which provides the distinguishing characteristics of an x, but only in terms of observables, i.e., in terms of properties which are necessarily seen, heard, tasted, etc. in seeing or hearing or tasting etc. the thing defined. For example, the nominal definition of gold might be 'Gold is a metal which is yellow and malleable'; in this case, in observing instances of gold we necessarily observe a metal which is yellow and malleable. And, since we cannot provide such distinguishing properties in the case of green, therefore green does not have

¹This also seems to clarify the sense of 'cause' relevant here.

a nominal definition. A real definition of gold, on the other hand, is a statement of the distinguishing properties of gold, but in terms which take us beyond what is necessarily observed in observing instances of gold - whatever such terms might be - and presumably take us to the point where we can see the possibility of there being gold.¹ Thus, in the case of green, although in observing green we do not in that respect observe blue and yellow and therefore 'Green is blue and yellow' is not a nominal definition, nevertheless, according to this view, 'Green is blue and yellow' is a real definition of green because it provides the defining characteristics of green in "non-observable"² terms. And by 'defining characteristics of green' in this context is meant characteristics which are contained in the nominal essence of green - i.e., characteristics which are contained in what the abstract idea of green, given that it is a sufficiently distinct instance, is an idea of. Thus, on this view, green is logically identical with yellow

¹Such a view would seem to allow for the possibility of levels of "real definitions" - i.e., definitions which simply take us beyond observables but which do not yet disclose the possibility of the thing defined (e.g., 'Green is blue and yellow'?) - before the "ultimate" real definition is reached where such a disclosure is achieved.

²This use of 'non-observable' is not intended to exclude the fact that it is presumably through empirical observation that we are often provided with "clues" as to what the real definition of a given sort of thing is, and also that observed connections are useful in "confirming" the real definitions that one makes.

and blue; or, any word, used to signify the idea of green is used to signify an idea which is of blue and yellow; or, any word used to mean green means blue and yellow (although the user might not know this; i.e., in this sense he is not using such a word to mean blue and yellow) - and this seems to undercut an important assumption which underlies Locke's notion of a nominal essence, and, to my mind, is wrong in doing so. For sensible ideas do not seem to be confused in this sense.

Now, on this interpretation of Leibniz, it seems to be one of the natural philosopher's tasks to uncover such real definitions - definitions the truth of which presumably can only finally be known via reason or a priori (for here the question is of necessary truth) but which can at least be suggested or "confirmed" by empirical observation (in the way, e.g., that experience can be useful to the geometer).¹ Thus, in reply to Locke's complaint that we cannot perceive a necessary connection between primary qualities and secondary qualities,² Leibniz writes: "these sensitive ideas depend in detail upon the figures and movements, and express them exactly,

¹And thus the friction indicated above concerning the empirical confirmation of identicals would be eased.

²Locke himself tends to run together the point that we cannot perceive a connection between primary and secondary qualities and the point that we cannot perceive how primary qualities, or a body with such-and-such primary qualities, can produce sensible ideas of secondary qualities in the mind (see E IV iii 12-13, pp 201-02; E IV iii 28, pp 220-21).

although we cannot distinguish therein this detail in the confusion of too great a multitude and minuteness of mechanical actions which strike our senses. But if we had reached the internal constitution of some bodies, we should see also how they must have these qualities, which would themselves be reduced to their intelligible reasons; although it would never be in our power to recognize them sensibly in these sensitive ideas which are a confused resultant of the actions of bodies upon us, as, now that we have the perfect [?] analysis of green into blue and yellow, and have scarcely anything more to ask in regard to it save as related to these ingredients, we are, however, incapable of analyzing the ideas of blue and yellow in our sensitive idea of green, for the very reason that it is a confused idea. It is much the same as we cannot analyze the idea of the teeth of the wheel, i.e. of the cause, in the perception of an artificial transparency, which I have noticed among the clock-makers, made by the rapid rotation of a cog-wheel, which makes the teeth disappear, and an imaginary continuous transparency appear in their place, composed of the successive appearances of the teeth and their intervals, but in which the succession is so rapid that our phantasy cannot distinguish it. We find then, indeed, these teeth in the distinct notion of this transparency, but not in this confused sensitive perception, whose nature is to be and to remain confused; otherwise if the confusion ceased (as if the motion

were so slow that we could observe its parts and their succession) this notion, i.e. this phantasm of a transparency would no longer exist." (NE IV vi 7, pp 458-59, G 383-84).¹

Now, one of the central points in this passage is that we can explain the transparency which we sense in terms of the rapid rotation of the teeth of the watch's cog-wheel and, presumably, can therefore give a real definition of this sort of transparency in such terms, and that to ask for greater knowledge than this - notably, to ask that our confused sensible idea of the transparency be the relatively distinct idea of rapidly rotating teeth on a cog-wheel - is to ask for what is logically impossible. Thus, he ends the passage with the point that to make such a request and bemoan the fact that it cannot be satisfied is to create mythical difficulties: "these successive things [i.e., movements of the teeth on a cog-wheel] are confounded in an apparent simultaneity: it is thus easy to think that it will be the same as regards other sensitive phantasms, of which we have not as yet so perfect an analysis,

¹See also NE IV iii 8-16, p.432, G 363-64, re the use of this method of "analysis" in physics and the possibility of employing it in medicine: "The ideas of sensible qualities are confused, and the powers which should produce them furnish in consequence only ideas into which some confusion enters: thus the connections of these ideas can be known otherwise than by experience only as they are reduced to the distinct ideas which accompany them, as has been done (for example) in regard to the colors of the rainbow and of prisms. And this method presents a beginning in analysis which is of great use in physics; and by following it I doubt not that medicine in time will find itself considerably more advanced".

as of colors, tastes, etc. For, to speak the truth, they deserve this name phantasms rather than that of qualities or even of ideas. And it would suffice us in all respects to understand them as well as this artificial transparency, without its being reasonable or possible to claim a further knowledge of them; for to desire these confused phantasms to abide, and yet to distinguish therein their ingredients by the phantasy itself, is a contradiction, is a desire to have the pleasure of being deceived by an agreeable perspective, and to desire that at the same time the eye see the deception, which would destroy it But it often happens that men seek nodum in scirpo and make difficulties where there are none, by demanding the impossible, and afterwards complaining of their impotence and of the limits of their light." (NE IV vi 7, pp 459-60, G 384-85). Now, for me, this passage both throws a great deal of light on Leibniz's philosophical viewpoint and is characterised by a high degree of imaginative appeal. But the cold fact remains that the complaint which Locke's position expresses is not that our sensible ideas¹ cannot be non-sensible ideas but that, even granting that the sensible idea of green could be a confused idea of blue and yellow, or that

¹Or "sensitive phantasms". The fact that Leibniz withdraws the term 'idea' is itself significant. For to say (e.g.) that the sensitive phantasm of green is a confused idea of blue and yellow seems less paradoxical than to say that the sensible idea of green is a confused idea of blue and yellow.

this in fact is the case, we in fact cannot perceive that green is (really) blue and yellow - or that the indicated transparency is (really) the rapid rotation of the teeth on a cog-wheel - via examining the relevant abstract ideas. In short, we cannot, in the relevant sense, "find these teeth in the distinct notion of this transparency". And Leibniz's argument does nothing to ease the force of such a point. Consequently, the possibilities of human knowledge in this respect remain just as slim as before.

I have already mentioned, however, that the interpretation of Leibniz given here is only a tentative one. One reason for this is that, on a number of occasions, he clearly makes the point that nominal definitions are often provisional and thereby suggests that they are contingent statements: "Gold may be defined nominally in several ways; you may say that it is the heaviest of our bodies, that it is the most malleable, that it is a fusible body which resists the cupel and aqua fortis, etc. Each of these marks is good and is sufficient for the recognition of gold, at least provisionally and in the present state of our bodies, until a heavier body is found Thus you may say that in matters which we know only empirically, all our definitions are merely provisional" (NE III iv 16, p.324, G 278-79). But if nominal definitions are contingent statements, then they cannot be statements of the nominal essence of the thing defined. Rather,

they then seem to be statements which provide contingent observable criteria for our recognising or identifying instances of the thing "defined", and then (a) the use of 'definition' in 'nominal definition' becomes somewhat misleading, and (b) the notion of a nominal definition becomes less effective as a reconstruction of Locke's notion of a nominal essence.

Indeed, in discussing nominal definitions in this sense, Leibniz even suggests the possibility of our using words - e.g., 'gold' - to mean merely something with an unknown real internal constitution, that we can know things like 'The body with the greatest weight has the greatest ductility', and that we can know - empirically and provisionally - (e.g.) that gold is the body with the greatest weight and thereby know that gold has the greatest ductility (see NE IV vi 4, pp 454-57, G 380-83; NE III vi 14-17, pp 339-40, G 290-92). And this seems to be doing the very thing that Locke is in part working so hard against, viz., roughly, to allow the possibility of someone using a word to mean simply an unknown something or other, and in doing so, to know something about what that word refers to. For, in this case, how can anyone know, even provisionally, that gold is the body with the greatest weight; and how could anyone discover that some body other than gold has the same weight as gold and thereby find out that the provisional nominal definition is inadequate? (see E IV vi 4-6, pp 252-55; also E III x 17-18, pp 135-38 and Leibniz's

comments). But perhaps I am being unfair to Leibniz through failing to understand him on this point. At any rate, however this particular problem might sort itself out, I think the account of real definitions given above in relation to his notion of confused sensible ideas, and of the way he conceives the "analytic" task of the natural philosopher in this respect, is basically a sound one, and that is sufficient for this particular discussion.

B. Metaphysics

Neither Locke nor Leibniz devotes the detailed attention to the possibilities of knowledge in metaphysics which this and related questions have subsequently received. Consequently, the following discussion is not intended to be comprehensive in this respect. For I am working primarily on what they have to say on or near the subject and not, for example, conducting a careful examination of Leibniz's various metaphysical manoeuvres in order to find out what a typical metaphysician of a given sort is doing, or trying to do.

Both men criticise the often misguided practice of metaphysics, where such a practice at best simply generates a host of trifling propositions (see E IV viii 9, pp 299-300¹ and

¹See also E III x pp 122-47, "Of the Abuse of Words" - a chapter in large part devoted to linguistic abuses found in philosophical literature.

Leibniz's comments, pp 493-94, G 411-12). But they differ widely on the possibilities of real knowledge in this area, Locke holding to the view that we can perceive very few of the relevant necessary connections, and Leibniz to the position that: "As for real metaphysics, we are beginning, as it were, to establish it, and we find important truths grounded in reason and confirmed by experience, which belong to substances in general." (NE IV viii 9, p.495, G 412).

Leibniz does not elaborate to any extent on just how experience can be used to confirm metaphysical propositions. For him, possibly one way is through the findings of natural science, which depends on metaphysics for its general principles.¹ For, insofar as the scientific hypotheses (in part) derived from metaphysical principles are confirmed by experience, so the metaphysical principles themselves are confirmed: "Such a metaphysic was the demand of Aristotle, it is the science . . . which must be as regards the other theoretic sciences what the science of happiness is to the arts which it needs, and what the architect is to the workmen. This is why Aristotle said that the other sciences depend upon metaphysics as the most general science and must derive from it their principles, demonstrated by it." (NE IV viii 9, p.495,

¹This could provide another reason for ascribing to Leibniz the view that the knowledge of necessary truth is more prominent in natural philosophy than Locke allows.

G 412-13). Examples of such principles would be 'Nature proceeds by the shortest paths, or at least by the most definite' (see NE IV vii 15, p.484, G 404) or, perhaps, 'Atoms and the void are impossible' (see NE IV iii 18, p.433, G 364), or even 'Other things being equal, the simplest hypothesis lies closest to the truth'. One should not, however, over-emphasise the role experience can have in confirming principles from Leibniz's viewpoint; thus, he writes concerning Boyle: "who, to speak the truth, stops a little too much to draw from a great number of fine experiments no other conclusion than this which he might take as a principle, viz.: that everything in nature takes place mechanically, a principle which can be rendered certain by reason alone, and never by experiments, whatever their number." (NE IV xii 13, pp 526-27, G 437). And this suggests the general point that, if metaphysics is to be relatively independent of natural science - i.e., if natural science is to depend (to some extent) on metaphysics and not vice versa - then, in determining the truth of his propositions, the metaphysician must rely primarily on means other than confirmation provided by the natural scientist. And, for Leibniz, the a priori examination of one's own ideas appears to provide such means. To this extent, then, experience plays only a strictly secondary role in metaphysics.

There is apparently another way in which experience can be useful to the metaphysician, viz., in providing models for

describing the general structure of the universe: "And in matters more general you will find that my views concerning the Monads diffused everywhere, their unending duration, the conservation of the animal with the soul, the perceptions undistinguished in a certain condition, such as the death of simple animals, the bodies which it is rational to attribute to genii, the harmony of souls and bodies, which causes each to follow perfectly its own laws without being disturbed by the other and without the necessity of distinguishing therein the voluntary or the involuntary: you will find, I say, that all these views are entirely conformed to the analogy of the things which we observe and which I merely extend beyond our observations, without limiting them to certain portions of matter or to certain kinds of actions, and that the only difference therein is from the great to the small, from the sensible to the insensible." (NE IV xvi 12, p.553, G 455-56).

Now, even if the point is simply that he is using empirical models in constructing his system, it is open to some criticism on the grounds that, as far as our ordinary observations are concerned, we do not observe souls and bodies acting in harmony and independently according to their respective laws, but, rather, observe ourselves moving our own bodies and other objects, and feel the effects of other bodies on ourselves or of disorders in our own bodies on us, etc. Thus, the models he employs in this part of his system are in this sense not

empirical. Nevertheless, the notion of a world of monads acting in accordance with a pre-established harmony is empirical to the extent that it draws on certain features of what we experience, shapes them, and then extends them to the far reaches of the universe. The other important point here, however, is that constructing a system which in some respects is analogous to the world we experience is different from introducing such analogies in support of such a system, and if Leibniz is suggesting anything like the latter point, his statement is even less convincing. For instance, it is no argument on behalf of immortality simply to point out that the soul which endures after "death" is similar in such-and-such respects with the "living" soul we experience. Consequently, in this capacity, experience does not provide confirmation.

Finally, another way in which experience might be of use to the metaphysician, as far as Leibniz is concerned, is suggested by his notion of the a posteriori knowledge of the "reality" (possibility) of something. For, such a notion might be developed in the following way: in certain cases, we are unable to see the possibility of something a priori - i.e., simply by examining the relevant abstract ideas - but need to be shown, or reminded, that such a thing does exist, and thereby see its possibility. An example of this procedure - basically, that of giving a certain kind of counter-example to a purportedly necessary truth - might be provided by Leibniz's intro-

duction of our knowledge that there was a Julius Caesar as a counter-example to Locke's claim that we cannot know the existence of any external object not present to the senses. Or, consider the following remarks as an attempt to show the possibility of unnoticed sensible ideas in part by drawing on experience: "Thus it is that habit makes us take no notice of the motion of a mill or a waterfall when we have lived quite near it for some time. It is not that the motion does not always strike our organs, and that something no longer enters into the soul corresponding thereto, in virtue of the harmony of the soul and the body, but these impressions which are in the soul and the body, being destitute of the attractions of novelty, are not strong enough to attract our attention and our memory, attached to objects more engrossing." (NE Pref., p.47, G 47; as seen above, Leibniz takes his notion of petites perceptions much further than this). In showing the possibility of something by an empirical appeal, however, one is not giving simply an empirical argument. For one thing, the step from 'There is an x' to 'An x is possible' is not itself an empirical step. Moreover, in drawing on experience, in order to make the argument as strong as possible, one generally provides reasons for accepting the purported case of an x as an x; and once such reasons are effectively introduced, the particular example and therefore the empirical appeal become unnecessary. Thus, e.g., in claiming knowledge of the existence

of Julius Caesar, one might point out that the fact that there was a Julius Caesar is not in dispute, that there are good reasons for holding that he existed, and therefore, that if one firmly believes on the basis of such reasons that he existed, then one knows that he existed; in this case, one is moving away from the particular case of knowing Caesar's existence to the general position that anyone who firmly holds with good reason that p , where p in fact is the case, knows that p .

This suggests another way in which experience might be useful to the metaphysician, as far as Leibniz is concerned. For, as a metaphysician, he is not simply concerned with tabling a set of universal and necessary propositions, but is also concerned with providing a general picture of the way things actually are, i.e., a description of the actual world, created by God from a set of alternative possible worlds. And to this end an appeal to what we empirically observe might have some confirmatory function - where in this case the 'we' is not restricted to the natural scientist in a laboratory or on a field study. For instance, his introduction of petites perceptions to a certain extent involves this type of appeal, not simply to help demonstrate the possibility of this sort of perception but also to secure its existence. And, to the extent that Locke's claim re the origin of ideas can be called metaphysical - or his claim that the mind does not always think, or that our ideas are not innate, or even that it is

(factually) impossible for us to acquire much knowledge in natural science - then they can be said to be metaphysical claims which in part draw upon experience in this way; for they seem to be claims with existential presuppositions, i.e., claims which are in this sense concerned with the way things in fact are. In Leibniz's case, however, it is again true to say, I think, that the empirical dimension in his arguments - even those directed in part to describing what actually exists - is strictly secondary to what for him are a priori considerations. Thus, for example, even in his argument for petites perceptions, he takes the notion to such an extreme that the empirical appeal above no longer works for him, and, indeed, begins to work against him. For instance, according to his view, we have such perceptions even while sound asleep - i.e., sound sleep is like inattentive perception writ large: "for we always have objects which strike our eyes and ears, and, as a result, the soul is touched also, without our taking notice of it, because our attention is bent upon other objects, until this object becomes strong enough to draw it to itself, by redoubling its action or by some other means; it is like a particular sleep with reference to that object, and this sleep becomes general when our attention ceases to regard all objects together." (NE II i 14, p.115, G 105). Of course, conceptual considerations enter into an effective reply to such a point; but an important part of such a reply - if it is to satisfy

the requirements of the metaphysician in this sense - is to introduce empirical facts which count against claiming that we perceive in any way while we are what is usually called sound asleep. And, in order to counter such a reply, Leibniz appeals to general considerations - considerations which, although perhaps (for him) confirmed to some extent by other phases of experience, are for him largely a priori. Thus, in the case of defending minute perceptions, a reference to the pre-established harmony between souls and bodies often crops up, as well as the point that the fully developed doctrine of minute perceptions coheres nicely with general principles such as 'Nature makes no leaps' or 'There are no indiscernibles' (see NE Pref., pp 48-53, G 48-52). To this extent, then, the differences between Locke and Leibniz on the possibilities of knowledge in metaphysics seems more than verbal. One important question, however, is whether the general considerations which for Leibniz concern the metaphysician and are a priori are intended to be (all) considerations of necessary truth, i.e., considerations of agreement between abstract ideas. With this question partly in mind, I shall consider briefly the major test case introduced by Locke in this connection and taken up by Leibniz - viz., the question of whether or not a material substance can think.

Basically, Locke's line of reasoning on this point is: As far as we can tell, it is possible for a material substance

to have mental powers - e.g., the power of perception or the power of thought. Thus, as far as we can know, it is as possible to have a substance which has both mental and material properties as it is to have a solely material substance to which an immaterial mental substance is somehow "joined or fixed". If we allow the possibility of motion producing mental effects - e.g., the sensation of pleasure or pain - then we should not refuse to allow the possibility of a material substance which has mental properties; for the latter is no more incomprehensible to us than the former. Indeed, the very notion of an unextended substance has its difficulties. Consequently, given such limitations, we cannot know which alternative is true, although we can have assurance in terms of probability and faith that the human soul is both immaterial and immortal, and this adequately meets the demands of morality and religion. Thus, I know by experience that there is something that thinks, but whether it is material as well I cannot tell. And all that examining my abstract ideas on this question provides me with is the conclusion that either answer is possible (see E IV iii 6, pp 196-97).

Leibniz does not take up at any length¹ the suggestion that we can see the improbability of a thinking material substance - a suggestion which Locke bases on arguments he himself

¹See NE, Pref., p.63, G 61, and below, pp 243-44.

gives to show that God cannot be a system of matter which thinks (see E IV x 16-17, pp 318-19), but one which he does not elaborate.

Another preliminary comment: Leibniz does not point out that, if it were possible for a material substance to think, and if we could reach a stage where we could perceive this clearly, then, in such a case we would possess an important bit of metaphysical truth - particularly if it were reached after a series of carefully considered arguments. In reply to such a suggestion, however, Locke would probably say that we are concerned with the possibilities of real knowledge in metaphysics - the implication being that the perception of such possibilities falls into the same class as the perception of identity/diversity as far as its instructive character is concerned. Thus, we are concerned not simply with perceiving whether or not such-and-such a set of properties (in this case 'being extended and solid' and 'thinking') are compatible in the same subject, but with perceiving that a subject's having one property necessarily involves or necessarily excludes its having another property - where the involvement and exclusion are not simply the type illustrated respectively by a substance's being material involving its being extended, and by a substance's being immaterial excluding its being extended. Examples of the type of connection we are concerned with, as far as Locke is concerned, would be 'Whatever has a beginning

has a cause', 'Cogitative substances cannot be created by incogitative substances', and 'A cause contains at least as much perfection as its effect' (see his argument for God's existence, E IV x 1-11, pp 306-16). Nevertheless, such a reply supposes that identical and semi-identical propositions, as well as propositions concerning mere possibilities, are necessarily trifling, and this is the point which Leibniz's position on the knowledge of necessary truth - as distinct from what he necessarily expressly says - seems to be unwilling to admit. For, taking 'analysis' in a broad sense, it seems to be part of the task of analysis to weed out such possibilities and the fact that they can be "weeded out" implies that they need not be so trifling as Locke might suggest. Further, the metaphysician's programme, at least as conceived by Leibniz, often requires establishing analytic truths in this sense. For, if I understand his viewpoint anywhere near correctly, the metaphysician is not simply concerned with the fact that there are so-and-so's, but also to some extent with what such so-and-so's are; and the investigation of possibilities is integral to such a project, where the force of 'investigation' in this context must be respected.

