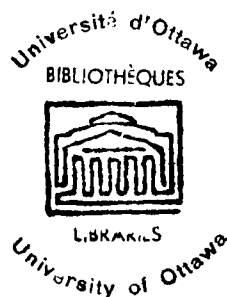


LOCKE'S THEORY OF UNIVERSALS
AND ITS RELATION TO THE QUESTION OF A
"SCIENCE" OF PHYSICAL THINGS)

by

John Louis KRAUS, C.S.B.

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degree of Doctor of Philosophy.



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-To
my Father and Mother
Requiescant in pace.

PREFACE

The question of "universals" and the question of a "science of physical things" are fundamental, related and perennial philosophical problems. This present study has a twofold end: its primary end is to examine the theory of universal ideas set forth by John Locke (1632-1704); its secondary end is to show the relation of Locke's theory of universals to the question of a "science" of physical things. To our knowledge such a twofold study of Locke has not been attempted previously.

This is not to suggest, of course, that no one has examined these two specific facets of the philosophy of this prominent English empiricist; certainly, several commentaries on Locke's philosophy and many good histories of modern philosophy discuss these points. But more specifically, John Linnell ("Locke's Abstract Ideas", in Philosophy and Phenomenological Research, 16, 1956, pp. 400-405) and Willis Doney ("Locke's Abstract Ideas", in Philosophy and Phenomenological Research, 16, 1956, pp. 406-409) treat of certain aspects of Locke's theory of universals. But these brief studies —good though they may be—are not, nor do they pretend to be, extensive studies of this topic. Further, Walter Baillie Carter (The Status of Universals in Locke, Berkeley and Hume, unpublished Doctor's thesis presented to the Faculty of Philosophy of the University of

Toronto, Toronto, Ontario, 1953, 365p.) discusses this problem in relation not only to Locke but also to Berkeley and Hume. But because these two other philosophers were examined together with Locke, Dr. Carter was not able to examine Locke's thinking as fully as this problem requires. Finally, Locke's theory of universals has occupied a considerable amount of the attention of Richard I. Aaron. Professor Aaron's famous "three strand" interpretation of Locke's theory of universals is an important one that must be examined at some length, and this will be done in "CHAPTER THREE, SECTION TWO, B. 3. a)" of this study. Moreover, to our knowledge a thorough study of Locke's notion of science has not been undertaken. Indeed, as indicated by this thesis title, the present analysis does not itself purport to be a complete study but only explores the question of a "science" of physical things. A full examination of this problem of Locke and "science" would be, I think, a fruitful contribution to the field of future Lockean studies.

The body of this dissertation will consist of four chapters. The order of presentation found in Locke's An Essay Concerning Human Understanding will be adopted wherever feasible, although the materials for each chapter will be drawn from many of his published works. CHAPTER ONE will have as its primary aim to examine Locke's empiricist perspective on the origin of simple ideas; CHAPTER TWO,

to examine his atomic perspective on the real essences of physical things; CHAPTER THREE, to examine his conceptualistic perspective on universal ideas; and, CHAPTER FOUR, to examine the significant epistemological effects of the relation between Locke's conceptualistic perspective on universal ideas of physical things and his agnostic perspective on the real essences of physical things as far as a science of physical things is concerned. Each chapter will begin with a statement of its primary end and further secondary ends.

Throughout this dissertation four abbreviated forms will be used:

- Works, Vol. 4, p. 87 means The Works of John Locke (12th ed., London, Thomas Tegg, 1823 [Reprinted by Scientia Verlag Aalen, Germany, 1963], 10 vols.), Volume Four, page 87
- Essay, II, xii, 3 (F.I.215) means An Essay Concerning Human Understanding (collated and annotated, with biographical, critical and historical prolegomena by Alexander Campbell Fraser [1st ed., Oxford, Clarendon Press, 1894, 2 vols.] New York, Dover Publications, Inc., 1959, 2 vols.), Book Two, Chapter Twelve, section three, Fraser, Volume One, page 215.
- Draft A, 43 (A-G.67-69) means An Early Draft of Locke's Essay (together with Excerpts from His Journals), ed. with intro. & appendix by Richard I. Aaron and Jocelyn Gibb, 1st ed., Oxford, Clarendon Press, 1936, xxviii, 132p.),

section forty-three, Aaron-Gibb, pages 67-69.

Draft B, 4 (R.19) means An Essay concerning the Understanding, Knowledge, Opinion, and Assent (ed. with intro. by Benjamin Rand, 1st ed., Cambridge, Harvard University Press, 1931, 1x, 307p.), section four, Rand, page 19.

It is a pleasure to express my gratitude to those who have helped me in the writing of this dissertation: to my Basilian confreres, who have given me the opportunity to pursue my studies; to Fr. Leo A. Hetzler, C.S.B., Ph.D., who read the manuscript and improved its style; and, to the many professors, who have helped to form my mind. Finally, I wish most of all to thank my director, Dr. Jerzy A. Wojciechowski, whose perspicacious mind and patient guidance have earned him my lasting respect and gratitude.

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CHAPTER ONE

AN EMPIRICIST PERSPECTIVE

CHAPTER ONE has a three-fold purpose: (i) to indicate the intellectual climate into which John Locke was born, and within which and against which his philosophy took form; (ii) to examine his attacks upon the innatist perspective; and (iii) to introduce Locke's own empiricist perspective.

Thus SECTION ONE will indicate the fundamental orientation of each of the three principal epistemological traditions that constituted a part of the intellectual climate of Locke's period: the Platonic-Augustinian-Cartesian Tradition, the Aristotelian Tradition, and the Ockhamite Tradition.

SECTION TWO will examine the principal points of Locke's attacks upon the innatist theory of knowledge. The extent of his rejection of innatism will also be indicated. And finally, the question will be posed, "Precisely who or what were the targets of Locke's attacks?"

After having presented these negative aspects of Locke's Essay in SECTION TWO, SECTION THREE will introduce a positive aspect, that is, his theory of experience, which supplies the mind with the "raw materials" for its complex ideas.

SECTION I

HISTORICAL BACKGROUND

William Luijpen has aptly remarked that philosophy is authentic philosophy only when the individual himself philosophizes.¹ Nevertheless, it would be an illusion to imagine that such a personal philosophical endeavor could be accomplished independently of the traditional modes of philosophizing, because each person is born into an intellectual climate that is composed of these various traditions. Initially, at least, the to-be-philosopher speaks the traditional languages, and, hence, becomes imbued with the thoughts embodied, as it were, in those languages. Therefore, an examination of the personal philosophizing of John Locke must begin with an historical note, a survey of the principal philosophical traditions into which he was born, and within which and against which he philosophized. Yet since "Locke's Theory of Universals" is a part of the problem of knowledge, the scope of this historical note will be limited to a brief examination of the fundamental orientation of each of the three principal epistemological

1 Cf. William A. LUIJPEN, O.S.A., Existential Phenomenology, Pittsburgh, Pa., Duquesne University Press, 1960, p. 4-9.

traditions that constituted a part of the intellectual climate of Locke's period.²

A. THE PLATONIC-AUGUSTINIAN-CARTESIAN TRADITION

Platonism was one of the principal constituents of the intellectual climate of Locke's day. The Platonism in question, however, was not so much that of Plato (ca. 429-374 B.C.) or Plotinus (204/205-270 A.D.), as it was that of Saint Augustine (354-430) and René Descartes (1596-1650).