Leibniz devotes the greater and more interesting amount of his attention to 'Can material substances think?' in the Preface to the New Essays (pp 56-63, G 54-61), where he

considers Locke's restatement of his position in his correspondence with Stillingfleet. Locke's position remains substantially the one I have outlined above, and Leibniz attacks it in basically the following way:

(a) Although the comprehensive powers of creatures are not the measure of God's power, the natural order¹ (as opposed to the miraculous) is fully comprehensible to man. Consequently, to claim that thinking matter is incomprehensible but nevertheless possible is to tread dangerous ground.

(b) A material substance which thinks, just like incogitative matter creating cogitative beings, is incomprehensible and therefore no part of the natural order. Similarly, the inter-action of immaterial and material substances is equally incomprehensible (and this leaves the door open for his system of pre-established harmony).

(c) Leibniz is thus in a position to support Stillingfleet's view that man's immortality is in accordance with the natural order. Religion and morality, therefore, do not depend solely upon articles of faith in this respect; indeed, the soul's mortality, not its immortality, would then be the miracle: "thus the immortality of our souls follows from what is natural, since their extinction can be maintained only by a miracle, whether by exalting matter or by annihilating the

¹See also NE IV ix 1, p.498, G 414-15.

soul." (NE Pref., p.62, G 60).

Now, what is of particular importance here is that, in admitting that God could - albeit by a miracle - confer mental powers on a material substance, Leibniz is admitting the logical possibility of a thinking material substance. He is therefore admitting that matter in this sense can think. Consequently, strictly speaking he is giving Locke¹ his central point that we do not know that mental substances are necessarily immaterial or that material substances are necessarily not mental. Granted, Locke often refers to substances which have both mental and material properties as being incomprehensible, unintelligible, or inexplicable, or inconceivable, but by this he does not mean to imply that the notion of thinking material substances is self-contradictory. Rather, for him, it is inconceivable² in the sense that how a material body can produce an idea in an immaterial mind is beyond his comprehension, or how, in the case of gravitation, one body can act upon another body from a distance is inconceivable to him. He cannot see how such things can occur, but he does see that they

¹Note that, at one point, Locke himself writes: "matter (which is evidently in its own nature void of sense and thought)" (E IV iij 6, p.193).

²The fact that expressions such as 'a mere material being which thinks' or 'a system of matter which thinks' are often used, rather than the more neutral 'a substance which has both material and mental properties', tends to promote the disturbance on the conceptual side.

can occur; or at least does not see that they cannot occur.

Consequently, if the knowledge that material substances cannot think is an example of the type of knowledge Leibniz is introducing against Locke's point that we have very little general knowledge of substances, then he is not introducing the knowledge of logically necessary truth and therefore not entirely meeting Locke's point. Nevertheless, the way is then open for Leibniz to claim that, although the knowledge that material substances cannot think is not of necessary truth, nevertheless it is a form of a priori knowledge in the sense that it does not draw (entirely) upon experience for its support; for it involves knowing what must be the case save for the intervention of God, and this is not (solely) an empirical matter. Now, such a claim would certainly shake up a basic assumption underlying Locke's account of knowledge and judgment - namely, that the way to truth as far as we are concerned is, roughly speaking, either through perceiving necessary truth or through experience or through faith grounded on reasons. For Leibniz's suggested form of knowledge in this case is not covered by such a set of alternatives.

In this connection, one might also introduce our general knowledge of what exists as envisaged by Leibniz; since he holds that any existential proposition save 'God exists' is contingent and yet suggests that we can acquire knowledge of what exists other than God by non-empirical means, i.e., by

discerning a priori the general principles which guide God's creative activity. Thus, we know in this way that God creates in accordance with the following design: "you cannot think nature too liberal; she is so beyond all that we can invent, and all advantageous compatible possibilities are found realized upon the grand theatre of her representations. There were formerly two axioms among philosophers: that of the Realists seemed to make nature prodigal, and that of the Nominalists seemed to declare her stingy. The one says that nature suffers no vacuum, and the other that she does nothing in vain. These two axioms are good provided you understand them; for nature is like a good economist, who saves where it is necessary in order to be grand at times and places. She is grand in effects, and sparing in the causes she employs." (NE III vi 32, p.356, G 303). If this is an epistemological view he would be prepared to accept, however, he does not develop the suggestion, and gives one virtually nothing to go on for the purposes of developing it effectively on his behalf. For example, concerning Locke's suggestion that it is highly probable that the soul is immaterial, he writes: "he attributes to the immateriality of the soul a probability in the highest degree, which could consequently pass for a moral certainty, so that I think that . . . he could easily accommodate himself to the doctrine which I have just set forth, and which is fundamental in every rational philosophy." (NE Pref., p.63, G 61). Does he mean to

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imply by this that the way we acquire certainty about the soul's immateriality is completely the same as the way we come to see the probability or improbability of a given proposition? For, according to Locke, the only way we can do the latter is through experience. And, if this is the case, just what are the empirical grounds which support the conclusion that the soul is immaterial? Or is Leibniz suggesting that Locke's position approximates his because he (Leibniz) holds that, in addition to being able to discern the improbability of a material soul, we are able to see a priori the "incomprehensibility" of a material soul - a point which Locke also admits - and are thereby able to see by non-empirical means that a material soul is "unnatural" and therefore that, since God has no reason to alter the natural order in this respect, there can be no material souls? Leibniz does not readily provide answers to such questions; nor does he discuss at length the key notions of incomprehensibility or being unnatural - notions which are put under considerable pressure in such a context. And, given the position on knowledge he is discussing, this is a disturbing omission.

Nevertheless, I think it is true to say that all "empirical" ideas can be traced to reflection. Leibniz - e.g., the idea of God, the idea of eternity, and especially even ideas of the so-called common sensibles - at least to this extent he stands opposed to empiricism. This particular division of Locke as empiricist and

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Instead of giving a straightforward summary, I propose to see how the terms 'empiricist' and 'rationalist' might be applied to Locke and Leibniz in view of central points made in the preceding discussion. Generally, Locke is viewed as the empiricist and Leibniz the rationalist, although in many cases the classification is heavily qualified.

The most notable way in which Locke fits the title of 'empiricist' and Leibniz 'rationalist' is in relation to their views on the origin of ideas. Locke holds that all our ideas originate in experience, whereas Leibniz - even given (a) a special sense of 'provided by experience', and (b) that the point is restricted to consciously perceived ideas - denies that all our ideas are originally provided by experience. Some doubt might be expressed in Leibniz's case, however, in view of the fact that he traces many so-called unempirical ideas to reflection and, in doing so, in effect seems to ground them in experience in the sense in which Locke grounds all ideas in experience. Nevertheless, I think it is true to say that not all "unempirical" ideas can be traced to reflection for Leibniz - e.g., the idea of God, the idea of eternity, and apparently even ideas of the so-called common sensibles - and at least to this extent he stands opposed to empiricism.

This particular division of Locke as empiricist and

Leibniz as rationalist is reinforced by their views on the innateness of ideas (either consciously or unconsciously perceived); for Locke rejects, and Leibniz supports, innateness. Indeed, Leibniz takes his position still another step further than Locke and in some sense "grounds" our distinct ideas, along with necessary truths, in the eternal mind of God: "This leads us finally to the ultimate ground of truths, viz.: to that Supreme and Universal Mind, which cannot fail to exist, whose understanding . . . is the region of eternal truths, as St. Augustine has recognized and expresses in a sufficiently vivid way Thus these necessary truths being anterior to the existence of contingent beings, must be grounded in the existence of a necessary substance. Here it is that I find the original of the ideas and truths which are graven in our souls, not in the form of propositions, but as the sources out of which application and occasion will cause actual judgments to arise." (NE IV xi 13-14, pp 516-17, G 429). Whatever else such a view might amount to, it places Leibniz solidly in the rationalist's camp on the origin and innateness of ideas.

Some care must be exercised, however, in determining just what part of the empiricist's camp Locke occupies in this respect. For he does not hold that it is logically impossible to have ideas which do not originate in experience. Nor does he restrict his claim to abstract ideas or the meaning of words, to the exclusion of, say, images. Moreover, he is not

satisfied with the claim that all our ideas are such that it is possible for us to experience what they or their components are of; his view demands the temporal, as well as the logical, priority of experience. Finally, of course, experience for him is not confined to sense-experience but includes reflection as well. Consequently, in any specific sense of 'empiricism' in which the preceding views run contrary to empiricism, Locke is not an empiricist.

The situation is far less straightforward once one moves away from the origin and innateness of ideas to certain points concerning knowledge.

According to Locke, the knowledge of general truth must be of necessary truth, and - aside from sensitive knowledge - the knowledge of particular truth is necessarily restricted to objects of immediate experience.¹ Granted, he is to some extent simply using 'knowledge' in a special restricted sense in adopting such a position. Nevertheless, (a) he does not clearly distinguish knowledge in this sense from knowledge in the relevant ordinary sense, and (b) attaches far greater value to what he accepts as knowledge than to what he excludes, as far as the ground, or reason, or evidence, for one's belief is concerned. Consequently, in this particular respect, Locke's

¹Or, to a truth demonstrable from premises falling into the indicated categories - e.g., 'God exists'.

position can be said to show a rationalist bias - a bias which Leibniz does not share, or at least does not share completely.

Thus, Locke certainly does not adopt the view that all knowledge is empirical. On the contrary, he suggests that no knowledge of general truth is empirical, and that the knowledge of particular truth - which is empirical - is for the most part confined to the knowledge of intuitive truths about oneself and one's own ideas and to sensitive knowledge concerning objects actually present to the senses. In this sense, then, Locke is definitely not an empiricist.

Although Leibniz holds a more liberal view of knowledge and is prepared to allow the knowledge of general truths on the basis of empirical evidence, or knowledge concerning particulars other than oneself which are not, or have not been, actually present to the senses, he does not claim that all knowledge is empirical. Indeed, not only does he allow for the knowledge of necessary truth, but he feels that the practical possibilities of our acquiring such knowledge are generally more widespread than Locke is prepared to admit. Nevertheless, insofar as he is entirely willing to accept the possibility of empirical knowledge of general truths or of particular truths concerning objects neither immediately nor actually present, Leibniz shows a sympathy towards empiricism in this respect which Locke lacks.

Both men hold that many propositions in, e.g., physics are in reality necessary propositions, although the limited human mind can only assess their truth-value in terms of probability or improbability, i.e., cannot discern their necessary truth or falsehood. But Leibniz takes his position one stage further and suggests that we can have the knowledge of the necessary truth or falsehood of such propositions, and introduces his special theory of confused sensible ideas to support such a view, especially in a discipline like physics. In this respect, then, Leibniz is clearly operating from the rationalist's camp, not only in the sense that he opts for the knowledge of "truths of reason" in natural philosophy, but also in the sense that he views (at least certain kinds of) sensible ideas as being highly confused instances of what he considers to be non-sensible or intelligible ideas - a view which radically opposes an empiricist's picture of experience.

Similarly, in the case of metaphysics, Leibniz defends the possibility of our knowing truths of reason - a possibility which Locke, save for the principles involved in his argument for God's existence and against God's being material, generally rejects. In this case, however, Leibniz does not seem to be defending the knowledge only of necessary truths, but also of truths which can be known a priori and yet are not necessarily true - truths which appear to be intimately connected with God's purposes in creating the universe. His position on the

place of reason (in this strict sense) in metaphysics, or in natural philosophy, is not such that it excludes the relevance of empirical evidence; still, (a) in the case of metaphysics at least, the value of an empirical appeal seems to be strictly secondary to that of the findings of reason, and (b) the empirical appeal is certainly not the only relevant one. To this extent, then, Leibniz can be viewed as a rationalist resisting the limitations imposed by Locke's empiricism¹ as far as areas such as physics and metaphysics are concerned.

Confining our attention to the knowledge of necessary truth, in one sense of '(logical) empiricist vs. rationalist', Locke tends towards rationalism and Leibniz towards (logical) empiricism, since Leibniz holds, and Locke denies, that all necessary truths are identical in form. This distinction itself is a variable one, depending upon the force of 'identical in form', or even upon whether or not the empiricist demands that all necessary truths are identical in form or simply that they are all formally true, where 'formally true' is looser

¹Although Locke is no empiricist in this respect in any sense which is incompatible with his appealing to, e.g., 'Whatever has a beginning has a cause' as a necessary truth in arguing for God's existence, or to 'Mere matter cannot create a thinking being' in arguing that matter cannot be the eternal source of all being. Furthermore, he is no empiricist in any sense incompatible with advocating the knowledge of necessary non-trifling truths in ethics - a view he shares with Leibniz.

than 'identical in form'. Nevertheless, it is clear that Leibniz seeks to restrict necessary truth to identical truths in some sense of 'identical truths' in which Locke feels that not all necessary truths are identical. Their divergence comes out most clearly in connection with affirmative subject-predicate propositions; for in this case, Locke holds that there are propositions which are necessarily true and yet are not such that (the ideas of) their predicates are contained in (the ideas of) their subjects, and mentions geometrical propositions as examples. Leibniz, on the other hand, thinks that such propositions (including geometrical propositions), if they are necessarily true, do really have a form such that their predicates are contained in their subjects, and that it is at least in principle possible for us to analyse the ideas involved in making such propositions and thereby reveal their identical form (indeed, for Leibniz this seems to be demonstration par excellence - a reduction to primitive truths). Consequently, he does not carry his position to the point where the knowledge of an identical truth is necessarily of a trifling truth - i.e., to the point where the discovery of necessary truth is impossible.

In this connection, however, Locke tends to take a step back into the empiricist's camp in another sense, since, at least in the case of those propositions which do have an identical form, he suggests that necessary propositions depend

for their truth-value on what the linguistic units used to express them mean - a suggestion which Leibniz strongly opposes. In this sense, the empiricist attempts to ground necessary truth in the contingent and empirically discernible uses of words in his efforts to get away from purported mysteries surrounding the notion of a non-empirical perception of truth. Thus, the perception of a necessary agreement between abstract ideas becomes the perception of what one means by the words one is using, and, depending upon whether the meaning of the given words sanctions it, the ideas agree or disagree and the proposition is true or false. Consequently, the line between the so-called non-empirical perception of necessary truth and the empirical perception of contingent truth in effect becomes a line between the perception of the correct or incorrect uses of words and the perception of truth on the basis of empirical evidence which does not (or at least need not) consist in contingent facts about language - i.e., a line between two significantly different kinds of empirical knowledge. On occasion, Locke suggests such a view in the case of necessary truths identical in form - indeed, he even suggests that such necessary propositions are themselves concealed propositions about how words are used - and says little to intercept extending the point to necessary truths which are not identicals. On other occasions, however, he seems to be opposed to such a view, applied to any sort of necessary

agreement between abstract ideas. Leibniz, of course, is clearly against this form of empiricism - i.e., is against nominalism in the corresponding sense. In this respect, then, one might describe Leibniz as standing squarely in the rationalist's camp, and Locke as drifting towards the empiricist's position, but with one foot lingering behind with the rationalists.¹

Now, one might loosen the sense of 'reason' relative to this context and view reason as follows: "The greatest part of our knowledge depends upon deductions and intermediate ideas: and in those cases where we are fain to substitute assent instead of knowledge, and take propositions for true, without being certain they are so, we have need to find out, examine, and compare the grounds of their probability. In both these cases, the faculty which finds out the means, and rightly applies them, to discover certainty in the one, and

¹Such a picture might also gain some support from the fact that Locke's is a relatively new and growing interest in language - an interest which does not seem to be exhausted totally by a desire (a) to remove linguistic abuses - e.g., uttering meaningless words; using words ambiguously or in a confused manner - or (b) to remove certain mistaken views about the use of words - e.g., that to every word there must correspond some thing, or that words signify real things rather than ideas (see E II xxxiii 19, p.535; E III v 16, pp 53-55; E III ix 21, pp 118-19; E IV vi 1, p.251). Even here, however, he seems to be investigating language partly in order to separate words from ideas. The question is, how sharp a separation does he want?

probability in the other, is that which we call reason." (E IV xvii 2, p.387; see also E IV xvii 23, pp 412-13). Moreover, if one loosens the demands made on 'knowledge' in a corresponding way to bring it more in line with ordinary usage, then in this sense of 'knowledge' and in this sense of 'reason', Locke continues to be a firm advocate of reason as far as knowledge is concerned. Waiving the point that he does not see clearly, if at all, that in the relevant ordinary sense of 'knowledge', much of what he describes as 'judgment of probability' counts as knowledge, one can say that, for Locke, knowledge of truths which are not self-evident can only be acquired via reason,¹ where presumably the only self-evident truths are necessary truths or (some) truths about oneself and one's own ideas. In a corresponding sense of 'rationalist', then, Locke is definitely a rationalist: "where the mind does not [at least] perceive this probable connexion, where it does not discern whether there be any such connexion or no; there men's opinions are not the product of judgment, or the consequence of reason, but the effects of chance and hazard, of a mind floating at all adventures, without choice and without direction." (E IV xvii 2, p.388). Thus, he brings faith and revelation in line with this view by (a) establishing reason as a negative check - i.e., any purported article of faith which is contrary to reason is unacceptable, and (b) demanding that the claim that

¹He himself might tend to emphasise the need for giving, rather than simply having, reasons.

the given proposition came, or comes, from God must itself be supported by reason and certainly must not be contrary to reason (see E IV xviii 4-11, pp 418-27). Further, he devotes a whole chapter to criticising religious enthusiasm, where an enthusiast is one who makes claims devoid of any reason whatsoever, where such claims are neither self-evident necessary truths nor intuitive truths about himself. As far as Locke is concerned, such a man has and offers nothing but "the strength of his own persuasions" (see E IV xix, pp 428-41). In this sense, then, Locke stands firmly behind the principle that "Reason must be our last judge and guide in everything." (E IV xix 14, p.438).

Generally speaking, Leibniz shares Locke's rationalism in this sense. He approves of Locke's attempts to ground faith in reason: "I commend you strongly, sir, when you wish faith to be grounded in reason: without this why should we prefer the Bible to the Koran or to the ancient books of the Brahmins?" (NE IV xvii 23, p.580, G 477); and he takes a dim view of enthusiasts in the sense of "those who believe without foundation that their movements come from God." (NE IV xix 1-16, p.598, G 487).

In this sense of 'rationalism', of course, rationalism is not relevant to this particular context in quite the same way as most of the preceding forms of rationalism, since there is no readily available sense of 'empiricist' in which a

rationalist in this sense and an empiricist would be necessarily opposed. Rather, the opposite of a rationalist in this case might be more aptly called "an irrationalist". Nevertheless, I have introduced the point here in order to emphasise the fact that Locke does not completely abandon general contingent propositions, or propositions about external objects not actually present to the senses, to the vagaries of unfounded opinion. As far as he is concerned, one can have very good reasons for making general contingent claims, or claims about external objects not actually present to the senses, and therefore can in this sense acquire knowledge on such matters. He is a rationalist to the extent that he demands reasons and to the extent that he believes such reasons can be provided over a wide range of human inquiry - much wider than the range given to knowledge in his strict sense. Thus, part of his general reply to the sceptic consists in the point that, although we cannot have "real" knowledge in such-and-such an area and it is foolish of us to keep trying to acquire it, we are capable of acquiring well-founded views on various matters in the given area and are equally foolish not to conduct our investigations with this aim in mind. Leibniz disagrees with this sentiment only to the extent that he generally gives more room to "real" knowledge.

Setting aside the latter, rather special sense of

'rationalist' and concentrating on the preceding senses in which rationalism is opposed to some form of empiricism, one might summarise the situation as follows:

For the most part, Leibniz remains in the rationalist's camp. Granted, he does not carry rationalism to the point where the knowledge of general truth is restricted to necessary truth; nor does he, at least in any clear way, set the knowledge of necessary truth on a level higher than other forms of knowledge in the way that Locke tends to. Moreover, in addition to admitting the possibility of forms of empirical knowledge not restricted to immediate or actual objects, he allows that an appeal to experience can play an important part in promoting knowledge in natural philosophy and even in metaphysics. Nevertheless, (a) he does not reject the knowledge of necessary truth - i.e., not all knowledge is empirical; and (b) he allows far greater room than Locke for our discovering necessary truth, or at least a priori truth, in natural philosophy and metaphysics. Granted too, he does adopt a logical empiricist's slogan that all necessary truths are identical in form; but in this case, the empirical sting is taken out of the claim because he definitely does not think that necessary truths are in any way dependent upon the uses of words, or that the knowledge of necessary truth is in any way reducible to the knowledge of linguistic facts.

In Locke's case, however, the situation is rather more

complex. He drifts towards an extreme form of rationalism in his general stand on knowledge, and is opposed to the logical empiricist's view of necessary truth. He does make some overtures to empiricism in suggesting that the knowledge of necessary truth - at least in the case of identicals - consists in knowing verbal facts. But such overtures largely remain the undeveloped consequences of his theory of essences, set within a discussion of knowledge dominated by references to intuition and the apparently unempirical perception of agreement between abstract ideas. Indeed, aside from his position on the origin and innateness of ideas, about the only clear way in which Locke helps to support empiricism (as far as the respects covered above are concerned) is (i) by allowing that experience provides us with reasons for making judgments concerning general connections or concerning particulars neither immediately nor actually present, and (ii) by rejecting the possibility of widespread knowledge of necessary (instructive) truth in natural philosophy or metaphysics. Otherwise, he generally stands amongst the rationalists, albeit with an occasional tendency to lean towards empiricism.

Abbreviations

BIBLIOGRAPHY

PRIMARY

AJP Aspirational Journal of PhilosophyLocke EthicsHJ Hobbes JournalThe Works of John Locke. 10 vols. London, 1823.IJP Indian Journal of PhilosophyFraser, A. C. (ed.) An Essay Concerning Human Understanding.
2 vols. Oxford, 1894.(For further references, see R. I. Aaron's John Locke. 2nd
edition. Oxford, 1955.)JSL Journal of Symbolic LogicLeibniz ndMo MohistGerhardt, C. I. (ed.) Die Philosophischen Schriften von
Gottfried Wilhelm Leibniz. 7 vols. Berlin, 1875-90.Langley, A. G. (trans.) New Essays concerning Human
Understanding by Gottfried Wilhelm Leibniz, together with
an Appendix consisting of some of his shorter pieces. 3rd
edition. La Salle, 1949.Ph Philosophical QuarterlyWiener, P. P. (ed.) Leibniz Selections. New York, 1951.PB Philosophical Bulletin(For further references, see E. Ravier's Bibliographie des
Oeuvres de Leibniz. Paris, 1937.)IAS International Association of Symbolic LogicRM Review of MetaphysicsT Theoria

SECONDARY

Although far from all the items included in the following list are directly relevant to the thesis topic, I have not been selective in the belief that an extensive list might be of some use on its own. It is not intended to be exhaustive, however, and is confined to works in English.

Locke
Abbreviations

- (For references to material contemporary with Locke, see J. W. ... O.U.R., 1956.)
- AJP Australasian Journal of Philosophy
- E Ethics "Locke and Berkeley's Commonplace Book", M, XI (1932), 277-78.
- HJ Hibbert Journal
- IJP Indian Journal of Philosophy PAS, XXXIII (1932-33), 173-
- JHI Journal of the History of Ideas; 2nd edition 1955.
- JP Journal of Philosophy
- JSL Journal of Symbolic Logic
- M Mind C. Ewing), XII (1937), 478-79.
- Mo Monist Weinberg), XLIX (1940), 83-85.
- P Philosophy reviewed in -
- PPR Philosophy and Phenomenological Research
- PS Philosophy of Science (1956), 182-83.
- PQ Philosophical Quarterly "Locke", 2, XII (1937), 19-32.
- PR Philosophical Review "Nationalism", Seventeenth Century Studies Presented to Sir Herbert Grierson, Oxford, 1938.
- PAS Proceedings of the Aristotelian Society The Theory of Universals, Ch. 2; Oxford, 1952.
- RM Review of Metaphysics
- T Theoria "What was Locke's doctrine of perception?", Hermathena (1883), 157-68.
- J Journal Aldrich V. C. "Locke's theory of perception", Rice Institute Studies, IX (1933), 238-59.
- Q Quarterly Locke. London, 1908.
- R Review H. The Influence of Contemporary Science on Locke's Method and Results. University of Toronto, 1923.
- "On interpreting Locke", University of Toronto Q, IV (1935), 524-33.

Locke

(For references to material contemporary with Locke, see J. W. Yolton's John Locke and the Way of Ideas. O.U.P., 1956.)

Aaron, R. I. "Locke and Berkeley's Commonplace Book", M, XL (1931), 439-59, and XLI (1932), 277-78.

- "Locke's theory of universals", PAS, XXXIII (1932-33), 173-202.

- John Locke. Oxford, 1st edition 1937; 2nd edition 1955.

First edition reviewed in -

JP, XXXIV (1937), 635-38.

P (A. C. Ewing), XII (1937), 478-79.

PR (J. R. Weinberg), XLIX (1940), 83-85.

Second edition reviewed in -

P (J. O. Urmson), XXXI (1956), 93.

PQ (W. Von Leyden), VI (1956), 182-83.

- "Great thinkers: (X) John Locke", P, XII (1937), 19-32.

- "The limits of Locke's rationalism", Seventeenth Century Studies Presented to Sir Herbert Grierson. Oxford, 1938.

- The Theory of Universals. Ch. 2. Oxford, 1952.

Abbot, T. K. "What was Locke's doctrine of perception?", Hermathena (1883), 157-68.

Aldrich, V. C. "Locke's theory of perception", Rice Institute Pamphlets, XX (1933), 238-59.

Alexander, S. Locke. London, 1908.

Anderson, F. H. The Influence of Contemporary Science on Locke's Method and Results. University of Toronto, 1923.

- "On interpreting Locke", University of Toronto Q, IV (1935), 524-33.

- Annand, M. R. "A critical examination of Locke's theory of relations", Calcutta R, XXXVII (1930), 209-29.
- Aronson, J. "Shaftesbury on Locke", American Political Science R, LIII (1959), 1101-04.
- Aspelin, G. "Locke and Sydenham", T, XV (1949), 29-37.
- Baldwin, B. T. "Locke's contributions to education", Sewanee R, XXI (1913), 177-87.
- Barnes, W.H.F. "Did Berkeley misunderstand Locke?", M, XLIX (1940), 52-57.
- Beatty, R. C. "Lowell's Commonplace Books", New England Q, XVIII (1945), 391-401.
- Beck, L. W. "Secondary quality; the problem of the relation of appearance to reality", JP, XLIII (1946), 599-610.
- Bond, D. F. "The neo-classical psychology of the imagination", ELH (1937), 245-64.
- Bonno, G. "The diffusion and influence of Locke's Essay Concerning Human Understanding in France before Voltaire's Lettres Philosophiques", American Philosophical Society Proceedings, XCI (1947), 421-25.
- Bourne, H. R. Fox. The Life of John Locke. 2 vols. London, 1876.
- Bracken, H. M. "Locke-Berkeley-Hume: the end of a triumvirate", IJP, III (1961), 1-8.
- Bradish, N. C. "John Sergeant, a forgotten critic of Descartes and Locke", Mo, XXXIX (1929), 571-90.
- Brinkley, R. F. "Coleridge on John Petvin and John Locke", Huntington Library Q, VIII (1945), 277-92.
- "Coleridge on Locke", Studies in Philology, XLVI (1949), 521-43.
- Broad, C. D. "John Locke", HJ, XXXI (1932-33), 249-67.
- Brogan, A. P. "John Locke and utilitarianism", E, LXIX (1958-59), 79-93.
- Brown, F. A. "Locke's 'Essay' and Bodmer and Breitinger", Modern Language Q, X (1949), 16-32.

- "John Locke and the religious 'Aufklärung'", R of Religion, XIII (1949), 126-54.
- "Locke's 'tabula rasa' and Gottsched", Germanic R, XXIV (1949), 3-7.
- "German interest in John Locke's Essay, 1688-1800", J of English and Germanic Philology, L (1951), 466-82.

Buchler, J. "Act and object in Locke", PR, XLVI (1937), 528-35.

Bull, George. "What did Locke borrow from Hooker?", Thought, VII (1932), 122-35.

Carlton, W. J. "John Locke and shorthand", Notes and Queries, CXCI (1948), 125-26.

Carus, P. "Leibniz and Locke", Mo, XXVII (1917), 137-42.

Cash, A. H. "The Lockean psychology of Tristram Shandy", ELH, XXII (1955), 125-35.

Cherno, M. "Locke on property: a reappraisal", E, LXVIII (1957-58), 51-55.

Christophersen, H. O. A Bibliographical Introduction to the Study of John Locke. Oslo, 1930.

Clapp, J. G. Locke's Conception of the Mind. New York, 1937.

Reviewed in -

JP, XXXIV (1937), 638-39.

Colie, R. "Lady Masham's letter to Jean Le Clerc, 12/1/1705", History of Ideas News Letter, I-II (1955-56).

Corson, J. C. "John Locke", Juridical R, XLIV (1932), 315-28.

Cowen, D. L. "Comments on Dr. Romanell's Article on Locke and Sydenham", Bulletin of the History of Medicine, XXXIII (1959), 173-80.

Cox, R. H. Locke on War and Peace. Oxford, 1960.

Reviewed in -

E (R. Hancock), LXXI (1960-61), 219-21.

- Cranston, M. "John Locke's correspondence with Esther Masham", Newberry Library Bulletin, IV (1950), 121-35.
- "The politics of John Locke", History Today, II (1952), 619-22.
 - "John Locke and John Aubrey", Notes and Queries, CXCIV (1950), 552-54, and CXCVII (1952), 383-84.
 - "John Locke: the exile", Listener, LII (1954), 759-60.
 - "Men and ideas: John Locke", Encounter, VII (Dec. 1956), 46-54.
 - John Locke, a Biography. London, 1957.
- Reviewed in -
- M (C. D. Broad), LXVII (1958), 548-54.
 - Spectator (J. Holloway), CXCIX (1957), 26.
 - Encounter (P. Laslett), IX (Sept. 1957), 84-86.
 - Thought (North), XXXII (1957), 607-08.
 - London Magazine (A. Quinton), IV (Sept. 1957), 57-60.
 - History Today (J.W.N. Watkins), VII (1957), 563.
 - Twentieth Century (J. G. Weightman), CLXII (1957), 274-75.
 - New Statesman (R. Wollheim), LIII (1957), 844.
 - PR (J. W. Yolton), LXVII (1958), 554-57.
- "Landmarks of political thought: Two Treatises of Civil Government", Listener, LXII (1959), 866-67.
 - "The politics of a philosopher: Locke's Two Treatises of Government", Listener, LXV (1961), 17-19.
- Creighton, J. E. "Eighteenth and nineteenth century modes of thought", PR, XXXV (1926), 1-21.
- Curti, M. "The great Mr. Locke: America's philosopher, 1783-1861", Huntington Library Bulletin, No. 11 (1937), 107-51.
- Curtis, M. M. An Outline of Locke's Ethical Philosophy. Leipzig, 1890.

- Czajkowski, C. J. The Theory of Private Property in John Locke's Political Philosophy. University of Notre Dame, 1941.
- Davis, J. W. "The Molyneux problem", JHI, XXI (1960), 392-408.
- Dawson, E. E. "Locke on number and infinity", PQ, IX (1959), 302-08.
- De Marchi, E. "Locke's Atlantis", Political Studies, III (1955), 164-65.
- Dempster, J. H. "John Locke - physician and philosopher", Annals of Medical History, IV (1932), 12-60, and 172-86.
- Dewey, J. "Substance, power and quality in Locke", PR, XXXV (1926), 22-38.
- Dewhurst, K. "Locke's midwifery notes", Lancet, CCLXVII (1954), 490-91.
- "Truss designed by Locke", British Medical J, (1954, Part II), 44.
- "Sydenham's letters to John Locke", Practitioner, CLXXI (1955), 314-20.
- "A symposium on trigeminal neuralgia: with contributions by Locke, Sydenham, and other eminent seventeenth century physicians", J of the History of Medicine, XII (1957), 21-36.
- "Locke and Sydenham on the teaching of anatomy", Medical History, II (1958), 1-12.
- "An essay on coughs by Locke and Sydenham", Bulletin of the History of Medicine, XXXIII (1959), 366-74.
- "Sydenham's original treatise on smallpox with a preface, and dedication to the Earl of Shaftesbury, by John Locke", Medical History, III (1959), 278-302.
- "Locke's essay on respiration", Bulletin of the History of Medicine, XXXIV (1960), 257-73.
- "The correspondence between John Locke and Sir Hans Sloane", Irish J of Medical Science, (1960), 201-12.
- "A review of John Locke's research in social and preventive medicine", Bulletin of the History of Medicine, XXXVI (1962), 317-40.

- Doney, W. "Locke's abstract ideas", PPR, XVI (1955-56), 406-09.
- Dunning, W. A. "The political philosophy of John Locke", Political Science Q, XX (1905), 223-45.
- Edgell, B. "Current constructive theories in psychology", Nature, CXXX (1932), 388-91.
- Engel, S. M. "Language and the structure of Locke's Essay", IJP, VIII (1961), 120-29.
- Evans, E.W.P. "Locke and the spirit of toleration", Baptist Q (1933), 266-70.
- Ewing, A. C. "Some points in the philosophy of Locke", P, XII (1937), 33-46.
- Figgis, J. N. The Divine Right of Kings. 2nd edition. C.U.P., 1914.
- Flew, A. "Locke and the problem of personal identity", P, XXVI (1951), 53-68.
- Foster, H. D. "International Calvinism through Locke and the Revolution of 1688", American Historical R, XXXII (1926-27), 475-99.
- Fowler, T. Locke. London, 1880.
- Fraser, A. C. Locke. Edinburgh and London, 1890.
- John Locke as a Factor in Modern Thought. British Academy lecture. London, 1905.
 - (ed.) An Essay Concerning Human Understanding. Vol. I, Prolegomena. Oxford, 1894.
- Gibson, A. G. The Physician's Art: An Attempt to Expand John Locke's Fragment, De Arte Medica. Oxford, 1933.
- Gibson, J. Critical notice of A. C. Fraser's edition of the Essay, M, III (1894), 536-43.
- "Locke's theory of mathematical knowledge and of a possible science of ethics", M, V (1896), 38-59.
 - Locke's Theory of Knowledge and its Historical Relations. Cambridge, 1917.

- Reviewed in - Treatment of Personality by Locke, Monthly Review, LXXVII (1918), 354-60.
- John Locke. British Academy lecture. London, 1933.
- Givner, D. A. "Scientific preconceptions in Locke's philosophy of language", JHI, XXIII (1962), 340-54.
- Gough, J. W. John Locke's Political Philosophy, Eight Studies. Oxford, 1950.
- Reviewed in - American Political Science R (L. Strauss), XLIV (1950), 769-70.
- J of Politics (J. H. Hallowell), XIII (1951), 108-10.
- "John Locke's herbarium", Bodleian Library Record, VII (1962), 42-46.
- Green, T. H. Works. 3 vols. ed. R. L. Nettleship. Vol. I. Part 1. London and New York, 1889-90.
- Gregory, J. C. "Locke on seventeenth-century science", Science Progress, XXI (1926-27), 492-501.
- Gregory, T. S. "John Locke: the order of nature", Listener, LIII (1954), 805-07.
- Grenville, W.W.G. Oxford and Locke. London, 1829.
- Hall, R. "John Locke's unnoticed vocabulary", Notes and Queries, CCVI (1961), 186-90, 207-10, 247-50, 330-35, and 432-33.
- Halpin, S. "The location of qualitative essence. II. Locke and Meyerson", New Scholasticism, X (1936), 226-44.
- Harvey, L. G. "Locke's secularized natural law and German imperialism", J of Social Philosophy, VII (1941), 67-73.
- Hefelbower, S. G. The Relation of John Locke to English Deism. University of Chicago, 1918.
- Hofstadter, A. Locke and Scepticism. New York, 1935.
- Horne, C. J. "Locke on 'hog-shearing' at Oxford", Notes and Queries, CXC (1946), 273-74.

- Hudson, J. W. The Treatment of Personality by Locke, Berkeley and Hume; a study, in the interests of ethical theory, of an aspect of the dialectic of English empiricism. Columbia, 1911.
- Jackson, R. "Locke's distinction between primary and secondary qualities", *M*, XXXVIII (1929), 56-76.
- "Locke's version of the doctrine of representative perception", *M*, XXXIX (1930), 1-25.
- Jackson, W. A. "J. R. Lowell and John Locke", New England Q, XIX (1946), 113-14.
- James, D. G. The Life of Reason: Hobbes, Locke, Bolingbroke. London, 1949.
- Reviewed in -
- Yale R (R. S. Crane), XXXIX (1949-50), 753-55.
- P* (D. D. Raphael), XXV (1950), 281-83.
- M* (J. J. C. Smart), LIX (1950), 121-22.
- AJP* (J. A. Passmore), XXIX (1951), 181-90.
- Johnston, H. "Locke's Leviathan", Modern Schoolman, XXVI (1949), 201-10.
- "Some remarks about Locke's teaching on property", New Scholasticism, XXIV (1950), 146-52.
- Jones, M. "Further thoughts on religion: Swift's relationship to Filmer and Locke", R of English Studies, IX (1958), 284-86.
- Kallich, M. "The association of ideas and critical theory: Hobbes, Locke, and Addison", *ELH*, XII (1945), 290-315.
- Kemp, J. Critical notice of P. Laslett's edition of Locke's Two Treatises of Government, *PQ*, XII (1962), 356-64.
- Kendall, W. John Locke and the Doctrine of Majority-Rule. (Illinois Studies in the Social Sciences, Vol. XXVI, No. 2). Urbana, University of Illinois Press, 1941.
- Reviewed in -
- JP* (A. Hofstadter), XXXIX (1942), 695-97.

- King, C. D. "The Lockean error in modern psychology", J of General Psychology, XXXVIII (1948), 129-38.
- King, P. (7th Lord King). The Life of John Locke, with Extracts from his Correspondence, Journals and Commonplace Books. London, 1829 (enlarged 1830 edition 2 vols.).
- Kirk, R. "John Locke reconsidered", Month, XIV (1955), 294-303.
- Knox, H. V. "Has Green answered Locke?", M, XXIII (1914), 335-48.
- Lamprecht, S. P. The Moral and Political Philosophy of John Locke. New York, 1918.
- "Innate ideas in the Cambridge Platonists", PR, XXXV (1926), 553-73.
 - "Locke's attack upon innate ideas", PR, XXXVI (1927), 145-65.
 - "The early draft of Locke's Essay", JP, XXIX (1932), 701-13.
 - "John Locke and his Essay", Columbia University Q, XXV (1933), 204-19.
 - "The role of Descartes in seventeenth-century England", Studies in the History of Ideas, Vol. III, 179-240. Columbia University Press, 1935.
- Larkin, P. Property in the Eighteenth Century, with special reference to England and Locke. Cork, 1930.
- Laski, H. J. Political Thought in England from Locke to Bentham. New York, 1920.
- Laslett, P. "Locke and the first Earl of Shaftesbury: another early writing on the understanding", M, LXI (1952), 89-92.
- "The 1690 edition of Locke's Two Treatises of Government: two states", Transactions of the Cambridge Bibliographical Society, I (1952), 341-47.
 - "Lord Masham's library at Oates", TLS (1952), 533.
 - with F. Bowers and J. Gerritsen. "Further observations on Locke's Two Treatises of Government, 1690", Transactions of the Cambridge Bibliographical Society, II (1954), 63-87.

- "John Locke as founder of the Board of Trade", Listener, LII (1954), 856-57.
 - "The English Revolution and Locke's Two Treatises of Government", Cambridge Historical Journal, XII (1956), 40-55.
 - "John Locke, the great recoinage and the origin of the Board of Trade, 1695-1698", William and Mary Q., XIV (1957), 370-402.
 - with J. R. Harrison. "The library of John Locke", TLS (1957), 792.
 - "John Locke's books and papers for his own university", TLS (1960), 168.
- Lavere, G. J. "Basis for the state in the political philosophy of John Locke", Culture, XVI (1955), 404-24; XVII (1956), 148-68.
- "The state of nature in the philosophy of John Locke", Culture, XVII (1956), 48-60.
- Lawrence, N. "Locke and Whitehead on individual entities", RM, IV (1950-51), 215-38.
- Lenz, J. W. "Locke's Essays on the Law of Nature", PPR, XVII (1956-57), 105-13.
- Linnell, J. "Locke's abstract ideas", PPR, XVI (1955-56), 400-05.
- Lodge, R. C. The Meaning and Function of Simple Modes in the Philosophy of John Locke. Minneapolis, 1918.
- Long, P. "A summary catalogue of the Lovelace Collection of the papers of John Locke in the Bodleian Library", Oxford Bibliographical Society, VIII (1959), 1-64.
- Lough, J. "Locke's list of books banned in France in 1679", French Studies, V (1951), 217-22.
- "Locke's reading during his stay in France (1675-79)", Library, VIII (1953), 229-58.
- Maclean, A. H. "George Lawson and John Locke", Cambridge Historical J., IX (1947), 69-77.

MacLean, K. John Locke and English Literature of the Eighteenth Century. Yale University Press and O.U.P., 1936.

Reviewed in -

Philological Q, XVI (1937), 180-81.

PR (T. M. Greene), XLVII (1938), 222-23.

Macpherson, C. B. "Locke on capitalist appropriation", Western Political Q, IV (1951), 550-66.

- "The social bearing of Locke's political theory", Western Political Q, VII (1954), 1-22.

Malhman, C. H. "The Baptists revise John Locke", J of Religion, XVIII (1938), 174-82.

Matthews, W. "Locke's shorthand diaries", TLS (1932), 691.

McColley, G. "Locke's Essay Concerning Human Understanding as a partial source of Pope's Essay on Man", Open Court, XLVI (1932), 581-84.

- "John Wilkins - a precursor of Locke", PR, XLVII (1938), 642-43.

McJarrow, J. S. "The philosophy of John Locke", London Q R, CLVIII (1933), 505-12.

McLachlan, H. The Religious Opinions of Milton, Locke and Newton. Manchester, 1941.

Reviewed in -

Church History (Battenhouse), XI, 257-58.