1. SAINT AUGUSTINE

Clearly set forth in Augustine's writings is INTERIORISM.³ Augustine exhorts his readers not to go abroad for truth (that is, outward toward material things), for the realm of truth is in the inward man, and, hence, one must discover it by turning within himself. In fact, before Descartes, Augustine insisted that one's own existence is the first and most certain of all truths: Si enim fallor, sum.

2 Throughout this section I am deeply indebted to the excellent work of: John Herman RANDALL, Jr., The Career of Philosophy, New York, Columbia University Press, 1962, especially pages 3-43.

3 Cf. Etienne GILSON, The Christian Philosophy of Saint Augustine, trans. L.E.M. Lynch, London, Victor Gollancz, Ltd., 1961, passim; Etienne GILSON, History of Christian Philosophy in the Middle Ages, New York, Random House, 1955, p. 70-81; and Armand A. MAURER, C.S.B., Medieval Philosophy, New York, Random House, 1962, p. 3-21.

After his conversion from skepticism, Augustine was convinced that he possessed true knowledge, that is, knowledge which is necessarily, immutably, and eternally true. Although he rejected the Platonic theory of innate ideas, the problem of how one acquires universal ideas was not his principal concern;⁴ rather, Augustine wondered how it was that he, a contingent, changing and temporal being, could make judgments that are necessarily, immutably and eternally true—that " $7 + 3 = 10$ ", for instance. To account for that fact, he proposed a theory of Divine Illumination, which states that whenever the human mind turns in upon the body of ideas that is in itself and makes a true judgment (be it about a theological, philosophical, or scientific matter), it does so under the influence of the necessary, immutable and eternal truths in God's mind. This Divine influence or illumination is, according to Augustine, a natural gift to all mankind.

4 Augustine maintains that all of our knowledge of the external world presupposes sensation. And, like Descartes after him, he holds that the soul or mind is not passive and receptive in sensation; rather, the mind is active. By sensation he means the soul's special act of vital attention directed toward a bodily change: one body causes a modification of the human body, and the soul, upon becoming aware of that modification, fashions out of its (the soul's) own substance the appropriate sense image and intellectual idea. It is not clear in the works of Augustine and Descartes precisely how one acquires ideas of spiritual realities; it would seem, however, that such ideas too are produced by the soul itself and out of its own capacities.

2. RENE DESCARTES

Descartes also adheres to a principle of INTERIORISM. Philosophy, according to Descartes, is the study of wisdom.⁵ By wisdom he means prudence in affairs and a perfect knowledge of all things within the ambit of one's mental power. Now Descartes insists that such knowledge must be derived from first causes or principles, and, hence, philosophizing must begin with an investigation of these. Here, then, one sees the INTERIORISM of Descartes, for the first causes that one's philosophizing investigates initially are principles of knowledge, that is, mental facts (the existence of the thinking self, for instance), which are absolutely indubitable in themselves and totally independent of the other truths that are derived from them.

Although Descartes was convinced that the power of forming a good judgment and of distinguishing the true from the false is by nature equal in all men, he insisted that one needs a proper method or systematic set of rules for seeking truth. If one's mental operations of intuition and deduction are employed in accord with this method, one will

5 Cf. Etienne GILSON, The Unity of Philosophical Experience, New York, Charles Scribner's Sons, 1952, p. 125-220; Etienne GILSON and Thomas LANGAN, Modern Philosophy, New York, Random House, 1963, p. 55-86; James COLLINS, A History of Modern European Philosophy, Milwaukee, Bruce Publishing Co., 1959, p. 138-198; and John Herman RANDALL, Jr., The Career of Philosophy, p. 371-395.

arrive, Descartes maintained, at a knowledge of all those facts that lie within the scope of his mental power. Now Descartes' mathematical endeavors convinced him that the proper method to be employed for seeking any truth is the mathematical method. Hence, (i) just as the mathematician begins with axioms or principles which are self-evident, so also must the philosopher begin with self-evident first principles of knowledge. Having employed the universal, provisional, theoretical and methodic doubt, these first principles are grasped clearly and distinctly — and, hence, truly — by an act of intuition, that is, a purely intellectual operation that is not integrated with sense perception. In company with Augustine, Descartes says that:

Intuitive knowledge is an illumination of the soul, whereby it beholds in the light of God those things which it pleases him to reveal to us by a direct impression of divine clearness on our understanding, which in this is not considered as an agent, but only as receiving the rays of divinity. ⁶

And, (ii) just as the mathematician deduces other propositions which logically follow from his axioms or self-evident principles, so also must the philosopher, according to Descartes, by means of mental acts of deduction infer from his

⁶ René DESCARTES, Lettre au Marquis de Newcastle, March or April, 1648, in Oeuvres de Descartes, ed. by C. Adam and P. Tannery, Paris, Cerf, 1897-1909, Vol. 5, p. 136. (Quoted by John Herman RANDALL, Jr., The Career of Philosophy, p. 388.)

first principles a chain of new and unknown truths which are equally clear and distinct, and, hence, certain.

INTERIORISM, then, is a basic characteristic of the epistemology of both Descartes and Augustine, and the influence of this perspective is concisely summarized by John Randall:

... Augustine's insistence that we must begin with self-examination, with the structure of knowledge and its implications as we find it in consciousness, became, when Descartes turned to it, the starting-point of the main current of modern philosophy; which ever since has started where Augustine started, with the fact of knowledge, not where Aristotle started, with the world of things —which has sought always to get from ideas to things, not from things to ideas. In science we call it the use of hypothesis, and reckon it our chief glory; in philosophy we call it the "critical philosophy," or "idealism." And the whole great stream of modern philosophy, from Descartes through Kant and the Germans down to Russell and Whitehead, Brunschvicg and Meyerson, Cassirer and Husserl, appears as a further elaboration of this Augustinian method. Augustine might well claim to be the "first modern philosopher."⁷

Thus, the Platonic-Augustinian-Cartesian tradition was one of the principal constituents of the intellectual climate into which Locke was born.

⁷ John Herman RANDALL, Jr., The Career of Philosophy, p. 29.