Theology (Bertel), XLIII, 191-92.

HJ (C. J. Cadoux), XL (1941-42), 111-12.

English (E.H.W. Meyerstein), IV (1942-43), 23-24.

McLachlan, H. J. Socinianism in Seventeenth-Century England. O.U.P., 1951.

Merton, R. K. "Science, technology and society in seventeenth century England", Osiris, IV (1938), 360-632.

- Miller, M. M. "Science and philosophy as precursors of the English influence in France: a study of the Choix des Anciens Journaux", PMLA, XLV (1930), 856-96 (espec. 886-96).
- Miller, P. "Edwards, Locke and the rhetoric of sensation", Perspectives of Criticism. ed. H. Levin. Harvard University Press, 1950.
- Monson, C. H., Jr. "Locke and his interpreters", Political Studies, VI (1958), 120-33.
- Morris, C. R. Locke, Berkeley, Hume. Oxford, 1931.
- Moulds, H. "John Locke's four freedoms seen in a new light", E, LXXI (1960-61), 121-25.
- Naidu, P. S. "Critical realism and John Locke", JP, XXXII (1935), 431-37.
- Neilson, F. "Lock's essays on property and natural law", American J of Economics and Sociology, X (1951), 269-83.
- O'Connor, D. J. John Locke. Pelican, 1952.
- Reviewed in -
- M (M. Warnock), LXII (1953), 571-72.
- PR (J. W. Yolton), LXII (1953), 458-61.
- JP (J. W. Yolton), L (1953), 435-40.
- Ogden, H.V.S. "The state of nature and the decline of Lockian political theory in England, 1760-1800", American Historical R, XLVI (1940-41), 21-44.
- O'Neil, C. J. "Is Locke's state the secular state?", New Scholasticism, XXVI (1952), 424-40.
- Pahl, G. "John Locke as literary critic and Biblical interpreter", Essays Critical and Historical Dedicated to Lily B. Campbell, 134-57. University of California Press, 1950.
- Reviewed in -
- Philological Q (Kahlich), XXX (1951), 279-80.
- Pap, A. Semantics and Necessary Truth. Ch. 3. Yale University Press, 1958.

Petzäll, A. Ethics and Epistemology in John Locke's Essay Concerning Human Understanding. Göteborg, 1937.

Reviewed in -

JP, XXXIV (1937), 666-67.

Phillips, W. "John Locke on the general influence of studies", British J of Psychology, XIII (1922-23), 1-25.

Picavet, F. "The mediaeval doctrines in the works of Donne and Locke", M, XXVI (1917), 385-92.

Pollock, F. Locke's Theory of the State. British Academy lecture. London, 1905. Republished in Essays in the Law. London, 1922.

Porter, N. "Marginalia Locke-a-na", New Englander and Yale R, XI (1887), 33-49.

Price, C. "Thomas Chudleigh and John Locke, 1684", Notes and Queries, CXCIV (1949), 519.

Reese, W. L. "The 'experimentum crucis' in Locke's doctrine of abstraction", PPR, XXI (1960-61), 490-500.

Romanell, P. "Locke and Sydenham: a fragment on smallpox (1670)", Bulletin of the History of Medicine, XXXII (1958), 293-321.

- "Locke's aphorisms on education and health", JHI, XXII (1961), 549-54.

Roth, L. "Note on the relationship between Locke and Descartes", M, XLIV (1935), 414-16.

Rowen, H. H. "A second thought on Locke's First Treatise", JHI, XVII (1956), 130-32.

Ryle, G. "John Locke on the human understanding", John Locke: Tercentenary Addresses. O.U.P., 1933.

Sandler, S. G. "Lockean ideas in Thomas Jefferson's Bill for establishing religious freedom", JHI, XXI (1960), 110-16.

Simon, W. M. "John Locke: philosophy and political theory", American Political Science R, XLV (1951), 386-99.

Singer, E. A., Jr. "John Locke", Annals of Medical History, VII (1935), 341-50.

- Singh, R. "John Locke and the theory of natural law", Political Studies, IX (1961), 105-18.
- Smith, C. I. "Locke and John Austin on the idea of morality", JHI, XXIII (1962), 141-42.
- "Some ideas on education before Locke", JHI, XXIII (1962), 403-06.
- Smith, N. K. John Locke. Tercentenary address. Manchester, 1933.
- Smock, G. E. "John Locke and the Augustan age of literature", PR, LV (1946), 264-81.
- Somerville, J. "The strange case of modern psychology", JP, XXXI (1934), 571-77.
- Sorley, W. R. "John Locke", Cambridge History of English Literature, VIII (1912), 328-48.
- Spahr, M. "Sovereignty under law; a possible redefinition of sovereignty in the light of Locke's theory of liberty", American Political Science R, XXXIX (1945), 350-55.
- Stocks, J. L. "Locke's contribution to political theory", John Locke: Tercentenary Addresses. O.U.P., 1933.
- Stolnitz, J. "Locke and the categories of value in eighteenth-century British aesthetic theory", P, XXXVIII (1963), 40-51.
- Strauss, L. "On Locke's doctrine of natural right", PR, LXI (1952), 475-502.
- "Locke's doctrine of natural law", American Political Science R, LII (1958), 490-501.
- Swabey, W. C. "Locke's theory of ideas", PR, XLII (1933), 573-93.
- Tagart, E. Locke's Writings and Philosophy historically considered, and vindicated from the Charge of contributing to the Scepticism of Hume. London, 1855.
- Thayer, Vivian T. The Misinterpretation of Locke as a Formalist in Educational Philosophy. Madison, Wisconsin, 1921.
- Thilly, F. "Locke's relation to Descartes", PR, IX (1900).

- Thomas, D. O. "The political philosophy of John Locke", P, XXXVII (1962), 259-63.
- Thompson, S. M. A Study of Locke's Theory of Ideas. Monmouth, Illinois, 1934.
- Tuveson, E. L. "The origins of the 'moral sense'", Huntington Library Q, XI (1947-48), 241-59.
- "The importance of Shaftesbury", ELH, XX (1953), 267-99.
 - "Locke and the 'dissolution of the ego'", Modern Philology, LII (1955), 159-74.
 - "An Essay on Man and 'the way of ideas'", ELH, XXVI (1959), 368-86.
 - The Imagination as a Means of Grace: Locke and the Aesthetics of Romanticism. Berkeley and Los Angeles, 1960.
 - "An Essay on Man and 'the way of ideas': some further remarks", Philological Q, XL (1961), 262-69.
- Von Leyden, W. "Locke and Nicole: their proofs of the existence of God and their attitude towards Descartes", Sophia, XVI (1948), 41-55.
- "John Locke's unpublished papers", Sophia, XVII (1949).
 - "Notes concerning papers of John Locke in the Lovelace Collection", PQ, II (1952), 63-69.
 - "John Locke and natural law", P, XXXI (1956), 23-35.
- Walcott, G. D. "Primary and secondary qualities", PR, XXXV (1926), 465-72.
- Waldman, T. "A note on John Locke's concept of consent", E, LXVIII (1957-58), 45-50.
- Ware, C. S. "The influence of Descartes on John Locke. A bibliographical study", Revue Internationale de Philosophie, IV (1950), 210-30.
- Johnston, C. S. (née Ware). "A note on an early draft of Locke's Essay", M, LXIII (1954), 234-38.
- "Bibliography of Locke's philosophical works, Bodleian Library". Unpublished thesis for D.Phil. Oxford, 1956.

- "Locke's Examination of Malebranche and John Norris", JHI, XIX (1958), 551-58.

Webb, T. E. The Intellectualism of Locke: An Essay. Dublin, 1857.

Wishy, B. "John Locke and the spirit of '76'", Political Science Q, LXXIII (1958), 413-25.

Withington, E. T. "John Locke's 'Medical Observations'", Medical Magazine, VII (1898).

Wolfe, D. E. "Sydenham and Locke on the limits of anatomy", Bulletin of the History of Medicine, XXXV (1961), 193-220.

Yolton, J. W. "Locke's unpublished marginal replies to John Sergeant", JHI, XII (1951), 528-59.

- "Locke and the seventeenth-century logic of ideas", JHI, XVI (1955), 431-52.

- John Locke and the Way of Ideas. Oxford, 1956.

Reviewed in - "Locke's examination of Leibniz examined", PQ (S. A. Grave), VIII (1958), 282-83.

- "Locke on the law of nature", PR, LXVII (1958), 477-98.

Yost, R. J., Jr. "Locke's rejection of hypotheses about sub-microscopic events", JHI, XII (1951), 111-30.

Burns, C. D. "Leibniz's life and work", Mo, XXVI (1916), 486-503.

- "Leibniz and Descartes", Mo, XXVI (1916), 524-33.

Calvin, H. "Leibniz's theory of law", Harvard Law R, LX (1946), 200-32.

Gajori, F. "Leibniz's 'Image of Creation'", Mo, XXVI (1916), 557-65.

- "The spread of the Newtonian and Leibnizian notations of the calculus", American Mathematical Society Bulletin, XXVII (1921), 453-58.

- "Leibniz, the master-builder of mathematical notations", Isis, VII (1925), 412-29.

Leibniz

- Alexander, H. B. (ed.). The Leibniz-Clarke Correspondence. Introduction. Manchester, 1956.
- Ballard, K. E. "Leibniz's theory of space and time", *JHI*, XXI (1960), 49-65.
- Barber, W. H. Leibniz in France from Arnauld to Voltaire: a Study in French Reactions to Leibnizianism, 1670-1760. Oxford, 1955.
- Reviewed in -
 P (L. J. Russell), XXXI (1956), 283.
Comparative Literature (K. B. Whitworth, Jr.), IX (1957), 171-74.
- Benziger, J. "Organic unity: Leibniz to Coleridge", *PMLA*, LXVI (1951), 24-48.
- Bergmann, G. "Russell's examination of Leibniz examined", *PS*, XXIII (1956), 175-203.
- Bjerregaard, C.H.A. "Spinoza, Leibnitz and Fichte", New Cycle, XI (1900).
- Broad, C. D. "Leibniz's predicate-in-notion principle and some of its alleged consequences", *T*, XV (1949).
- Burns, C. D. "Leibniz's life and work", *Mo*, XXVI (1916), 486-503.
- "Leibniz and Descartes", *Mo*, XXVI (1916), 524-33.
- Cairns, H. "Leibniz's theory of law", Harvard Law R, LX (1946), 200-32.
- Cajori, F. "Leibniz's 'Image of Creation'", *Mo*, XXVI (1916), 557-65.
- "The spread of the Newtonian and Leibnizian notations of the calculus", American Mathematical Society Bulletin, XXVII (1921), 453-58.
- "Leibniz, the master-builder of mathematical notations", Isis, VII (1925), 412-29.

- Galkins, M. W. "Kant's conception of Leibnitz's doctrine of space and time", PR, VI (1897).
- Carr, H. W. "The reform of the Leibnizian Monadology", JP, XXIII (1926), 68-77.
- Leibniz. London, 1929.
- Carus, P. "Leibniz and Locke", Mo, XXVII (1917), 137-42.
- Cassirer, E. "Newton and Leibniz", PR, LII (1943), 366-91.
- Chesley, E. M. "The ideal philosophy of Leibnitz", Theosophical R, XXVI (1900).
- Child, J. M. "Manuscripts of Leibniz on his discovery of the differential calculus", Mo, XXVI (1916), 577-629; XXVII (1917), 238-94; 411-54.
- "Barrow, Newton and Leibniz, in their relation to the discovery of the calculus", Science Progress, XXV (1930-31), 295-307.
- Cohen, I. B. "Leibniz on elliptical orbits; as seen in his correspondence with the Académie Royale des Sciences in 1700", J of the History of Medicine, XVII (1962), 72-82.
- Cooper, J. "Leibnitz's place in philosophy", Bibliotheca Sacra, LIV (1897).
- Crisafulli, A. S. "Parallels to ideas in the Lettres Persanes", PMLA, LII (1937), 773-77.
- Crompton, H. "Leibnitz as philosopher", Positivist R (1916), 241-46.
- Datta, D. M. "The windowless Monads", Mo, XLVI (1936), 13-24.
- Davidson, J. A New Interpretation of Herbart's Psychology and Educational Theory through the Philosophy of Leibniz. London, 1906.
- Dewey, J. Leibniz's New Essays concerning the Human Understanding: A Critical Exposition. Chicago, 1888.
- Dimier, L. "Bossuet's correspondence with Leibniz on reunion in the time of Louis XIV", Constructive Q (1918), 610-28.
- Dubs, H. H. "The misleading nature of Leibniz's monadology", PR, L (1941), 508-16.

- Eliot, T. S. "The development of Leibniz's monadism", *Mo*, XXVI (1916), 534-56.
- "Leibniz's monads and Bradley's finite centers", *Mo*, XXVI (1916), 566-76.
- Francis, E. K. "Leibnitz as mathematician", Positivist R (1916), 246-48.
- Gerhardt, K. I. "Leibniz in London", translated, with critical notes, by J. M. Child, *Mo*, XXVII (1917), 524-59.
- "Leibniz and Pascal", translated, with critical notes and summary, by J. M. Child, *Mo*, XXVIII (1918), 530-66.
- Gregory, J. C. "Leibniz, the identity of indiscernibles, and probability", *PPR*, XIV (1953-54), 365-69.
- Grene, M. and J. R. Ravetz. "Leibniz's cosmic equation: a reconstruction", *JP*, LIX (1962), 141-46.
- Guérout, M. "Substance and the primitive simple notion in the philosophy of Leibniz", translated by C. J. Beyer, *PPR*, VII (1946-47), 293-315.
- Haldar, H. "Leibniz and German idealism", *PR*, XXVI (1917), 378-94.
- Hall, A. R. and M. B. Hall. "Clarke and Newton", Isis, LII (1961), 583-85.
- Hartshorne, C. "Leibniz's greatest discovery", *JHI*, VII (1946), 411-21.
- Hathaway, A. S. "The discovery of the calculus", Science, L (1919), 41-43; LI (1920), 166-67.
- Heath, A. E. "Geometrical analysis of Grassmann and its connection with Leibniz's characteristic", *Mo*, XXVII (1917), 36-56.
- Heinemann, F. H. "Toland and Leibniz", *PR*, LIV (1945), 437-57.
- "Truths of reason and truths of fact", *PR*, LVII (1948), 458-80.
- Hicks, G. D. "The 'modes' of Spinoza and the 'monads' of Leibniz", *PAS*, XVIII (1917-18), 329-62.
- "The philosophy of Spinoza and Leibniz", Nature, CXXV (1930), 264-66.

- Holthouse, E. H. "Leibniz as historian", *TLA* (1935), 746.
- Hoskyn, F. P. "The relation of Malebranche and Leibniz on questions in Cartesian physics", *Mo*, XL (1930), 131-45.
- Irving, J. A. "Leibniz's theory of matter", *PS*, III (1936), 208-14.
- Johnson, A. H. "Leibniz and Whitehead", *PPR*, XIX (1958-59), 285-305.
- "Leibniz's method and the basis of his metaphysics", *P*, XXXV (1960), 51-61.
- Jordan, G. J. The Reunion of the Churches; a Study of G. W. Leibnitz and his Great Attempt. London, 1927.
- Joseph, H.W.B. Lectures on the Philosophy of Leibniz. Oxford, 1949.
- Jourdain, P.E.B. "The logical work of Leibniz", *Mo*, XXVI (1916), 504-23.
- Klibansky, R. "Leibniz's unknown correspondence with English scholars and men of letters", Mediaeval and Renaissance Studies, I (1941), 133-49.
- Koyré, A. and I. B. Cohen, "The case of the missing Tanquam: Leibniz, Newton & Clarke", *Isis*, LII (1961), 555-66.
- Lach, D. F. "Leibniz and China", *JHI*, VI (1945), 436-55.
- Latta, R. (trans.). The Monadology and other Philosophical Writings. Introduction and Appendices. O.U.P., 1898.
- "On the relation between the philosophy of Spinoza and that of Leibniz", *M*, VIII (1899), 333-56.
- Lieder, F.W.C. "Friedrich Spe and the Théodicée of Leibniz", *J of English and Germanic Philology*, XI (1912), 149-72 and 329-54.
- Lilley, A. L. "Bossuet, Leibnitz, and reunion", *Theology*, XVII (1928), 142-57.
- Lindsay, J. "Leibniz on truth and being", *Mo*, XXXI (1921), 512-35.
- Little, A. "Leibniz, the father of German philosophy", Studies (1946), 75-84.

- Locke, L. L. "The contributions of Leibniz to the art of mechanical calculation", Scripta Mathematica (1933), 315-21.
- Loemker, L. E. "Leibniz's doctrine of ideas", PR, LV (1946), 229-49.
- "Leibniz's judgments of fact", JHI, VII (1946), 397-410.
 - "Note on the origin and problem of Leibniz's Discourse of 1686", JHI, VIII (1947), 449-66.
 - "Boyle and Leibniz", JHI, XVI (1955), 22-43.
 - "Leibniz and the Herborn encyclopedists", JHI, XXII (1961), 323-38.
- Lovejoy, A. O. The Great Chain of Being. Ch. 5, "Plenitude and sufficient reason in Leibniz and Spinoza". Harvard, 1936.
- Lowrey, C. E. "The philosophy of Leibnitz", Education, X (1890), 373-79.
- Majumdar, J. K. "The idealism of Leibniz and Lotze", PR, XXXVIII (1929), 456-68.
- May, W. E. "The God of Leibniz", New Scholasticism, XXXVI (1962), 506-28.
- McLenon, R. B. "A contribution of Leibniz to the history of complex numbers", American Mathematical Monthly, XXX (1923), 369-74.
- McRae, R. "The unity of the sciences: Bacon, Descartes, and Leibniz", JHI, XVIII (1957), 27-48.
- Merkel, F. R. "The missionary attitude of the philosopher G. W. von Leibniz", International R of Missions, IX (1920), 399-410.
- Merz, J. T. Leibniz. Edinburgh and London, 1884.
- Meyer, R. W. Leibnitz and the seventeenth-century Revolution. trans. J. P. Stern. Cambridge, 1952.

Reviewed in -

PR (P. P. Wiener), LXII (1953), 451-53.

Montague, M.F.A. "Leibnitz and Newton", Isis, XXXIII (1941), 65.

Nason, J. W. "Leibniz and the logical argument for individual substances", M, LI (1942), 201-22.

- "Leibniz's attack on the Cartesian doctrine of extension", JHI, VII (1946), 447-83.

Northrop, F.S.C. "Leibniz's theory of space", JHI, VII (1946), 422-46.

Pap, A. Semantics and Necessary Truth. Ch. 1. Yale University Press, 1958.

Reed, E. E. "Leibniz, Wieland and the combinatory principle", Modern Language R. LVI (1961), 529-37.

Reichenbach, H. Modern Philosophy of Science. Ch. 2, "The theory of motion according to Newton, Leibniz and Huyghens". London, 1959.

Rescher, N. "Contingence in the philosophy of Leibniz", PR, LXI (1952), 26-39.

- "Leibniz's interpretation of his logical calculi", JSL, XIX (1954), 1-13.

Reviewed in -

JSL (M. Dummett), XXI (1956), 197-99.

- "Identity of indiscernibles: a reinterpretation", JP, LII (1955), 152-55.

- "Leibniz's conception of quantity, number, and infinity", PR, LXIV (1955), 108-14.

Russell, B. A Critical Exposition of the Philosophy of Leibniz. C.U.P., 1900 (2nd edition, London, 1937).

Reviewed in -

PR (G. M. Duncan), X (1901).

M (R. Latta), X (1901), 525-33.

E (A. E. Taylor), XI (1900-01).

- "Recent work on the philosophy of Leibniz", M, XII (1903), 177-201.
- Russell, L. J. "Some problems in the philosophy of Leibniz", PAS, XXIII (1922-23), 197-214.
- "The correspondence between Leibniz and De Volder", PAS, XXVIII (1927-28), 155-76.
 - "Great thinkers:(IX) Leibniz", P, XI (1936), 403-18.
 - "Leibniz's account of phenomena", PAS, LIV (1953-54), 167-86.
 - "The word symbolizare in Leibniz", P, XXXV (1960), 273.
- Russo, S. "The influence of the theory of preformation on Leibniz's metaphysics", Open Court, XLV (1931), 257-67.
- "The concept of matter in Leibniz", PR, XLVII (1938), 275-92.
- Saw, R. L. Leibniz. Pelican, 1954.
- Reviewed in -
- P (P. Lucas), XXXI (1956), 92.
- Schneider, H. "An unpublished letter concerning Leibniz", Isis, XLIV (1953), 266-72.
- Schrecker, P. "Descartes and Leibniz in 1946", P, XXI (1946), 205-33.
- "Leibniz's principles of international justice", JHI, VII (1946), 484-98.
 - "Leibniz and the art of inventing algorisms", JHI, VIII (1947), 107-16.
 - "Leibniz and the Timaeus", RM, IV (1950-51), 495-505.
- Sheldon, W. H. "Leibniz's message to us", JHI, VII (1946), 385-96.
- Smith, N. K. "Kant's relation to Hume and to Leibnitz", PR, XXIV (1915), 288-96.
- Sparrow-Simpson, W. J. "Bossuet and Leibniz on reunion", Church Q R, CXVI (1933), 53-65.

- Spitz, L. W. "The significance of Leibniz for historiography", JHI, XIII (1952), 333-48.
- Strawson, P. F. Individuals. Ch. 4, "Monads". London, 1959.
- Turnbull, R. G. "Aseity and dependence in Leibniz's metaphysics", T, XXV (1959), 95-114.
- Tute, Sir R. "Indications that the universe is alive", HJ, XXXVII (1938-39), 541-52.
- "Is matter intelligent? Monads versus particles", HJ, XLVI (1947-48), 117-24.
- Voegelin, E. "The origins of scientism", Social Research, XV (1948), 462-94.
- Ward, Sir A. W. Leibniz as a Politician. The Adamson lecture, 1910. Manchester, 1911.
- Wells, R. "Leibniz today", RM, X (1956-57), 333-49; 502-24.
- Wiener, N. "Quantum mechanics, Haldane, and Leibniz", PS, I (1934), 479-82.
- Wiener, P. P. "Notes on Leibniz's conception of logic and its historical context", PR, XLVIII (1939), 567-86.
- "Leibniz's project of a public exhibition of scientific inventions", JHI, I (1940), 232-39.
- Yost, R. M., Jr. Leibniz and Philosophical Analysis. (University of California publications in philosophy, Vol. XXVII). Berkeley, 1954.
- Reviewed in -
- PR (N. Rescher), LXIV (1955), 492-94.

Indiscernibles

1. In its logical form, the principle of the Identity of Indiscernibles can be stated as follows: It is logically impossible for two particulars to be indiscernible, i.e., to have all their properties in common. Or, any two particulars must be discernible, i.e., have at least one property not in common. Or, again, it is logically impossible for two (i.e., numerically different) particulars not to be qualitatively different, i.e., to be qualitatively identical. Henceforth, I shall call the logical principle of the Identity of Indiscernibles simply 'the Principle'.

There is a so-called weaker form of the Principle which commands some plausibility in areas where the corresponding so-called stronger form is rejected. I shall call the so-called weaker form 'the "weaker" form', and the so-called stronger form 'the "stronger" form'. The "weaker" form is distinguished from the "stronger" form by some in such a way that, within the terms of reference of the Principle, the former admits, whereas the latter excludes, numerical identity and numerical difference as properties. For example, on the "stronger" interpretation, although it logically follows that one particular (x) and another particular (y) are discernible if x has, and y does not have, the so-called property of being numerically identical with the snake which bit a queen, the fact that x has, and y does not have, this

so-called property does not itself make x and y discernible.

In his "The Identity of Indiscernibles",¹ Max Black briefly considers the "weaker" version, and criticises it for amounting to nothing more than an uninteresting truism (p.82). He then goes on to argue primarily against using the verificationist's theory of meaning to defend the "stronger" form. I do not agree that the "weaker" form is an uninteresting truism. On the contrary, I think it stands (or, rather, falls) on all fours with the "stronger" form, and, therefore, is in this sense no weaker. The following defence of this claim, however, depends in part upon points of the kind introduced by Black himself in the second portion of his paper. Consequently, with reference to his general position, my argument might be taken as more of an attempted "ironing out" than a straightforward criticism.

Hereafter, unless otherwise indicated, the form of the Principle under consideration is the "weaker" one.

2. Consider the following argument on behalf of the Principle:

¹Problems of Analysis, Ch. v (London, 1954), pp 80-92. Originally published in Mind, LXI (1952). All page references are to the former.

In his notes (pp 292-93), Black quotes a passage from Principia Mathematica (1:51), in which the "weaker" form of the Principle is defended.

Given two allegedly indiscernible particulars, A and B,
then

A is numerically identical with A and numerically different from B,

and B is not numerically identical with A and is not numerically different from B. (Principle of Identity).

Therefore, A and B are discernible, insofar as A has, but B does not have, the property of being numerically identical with A and numerically different from B.

And, therefore, any two particulars are discernible, since what holds here for A and B, holds for any two particulars. (cf. Black, pp 80-81).

Instead of criticising this argument for generating an uninteresting truism, one can criticise it as follows:

The argument consists in an attempt to demonstrate the Principle via a reductio ad absurdum. It postulates the allegedly possible case of two completely indiscernible particulars and then attempts to demonstrate the logical impossibility of such a case. Consequently it begins: 'Given two allegedly indiscernible particulars, A and B . . . '.

But, using 'A' and 'B' to refer to the given particulars is in effect an attempt to use different names to refer to each of them - a move which is ex hypothesi impossible because it contradicts the indiscernibility condition of the

hypothetical case. For the successful use of different names in this manner presupposes the possibility of qualitatively distinguishing the given particulars, i.e., the possibility of saying truly 'A is the particular which ...' and 'B is the particular which ...'. And, ex hypothesi, there are no possible grounds for so distinguishing them. The exponent of the Principle must here prove the discernibility of the given particulars, not assume it; and the use of different names to refer to each of them simply assumes it. Black clearly recognises the force of this point (see pp 83-87), but fails to apply it, at least in any recognisable way, to the argument for the "weaker" form of the Principle.

If, on the other hand, 'A' and 'B' are not being used as different names in this context, then they must have something of the force of variables. In this case, however, the claim that, e.g., A has the property of being numerically identical with A and numerically different from B, reduces (roughly) to the claim that one of the given particulars is numerically identical with itself and numerically different from the other one - a claim which holds for either of the given particulars and which does not support the conclusion that the two particulars are discernible (cf. below, section 5).

3. A modified argument for the Principle might then be introduced.

Granted, one cannot actually use different names to refer to each of the given particulars. But, if one of the particulars were called A and the other called B, then the particular called A would be identical with the particular called A, and the particular called B would not be identical with the particular called A. Consequently, the two particulars are discernible, since the particular which would be called A has, whereas the particular which would be called B does not have, the property of being identical with the particular which would be called A.

This argument, however, is clearly just as futile as the former one - and for the same type of reason.

Three points are especially relevant:

- (a) It is impossible for only one of the particulars, as given, to be called A, and for only the other one to be called B. If one of the given particulars is called A, then ex hypothesi the other one must also be called A. Consequently, one cannot refer to the given particulars as 'the one called A' and 'the one called B'.
- (b) One can, of course, say, 'If only one of the given particulars were called A and only the other B, then the particular called A would be etc.'. But, in saying this, one cannot conclude that only one of the particulars, as given, is called A and only the other is called B. Logically, it amounts to a specific case of

saying 'If one of the given particulars were qualitatively different from the other particular in respect x, then the two particulars would be qualitatively different in respect x'. This is analytically true, but offers no grounds for saying that the two particulars, as given, do qualitatively differ in respect x.

- (c) Further, one cannot say, 'One of the given particulars would alone be called A and the other would alone be called B, under conditions y', unless conditions y include a "trivialising" condition with the force of 'If one of the given particulars were alone called A and the other were alone called B . . .'. Consequently, one cannot use 'the particular which would be called A under conditions y' to distinguish one of the given particulars from the other one. For, the only sense in which this expression is applicable to either of the given particulars is that of 'a particular which would alone be called A under such-and-such conditions, if it were alone called A under such-and-such conditions'. And, in this sense, it is equally applicable to either of the given particulars (indeed, to any particular).

Similarly, although one can in a sense say, 'It is logically possible for one of the particulars to be alone called A', or 'one of the particulars could alone be called A' (though not as given), this offers no

grounds for qualitatively distinguishing the given particulars, because such statements are equally true of either particular (cf. Black, p.84).

4. It must be clearly understood that the claims for the ex hypothesi impossibility of, e.g., using names, or referring to the given particulars as 'the one called A' and 'the one called B', are not circular claims. I am not arguing that the two given particulars must be indiscernible simply because they are postulated as such. For, whether or not two particulars can be indiscernible is the very point at issue. What I am claiming, rather, is that since the exponent of the Principle has assumed, for the purposes of a reductio, that two particulars are indiscernible, he is therefore responsible for showing the impossibility of such a case. And he cannot be allowed to do this by introducing features which (a) would entail that the given particulars are discernible but (b) are not entailed by any conditions governing the hypothetical case. For one of the conditions governing the hypothetical particulars is that they are indiscernible. Consequently, any claims about the given particulars which introduce features satisfying both (a) and (b) are claims for ex hypothesi impossibilities (cf. Black, p.92).

5. Still another argument for the Principle might take the

following line - although the chances of finding its actual presentation in any clear form are perhaps slim.

Let the two given particulars, and only the given particulars, each have the property P. Also, let 'P-particular' mean a particular which has the property P. One of the given particulars is then numerically identical with one of the two P-particulars and numerically different from the other P-particular. And the other particular is numerically identical with one of the two P-particulars and numerically different from the other P-particular. Now, for each of the given particulars, the property of being numerically identical with one of the two P-particulars (or being numerically different from the other P-particular) is different because, in each case, 'one of the two P-particulars' (or 'the other P-particular') refers to numerically different particulars. Therefore, the two given particulars are discernible, since they each must have (a) some property and therefore (b) some property not in common.

This argument no more holds than the claim that, for each particular, being numerically identical with itself is a different property because 'itself' in each case refers to a numerically different particular. For, if it were true, then it would be necessarily false to claim, e.g., that each of the given particulars is numerically identical with itself (or numerically different from the other particular, or

numerically identical with one of the two P-particulars, etc.), or that one of the given particulars is numerically identical with itself and the other particular is equally identical with itself, etc.

To take another example, consider a universe in which there are two green swans and a man called Paul. Initially, Paul is standing beside one of the green swans; after a few minutes, he then moves to a position beside the other green swan. Now before Paul moves, one can say 'Paul is standing beside one of the green swans'. After he moves, one can then say 'Paul is still standing beside one of the green swans'. And the force of 'still' in the latter statement suggests that Paul has the same property in each case, despite the fact that the green swan in each case is numerically different.

Or, consider the same universe with the addition of another man, called Peter, such that Peter and Paul each is standing beside one of the green swans. Being able to say 'Peter and Paul each is standing beside one of the green swans' in such a context suggests that Peter and Paul each has the same property, although the particular green swan beside Peter is numerically different from the green swan beside Paul. Again, under such conditions, if someone asked 'In what respects are Peter and Paul the same', the reply 'Each is standing beside one of the green swans in the

universe' would be perfectly acceptable as part of the answer, despite the fact that each is standing beside a numerically different swan (cf. Black, p.85 re the property of occupying the same place as itself).

6. This whole discussion is intended to be neutral regarding any questions in connection with "universals". Thus, if a "resemblance-theory" is deemed in any way superior, the various points could be made with the appropriate forms of discourse. Expressions such as 'property', 'have some property in common', 'has the same property', 'is a different property' have been generally employed here for the sake of verbal economy and because of their greater familiarity in such a context. On the other hand, if one wanted, for some reason or other, to distinguish between the property P and a particular instance of the property P, and then claim that, given two P-particulars, although each has the same property P, the particular instances of P had by each particular are numerically different, such a position is by intention not contravened by anything said in this discussion. Alternatively, if there are no genuine problems in this connection, then obviously nothing said here contradicts such a view.

7. For the foregoing reasons, then, from the viewpoint of knowing its truth, the "weaker" form of the Principle

seems on no better ground than the "stronger" form. For, from this viewpoint, the "weaker" form makes no fewer demands than the "stronger" form, inasmuch as the arguments necessary to establish the latter - if there are such arguments - are equally necessary to establish the former.

In contrast, however, it might prove instructive to examine Black's attempt to show that the "weaker" form is an uninteresting truism. His argument reads roughly as follows:

'A has the property of being numerically identical with A' means 'A is A'.

'B does not have the property of being numerically identical with A' means 'B is not A'.

Therefore, 'A and B have one property not in common' here means 'A and B are numerically different'.

And therefore, the Principle simply becomes the vacuous

'Numerically different things are numerically different' (see pp 81-82).

Now, although 'A has the property of being numerically identical with A' is logically equivalent to 'A is A', nothing said by Black's imaginary advocate of the Principle involves the view that the sentences used to make the foregoing statements are equivalent in meaning. Furthermore, under the apparent given conditions of this case, if 'A' and 'B' are used as names of numerically different particulars, then either the property of being identical with A is a property

which B cannot have, or, perhaps, from the fact that A is, but B cannot be, identical with A it follows that A and B are discernible. Consequently, if there are (were) two such particulars, A and B - where 'A' and 'B' are used as names - then A and B are (would be) necessarily discernible.

This point might be sustained from a slightly different viewpoint by arguing that, under the apparent given hypothetical conditions, 'The two particulars, A and B, are indiscernible' is internally inconsistent insofar as it denies the uniqueness conditions presupposed by the use of 'A' and 'B'. Nevertheless, although it is true that, under the given conditions, if there were two particulars, A and B, then A and B would be discernible, it does not necessarily follow that any two particulars are discernible. For it has not yet been shown that names can be successfully used by us to distinguish any two particulars. And it is my contention that, under the conditions of the previously indicated hypothetical case (see above, section 2), names cannot be used by us to distinguish particulars without presupposing their discernibility - one obvious consequence of which is that names cannot be used by us to distinguish indiscernible particulars under such conditions (I shall return to this point in the next two sections).

On the other hand, if 'A' and 'B' are not intended as names of the different particulars in this context (and, since

Black constructs his own opposition, this is his privilege), then to claim that A is qualitatively different from B insofar as the former is, whereas the latter is not, numerically identical with A, simply amounts to claiming that one of the given particulars is, whereas the other is not, identical with itself - which is absurd. In this case, without introducing any further considerations, the only way to "save" the Principle would indeed be to admit that 'One particular qualitatively differs from another particular' means 'One particular is numerically different from another particular' (or something very much like it), and thereby trivialise it. But, if this is Black's point, then (a) the way he puts it is somewhat misleading, and (b) the imaginary exponent of the Principle would take on a highly straw-like texture.

8. An apparently more serious objection might now be considered, the central tenet of which is that the preceding argument takes a much too facile view of the use of proper names. For, in suggesting that names could not be used to distinguish two particulars without presupposing their discernibility, one overlooks the role which demonstratives, token reflexives, or indicator words, can and do play in the use of uniquely referring expressions. Thus, for example, we can without contradiction suppose a world in which there are two descriptively indiscernible (see footnote 1, p.17)

spheres spatially related to me such that one of the spheres is on my right and the other sphere is on my left. For instance, suppose that such a world consists in myself, the two spheres, each ten feet in front of me, and another man descriptively indiscernible from me, standing ten feet behind each of the spheres (relative to me); and suppose any other specific duplications which are necessary in this case. In such a world, I could use the expressions, 'the sphere on my right' and 'the sphere on my left' to distinguish the two spheres - and, indeed, use such expressions as a basis for giving them different names (provided, of course, that my counterpart is doing descriptively the same thing). Furthermore, in the world in which I am now actually writing, I can use the expressions, 'the sphere which is (strictly, would be) on my right in such a world' and 'the sphere which is (would be) on my left in such a world', to distinguish the two hypothetical spheres. Suppose I call the sphere which is on my right in such a world 'Virtue' and the sphere which is on my left 'Vice'. I can then make such statements as 'Virtue is numerically identical with Virtue, and numerically different from Vice, whereas Vice is not numerically identical with Virtue and not numerically different from Vice'. Consequently, so the argument runs, Virtue is qualitatively different from Vice insofar as Virtue has, whereas Vice has not, the property of being identical with Virtue. And,

therefore, Virtue and Vice are discernible. Furthermore, in this case, the use of the names 'Virtue' and 'Vice' has not presupposed the discernibility of the given hypothetical particulars.

It is presumably to take into account considerations of this sort that Ayer, in his "The Identity of Indiscernibles",¹ suggests that only properties the ascription of which contains no ("non-descriptive") unique reference are to be accepted within the terms of reference of the Principle - for otherwise it "easily becomes trivial" (p.29). As opposed to Black (though not expressly in opposition to Black), Ayer points out that excluding numerical identity and difference as properties is neither necessary nor sufficient to save the Principle from triviality. Not sufficient because analogous points can be made concerning properties such as 'being spatially co-extensive with' or 'being at no distance from' (i.e., for particulars which can have spatial properties), and not necessary because admitting only "generalised" properties secures the objective (and at the same time allows, e.g., 'An automobile is numerically identical with itself' to count as the

¹Philosophical Essays (London, 1959), 26-35. Ayer's discussion is set within the context of an "anti-substance" view of individuals (see also "Individuals", Philosophical Essays, 1-25). This view and its peculiar consequences for the question of indiscernibles are not considered here - not because they are not interesting or important, but because they raise a somewhat different set of questions.

ascription of a property).

On this view, then, the "weaker" form is distinguished from the "stronger" form insofar as the latter admits, whereas the former does not admit, properties the ascription of which involves a ("non-descriptive") unique reference to some particular. Thus, for example, 'being 20 feet from Nelson's Column' does not count, whereas 'being 20 feet from a column which is ...', or even 'being 20 feet from the column which ...'¹ (where '...' contains no "non-descriptive" unique reference), does count, as a property on the "stronger" form. And, therefore, from the viewpoint of the "stronger" form, the argument given above for the discernibility of Virtue and Vice is unacceptable - for 'being identical with Virtue' does not count as a property.

9. Even presented with this somewhat sounder distinction between "weaker" and "stronger" forms of the Principle, however, I still think it subject to criticism.

(a) For one thing - though this is a point I see no way of proving, save perhaps indirectly from (b) below - it seems

¹The ascription of this property instantiates the notion of a property-ascription containing a "descriptive" unique reference. The possibility of qualifications attendant upon the distinction between descriptive and non-descriptive unique reference is not considered by Ayer, and, although interesting in itself, is of little consequence in this particular context.

doubtful that, if (e.g.) a particular, x , were equi-related to two descriptively¹ indiscernible spheres such that I could distinguish the spheres as this sphere and that sphere, then the statement ' x is R to this sphere' would be considered as ascribing a different property to x than the statement ' x is R to that sphere' - within the terms of reference of the Principle, as ordinarily conceived and as ordinarily affirmed or denied. Rather, within such a frame of reference, one's first reactions would be along the lines of 'Well, is this sphere really indiscernible from that sphere?', in an effort to determine whether or not x 's being R to this sphere and being R to that sphere involves its having the same or different properties - with the implication that, if this sphere and that sphere truly are descriptively indiscernible, then being R to this sphere and being R to that sphere does not involve having different properties - at least within the conceptual frame of reference of the Principle.

Now, if this suggestion is true, it follows that separating the "weaker" from the "stronger" form constitutes an alteration in the concepts of property and of difference of properties - but an alteration in the opposite direction from that initially suggested. For, the initial suggestion

¹Two particulars are descriptively indiscernible if the description of each in purely general terms is the same.

seemed to be that, as the Principle ordinarily stands, it only makes the demands of the "weaker" form, and therefore, in order to "strengthen" it and avoid the accusation of triviality, one must introduce the indicated alterations. On the contrary, however, it now turns out that the Principle as ordinarily conceived is the "stronger" form and an alteration is necessary in order to "weaken" it. Consequently, given the way 'It is impossible for two particulars to be indiscernible' is ordinarily used, it is true - and not simply the result of stipulation - that, e.g., x's being R to this sphere and being R to that sphere does not involve x's having different properties if this sphere and that sphere are descriptively indiscernible. And furthermore, if the "weaker" form of the Principle is defined as that form of the Principle in which no contra-ordinary alterations are made to the concept of a property and which thereby remains trivial, then there is no "weaker" form of the Principle.

(b) More seriously, admitting the indicated alterations to the concept of a property does not secure the truth of the Principle. For, one is only able to use uniquely-referring expressions involving demonstratives, token reflexives, indicator words, etc., within certain limited contexts - viz., roughly, in those contexts where the particulars are, or have been, in one's "immediate presence", or are uniquely related to such particulars. The Principle, on the other hand, is

designed to be a logically necessary statement covering any particular - and therefore its application cannot be restricted to particulars satisfying such conditions. Thus, in making the point above that, in the hypothetical cases introduced in sections 2 and 7, the use of proper names presupposes the discernibility of the given particulars, I was invoking the point that, since the conditions governing the given particulars apparently do not allow the use of "non-descriptive" uniquely-referring expressions (e.g., 'this so-and-so') to distinguish particulars, the only way a uniquely-referring expression can be used is by using a "descriptive" uniquely-referring expression (e.g., 'the so-and-so which ...') and therefore by presupposing the descriptive discernibility of the given particulars. And, unless this gap - between conditions under which "non-descriptive" referring expressions can, and conditions under which they cannot, be used - is somehow bridged, the "weaker" form of the Principle is still no weaker than the "stronger" form.

(c) Finally, even if this gap could be shown to be somehow bridgeable, the very process of arguing for such a bridge would show, I think, that the "weaker" form of the Principle, if true, is anything but a trivial, uninteresting truism.

10. For the preceding reasons, then, I think the introduction of a so-called weaker form of the Principle is mistaken.

Moreover, the further claim, that the "weaker" form is trivial, is, if anything, in a worse position.