B. THE ARISTOTELIAN TRADITION

The Aristotelian tradition, a second principal constituent of the heterogeneous intellectual climate of Locke's period, is characterized by its NON-INTERIORISM.⁸ That is, Aristotle (384/383-322 B.C.), Saint Thomas Aquinas (ca. 1225-1274) and their followers maintained that in order to discover truth one must go outward toward things—knowledge comes from observing the world and reflecting upon what one has observed. In this perspective the world has the power to be known and man has the power to know it; human knowledge is described as a vital and immanent action enacted through a cognitive faculty that has been informed by a presentative species of a being, thus enabling the person to become intentionally united with that being.

The Aristotelian tradition admits two kinds of knowledge, namely, sense knowledge and intellectual knowledge (the latter being posterior to the former). Thus, it maintains a more balanced epistemological theory than either that of the empiricists or the rationalists. By means of his senses man has the power to become all of the sensible

⁸ Cf. John Herman RANDALL, Jr., Aristotle, New York, Columbia University Press, 1960, p. 81-106; and Etienne GILSON, The Christian Philosophy of St. Thomas Aquinas, trans. L.K. Shook, C.S.B., New York, Random House, 1956, p. 200-235.

forms or qualities of things, and by means of the abstractive power of his intellect he is able to become the intelligible forms of these same things. The difference between the determinant of knowledge (that is, the presentative species or form in the knower) and the determinant of the thing known (that is, its form or specifying principle) is not in content, but rather in mode of existence. This is an extremely important point, for the presentative species is a means by which the subject knows that objective form or content, and the subject shall know that objective form only insofar as this species adequately specifies his cognitive act of grasping that objective content. Truth, accordingly, is the agreement between one's intellectual judgment about the real state of a being and the real state of that being. In short, true knowledge involves a fundamental relation of identity between the knowing subject and the known object.

Aristotle occupies an unique place in the history of philosophy by whatever criterion one may judge him: breadth of learning, originality, or influence. After Aristotle's death, his philosophy was kept alive by members of the Peripatetic School, the Alexandrian School, and various Arabian and Syrian scholars. During the twelfth and thirteenth centuries many of his works were translated into Latin, and became the core of the curriculum in many

European Universities. For instance, Thomas Hobbes (1588-1679) in his De Corpore Politico, which was written in England and circulated in manuscript in 1640, reports of Aristotle that his "opinions are at this day, and in these parts, of greater authority than any other human writings."⁹ Again, Descartes in his letter to Abbé Claude Picot, who translated his Principles of Philosophy into French (published in 1647), says that even those who do not follow Aristotle's philosophy "have yet been imbued with his teaching in their youth, for it forms the sole teaching in the Schools."¹⁰ Indeed, although the rise of modern science has brought about a decline in the authority of Aristotle, every contemporary philosopher should take note of the warning of Friedrich W.J. Schelling (1775-1854), who has said that "No one will create anything enduring who has not come to terms with Aristotle, and sharpened his own ideas on the whetstone of his arguments."¹¹ Thus Locke had also to confront the Aristotelian tradition.

9 Thomas HOBBS, De Corpore Politico, Part I, Chapter IV, paragraph 1. The English Works of Thomas Hobbes of Malmesbury, Sir William Molesworth (ed.), Germany, Scientia Aalen, 1962, Vol. 4, p. 102-103.

10 René DESCARTES, Principles of Philosophy, Author's Letter (The Philosophical Works of Descartes, trans. E.S. Haldane and G.R.T. Ross, New York, Dover Publications, Inc., 1955, Vol. I, p. 207).

11 Friedrich Wilhelm Joseph SCHELLING, Werke, Vol. 11, p. 380. (Quoted by John Leofric STOCKS, Aristotelianism, London, George G. Harrap and Co. Ltd., [n.d.], p. 155.)

C. THE OCKHAMITE TRADITION

The third and final major constituent to be examined of the intellectual climate of Locke's period is the Ockhamite tradition, which originated with William of Ockham (1290?-1349/50).¹² Like Aristotle and many of the scholastics, Ockham insists that philosophical explanations should be in as simple terms as possible. This principle of economy of thought—the so-called "Ockham's Razor"—is evident in his theory of the universe and in his theory of knowledge.

Like Roger Bacon (ca. 1214-ca. 1292), Ockham insists that everything outside the intellect is individual by the very fact that it is real, and not, as an orthodox Aristotelian says, because of an individuating principle in its actual being. Ockham grants, moreover, that there are similarities among some things, but there are no essences or natures in things that account for such similarities, or serve

¹² Cf. Armand MAURER, C.S.B., "Scotism and Ockhamism", in A History of Philosophical Systems, Vergilius Ferm (ed.), New York, The Philosophical Library, 1950, p. 212-224; Armand MAURER, C.S.B., "Ockham's Conception of the Unity of Science", in Mediaeval Studies, 20 (1958), p. [98]-[112]; Armand MAURER, C.S.B., Medieval Philosophy, p. 265-291; Etienne GILSON, History of Christian Philosophy in the Middle Ages, p. 489-499 & 780-793; and Ockham. Philosophical Writings, [a selection of Latin texts] ed. & trans. Philotheus Boehner, O.F.M., New York, Thomas Nelson and Sons, 1957, Editor's Introduction, p. ix-li.

as a foundation in things for one's universal knowledge. In other words Ockham, like a modern scientist, considers the similarities of things to be purely factual, that is, data that can be observed but not rationally explained. A consequence of this attitude toward essences is that a knowledge of one thing cannot yield any knowledge of another thing which has not been perceived as yet.

Like the Aristotelians, Ockham maintains that the world of individual things has the power to be known and man has the power to know it. One's knowledge of these things is acquired by sense and intellectual intuitions: sense intuitions must precede intellectual intuitions, save when one intellectually intuites the acts and states of his soul (hence, Ockham is like the Augustinians in this respect). Intuitive cognition is the basis for a self-evident existential statement. Ockham's theory of knowledge is in keeping with his theory of things, for he insists that intuitive knowledge does not involve the reception of a presentative species or concept of the thing that is known. All that such knowledge requires is (i) a spectator, that is, a person's non-productive act of knowing or taking notice, and (ii) the thing immediately apprehended or observed. In the case of intuitive knowledge, according to Ockham's later writings, a particular concept is identical with a clear and distinct act of knowing a thing, whereas

a universal concept is identical with a confused and indistinct act of knowing that same thing. Ockham, it may be well to add, maintains that God normally uses an individual existent as secondary cause when causing one's intuitions; however, God, being omnipotent, can cause the act of knowing when there is no existent present and exercising its secondary causality. This means, then, that the fact of a sense or intellectual intuition is no guarantee that an extra-mental existent is present and being known by such a cognitive act. This tenet, accordingly, opens the door to skepticism or idealism.

Ockham admits another kind of cognition, namely, abstractive cognition: an act of cognition which leaves out of consideration the existence or non-existence of its object. When one compares several similar abstractive cognitions of singulars, he is able to evoke a more general cognition or universal concept (which is, according to Ockham, a natural sign of many individuals) that can function as a term in a mental proposition. Such an act of cognition is universal not because it apprehends a common structure in things (as has been said, there is no such structure in things according to Ockham), but rather because the act itself is so indistinct that it can, according to Ockham, function as a sign of many individuals.

Like Aristotle, Ockham insists that science concerns the universal. But reality is individual—universal-ity is a property of concepts only, which are the terms of propositions. Therefore, "Every science, whether it be real [physics, for instance] or rational [logic, for instance], is concerned only with propositions as with objects known, for only propositions are known."¹³ In another work he says:

A real science is not about things, but about mental contents standing for things; for the terms of scientifically known propositions stand for things. Hence in the following scientifically known proposition, 'All fire is warming', the subject is a mental content common to every fire, and stands for every fire. This is the reason why the proposition is called real knowledge (that is, knowledge concerning real things).¹⁴

¹³ William of OCKHAM, Sent., I, 2, 4, M. (Quoted by Armand MAURER, C.S.B., "Ockham's Conception of the Unity of Science", p. [100]. Ockham's interioristic or subjectivistic representative theory of science is akin to that of the Platonic-Augustinian-Cartesian tradition, and, likewise, to that of the Logical Positivists: Moritz Schlick (1882-1936), for instance, says that "Every science, (in so far as we take this word to refer to the content and not to the human arrangements for arriving at it) is a system of cognitions, that is, of true experiential statements. And the totality of sciences, including the statements of daily life, is the system of cognitions." Moritz SCHLICK, "The Turning Point in Philosophy", trans. David Rynin, in Logical Positivism, A.J. Ayer (ed.), Glencoe, Illinois, The Free Press, 1960, p. [56]. Cf. Armand MAURER, C.S.B., "Ockham's Conception of the Unity of Science", p. [112].

¹⁴ William of OCKHAM, Prologus in Expositionem super viii libros Physicorum (Philotheus Boehner, O.F.M., Ockham. Philosophical Writings, p. 12).

The proper objects of real sciences, accordingly, are the universal terms and propositions which stand for and signify individual things. How such universals can stand for and signify pure and radically distinct individuals is not really justified in Ockham's writings.

To indicate the influence of the Ockhamite tradition, one can do no better than to cite the following paragraphs of Professor Randall:

Ockham's theory is a form of presentational realism: In knowing, a passive mind directly perceives particular real objects, their properties and relations. There is no need of any "active intellect" to abstract nonexistent "forms" and "species." A universal is generated naturally in the mind by direct contact with objects without any activity of the mind itself. This complete passivity of the mind, this spectator theory of knowledge, has persisted as the fundamental assumption of the empiricist tradition; together with those of a structureless world of pure particulars, and of the contents of the mind itself as the immediate object of knowledge, it has formed the major British tradition. These presuppositions are combined in Ockham with an elaborate theory of science as the manipulation of terms or signs in discourse.

This is the Ockhamite position to which the English thinkers, Hobbes, Locke, and Newton, turned to interpret seventeenth-century science. For it, the object of science is to define and analyze terms, which stand for individual things causally related. Its method is to observe by sense particular things causing other things, and then to define one's terms in such a way that the same consequences will follow logically from an analysis of the terms as follow in experience from the things for which those terms stand. The task of the scientist is to construct a rigorous postulate system that can represent or serve as the sign of the observed course of natural events. Science is a demonstrative system; but it must correspond to the observations of sense. The Ockhamite position thus

combines a realistic view of sense knowledge with a representative theory of science. In this discrepancy lie the seeds of scepticism, which speedily developed in the fourteenth-century Schools, and again in the eighteenth-century when it was applied once more.¹⁵

Thus the Ockhamite tradition along with the Platonic-Augustinian-Cartesian and Aristotelian traditions constituted the three major philosophical perspectives into which Locke was born and began to philosophize.

SECTION II

CLEARING THE WAY

One's personal philosophical endeavors, as has been said, are influenced by the streams of thought or traditional modes of philosophizing into which he is born. Initially one may share in them somewhat passively, but sooner or later he must take an active stand in relation to such streams or traditional modes of philosophizing. Further, one may either adopt certain traditional questions and answers, and perhaps even make a personal contribution to the progress of those systems; or, he may totally or partially reject them.

Now when one rejects a given intellectual position, he must follow or create another, for one cannot think in a

¹⁵ John Herman RANDALL, Jr., The Career of Philosophy, p. 43.

vacuum. Furthermore, one does not like to think alone. He wants others to see things as he sees them. And if others do not think of things in the way he is convinced that they ought to be thought of, he will endeavor to show them directly or indirectly where they are wrong. Further, his attempts to win converts to his own perspectives are often marked by certain characteristics: (i) an intentional omission of the name of the persons whom one is attacking, especially if such persons (unlike him) enjoy a position of authority in the contemporary intellectual climate; and (ii) a tendency to exaggerate in one way or another what one considers to be the errors of those systems, for exaggerated statements of philosophical tenets always appear rather ridiculous and, hence, more vulnerable. These two factors, of course, make it very difficult for future generations to be certain of the identity of the precise targets under attack. Thus each reader of Book One of Locke's An Essay Concerning Human Understanding (as well as those sections of "Draft A" and "Draft B" of the same work which treat of innate knowledge) experiences this difficulty.

Among the principal tenets of the intellectual climate of Locke's day was the theory of innate knowledge. In Book One of his Essay Locke makes his dissatisfaction with this tenet abundantly evident. In order to "clear the way" for his own empirical perspective, he formulates a series

of attacks upon the upholders of the innatist perspective.¹⁶ The principal points of his attacks, the extent of his rejection of innatism, and the targets of his attacks will now be studied. This examination will bring into focus the initial stage of Locke's empirical perspective as well as the innatist aspect of the intellectual climate in which and against which it was formulated. Such an examination is a necessary preliminary step towards an understanding of "Locke's Theory of Universals", which is itself a non-innatist theory.