As far as the question whether the Principle is true is concerned, it receives no direct attention here, save for the following brief points:

- (i) If one purports to argue "for" the Principle by appealing to a verifiability criterion of meaning, one must be prepared to admit that, if 'There are indiscernibles' is meaningless, then 'There are no indiscernibles' is equally meaningless - and therefore that the Principle itself is meaningless.
- (ii) It seems conceivable to have a world in which indiscernibles could be observed as such.
- (iii) More directly, a world in which there are indiscernibles seems intuitively quite conceivable to me, and, for anyone for whom this is equally so, any defence of the Principle must present arguments which are sufficiently strong to overthrow its prima facie implausibility.
- (iv) In introducing, e.g., a world consisting in an infinite series of sounds ... ABCDABCDAB ... (see Ayer, p.32) as an example of a universe containing indiscernibles, certainly I believe that, in such a case, there is a plurality of indiscernible A's, a plurality of indiscernible B's, etc. - i.e., a plurality of indiscernible instances of the sound A, of the sound B, etc. - and to that extent, "assume" that it is

possible to refer to a plurality of indiscernible objects. In introducing such an example, I thereby hope to get my opponent to see the general point - for if he accepts the example, then he must accept the general point - and this is an acceptable mode of philosophical argument. I am not, however, arguing for the possibility of such a universe by appealing to the general point; in this case, the example must stand or fall on its own merits - on threat of circularity. If the Principle's advocate finds the Principle still more convincing than any of my purported counter-examples, he is, of course, free to do so. But he himself must admit that simply rejecting my examples on the basis of the Principle itself does not consist in an argument for the Principle. And, any argument against such examples which relies on a premise such as, "It is only where there is discernibility that it makes any sense to talk of the plurality of objects" (Ayer, p.34), seems little more than the rejection of counter-examples on the basis of the Principle itself.

(v) In claiming that the very reference to a plurality of particulars presupposes their discernibility, one must be careful to distinguish between the senses of 'reference to a plurality of particulars' in which the statements, 'A number of men are attacking the walls', 'The tallest man is not wiser than the oldest man but is stronger than the fattest man', and 'The sphere on my right is the same distance from

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the sphere directly in front of me as the latter is from the sphere on my left', might be said to involve a reference to a plurality of particulars.

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Proposed definitions, or analyses, or criteria, of a type often follow at least one of two related lines:

- (a) That which views a type as the range of significance of such-and-such a predicate or set of predicates,
- (b) That which appeals to the only possible truth-value(s) of a significant type predication.

Under heavy pressure, however, neither approach offers such hope for its prospects. In one important sense of 'type' - viz., that in which the notion of a type is blended with the notion of a concept and in which types attract the eye of

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Through a mild mist, it appears that the notion of a type can be employed and examined in a variety of contexts. For instance, one might employ it in "typically restricting" the values of variables in an artificial language to forestall Russellian paradoxes. Or, one might use it to reveal type-confusions of a less specialised kind, particularly as the source of mistaken philosophical theories. One might investigate the notion in order to understand the logical structure of certain statements - either for the purposes of constructing languages or to clarify the structure of natural languages. Alternatively, an aspiring metaphysician might employ the notion to disclose general features of the way things are and/or of our conceptual scheme, or possible alternatives; or he might examine the notion as a preliminary to the metaphysical inquiry proper.

Proposed definitions, or analyses, or criteria, of a type often follow at least one of two related lines:

- (a) That which views a type as the range of significance of such-and-such a predicate or set of predicates.
- (b) That which appeals to the only possible truth-value(s) of a significant type-predication.

Under heavy pressure, however, neither approach offers much hope for its prospects, in one important sense of 'type' - viz., that in which the notion of a type is blended with the notion of a category and in which types attract the eye of

the metaphysician. Partly to show this, and partly because of the material's own interest, I intend to consider certain points raised by Arthur Pap in his "Types and Meaninglessness".¹

I

1. In order to lay some sort of foundation for understanding the discussion of typehood, consider a point made by Pap near the end of his paper: "the line between the false and the meaningless is not only fuzzier than it is according to the Russell-Carnap theory, but even fuzzier than it appears in the liberalized conception of types. The meaninglessness illustrated by 'the philosophy of logical atomism is a rose' and 'the theory of relativity is a good swimmer' could, after all, be called 'a priori falsehood' by those who do not wish to call a sentence meaningless unless at least one constituent term is meaningless." (p.52).

He explains 'a priori falsehood' by distinguishing limited from unlimited negation: The negation 'S is non-P' is limited if 'non-P' "is equivalent to the disjunction of all the other members of the predicate family to which P belongs" (p.53). In other words, a limited negation is one which asserts that S is not P, where P is a kind of Q, but implies that S is some other kind of Q; e.g., 'A fire engine is not

¹Mind, LXIX (1960), 41-54. Page references to Pap are to this paper.

'blue' implies 'A fire engine is some colour other than blue'. An unlimited negation, then, is a negating statement which has no such limiting implications. And an a priori falsehood is a statement the unlimited negation of which is necessarily true, i.e., is an "unlimited necessary falsehood" (p.54).

Conjoined with the blurring of the distinction between meaninglessness and falsehood is the claim that it is largely a "verbal" question whether a statement such as 'The number 5 is red' is meaningless or false: "Such a a priori falsehood is very different from formal contradiction, but the question whether 'false' or 'meaningless' is the right word to use is just as verbal as the question whether formally contradictory statements are false or meaningless." (pp 52-53).

2. In the relevant ordinary sense of 'false', a statement is false if and only if its negation is true (There is an ordinary, though less customary, use of 'false' in the sense of 'not true'. But since Pap is not trying to diminish the line between meaningless and false statements in this sense of 'false', it is of no relevance to this discussion). Now I doubt very much that Pap would want to claim that 'negation' in this context means what he means by 'unlimited negation'. For one thing, if a statement were false if and only if its unlimited negation were true, then 'The number 5 is red' would necessarily be false and therefore could not be neither

true nor false. Also, he himself says that a (non-categorical) negation "is ordinarily construed as a limited negation" (p.54) and suggests that limited as well as unlimited negations rightfully count as kinds of negation - which would be impossible if 'negation' meant an unlimited negation.

Rather, his view seems more like the following: Although 'The number 5 is red' is not a limited falsehood - i.e., its limited negation is not true - it is nevertheless an unlimited falsehood - i.e., its unlimited negation is true - and is therefore false. In other words, although 'The number 5 is red' is not one kind of falsehood, viz., a limited falsehood, it is another kind of falsehood, viz., an unlimited falsehood.

But, in the relevant ordinary sense of 'negation' and 'falsehood', can a given statement have more than one kind of negation? Certainly, it is possible to differentiate kinds of negation in terms of 'limited and unlimited', but in the case of a given statement, is it possible to produce two negations, one falling into one class and the other falling into another class? For example, the negation of 'The number 5 is red' is 'The number 5 is not red' and it is limited or unlimited, depending upon what statement the sentence 'The number 5 is red' is used to make. If it is used in such a way that 'The number 5 is red' presupposes 'The number 5 is coloured', then 'The number 5 is not red' implies

'The number 5 is coloured' and is therefore a limited negation. On the other hand, if the sentence 'The number 5 is red' is used in such a way that 'The number 5 is red' has no such presuppositions, then 'The number 5 is not red' is an unlimited negation. Thus, in the first instance, the unlimited 'The number 5 is not red' is not the negation of 'The number 5 is red'; for otherwise 'The number 5 is red' would be false in the event that the number 5 is not coloured and therefore could not presuppose 'The number 5 is coloured'. And in the second instance, the limited 'The number 5 is not red' is not the negation of 'The number 5 is red' because then 'The number 5 is red' would presuppose 'The number 5 is coloured'.

Thus, in Pap's sense of 'negation' and 'falsehood', 'S is an unlimited falsehood if and only if its unlimited negation is true' becomes something like 'S is an unlimited falsehood if and only if non-S in the unlimited sense is true'; whereas in the relevant ordinary sense of such terms, 'S is an unlimited falsehood if and only if its unlimited negation is true' either amounts to 'S is an unlimited falsehood if and only if the negation of S is unlimited and true' or presupposes that the negation of S is unlimited. In Pap's sense, a given statement necessarily has an unlimited (as well as a limited¹) negation; in the ordinary sense, a given

¹Or, perhaps, limited negations at variable levels.

statement necessarily has a negation but it might not be unlimited.

For these reasons, I think the sense of 'false' in which one can say that a statement is an unlimited falsehood if and only if its unlimited negation is true, and from this infer that, e.g., 'The number 5 is red' is an unlimited necessary falsehood, must be a special one. For, in the relevant ordinary sense of 'false', it is not the case that 'The number 5 is red' (where the sentence 'The number 5 is red' is used in such a way that the statement 'The number 5 is red' is meaningless) is an unlimited falsehood, because its negation is not unlimited.

3. The preceding observations support the following conclusions: The line between the false and the meaningless, in the relevant ordinary sense of 'false' and the sense of 'meaningless' in which a statement is meaningless if and only if it is (necessarily) neither true nor false, is not blurred to the extent that a meaningless statement can be false or a false one meaningless. The line can be blurred in this way only by introducing a technical sense of 'false' - viz., one in which a statement S is an unlimited falsehood if and only if its "unlimited negation" (i.e., non-S without any limiting implications) is true. In this special sense of 'false', a meaningless statement is indeed necessarily

false; but it does not follow that the distinction between meaningless and false statements, in the relevant ordinary senses of these terms, is no sharper than the distinction between meaningless and "a priori false" statements.

On the other hand, Pap could be simply pointing out that the analogies between meaningless and necessarily false statements are greater than is pre-analytically evident. For, in the case of a necessarily false statement, its negation must be necessarily true; and in the case of a meaningless statement, a statement with its "negative form" but without its limiting implications must be necessarily true. If this is the case, his point is of some merit; but even here one feels he at least tends to overestimate such analogies.

Similarly, in claiming it is a "verbal" question whether 'The proposition p is red' is meaningless or false, if he is suggesting that within the terms of reference of the (relevant) ordinary and his special sense of 'false', it depends upon how 'false' is used, then his claim is unobjectionable. On the other hand, if he is suggesting that within the terms of reference of relevant ordinary usage it is in this sense a verbal question whether 'The proposition p is red' is false, then his claim is mistaken. Alternative interpretations could be introduced, but the basic point remains that in the relevant ordinary sense of 'false' and 'meaningless', false statements are necessarily not meaningless and meaningless

statements are necessarily not false, and any remark like "This is merely a verbal matter" which implies otherwise is wrong.

4. Although the points made in the foregoing discussion are at least substantially true, considerations of the sort introduced by Pap in "justifying" his "preference" for calling (so-called) type-confusions 'a priori falsehoods' might pose certain difficulties. For instance, since 'Whatever is red is extended' is necessarily (although non-formally) true, therefore its negation must be necessarily (although non-formally) false. Now, according to Pap, 'Some unextended entity is red' can count as the negation of 'All red entities are extended'. But, 'Some unextended entity is red' is entailed by the conjunction of 'No numbers are extended' and "the supposedly meaningless" 'The number 5 is red'. Therefore, 'Some unextended entity is red' can be called either meaningless or a priori false (p.53).

Taking the first part of the point first, if 'Some unextended entity is red' is such that it presupposes 'Unextended entities are coloured', and if 'All red things are extended' is necessarily true, then 'Some unextended entity is red' is not (logically equivalent to) the negation of 'All red entities are extended'. For, if 'Some unextended entity is red' presupposes the necessarily false 'Unextended

entities are coloured', then the former statement's negation, 'No unextended entity is red', equally presupposes 'Unextended entities are coloured' and therefore cannot be logically equivalent to 'All red things are extended'. On the other hand, if 'Some unextended entity is red' and 'No unextended entities are red' have no such presuppositions, then they can be taken as, respectively, (logically equivalent to) the negation of, and logically equivalent to, 'All red things are extended'.⁷ presupposes an analogy between, e.g., the meaning-

In the former case, then, 'Some unextended entity is red' is meaningless, whereas in the latter case it is necessarily false. But in neither case does a meaningless statement become a false statement or a false statement meaningless, in the relevant ordinary sense of 'meaningless' and 'false'.

Concerning the second part of the point, one might readily admit that the conjunction of 'No numbers are extended' (S1) and 'The number 5 is red' (S2) entails 'Some unextended entity is red' (S3) in the sense in which a statement which is necessarily not true entails any statement. But in this case the truth-value of 'Some unextended entity is red' is irrelevant. On the other hand, I can see some point in claiming that S1.S2 entails S3 in a different sense of 'entails' only if S3 is necessarily neither true nor false, i.e., presupposes 'Unextended things are coloured'. Even given this, however, for the reasons given above, it does not follow that the

statement entailed by S1.S2 is logically equivalent to the negation of the necessarily true 'All red entities are The extended'. 'p is red' is necessarily not the sort of thing which can be true or false in a non-derivative sense). But

5. It has been said above that there are significant analogies between meaningless statements and necessarily false statements. One might object to this, however, on the grounds that the very reference to such purported analogies incorrectly presupposes an analogy between, e.g., the meaningless 'The proposition p is red' and the false 'A dog is not an animal' - namely, that they can both be considered as statements. For, according to this line of reasoning, only sentences, or other types of expression, can be said to mean anything or to be without meaning. Consequently, 'The statement "The proposition p is red" is meaningless' itself involves a type-confusion.

I disagree with this line of criticism and feel that a position approximating that suggested by Pap is the right one. According to this position, in one important ordinary sense, a statement (and therefore a sentence in a derivative sense) can be contingently true, contingently false, necessarily true, necessarily false, contingently neither true nor false, or necessarily neither true nor false. For one thing, it seems true to say that 'The proposition p is red' is necessarily neither true nor false (where I am using the expression

'"The proposition p is red" is necessarily neither true nor false' to mean something other than that the sentence 'The proposition p is red' is necessarily not the sort of thing which can be true or false in a non-derivative sense). But in this case, if one were simply referring to the sentence 'The proposition p is red' and describing its unsuccessful use, then the claim could not be true. For it can only be a contingent matter whether a specified sentence has a truth-value or is used to make a statement.

Consider the following arguments: (a) 'x is a bright shade of red' entails 'x is not the number 5' (unlimited sense) because if x is the number 5, then the number 5 is a bright shade of red - which is meaningless. (b) 'The proposition p is red' is necessarily neither true nor false because both it and its negation, 'The proposition p is not red', entail 'The proposition p is a colour', and 'The proposition p is a colour' is necessarily not true. In each of these arguments, the claim is rightly made or implied that a meaningless S is logically related to such-and-such a statement in such-and-such a way. But sentences can only be logically related to statements in a derivative sense; and they can only enter into logical relations in a derivative sense if they are used to make statements. Consequently, the validity of the above arguments depends upon the possibility of referring without contradiction to statements which

are necessarily neither true nor false, i.e., to meaningless (in this sense) statements.

It seems quite conceivable to have a discussion in which someone says with conviction that sentence S1 entails sentence S2, but does not mean by this that the statement S1 is used to make entails the statement S2 is used to make. And it seems more plausible to view such an occurrence as itself the making of a statement, even though such a statement is necessarily neither true nor false, than to accept the general thesis that a statement cannot be necessarily neither true nor false - just as I find it more plausible to view

6. 'The pork in the sausage is sweet' as a statement even where there is no pork in the sausage, than to accept the general thesis that a statement must be either true or false.

In admitting the possibility of meaningless statements, however, one must carefully distinguish meaninglessness in this sense from meaninglessness in any sense in which 'S is meaningless' entails 'S is not used to make a statement'. Thus, during the course of a discussion one of the participants might intelligibly point out, 'If you mean by the sentence "S is R" that the number 5 is red, then your claim is meaningless'. And if another participant then denied that the sentence 'S is R' means that the number 5 is red on the grounds that 'S is R' does not mean anything, he would be ascribing meaninglessness to 'S is R' in a sense distinct

from that in which the first participant accused the user of 'S is R' of meaninglessness. (his synonym for 'type-predicate') Because the customary use of 'meaningless' is unsteady in this respect, I shall use 'absurd' in place of 'meaningless' in the following discussion. Thus, 'absurd' is to be confined to statements which are necessarily neither true nor false and does not cover logical contradictions or highly probable falsehoods, unlike some phases of its ordinary use. of a type-predicate, e.g., 'A proposition is a number'); and thereby excludes the possibility of true negative type-predications (e.g., 'A proposition is not a number'). For,

6. other Despite his effort to show otherwise, it is hard to see how Pap's definition of 'type' does not allow many more classes to qualify as types than we would normally and reasonably be prepared to admit. His definition reads: "a type is a class such that there are families of predicates which can be significantly, i.e. correctly or falsely, ascribed to all and only members of it." (p.48, minus italics). The definition is proposed as a replacement for Russell's "a class such that the assertion that something is a member of it is true provided it is significant", or "a class of all entities that are of the same type as a given entity; where x and y are of the same type if 'x' and 'y' are inter-substitutable in any significant sentence without producing nonsense". The consequent re-definition of 'type-
- 7.

'predicate' is also offered as a replacement for Carnap's criterion of 'universal word' (his synonym for 'type-predicate'), the latter being: if 'P' is a universal word, then all admissible (i.e., significant) substitution instances of 'Px' are analytic.

One of Pap's principal reasons for rejecting the Russell-Carnap view of types is that it excludes the possibility of false type-predications (i.e., false predications of a type-predicate, e.g., 'A proposition is a number') and thereby excludes the possibility of true negative type-predications (e.g., 'A proposition is not a number'). For, other considerations aside, any successful proof that a statement is absurd requires an appeal to the truth of just such a negative type-predication (p.43; for his criticism of any attempt to resolve this difficulty via recourse to the formal mode of speech, see pp 43-46). Furthermore, the prohibition against the use of unrestricted variables demanded by Russell's theory disallows the possibility of making general statements about types - one consequence of which is that the theory itself is self-refuting (p.44). I think Pap's criticism of the Russell-Carnap position is basically sound. Nevertheless, his re-definition of 'type' seems far too loose.

7. He himself considers this objection as a result of Max Black's calling his attention to the possibility of predicates

of the form 'has relation R to every other member of K'. Predicates of this form are predicable without absurdity of all and only members of K (or possible members of K^1), where 'K' can have an almost unlimited range of values, including such apparent non-types as the class of logicians, of golf balls or of frying pans.

Pap attempts to meet the objection with respect to this form of predicate as follows: Letting K be the class of logicians and R the relation of being admired by, "let us analyse what we assert about x in saying 'x is admired by every other logician': for every y, if y is a logician and y is different from x, then y admires x (that x is himself a logician is presupposed rather than asserted). It then appears that the range of values of x extends far beyond the class of logicians." (p.50).

Now, in one possible sense of 'the range of values of x' (or 'the range of significance of x' or 'the range of significant values of x'), the range of values of x in a statement of the form 'x is P' covers any class to which x must belong in order that 'x is P' is not absurd. For instance, in 'x is bright' the range of values of x in this sense includes both the class of colours and the class of

¹The need for qualifications in this respect is subsequently generally ignored.

first-order properties, since 'x is bright' presupposes both 'x is a colour' and (therefore) 'x is a first-order property'. In this sense, then, the range of values of x in 'x is P' is not determined solely by what 'x is P' asserts about x, to the exclusion of what it presupposes about x. Rather, it is because 'x is P' presupposes 'x is O' that the range of values of x includes the class of O's.

One can tighten the sense of 'range of values', however, to the point where the range of values of x in 'x is P' is the class of O's if and only if 'is P' is predicable without absurdity of all and only O's. For example, in this sense the range of values of x in 'x is bright' is restricted to the class of colours and does not include the class of first-order properties; for x could be a first-order property such that 'x is bright' is absurd (to take Pap's example, triangularity). Still, in this sense too, the point holds that the presuppositions of 'x is P' are vital in determining the range of values of x.

Thus, in a sense, Black is right in suggesting that the range of values of x in 'x is admired by every other logician' is restricted to the class of logicians - viz., in either of the two senses, or at least in the first sense, indicated above. And he is right partly because 'x is admired by every other logician' presupposes and does not assert 'x is a logician'. Now, on Pap's analysis of 'type', to admit that

the range of values of x in ' x is P ', in either of the above senses, is restricted to the class of O 's is not to admit that the type "associated" with the predicate ' x is P ' is necessarily the class of O 's. Nevertheless, in order that the class of O 's counts as the type "associated" with ' x is P ' on his analysis, the range of values of x in ' x is P ' must be restricted to the class of O 's in either of the two preceding senses of 'range of values'. Consequently, it is at least dangerously misleading to suggest that what ' x is admired by every other logician' presupposes about x is irrelevant to the question of what type is "associated" with the predicate ' x is admired by every other logician'.

Thus, something more effective might be done with a predicate of the form ' x is R to every other K ' by taking a closer look at Pap's notion of a family of predicates: "A predicate family is a set of predicates such that one and only one member of it must be true of anything of which some member of the set is true or false." (p.48). For instance, if a colour-predicate ' x is brown' is true or false of x , then with his definition one and only one colour predicate is true of x . For if x is brown, then x is brown and in that respect no other colour, and if x is not brown, then x must be some colour and only that colour other than brown.

Now his analysis of 'type' requires that there be a family (indeed, families) of predicates which are predicable

without absurdity of all and only members of C, in order that C can count as a type. Therefore, one might argue that a predicate of the form 'is R to every other member of K' is not a member of a family of predicates predicable without absurdity of all and only members of K (as distinct from, say, a family of predicates predicable without absurdity of all and only things related in such-and-such a way to members of K), and therefore does not delineate K as a type. Certainly, what 'x is R to every other member of K' presupposes about x merely in virtue of the use of 'other' is not in itself sufficient to render K a type on Pap's criterion.

8. Whether or not the preceding considerations offer a successful counter to Black's specific objection is of relatively minor importance. For the general point in defence of which predicates of the form 'is R to every other K' are introduced - viz., that Pap's definition allows (virtually) any class to bear the title of typehood - holds and can, I think, be defended in terms which more readily come to grips with his definition.