A. DISCREDITING THE INNATIST PERSPECTIVE

Locke formulates the innatist thesis in the following manner:

There is nothing more commonly taken for granted than that there are certain principles, both speculative and practical, (for they speak of both), universally agreed upon by all mankind: which therefore, they argue, must needs be the constant impressions which the souls of men receive in their first beings, and which they bring into the

¹⁶ Evidently Locke felt an increasing need to defend his empirical thesis, for (i) in "Draft A", which he seems to have written in the summer of 1671, Locke devotes but one section to the thesis of innate knowledge—see: Draft A, 43 (A-G. 67-69); (ii) in "Draft B", which he seems to have written in the autumn or winter of 1671, Locke devotes thirteen sections to the thesis of innate knowledge—see: Draft B, 4-16 (R. 19-61); and (iii) in his completed text, namely, An Essay Concerning Human Understanding, which was first printed in 1690, Locke devotes the whole of Book One to the question of innate knowledge—see: F.I. 37-118.

world with them, as necessarily and really as they do any of their inherent faculties.¹⁷

Now there are three points of special interest in this text that should be noted. First, Locke asserts that this innatist thesis is "commonly taken for granted". The first question which arises in the mind of his reader is: "By whom?" "The Scholastics?" "The Cartesians?" "The Cambridge Platonists?" Indeed, Locke's failure to name his opponents has given rise to an enormous amount of speculation, as will be seen later in this study. Secondly, Locke says that according to the innatists' these principles are "constant impressions". By "constant impression" Locke means an explicitly reflected-upon (at one time or another), determinate, ideational content.¹⁸ Throughout his polemic against innate knowledge one finds Locke insisting that:

To say a notion is imprinted on the mind, and yet at the same time to say, that the mind is ignorant of it, and never yet took notice of it, is to make this impression nothing. No proposition can

17 Essay, I, i, 2 (F.I. 38-39).

18 Although Locke totally rejects the thesis of innate knowledge, in a section added in the second edition of his Essay he does not insist that an innate idea is an idea that is at every moment explicitly reflected upon. An idea may be "lodged in the memory". However, there are no ideas in one's memory that have not been explicitly reflected upon at one time or another. Cf. Essay, I, iii, 21 (F.I. 109-111).

be said to be in the mind which it never yet knew,
which it was never yet conscious of.¹⁹

Thus, for Locke the presence in the mind of a constant impression, mental object, idea or principle (save when lodged in the memory) must be accompanied by a consciousness of that cognitive content. Thirdly, Locke says that those who maintain this thesis claim that these principles are "universally agreed upon by all mankind" and hence are for that reason considered to be innate. In other words the supposed fact of universal consent to certain speculative and practical principles is, according to Locke, currently and commonly being employed as the criterion and verification of the innateness of such principles. It is with this latter

¹⁹ Essay, I, i, 5 (F.I. 40). While examining Book One of Locke's Essay, it is essential to keep in mind that the identification of "constant impression" or "innate truth" with an "explicitly reflected upon (at one time or another), determinate, ideational content" is one that is made by Locke himself, and need not be (as far as one can gather from Locke's texts) the position held by the targets of his attacks. Notice, for instance, that Locke says "it seeming to me near a contradiction to say, that there are truths imprinted on the soul, which it perceives or understands not: imprinting, if it signify anything, being nothing else but the making certain truths to be perceived. For to imprint anything on the mind without the mind's perceiving it, seems to me hardly intelligible." Ibid. (*italics mine*). Evidently Locke's meaning of "innate truth" is not the same as that of his opponents, for if it in fact were, their positions would be so naive that they would not warrant a lengthy refutation. It seems, rather, that throughout Book One Locke is reading his own understanding of innate truth into his opponent's positions, so as to make them appear so ridiculous that his reader will reject innatism in general and be won over to his empiricist perspective.

point, i.e. the supposed existence of universal consent, that Locke begins his attack. He devotes the whole of Book One, Chapter One of his Essay to an attack upon the thesis of innate speculative principles.

1. THERE ARE NO INNATE SPECULATIVE PRINCIPLES

Locke maintains that any argument for the innateness of certain speculative and practical principles that is based on universal consent proves nothing as to their origin, if that universal agreement regarding them can be accounted for in some other way.²⁰ Thus Locke assumes that universal consent to a certain truth is proof of its innateness, if that consent cannot be accounted for in some other way. Here, then, two questions arise, namely, (i) "Is universal consent to a certain truth a matter of fact?" This question is discussed in detail in Book One of his Essay. And (ii) "If universal consent to a certain truth is a matter of fact, can that fact be accounted for in some other way than the innatist theory?" The implication is that first principles could be universally agreed upon and yet be empirical in origin. However, the empirical origin of principles is not developed in any detail in Book One of his Essay. This thesis is but one aspect of his general

20 Cf. Essay, I, i, 3 (F.I. 39).

thesis of the empirical origin of all human knowledge which is operative throughout his writings.

Locke begins his attack by stating that the argument from universal consent, which is being employed as the criterion and verification of the existence of innate principles, is in fact a demonstration that there are no such principles, because there are no speculative or practical principles to which all mankind assent.²¹ Locke has a great deal to say about the empirical origin of all knowledge, but the point at issue here is that it is commonly taken for granted that there are certain innate principles, and universal assent to these is supposed to prove their innateness. Locke does not identify his opponents here.

Locke immediately focuses his reader's attention upon the speculative principles of identity and contradiction: "Whatsoever is, is" and "It is impossible for the same thing to be and not to be." Locke seems to feel that if one sees that these "magnified principles of demonstration" are not innate, he will readily accept the thesis that no principles are innate.²² His question is not whether all men have the innate capacity to discover gradually the self-evidence of such principles and commonly assent to them;

21 Cf. Essay, I, i, 4 (F.I. 39).

22 Cf. Essay, I, i, 28 (F.I. 62-63).

but, rather, it is whether all men are conscious of and give their assent to these maxims at birth. So Locke brings his reader's attention to the evident fact that children and idiots do not have the least apprehension or thought of the speculative principles of identity and contradiction. Universal consent to these principles, accordingly, is not a matter of fact. This proves for Locke, then, that such principles are not innate.

Now the absence of universal consent to even one supposed innate principle is of prime importance to Locke's attack. The operative notion underlying this entire argumentation is that universal knowledge and universal assent are necessary concomitants of all innate principles and ideas.²³ Whether or not this notion is a part of the innatist hypothesis is another question. Locke is not aiming at historical precision. Now if one accepts Locke's underlying notion, it means, then, that the absence of universal knowledge of and assent to a principle or idea proves the mental absence of that so-called innate principle or idea (not, however, the absence of the intellectual capacity to acquire a knowledge of that principle or idea). Hence, the absence of universal knowledge of and assent to any principle

23 Cf. Essay, I, i, 5 (F.I. 40-42) and Essay, I, i, 26 (F.I. 60). Knowledge and assent are used convertibly in Book One of the Essay.

or idea disproves, according to Locke's perspective, the innatist hypothesis in general.

Regarding the above consequence Locke says: "To avoid this, it is usually answered, that all men know and assent to them, when they come to the use of reason; and this is enough to prove them innate."²⁴ Here again, Locke does not identify his opponents. He insists that this more liberal thesis must signify,

... either that as soon as men come to the use of reason these supposed native inscriptions come to be known and observed by them; or else, that the use and exercise of men's reason, assists them in the discovery of these principles, and certainly makes them known to them.²⁵

Thus this more liberal thesis must signify either (i) that men discover and observe their so-called innate principles when they come to the use of reason, and this is sufficient to prove them innate; or (ii) that men discover these principles by means of the use and exercise of reason, and this is sufficient to prove them innate.

Now Locke maintains that those who hold the first of these two more liberal theses, namely, that men discover and observe their so-called innate principles when (that is, at

24 Essay, I, i, 6 (F.I. 42). As A.C. Fraser says, "Locke often uses 'reason' for reasoning; so here he means, when they come to the conscious use of the deductive faculty, which elicits previously unknown propositions from those already known." Ibid., note 2.

25 Essay, I, i, 7 (F.I. 42).

the time that) they come to the use of reason, are evidently in error, for children and a great part of the illiterate people and savages manifest many instances of the use of their reason a long time before they have any knowledge of the speculative maxim of contradiction, for instance.²⁶

Furthermore, even if this were the time when such principles became known and assented to, it would not be a criterion and verification of their innateness,

For, by what kind of logic will it appear that any notion is originally by nature imprinted in the mind in its first constitution, because it comes first to be observed and assented to when a faculty of the mind, which has quite a distinct province, begins to exert itself?²⁷

Locke agrees

... with these men of innate principles, that there is no knowledge of these general and self-evident maxims in the mind, till it comes to the exercise of reason: but I [Locke] deny that the coming to the use of reason is the precise time when they are first taken notice of; and if that were the precise time, I deny that it would prove them innate.²⁸

26 Cf. Essay, I, i, 12 (F.I. 45-46).

27 Essay, I, i, 14 (F.I. 47).

28 Ibid. Locke does admit that we do not come to the knowledge of the principles of identity and contradiction, for instance, until sometime after we come to the use of reason, cf. Essay, I, i, 12 (F.I. 45-46), and Essay, IV, vii, 9 (F.II. 273-275). Locke correctly maintains that the self-evidence of a truth is not a sign of its being innate, cf. Essay, I, i, 10 (F.I. 43-44). Locke holds that universal and immediate assent given to a principle upon understanding it is a sign of its self-evidentness, but not of its innateness, cf. Essay, I, i, 17-24 (F.I. 51-58).

Thus Locke maintains, and correctly so, that the thesis which states that men discover and observe their so-called innate principles when they come to the use of reason, and this is sufficient to prove them innate is both false and frivolous.

Further, Locke maintains that those who hold the second of these two more liberal theses, namely, that men discover their so-called innate principles by means of the use and exercise of reason, must say "that whatever truths reason can certainly discover to us, and make us firmly assent to, those are naturally imprinted on the mind."²⁹ And, according to Locke, these same men consider reason to be "nothing else but the faculty of deducing unknown truths from principles or propositions that are already known."³⁰ But, according to Locke, knowledge and assent are necessary concomitants of all innate truths. Therefore, if one reads this latter point (and Locke wishes his reader to do so) into the above thesis which states that men discover their so-called innate principles (especially the speculative maxims of identity and contradiction) by means of the use and exercise of reason, then, those who maintain this thesis are saying in effect that they both know and do not know at one

29 Essay, I, i, 8 (F.I. 42).

30 Essay, I, i, 9 (F.I. 43).

and the same time all the principles that their reason can certainly discover. Such a thesis, then, is absurd, and, hence, those who argue in this way are, in fact, arguing against (rather than for) the innateness of such truths.³¹ The fact that a truth is discoverable by the use and exercise of reason is not, therefore, a criterion and verification that that mental content is innate in origin.

Thus in Book One, Chapter One, of his Essay, Locke shows: (i) that universal knowledge of and assent to a speculative principle is not a matter of fact, and, hence, anyone attempting to prove the existence of innate speculative principles on the basis of universal consent to any one of them is arguing contrary to fact; (ii) that men do not in fact discover and observe speculative principles when they come to the use of reason, and, hence, anyone attempting to prove the existence of innate speculative principles on the basis of such a theory are wrong in doing so; and (iii) that to claim that the discoverability of a speculative principle by the use and exercise of reason is a criterion and verification of its innateness is an absurd thesis, for it would

³¹ Locke says that "all reasoning is search, and casting about, and requires pains and application. And how can it with any tolerable sense be supposed, that what was imprinted by nature [and the men under attack, according to Locke, suppose the speculative maxims of identity and contradiction to be so imprinted], as the foundation and guide of our reason [namely, the maxim: 'That it is impossible for the same thing to be and not to be'], should need the use of reason to discover it?" Essay, I, i, 10 (F.I. 44).

involve holding also that each truth that our reasoning discovers is innate. Locke makes this thesis of his opponents appear all the more ridiculous by reading his own meaning of innate truth (a mental content that is consciously known and assented to) into their doctrine. Locke has been concerned chiefly throughout this chapter with showing that the first principles of knowledge and science, that is, the speculative maxims of identity and contradiction, are not innate, for "if these 'first principles' of knowledge and science are found not to be innate, no other speculative maxims can (I suppose), with better right pretend to be so."³²

2. THERE ARE NO INNATE PRACTICAL PRINCIPLES

Having refuted to his satisfaction the hypothesis of innate speculative principles, Locke focuses his attacks upon the hypothesis of innate practical principles, that is, the principles of morality and conduct. He says:

If those speculative Maxims, whereof we discoursed in the foregoing chapter, have not an actual universal assent from all mankind, as we there proved, it is much more visible concerning practical Principles, that they come short of an universal reception: and I think it will be hard to instance any one moral rule which can pretend to so general and ready an assent as, 'What is, is'; or to be so manifest a truth as this, that 'It is impossible for the same thing to be and not to be.'

³² Essay, I, i, 28 (F.I. 63).

Whereby it is evident that they are further removed from a title to be innate; and the doubt of their being native impressions on the mind is stronger against those moral principles than the other. Not that it brings their truth at all in question. They are equally true, though not equally evident. Those speculative maxims carry their own evidence with them: but moral principles require reasoning and discourse, and some exercise of the mind, to discover the certainty of their truth.³³

Here, as in his refutation of the hypothesis of innate speculative principles, an operative notion is that universal knowledge and universal assent are necessary concomitants of all innate principles and ideas.³⁴ Locke maintains that "the ignorance wherein many men are of them [i.e., practical principles], and the slowness of assent wherewith others receive them, are manifest proofs that they are not innate, and such as offer themselves to their view without searching."³⁵

33 Essay, I, ii, 1 (F.I. 64).

34 Cf. Essay, I, ii, 3 (F.I. 67); Essay, I, ii, 14 (F.I. 78-80); Essay, I, ii, 20 (F.I. 85-86); Essay, I, ii, 27 (F.I. 90-91); Essay, I, iii, 4 (F.I. 94); Essay, I, iii, 21 (F.I. 109-111); and Essay, I, iii, 23 (F.I. 112-114).