To get the definition as clear as possible, consider its application to the class of coloured things: A statement like 'The proposition p is red' is absurd because both it and its negation entail 'The proposition p is coloured', and the proposition p is necessarily not coloured. Thus, colour-

predicates such as 'is red', 'is blue' or 'is pink', are predicable without absurdity only of coloured things. Furthermore, since any coloured thing necessarily satisfies all the presuppositions generated simply by predicating a colour-predicate of it, therefore predicates such as 'is red', 'is blue', or 'is pink' can be predicated without absurdity of any coloured thing. Finally, colour-predicates form a family in the relevant sense (see preceding section). Consequently, there is a family of predicates "associated" with coloured things - i.e., each of a number of predicates can be ascribed without absurdity to all and only members of the class of coloured things, and such predicates form a family. Therefore the class of coloured things constitutes a type.

With one exception this attempt to show the typehood of the class of coloured things has remained true to Pap's definition. The exception consists in the fact that his definition demands more than one "associated" predicate-family as a condition of typehood. The reasons I have omitted such a condition are (a) I do not clearly see why it is necessary from his viewpoint, and (b) if it is necessary, I think points made below could be altered where necessary to take it into account.

In order to qualify a given class as a type on his definition, then, all that is necessary is to find a family of predicates predicable without absurdity of all and only

members of that class. And I think such a family can be found for (virtually) any class. For instance, consider the class of things which have hind feet and forefeet, and the predicates 'has hind feet which are larger than its forefeet', 'has hind feet which are smaller than its forefeet', and 'has hind feet which are the same size as its forefeet'. Is it not possible to use these expressions in such a way that the resulting predicates are predicable without absurdity of all and only things having hind feet and forefeet? And do not such "hind feet/forefeet" predicates form a family in the relevant sense? Indeed, if one wanted to meet the need for more than one such family in this case, one might introduce predicates such as 'has hind feet which are darker than (lighter than, the same shade as) its forefeet'. Again, take the class of ducks (horses, cows, pigs, etc.) and the predicates 'is a white duck', 'is a black duck', 'is a purple duck'. Such "coloured duck" predicates are predicable without absurdity of all and only ducks; for in a sense, 'A horse is a red duck' is equally as absurd as 'The number 5 is red'. And they form a family in the relevant sense.

Thus, in searching for a family of predicates to qualify a given class as a type, one rough pattern to follow is: if a given class is the class of K's, then the required predicates are of the form 'is a K which is P', where P is a kind or determinate of Q and K is necessarily Q. And this pattern

or some suitable replacement can be used to uncover a family of the required predicates for any class.

One might object that this argument takes its eye off the logical structure of ordinary language and weaves a web of specially constructed predications to secure its objectives. The ascriptions and predications which occur as we actually use language are such that the families of predicates "associated" with classes are much more restricted than the foregoing theory suggests. Consequently, keeping one's feet on the ground and attending to the way language is in fact used will disclose that far from any class qualifies as a type on the criterion in question.

Now, as a matter of fact, the presuppositions of the statements we actually do make are probably much more varied and operate at many more levels than is uncritically thought to be the case. As noted above, of course, not all presuppositions are of the sort sufficient to pigeon-hole a given class as a type on Pap's analysis. Nevertheless, the diversification of even the relevant kind of presuppositions in language as we actually use it would probably surprise many subscribers to the belief that at least the majority of such presuppositions are to be found in the generic stratosphere.

Moreover, the whole objection is misconceived since the question here is whether, for any given class, there are predicates which (1) are predicable without absurdity of all

and only members of that class and (ii) form a family, but not whether such predicates are in fact predicated in the actual ordinary, or extraordinary, use of language. In this sense, we are concerned with possible predications and therefore artificial, specially constructed predicates are just as relevant in this context as ones found in any natural language.

9. The sense of 'type' appropriate to this discussion, however, is not always as neat and tidy as it might be. If A says to B that a bullet has longer hind legs than forelegs and B criticises A for committing a type-confusion, we would not normally object to B's criticism on the grounds that A's presuppositions do not delineate a type. And this is not because we have not yet seen that an absurdity of this kind does not necessarily indicate a type-difference. Rather, it is because, in one sense of 'type', a type-confusion is adequately illustrated by just such an absurd statement. Thus, under such conditions, if B went on to say 'A bullet is not the type of thing which can or cannot have longer hind legs than forelegs, because a bullet cannot have legs', in one important sense of 'type', B is indicating the type of thing a bullet is not.¹

¹Throughout this discussion I pay little attention to distinguishing a type as class from a type as kind, in the belief that any alterations demanded by such a consideration are of minor importance.

Nevertheless, in such a context another, and to some extent competing, notion of a type often emerges, usually in the form of the notion of a class at the relatively general end of a chain of classes and subclasses - and thus the link with categories. Tension is created because in the former case a type is roughly the range of significant predication of a given set of predicates, and then any class becomes a type relative to some such set, and in the latter case types are restricted to only certain classes. I shall refer to the latter as a type in the restricted sense and to the former as a type in the looser sense. Confusion of the two arises partly because in most recognised cases of type-confusion, and certainly in many of the examples usually given of type-confusions, the kinds of thing involved belong to different types in both the restricted and the looser sense: e.g., 'The number 5 is red', 'The atomic theory is hungry', 'Cycling to work logically entails "No swans are black"'.

In denying that types consist in classes with which families of predicates are "associated", I am therefore using 'type' in a restricted sense. This is not simply an arbitrary stipulation on my part, however, since (i) Pap's attempts to defend his definition against the charge that any class would then count as a type shows that a type in the restricted sense is the relevant analysandum in this context, and (ii) many philosophers who have discussed and/or attempted to

uncover types or categories have been concerned with them in a restricted sense.

Thus, when Ryle claims the revelation of a host of type-confusions or category-mistakes in connection with the philosophy of mind and concludes that the mind, knowledge, perception, and the emotions are therefore not the type of thing they are often thought to be, in at least one important sense of 'type' his conclusions are quite justifiable, given the relevant absurdities. Moreover, in the immediate context of the philosophy of mind the question of typehood raised here is of secondary importance, since the absurdities remain absurdities even if they do not point to type-differences in the restricted sense. Nevertheless, if Ryle's claims are to be understood against the background of his theoretical views concerning types, then they are subject to some criticism. For the theory in accordance with which they are made suggests a concern with types in a restricted sense and yet views a type as the range of significance of a given propositional frame or set of propositional frames. Admittedly, one of his objectives is to loosen the restrictions placed on types by, say, Aristotle or Kant; but he does not clearly indicate that he is prepared to admit every class as a type.¹

¹e.g., see "Categories", Logic and Language, second series, ed. A. Flew (London, 1953), 65-81. Originally in Proceedings of the Aristotelian Society, 1937-38. For a criticism of Ryle along such lines, see Ch.7 of John Passmore's Philosophical Reasoning (London, 1961), especially pp 131-47.

The situation is certainly not straightforward in Ryle's case, however. He has at least come to view the notion of a category with a characteristic grain of salt and is content to use the word 'category' in a rough and ready fashion: "I think it is worth while to take some pains with this word 'category', but not for the usual reason, namely, that there exists an exact, professional way of using it, in which, like a skeleton-key, it will turn all our locks for us; but rather for the unusual reason that there is an inexact, amateurish way of using it in which, like a coal-hammer, it will make a satisfactory knocking noise on doors which we want opened to us."¹ And from a theoretical viewpoint, his primary contention is: "The truth is that there are not just two or just ten different logical métiers open to the terms or concepts we employ in ordinary and technical discourse, there are indefinitely many such different métiers and indefinitely many dimensions of these differences." (Dilemmas, p.10). Thus, he comes very near to allowing expressly that virtually any class qualifies as a category relative to some propositional frame or set of propositional frames. But if he is using 'category' in this way and if he is prepared to accept such a consequence, is he being entirely fair to Aristotle or Kant?

¹Dilemmas (Cambridge, 1960), p.9.

10. As far as a type in the restricted sense is concerned, can anything more interesting be found than the rather vague 'a class at the relatively general end of a chain of classes and subclasses'? At the moment, I can see nothing approaching an effective reply to this question. As an account of the way 'type' is generally used in the restricted sense, such a view probably comes closer to the truth simply because it makes the concept no more refined than it actually is. If so, the interesting problem then is whether, in the rough area covered by 'type' in its present sense, one can uncover an important but sharper distinction which could be marked by 'type' and 'non-type', either between certain kinds of classes or concealed within the elasticity of the use of 'class'.

One can, of course, confine 'type' to the uppermost peak of a hierarchy of classes and subclasses, i.e., to any class which is not a subclass. But from the viewpoint of the concept's application, it seems of relatively little philosophical interest and attended by practical difficulties. Furthermore, in the usual restricted sense of 'type', a type is not necessarily a class which is not a subclass - e.g., consider the classes of relations and of qualities with respect to the class of properties. Consequently, in this light there seems little to say in favour of using 'type' to mean a class which is not a subclass. Nevertheless, if 'type' is thus strictly confined, certain theoretical consequences

appear to follow which are of some interest, at least within the boundaries of this paper.

In this very strict sense of 'type', an altered version of Russell's criterion might appear acceptable: a type is a class such that the assertion that something is a member of it is either necessarily true or necessarily false, provided it is either true or false. Indeed, one might even be tempted to come closer to Russell by claiming: a type is a class such that the assertion that something is a member of it is either necessarily true or necessarily false, provided it is not absurd. The second claim crumbles, however, in the face of an assertion like 'John is a member of T' (where T is a type), an assertion which is contingently neither true nor false in the event that there is no John, i.e., is neither absurd nor necessarily true nor necessarily false. Furthermore, the possibility of such an assertion also forces at least a clarification of the first amended criterion. For, if a type-predication can be contingently neither true nor false, then it is not necessarily either a necessary truth or a necessary falsehood. Indeed, if a given kind of assertion is necessarily either a necessary truth or a necessary falsehood, then it is necessarily either true or false and the 'provided that' rider renders the amended criterion incoherent.

A distinction must therefore be drawn between claiming that a type-predication is either a necessary truth or a

necessary falsehood provided it is either true or false, and claiming that if a type-predication is either true or false then either necessarily such a type-predication is true or necessarily such a type-predication is false. In other words, in order to have at least some initial plausibility, the amended criterion must amount to: a type-predication is an assertion which is either necessarily not true or necessarily not false.

11. Another objection to the amended criterion might be voiced on the grounds that, e.g., even if John exists, the statement 'John is a T' cannot be "necessarily true" or "necessarily false" because - to introduce a view which is sometimes uncritically traced to Locke through Mill's eyes - there is "nothing essential to particulars". But, although there are important differences between the use of uniquely referring expressions and the use of other referring expressions, I can see no good theoretical grounds for denying that, if the statements 'John Bright was a person', 'The Great War was an event', and 'Mount Everest is a material object' are either true or false, then it necessarily follows that such statements are true. If, using Locke's terminology, one claims that particulars such as John Bright, the Great War, and Mount Everest, cannot have essences, I admit that strictly speaking this is so - for allowing the essence of

John Bright would commit one to allow a statement of the form 'John Bright necessarily is ...' to be true. But admitting that particulars cannot have essences in this sense does not involve denying that, under such-and-such conditions, it necessarily is the case that the statement 'John Bright was a person' is true.

Moreover, given that something is a member of a specified type, it is impossible for it to become a member of a different type - this is a necessary truth, dictated by the concepts of change and of the same particular. Consequently, one cannot argue from the possibility of a particular's changing its type to the possible "contingency" of a type-predication in any sense which allows that although 'John is a T' is true(false), it could be false (true).

Although such counter-objections are interesting in themselves, however, the class of entities actually related¹ to some other entity seems to provide a valid counter-example to the amended criterion. For it seems only a "contingent" matter, for some particulars, whether a given particular is actually related to some other particular. In this connection, one might also introduce the possibility of "intentionally determined" classes - e.g., the class of entities perceived

¹If x is actually related to y, then there is a y (using 'is' in the tenseless sense); e.g., a spatial, temporal, or causal relationship.

by men, or the class of entities thought of by philosophers - and then tender 'Anything perceived by a man is a T' or 'Anything thought of by a philosopher is a T' as "contingent" type-predications. Such a move is attended by dangers of reification, but if developed properly, I think it forces at least a qualification on the amended criterion - a force which is not lessened by an appeal to the so-called systematic ambiguity of the operative intentional terms.

12. Thus, even where a type is a class which is not a subclass, in order to preserve a criterion of typehood formulated in terms of the possible truth-values of a type-predication, one must exclude the class of things actually related to other things from being a type and even, perhaps, the class of entities "intentionally related" to something. Further, one must also exclude "intentionally determined" kinds as possible values of x in type-predications of the form 'x is a T'; indeed, there seems to be a need for excluding "relationally determined" kinds in general.

Now, even if such a duly qualified point about the truth-values of a type-predication can be made out, the necessary qualifications are so numerous that at the very least it provides an unbearably cumbersome criterion of typehood - if it can be properly called a criterion in terms of the truth-values of a type-predication at all. And if 'type'

is loosened beyond the unusually strict 'class which is not a subclass', any attempt to provide a corresponding criterion becomes hopeless. Furthermore, if one conjoins this fact with points introduced by Pap against the Russell-Carnap theory and with arguments used above in criticising Pap's re-definition, one has good grounds, I think, for being sceptical about the possibilities of providing a satisfactory criterion of typehood either in terms of the possible truth-value(s) of a type-predication or in terms of the range of significance of such-and-such a set of predicates.

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D. A. Odegard. Ph.D.

The Correct Use of a Sentence

1. In a critical notice¹ of Alan R. White's G. E. Moore: A Critical Exposition (Oxford, 1958), Norman Malcolm re-states his interpretation of Moore's defence of Common Sense "as being in reality a defence of ordinary language", an interpretation which purportedly describes Moore's view "in so far as it is an interesting and tenable philosophical position" (p.97).

As an example of Moore's defensive manoeuvres of the relevant kind, he cites the following argument against Hume: "If Hume's principles are true, then, I have admitted, I do not know now that this pencil - the material object - exists. If, therefore, I am to prove that I do know that this pencil exists, I must prove, somehow, that Hume's principles, one or both of them, are not true. In what sort of way, by what sort of argument, can I prove this?

"It seems to me that, in fact, there really is no stronger and better argument than the following. I do know that this pencil exists; I could not know this, if Hume's principles were true; therefore Hume's principles, one or both of them, are false. I think this argument is as strong and good a one as any that could be used: and I think it really is conclusive".²

¹Mind, LXIX (1960), 92-98. Page references to Malcolm are to this paper.

²as quoted by Malcolm, pp 96-97; originally in Some Main Problems of Philosophy (London, 1953), pp 119-120.

Malcolm rightly feels that in a case such as this Moore is not appealing to common sense in the sense of what is universally or generally held to be the case. Rather, he takes Moore to be pointing out (indeed, reminding us) that a sentence like 'I know this is a pencil' has a correct use in ordinary discourse. From this it follows, for Malcolm, that the sentence 'I know this is a pencil' is not self-contradictory. And therefore the notion of our knowing a material object proposition to be true is not self-contradictory. Consequently, since the philosophical claim that we do not know material object propositions to be true is a purported necessary truth, the philosophical claim is mistaken. He thus concludes that, in this type of case, Moore's so-called defence of Common Sense is really "a defence of ordinary language" (see p.97 for this argument).

2. Exposition of Moore for the most part aside, I want to consider Malcolm's contention that the view he here ascribes to Moore is a "tenable philosophical position". One preliminary point: strictly speaking, it seems to me that the line of reasoning introduced by Malcolm, rather than being a defence of ordinary language in the sense of a justification for using certain expressions in such-and-such a way, is a defence of a non-linguistic point - in this case,

that it is possible for me to know that a pencil, and therefore a material object, exists - by appealing to ordinary language.

Does the inference from 'The sentence "I know this is a pencil" has a correct use in ordinary discourse' to 'The sentence "I know this is a pencil" is not self-contradictory' hold? If 'The sentence "I know this is a pencil" has a correct use in ordinary discourse' means (roughly) that the words composing the sentence 'I know this is a pencil' have a correct or proper use, or have a meaning in ordinary language, and that the syntax of the given sentence is correct, then it is quite possible for a sentence both to have a correct use in ordinary discourse and to be self-contradictory. For instance, in this sense of 'correct use of a sentence', each of the sentences, 'All boys are non-boys', 'A brother is not male', and 'If John is Peter's father, then Peter is not John's son', has a correct use in English; for in each case the component words have a correct use and the sentence is syntactically sound. Nevertheless, each sentence is also self-contradictory; or, strictly speaking, when used correctly each is used to make a statement which is self-contradictory. Consequently, in this (first) sense of 'correct use in ordinary discourse', the inference from a sentence's having a correct use in ordinary discourse to its being used to make a statement which is not self-contradictory

does not hold.

The inference does hold, however, if 'correct use in ordinary discourse' is understood in a rather more special (second) sense - viz., one given in terms of the possible truth of the statement the sentence is in the first sense correctly used to make. For example, 'The sentence "I know this is a pencil" has a correct use in the second sense' amounts to 'The sentence "I know this is a pencil" is in the first sense correctly used to make a statement which could be true'. In this second sense of 'correct use', then, 'The sentence S has a correct use' obviously entails 'The sentence S is used to make a statement which is not self-contradictory'. Corresponding points hold in connection with another possible (third) sense of 'correct use in ordinary discourse', in which 'Sentence S has a correct use in ordinary discourse' amounts to 'S is in the first sense correctly used to make a statement which is true'.

Now it seems to me that Malcolm is using 'correct use in ordinary discourse' more or less in the first sense and not in the second (or third) sense; i.e., is using it in such a way that the relevant portion of his argument does not hold. For one thing, if this is not the case, then assertions such as, "To understand that this claim is mistaken it is sufficient to realize that these sentences do have a correct use in ordinary discourse, which they could

not have if they were self-contradictory", or "He was not begging the question against Hume . . . because his very point was that it is really not open to question that such sentences have a correct use", or "On my view, then, Moore's so-called defence of Common Sense . . . is merely the assertion, in regard to various sentences, that those sentences have a correct use in ordinary language" (p.97), need careful explaining in terms of having a correct use in the second sense; and no such explanation is provided. Moreover, the premise that the argument would then have - 'The sentence "I know this is a pencil" is used in ordinary discourse to make a statement which could be true' - would scarcely be as prima facie acceptable to all philosophers as the claim that the sentence 'I know this is a pencil' has a correct use in the first sense of 'correct use', and as unquestionable as Malcolm takes it to be. Finally, the argument would then in fact amount to: If sentence S is used in ordinary discourse to make a statement which could be true, then S is used in ordinary discourse to make a statement which is not self-contradictory - which is a less interesting argument than the one Malcolm seems to want to secure.

Given this, however, consider the following remark: "All he [Moore] needed to do was to remind his audience and readers that the sentence "I see a door over there" can be correctly used to make a true statement" (p.97). In this

instance, although he is using 'correctly used' in the first sense, he is not confining his appeal to correct use in this sense, but is in effect appealing to correct use in the second sense. For he is appealing to the truth, and therefore the possible truth, of the statement which the given sentence is used to make in ordinary discourse. Now, as shown above, the two appeals are distinct in very important ways. But Malcolm does not seem to see this clearly. And it is because he tends to run the two points together that his argument has more initial plausibility than it might otherwise have.

In this connection, one might also put some pressure on an expression he occasionally uses, apparently without hesitation - viz., "has a correct use in ordinary discourse". As indicated above, 'Sentence S has a correct use in ordinary discourse' might mean that the words composing S have a use in ordinary discourse and S is syntactically sound (or something sufficiently like this). Now, as far as ordinary usage is concerned, there could be some redundancy involved in using the expression in this way. For, relative to ordinary usage, either 'Sentence S has a correct use' or 'Sentence S has a use in ordinary discourse' alone could effectively be used to mean that the words composing S have a use in ordinary discourse and S is syntactically sound. There is, however, a sense of 'S has a correct use' in which 'Sentence

'S has a correct use in ordinary discourse' does not run the danger of any such redundancy - viz., the sense in which 'S has a correct use' amounts to 'S is used to make a statement which is true (or, at least, which could be true)'. In this sense, then, 'S has a correct use in ordinary discourse' does amount to 'S is used in ordinary discourse to make a statement which is (or at least could be) true', and does so without any trace of redundancy. And the fact that Malcolm's use of 'correct use in ordinary discourse' is not clearly marked by traces of redundancy suggests that he does not always clearly distinguish correct use in the indicated senses. In this respect as well, then, his argument commands greater plausibility than it would if the relevant distinction had been drawn. For, although from 'S has a correct use' in the sense of 'S is used to make a true statement' it does follow, from 'S has a correct use' in the sense of 'The component words of S have a use in ordinary discourse and S is syntactically sound' it does not follow, that S is used to make a statement which is not self-contradictory.

3. Waiving the preceding considerations, however, consider the argument as simply moving from 'The sentence "I know this is a pencil" is used in ordinary discourse to make a statement which is true' to 'The sentence "I know this is a pencil" is used to make a statement which is not self-contradictory', and

then to 'It is possible for someone to know that this is a pencil'.

Strictly speaking, the only way in which the second stage of this inference can come close to holding is the way in which any statement entails a statement which is necessarily true. For, 'The sentence "I know this is a pencil" is used to make a statement which is not self-contradictory' is itself a contingent statement. And then the argumentative value of appealing to the given premise vanishes. On the other hand, if the conclusion 'It is possible for someone to know that this is a pencil' is viewed as a contingent statement, then it is possible for it to be not true - e.g., for there to be no material object present - and yet for the sentence 'I know this is a pencil' to be used to make a statement which is free from contradiction - e.g., the statement that an automobile is dangerous, or that a cow gives milk, or, indeed, that I know that there is a pencil here. Furthermore, it is equally possible for 'It is possible for someone to know that this is a pencil' to be not true and, conjointly, for the sentence 'I know this is a pencil' to be used to make a statement which is not only free from contradiction but is also true - e.g., the statement that all men are mortal, or that all horses are animals.