35 Essay, I, ii, 1 (F.I. 65). Not only is the absence of universal knowledge and assent to the principles of morality and conduct proof that these practical principles of knowledge are not innate, but also the fact that "there cannot any one moral rule be proposed whereof a man may not justly demand a reason: which would be perfectly ridiculous and absurd if they were innate; or so much as self-evident, which every innate principle must needs be, and not need any proof to ascertain its truth, nor want any reason to gain its approbation." Essay, I, ii, 4 (F.I. 68-69). In other words, if practical principles ("That one should do as he

Now if we assume, as Locke does, that the actions of men are the best manifestations of their thoughts, and that practical principles of knowledge do not terminate merely in speculative assent to their truth but exercise a regulatory influence on one's actions (and this appears to be the distinctive characteristic of truths of the practical order), it is evident, then, that there are no innate practical principles of knowledge, for it is an empirical fact that there is little, to say nothing of universal, uniformity in man's actions.³⁶ What Locke is rejecting is any

would be done unto", for example) were innate, according to Locke, everyone would immediately ascertain their truth and reasonableness, their validity. The fact, then, that men instinctively ask themselves why these principles are valid is proof that they are not innate. He maintains, furthermore, that "the truth of all these moral rules plainly depends upon some other antecedent to them, and from which they must be deduced; which could not be if either they were innate or so much as self-evident." Ibid. This "antecedent", according to Locke, is ultimately the idea of God: "Without a notion of a law-maker, it is impossible to have a notion of a law, and an obligation to observe it." Essay, I, iii, 8 (F.I. 96). Cf. Essay, I, ii, 6 (F.I. 70). The idea of God is not innate, but "the visible marks of extraordinary wisdom and power appear so plainly in all the works of the creation, that a rational creature, who will but seriously reflect on them, cannot miss the discovery of a Deity." Essay, I, iii, 9 (F.I. 99).

³⁶ Cf. Essay, I, ii, 3 (F.I. 66-68). Here Locke says: "Practical principles, derived from nature, are there for operation, and must produce conformity of action, not barely speculative assent to their truth, or else they are in vain distinguished from speculative maxims." (*Italics mine.*) However, in Essay, I, ii, 11 (F.I. 74-75) Locke admits that one's actions will not necessarily conform to the moral rules that he knows and assents to. In this discussion Locke seems to use the expressions "practical principles" and "moral rules" as synonymes. Cf. Essay, I, ii, 4 (F.I. 68-69).

theory of innate practical principles of the cognitive order. In other words, without naming his innatist opponents, Locke insists that their hypothesis means that the Author of nature has inscribed in the understanding of each man practical truths, practical principles and ideas. Now, Locke argues, the presence of such cognitive contents would be accompanied by (a) universal knowledge of and universal assent to them; and (b) in the majority of instances regulatory influences of those contents on each man's actions. This means, then, that if such be the case it is reasonable to expect to observe a rather extensive uniformity of actions amongst men, because a reasonable number of their actions ought to conform to these practical truths. Notice that Locke is not saying that one's actions will necessarily conform to the practical truths that one knows and assents to. Now the best manifestations of men's thoughts are their actions. But anyone who is even moderately conversant with the history of mankind must admit that there is no such uniformity in man's actions in respect to these (even one) so-called innate practical truths. For instance, the great principle of morality, "To do as one would be done to" is supposed to be an innate practical principle, and yet one finds that the actions of some men conform to it while others carry on such practices as burying their sick alive, and so on. Therefore the empirical evidence,

Locke concludes, is against rather than in support of the hypothesis of innate practical principles and ideas of the cognitive order. It is not the fact of the existence of such principles and ideas that is in question here; rather, it is their supposed innate origin that is being rejected.

In the remainder of Book One, Chapter Two, of his Essay, Locke examines a series of so-called innate practical truths, practical principles and ideas—"God is to be worshipped", for instance. He attacks these along the lines outlined above. Thus Locke remains firm in his conviction that there are no innate practical truths of the cognitive order, for if there were, they would be universally known and assented to; men would not question their validity; they would not be deduced from other truths; and in the majority of instances men's actions would be regulated by them. Such is evidently not the case. Therefore, Locke concludes, there are no innate cognitive principles of morality and conduct.³⁷

3. THERE ARE NO INNATE IDEAS

It should be noted that Chapter Three (the final chapter of Book One of the Essay) is principally concerned

³⁷ Cf. Ake PETZALL, "Ethics and Epistemology in John Locke's Essay Concerning Human Understanding", in Goteborgs Hogskolas Arsskrift [Acta Universitatis Gotoburgensis], Goteborg, Wettergren & Kerbers Forlag, 42:2 (1937), p. 42-45.

with the refutation of the thesis of innate ideas, such as "impossibility", "identity", "whole", "part", "worship", "God", "substance", and so on. Here more explicitly than in Chapters One and Two of Book One of the Essay, Locke attacks the most fundamental aspect of the innatist hypothesis, the thesis of innate ideas. His argument is that if the hypothesis of innate ideas is false, then, a fortiori the hypothesis of innate principles is false, "For, where the ideas themselves are not, there can be no knowledge, no assent, no mental or verbal propositions about them."³⁸ In other words, innate principles must be composed of innate ideas. But, Locke argues, it is evident there are no innate ideas:

If we will attentively consider new-born children, we shall have little reason to think that they bring many ideas into the world with them. For, bating perhaps some faint ideas of hunger, and thirst, and warmth, and some pains, which they may have felt in the womb, there is not the least appearance of any settled ideas at all in them; especially of ideas answering the terms which make up those universal propositions that are esteemed innate principles.³⁹

Therefore there are no innate principles. The ideas of "God" and "worship", for example, are not, according to

³⁸ Essay, I, iii, 1 (F.I. 92). Cf. Essay, I, iii, 20 (F.I. 108-109).

³⁹ Essay, I, iii, 2 (F.I. 92-93).

Locke, innate; consequently, and a fortiori, the principle: "God is to be worshipped" is not innate.

It may be said that the underlying theme of the whole of the Essay is the empirical origin of all human knowledge. Thus the whole of the Essay is in a sense a sustained attack upon the innatist hypothesis in general. Book One is simply the most explicit part of Locke's attack.

It is interesting to note that Anthony Ashley (1671-1713), third earl of Shaftesbury, says: "'Twas Mr. Locke that struck at all Fundamentals, threw all Order and Virtue out of the World, and made the very Ideas of these (which are the same as those of God) unnatural, and without Foundation in our Minds."⁴⁰ And Kenneth MacLean further observes that:

It must have been disturbing in 1690 to read of Locke's denial of innate moral principles for that opinion placed him in the radical tradition of Hobbes [1588-1679], the terror of Malmesbury, whose well-known conviction that the state of nature is a state of war is equivalent to saying that man is born without any native moral principles to prevent him from preying upon his fellows.⁴¹

⁴⁰ Several Letters Written by a Noble Lord to a Young Man at the University, London, 1716. Letter of June 3, 1709. (Quoted by Kenneth MacLEAN, John Locke and English Literature of the Eighteenth Century, New York, Russell and Russell, Inc., 1962, p. 24.)