Thus, the only way to get near constructing a cogent and valid argument along such lines is to introduce premises

about the (possible) truth-values of statements - notably of the statement that I know this is a pencil. And, aside from canvassing public or expert opinion on this point - a procedure neither Moore nor Malcolm advocates as providing an exhaustive means to philosophical truth - the only effective way of, e.g., securing the truth of the statement that I know this is a pencil is either by showing via argument that I do in fact know this is a pencil or by appealing to the purportedly obvious fact that I know this is a pencil. And if some philosopher disagrees with an advocate of Moore on this point, particularly as a result of disputing the general claim that one can know there are material objects, and introduces arguments to defend his position, it is no adequate reply simply to point out or remind him that the sentence 'I know this is a pencil' has a use in ordinary language. Certainly, it is relevant to show that the sceptic is using 'know' in a special, restricted sense - if he is doing so - in order to keep in view just what the claim in question is, i.e., to prevent merely verbal disputes. Moreover, it is important to distinguish knowledge, in the sense in which the claim to the knowledge that there are material objects is made, from knowledge in any special but analogous sense in which the sceptic might be making his counterclaim, in the event that the sceptic confuses the two and overstates his case. In those situations where such verbal and partly verbal points do

apply, they are of central importance. Nevertheless, to allow this role to a linguistic appeal is not to allow that simply because such-and-such a sentence has a use in ordinary discourse, either therefore it is used to make a statement which could be true, or therefore such-and-such a non-verbal point holds.

In the case under consideration, then, Moore is arguing that, in the relevant ordinary sense of 'know', I do know that this is a pencil and, since the conjunction of Hume's principles entails that I cannot know this, therefore at least one of Hume's principles is not true; for it is more evident that this is a pencil than that the conjunction of Hume's principles is true. Granted, in the particular passage Malcolm quotes, Moore presents his argument in a rather poor way since he sets out with the problem that, if he is to prove that he knows the pencil exists, then he must disprove Hume; and he attempts to accomplish this by simply claiming that he knows the pencil exists and inferring therefrom that Hume is wrong - which is circular. Nevertheless, if a broader view of Moore's position is taken, it supports in substance, I think, the very brief description I have given of it. In this case, then, Moore opts for what might be considered as just plain common sense - in the sense of what anyone equipped with an average amount of reasoning power or sound judgment is capable of seeing - and for what as a matter of fact is,

in its general form, also common sense in the sense of what is generally held to be the case. And, as well as not being an argument which relies upon the fact that most people hold such a view, it is neither a defence of ordinary language nor a defence by appealing to ordinary language, in any sense in which making such an appeal involves adopting the linguistic argument Malcolm seems to find tenable.

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D. A. Odegard. Ph.D.

UNIQUE REFERENCE AND ENTAILMENT

By DOUGLAS ODEGARD

1. **D**OES an ordinary subject-predicate statement, the subject term of which refers to a particular, *entail* the simple statement asserting the existence of the particular referred to? For instance, does 'Bill is a thief' entail 'Bill exists'? (Where 'Bill exists' amounts to something like 'There exists one and only one man who . . . ' and does not presuppose, as well as assert, the existence of one and only one man who . . . Similarly, 'Bill does not exist' amounts to something like 'There is no (solitary) man who . . . ' and does not both presuppose and deny the existence of one and only one man who In the interests of economy, 'Bill exists' and 'Bill does not exist' are generally used throughout this paper.)

In "On Referring",¹ P. F. Strawson denies that a statement (of the kind indicated) involving a unique reference entails any statement (also of the kind indicated) asserting the existence of the particular referred to: "To say 'The king of France is wise' is, in some sense of 'imply', to *imply* that there is a king of France. But this is a very special and odd sense of 'imply'. 'Implies' in this sense is certainly not equivalent to 'entails' (or 'logically implies'). And this comes out from the fact that when, in response to his statement, we say (as we should) 'There is no king of France', we should certainly *not* say we were *contradicting* the statement that the king of France is wise. We are certainly not saying that it is false." (p. 34).

Strawson's argument for denying entailment between statements of the relevant type, then, is briefly: If the unique-reference statement entails the existential statement, then, if the existential statement is false, the unique-reference statement is false. Whereas, in truth, if the existential statement is false, then the unique-reference statement is neither true nor false, and therefore not false.

I agree with Strawson that if the relevant existential statement is false, then the unique-reference statement is not false, but is neither true nor false. But I do not agree that this point warrants the claim that the unique-reference statement does not entail or imply, except in "a very special and odd sense", the existential statement. In showing this, I intend to show that the unique-reference statement *does* entail or logically imply the relevant existential statement, in a sense of 'entail' or 'logically imply' which at least approximates the ordinary sense of these terms, and, I think, is not unusual or extraordinary at all.

¹ Originally in *MIND*, N.S. lix (1950); reprinted with additional footnotes in *Essays in Conceptual Analysis*, ed. Antony Flew (London, 1956). The page reference is to the latter.

2. A reasonably common definition of 'entailment' is: One statement entails another statement if and only if the conjunction of the former with the negation of the latter is inconsistent. I shall accept this formulation, but only on a tentative basis, reserving the right to attach qualifications where necessary.

Let 'Bill is a thief' exemplify the type of unique-reference statement we are concerned with, and let 'Bill exists' exemplify the corresponding existential statement. According to the preceding definition of 'entailment', then, 'Bill is a thief' entails 'Bill exists' if and only if the conjunction of 'Bill is a thief' with 'Bill does not exist' is inconsistent.

There are undoubtedly occasions when the sentences 'Bill is a thief' and 'Bill does not exist' are used in such a way that the statements they are used to make are *not* inconsistent. For instance, 'Bill is a thief' might be used to assert the material conditional, 'If there is one and only one man who . . . , then he is a thief', and, in this case, the statement it is used to make is true if 'Bill does not exist' is true. Or, 'Bill is a thief' might be used to describe a particular fictional character, and 'Bill does not exist' to affirm Bill's fictional status. Such uses of the indicated sentences are not uses with which I am here concerned, however. For I am concerned only with their use when the statements they are used to make are such that 'Bill is a thief' would be said by Strawson to imply, in the so-called "very special and odd" sense of 'imply', 'Bill exists'. Thus, the use of 'Bill is a thief' to make an existential statement—e.g., 'There is one and only one man who etc.'—is excluded as well.

3. Further preliminary points in connection with terminology: a statement is false if and only if its negation is true. In this immediate context, 'negation' is restricted to the form illustrated by 'Bill is not a thief', 'Bill does not exist', 'Not all apples are green', 'Some horses do not like sugar', etc.

If one allows the possibility of some types of statement being neither true nor false, however, one can then introduce a looser (but less usual) sense of 'negation' in which, e.g., the negation of 'Bill is a thief' is either 'Bill is not a thief' or 'It is neither the case that Bill is a thief nor the case that Bill is not a thief'. In this (second) sense of 'negation', the negation of a statement might be either the negation of the statement in the first sense or the denial of both the affirmative and negative (in the first sense) forms of the statement. And one can then develop a third sense for 'negation' in which it is applicable only to statements of the form 'It is neither the case that . . . nor the case that . . . '.

The negation of a statement p in the first sense of 'negation' will be symbolised as \bar{p} . The negation of p in the third sense will be symbolised as Neither- p -nor- \bar{p} .

4. Roughly, a statement is inconsistent if there are (logically) no possible conditions under which it could be true. Now, there *seem* to be no possible conditions under which the conjunction of 'Bill is a thief' and 'Bill does not exist' could be true. Consequently, the conjunction of 'Bill is a thief' and 'Bill does not exist' *seems* to be inconsistent. And, therefore, 'Bill is a thief' *seems* to entail 'Bill exists'.

Nevertheless, so the argument might run, the claim "'Bill is a thief' entails 'Bill exists'" itself entails "'Bill does not exist' entails 'Bill is not a thief'", and, since 'Bill does not exist' entails 'It is neither the case that Bill is a thief nor the case that Bill is not a thief', therefore 'Bill is a thief' does not entail 'Bill exists'.

In symbols, if $p \equiv$ 'Bill is a thief', and $q \equiv$ 'Bill exists', then this point becomes: p does not entail q , because if p entails q , then \bar{q} entails \bar{p} , and \bar{q} does not entail \bar{p} ; rather \bar{q} entails Neither- p -nor- \bar{p} .

Preserving the indicated notation, it is true that \bar{q} does not entail \bar{p} . Consequently, in order to maintain that p entails q , one must focus the question on the claim that if p entails q , then \bar{q} entails \bar{p} .

The argument for this claim might read as follows:

p entails $q \equiv p\bar{q}$ is inconsistent.	
$p\bar{q}$ is inconsistent $\equiv \bar{q}p$ is inconsistent	($\because p\bar{q} \equiv \bar{q}p$)
$\bar{q}p$ is inconsistent $\equiv \bar{q}$ entails \bar{p}	($\because p \equiv \bar{\bar{p}}$)
Therefore, if p entails q , then \bar{q} entails \bar{p} .	

Now, the weakness in this proof, in a context where Neither- p -nor- \bar{p} is possible, lies in the claim that $\bar{q}p$ is inconsistent $\equiv \bar{q}$ entails \bar{p} . For, although $\bar{q}p$ is inconsistent, in such a context $\bar{q}\bar{p}$ might be inconsistent as well, and, therefore, \bar{q} might not entail \bar{p} but rather, might entail Neither- p -nor- \bar{p} . In non-symbolic terms, the conjunction of 'Bill does not exist' with 'Bill is a thief' is inconsistent. But it does not follow from this that 'Bill does not exist' entails 'Bill is not a thief'; indeed, 'Bill does not exist' is inconsistent with 'Bill is not a thief'. Consequently, in this case, 'Bill does not exist' entails 'It is neither the case that Bill is a thief nor the case that Bill is not a thief'.

The point might be put in slightly different terms, given another customary formulation of entailment, viz: \bar{q} entails \bar{p} if and only if $\bar{q} \supset \bar{p}$ is necessary. Given that $\bar{q}p$ is inconsistent under conditions where Neither- p -nor- \bar{p} is possible, it does not necessarily follow that $\bar{q} \supset \bar{p}$ is necessary, i.e., that \bar{q} entails \bar{p} . For, it might be the case that $\bar{q} \supset$ Neither- p -nor- \bar{p} is necessary, and therefore that $\bar{q}\bar{p}$ is inconsistent. Thus, given that 'Bill does not exist and Bill is a thief' is inconsistent, it does not necessarily follow that 'Bill does not exist \supset Bill is not a thief' is necessary. Indeed, 'Bill does not exist and Bill is not a thief' is inconsistent, and 'Bill does not exist \supset It is neither the case that Bill

is a thief nor the case that Bill is not a thief' is necessary. Consequently, the statement " 'Bill does not exist' and 'Bill is a thief' are inconsistent" does not entail the statement " 'Bill does not exist' entails 'Bill is not a thief'".

5. Thus, in general, equating 'p entails q', in the sense in which it is customarily formulated as 'p \supset q is necessary', with 'p \bar{q} is inconsistent' can be dangerous, for the equation does not hold unconditionally—viz., under conditions where the conjunction of p and Neither-q-nor- \bar{q} is not inconsistent.

Consequently, if we call the claim that 'p entails q' entails ' \bar{q} entails \bar{p} ' the rule of transposition, then such a rule does not hold under *all* conditions. For, p entails q only if *either*

- (a) p \bar{q} is inconsistent. And Neither-q-nor- \bar{q} is self-contradictory, and therefore the conjunction of p and Neither-q-nor- \bar{q} is inconsistent,
- or (b) p \bar{q} is inconsistent. And, although Neither-q-nor- \bar{q} is possible, the conjunction of p and Neither-q-nor- \bar{q} is inconsistent.

Now, under most conditions, in addition to either (a) or (b), either Neither-p-nor- \bar{p} is internally inconsistent or \bar{q} contradicts (in the usual sense) p, and therefore the conjunction of \bar{q} and Neither-p-nor- \bar{p} is inconsistent. Under such conditions, the rule of transposition holds. But, in the type of case under consideration, the conjunction of \bar{q} and Neither-p-nor- \bar{p} is not inconsistent, and therefore the rule of transposition does not hold.

Thus, claiming " 'Bill is a thief' entails 'Bill exists' " does not itself entail claiming " 'Bill does not exist' entails 'Bill is not a thief' ". For, all that the claim " 'Bill is a thief' entails 'Bill exists' " itself entails is: the conjunction of 'Bill is a thief' with 'Bill does not exist', and the conjunction of 'Bill is a thief' and 'It is neither the case that Bill exists nor the case that Bill does not exist' are both inconsistent. But this *in itself* does not entail that the conjunction of 'Bill does not exist' and 'Bill is a thief', and the conjunction of 'Bill does not exist' and 'Neither Bill is . . . nor Bill is not . . .', are both inconsistent. And *both* these latter conditions must be met in order that 'Bill does not exist \supset Bill is not a thief' is necessary.

Consequently, one (possibly) central argument against viewing the logical relationship between a unique-reference statement and the relevant existential statement as *entailment* is invalid.

Therefore, a unique-reference statement entails the relevant existential statement in the ordinary 'p \supset q is necessary' sense of 'entails'. For 'Bill is a thief \supset Bill exists' is necessary; and applying 'entails' in its usual sense does not logically commit one to make further claims which are falsified by this type of situation.

6. In presenting this argument, I think I have used terms such as 'necessary', 'inconsistent', and (therefore) 'entails' in relevant ordinary senses. For one thing, claiming ' $p \supset q$ is necessary' or ' $p\bar{q}$ is inconsistent' does not *itself* entail that Neither- p -nor- \bar{p} and Neither- q -nor- \bar{q} are self-contradictory. Nor is the use of 'necessary' or 'inconsistent' necessarily restricted to contexts where the relevant logical incompatibilities are solely in the form of one statement being the negation of, or entailing the negation of, another statement, in the ordinary sense of 'negation'. For instance, the conjunction of p and Neither- p -nor- \bar{p} is every bit as logically inconsistent—in an ordinary sense of 'logically inconsistent'—as the conjunction of p and \bar{p} .

It might be, and probably is, the case that terms like 'necessary', 'inconsistent', etc., as ordinarily used, have a flexible sense, and the conditions which render their application correct in one case are not identical with the conditions which render their application correct in another. But, (a) their flexibility in respects which are relevant to the present argument needs further demonstrating, and (b) even if this point is true, it simply shows that the ordinary use of such terms is flexible, and not that using them in the way they are used in this paper is using them in an unusual or extraordinary sense.

Admittedly, statements of the form 'It is neither the case that Bill is . . . nor the case that Bill is not . . .' may play a minor role in ordinary discourse. But once a statement of this kind is recognised as a possible form of discourse—a thoroughly justifiable move, I think—'necessary' can then be used in a relevant, ordinary sense to claim (e.g.) that 'Bill is a thief \supset Bill exists' is necessary, although the *kind* of necessary agreement is different from the kind with which one is usually concerned.

7. Now, a critic might re-introduce one of the central points at issue in slightly different terms, claiming that, e.g., 'Bill does not exist' does not *contradict* 'Bill is a thief', in the ordinary sense of 'contradict', since it does not assert or entail 'Bill is not a thief'—i.e., it does not entail the negation of 'Bill is a thief', in the appropriate ordinary sense of 'negation'. Rather, 'Bill does not exist' contradicts 'Bill is a thief' in a way corresponding to the (unusual) sense in which 'It is neither the case that Bill is a thief nor the case that Bill is not a thief' negates 'Bill is a thief'. And therefore, 'Bill is a thief' does not entail 'Bill exists', because such an entailment itself entails that 'Bill does not exist' contradicts 'Bill is a thief'.

Nevertheless, (1) at least the analogies between 'negation' in the 'Neither is nor is not' sense, and 'negation' in its more usual sense, and between corresponding senses of 'contradicts', are stronger than any claim that the unusual sense of 'negation' or 'contradicts' is "very special and odd" might suggest. And, (2) a term such as 'in-

consistent' does not seem as confined in this respect as 'contradiction' or 'negation'. Thus, 'Bill does not exist' and 'Bill is a thief' are inconsistent, whereas 'Bill does not exist' does not contradict 'Bill is a thief'. And, since 'entailment' can, in at least one of its ordinary uses, be formulated in terms of inconsistency, therefore 'Bill is a thief' entails 'Bill exists' despite the fact that 'Bill does not exist' does not contradict 'Bill is a thief'.

8. Even if—and I heavily doubt this postulate—'entails' is not being used in its ordinary sense, or in one of its ordinary senses, in claiming (truly), for example, that 'Bill is a thief' entails 'Bill exists', the argument in this paper has at least shown, I think, that the sense of 'entails' or 'implies' in which it *can* be claimed that a unique-reference statement entails the relevant existential statement, is not so very "special and odd" in relation to ordinary usage as Strawson might suggest.

In fairness, however, it should be pointed out that Strawson, in "On Referring", is not *primarily* concerned with what the logical relationship between a unique-reference statement and the relevant existential statement *is*, but is more concerned with what it is not. He is chiefly interested in denying the claim that uniquely referring expressions are disguised assertions or that unique-reference statements are simply kinds of existential statements. Consequently, he denies that the relevant negative existential statement contradicts (in the usual sense) a unique-reference statement, and, believing that entailment involves the indicated type of contradiction, he is therefore forced into denying entailment between unique-reference statements and the relevant existential statements. And, to prevent any confusion on this issue, he claims that a unique-reference statement implies the relevant existential statement only in "a very special and odd sense" of 'implies'. Now, viewed strictly within this context, to say that the relevant sense of 'implies' is "very special and odd" need not be particularly misleading. But if the expression suggests, as well it might, that "special implication" and entailment differ significantly beyond the fact that the negation of an implied statement does not contradict the implying statement, whereas the negation of an entailed statement contradicts the entailing statement (where 'negation' and 'contradicts' are used in their more customary senses), then it can be misleading.

To do full justice to Strawson, it should also be pointed out that his discussion of this and related points in *Introduction to Logical Theory* (London, 1952) does not even "suggest" so radical a difference between special implication and entailment. In this context, he states that there is "a kind of logical absurdity" in conjoining, e.g., 'Bill is a thief' with 'Bill does not exist', but warns that this type of logical absurdity

must be distinguished from "straightforward self-contradiction". Consequently, he denies that 'Bill is a thief' entails 'Bill exists' and prefers to say that 'Bill is a thief' *presupposes* 'Bill exists'.¹ Thus, he retains the view that the sense of 'implies' in which one can say that a unique-reference statement implies the relevant existential statement is special, and therefore presumably different from any ordinary sense, but at least he does not put it forward as a "very special and odd sense".

9. Finally, to repeat the stronger claim in brief, although the logical relationship between 'Bill is a thief' and 'Bill does not exist' is not one of "straightforward contradiction" where straightforward contradiction involves denial or negation in the ordinary sense, "'Bill is a thief' entails 'Bill exists'" does not itself entail "'Bill does not exist' straightforwardly contradicts 'Bill is a thief'". And, since the existence of Bill is a logically necessary condition of his being a thief, I see no good reason for denying the claim that 'Bill is a thief' entails 'Bill exists'.

¹ See especially pp. 174-175.

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ONE FORM OF SCEPTICISM ABOUT INDUCTION

By KEITH CAMPBELL

SOME principles of thought are so fundamental that they cannot coherently be called in question; any successful denial of such a principle's validity must itself depend on what it would impugn. The "laws of thought", notably those of contradiction and excluded third (fourth, fifth, . . .) are commonly held to be of this kind. The characteristic is shared also by some inductive principles, in particular by Λ : *At least one inductively established result is justifiable.*

Let 'regular concomitance' be taken as synonymous with 'repetitive concomitance in accordance with some law'. Let a *sub-predictive generalization* be any assertion of the form 'There is a regular concomitance of characteristics α and β throughout a substantial segment of space-time, past and present'. These assertions are labelled *sub-predictive* because, although any such assertion does entail that given favourable conditions for confirmation, for every occurrence of α up till now, an occurrence of β would be found to have been its concomitant, yet it makes no claim about future occurrences of α . Each is a *generalization* because it makes an assertion about the whole class *occurrences of α hitherto* in a situation where it is not known that more than a proper part of that class has been examined.

In all that follows, it is to be understood that no analytic relations hold between α and β . So a sub-predictive generalization can only be established by taking the cases of α observed up till now as establishing a law of concomitance, and using this law as the basis for a general claim concerning α s. That is, its mode of establishment is inductive, but as a sub-predictive generalization does not claim that the concomitance in question will continue, the inductive process is a weak one. It is, consequently, the less likely to be dispensable. Whether the generalization is regarded as inferred from, or confirmed by, the relevant observational truths is here irrelevant.

For brevity, sub-predictive generalizations connecting two characteristics will be referred to by descriptions of the form 'the sub-predictive generalization that α s β ', or 'the inductive result that α s β '.

Consider now the sceptical assertion \bar{A} : *No inductive generalization, of any kind, is justifiable.* Any use of a language to communicate evinces faith in the inductive results that language utterers are language understanders, that sound patterns are propagated in air without radical distortion, that human beings can distinguish areas of light and dark on a page under normal conditions, and so on. And any successful use of language for communication entails the truth of some of these proposi-