⁴¹ Ibid., p. 25. This excellent study endeavors to show how the theories of the mind developed in Locke's Essay were criticized, adapted, and popularized by English literature of the Eighteenth Century.

However disturbing his writings might have been to some of his readers, it was not Locke's intention to throw out speculative or practical truths. His purpose was to inquire into the origin (and so on) of human knowledge, and his inquiry ended in a conviction that experience is the origin of all human knowledge.

B. THERE ARE INNATE COGNITIVE FACULTIES AND
INNATE APPETITIVE FACULTIES WITH TENDENCIES TO GOOD

While Locke rejects the innatist hypothesis regarding speculative and practical principles and ideas of the cognitive order, he does admit that God has "furnished man with those faculties which will serve for the sufficient discovery of those things requisite to the end of such a being."⁴² Furthermore, he admits innate instinctive principles of the life of action:

Nature, I confess, has put into man a desire of happiness and an aversion to misery: these indeed are innate practical principles which (as practical principles ought) do continue constantly to operate and influence all our actions without ceasing: these may be observed in all persons and all ages, steady and universal; but these are inclinations of the appetite to good, not impressions of truth on the understanding.⁴³

Thus, Locke admits that each man has innate cognitive and appetitive faculties, and that the latter have innate

42 Essay, I, iii, 12 (F.I. 102).

43 Essay, I, ii, 3 (F.I. 67).

practical principles in the sense of inclinations or tendencies towards what is good for him and away from what is evil for him.

C. THE TARGETS OF LOCKE'S ATTACKS UPON INNATE KNOWLEDGE

It is important to note, then, that a study of Book One of the Essay reveals that the type of innatism which Locke was purporting to reject and even attack was an innatism of the cognitive order, that is, an innatism which states that God infuses into the mind of each man at birth some determinate cognitive contents of the speculative and practical orders. It cannot, in truth, be denied that various theories of innatism did constitute a part of the intellectual climate into which Locke was born, and within which and against which he philosophized. Innatist theories, for that matter, may be found throughout the history of philosophical as well as theological endeavors.

The question which is now to be examined is this: "Precisely who or what were the targets of his attacks?" This is an extremely important question, for the initial concern of a philosopher very often permeates or at least exercises a significant influence upon his entire system.

Now it is true that the substance of his empiricist perspective expressed in Books Two, Three and Four, of his Essay seems to have been formulated before he wrote Book

One, for his attacks upon innatism constitute only a small portion of "Draft B" and still less of "Draft A". Nevertheless, Locke, as an empiricist, must have had his thoroughgoing distaste for innatism at the time he composed these early drafts of his Essay, even though he did not express it at length, for an innatist perspective and a thoroughgoing empiricist perspective simply cannot be combined into a unified whole. Book One of his Essay (first printed in 1690), accordingly, simply puts into writing the attitude toward innatism which he held but did not express at length in 1671, the date of both "Draft A" and "Draft B". The series of attacks upon the innatist hypothesis expressed in Book One of his Essay, then, seem to have been occasioned not by a new attitude toward such a perspective, but, rather, by the persistent teaching of innatist doctrines by prominent philosophers of his day, who, of course, constituted a sizable obstacle to the winning of converts to his own empiricist perspective.

As has been seen, the question "Precisely who or what were the targets of his attacks?" is an extremely important one. Unfortunately, however, it is not easily answered. In fact, a definitive answer as to who were the targets of his attacks simply cannot be formulated, for several reasons. First, Locke does not name the targets of his attacks. Secondly, he does not elucidate adequately

the innatist doctrines of those whom he attacks. Thirdly, he refuses to consider the possibility of attaching to an innatist theory of the cognitive order any meaning other than a determinate mental content that is: (i) infused into one's mind at birth; (ii) explicitly reflected upon by the recipient of it at birth; and (iii) either actually now present in the recipient's consciousness or, at least, lodged in his memory. Such an extreme meaning was not attached to the innatist hypotheses in the intellectual climate of his day. Locke himself insisted that the innatist hypotheses have to mean this, in order to make such theories appear absurd and ridiculous to his readers, and, thereby, to win converts to his own empiricist thesis.

It is true that Locke named Lord Herbert of Cherbury (ca. 1581-1648) (and him only) and devoted several sections of Chapter Two, Book One, of his Essay to an attack upon his innatist thesis.⁴⁴ But Lord Herbert is evidently only a minor target of his attacks, for Locke settled upon the general orientation of Book One of his Essay, or, perhaps, already composed the greater part of it, before even becoming acquainted with the innatist theory of

44 Cf. Essay, I, ii, 15-20 (F.I. 80-86). Approximately the same discussion appears in "Draft B" of the Essay. Cf. Draft B, 5-6 (R. 31-36). Lord Herbert's name does not appear in "Draft A"; nor does Locke discuss his innatist thesis there.

Lord Herbert as expressed in the latter's De Veritate, pro-ut distinguitur a Revelatione, a Verisimili, a Possibili, et a Falso (1624).⁴⁵ A.C. Fraser draws attention to the fact that the doctrine of Lord Herbert had attracted the interest of René Descartes, Petrus Gassendi (1592-1655) and Nathaniel Culverwel (ca. 1618-ca. 1651); hence, "That Locke should have been thus ignorant of the De Veritate shows his comparative indifference to books, and to the philosophical opinions of others."⁴⁶ Fraser's statement, no doubt, can be challenged. Nevertheless, it is very evident that Locke does give his reader such an impression. For in his "Epistle to the Reader", speaking of the Essay in general, Locke does say that it is "spun out of my own coarse thoughts."⁴⁷ And again towards the end of Book One of his Essay Locke says: "Truth has been my only aim; and wherever that has appeared to lead, my thoughts have impartially followed, without minding whether the footsteps of any other lay that way or not."⁴⁸

Although no definitive answer can be given to the question "Precisely who were the targets of his attacks?",

45 Cf. Essay, I, ii, 15 (F.I. 80-82).

46 F.I. 80, note 2.

47 Essay, The Epistle to the Reader (F.I. 11).

48 Essay, I, iii, 24 (F.I. 115).

many Lockean scholars have advanced a variety of opinions on this subject. The most common of these is the one set forth by R.I. Aaron, who says:

The conclusion to which we seem driven, then, is that Locke's polemic was meant for the Cartesians, for the schoolmen, for certain members of the Cambridge Platonists, and for those others, Herbert and the rest, who advocated the theory of innate ideas in any way.⁴⁹

Like Professor Aaron, Lockean scholars in general are very guarded in their statements on this matter; nevertheless, some do single out one or another philosopher or school of thought as the principal target of Locke's attacks upon innate knowledge. Under numbers "1", "2" and "3" on the pages which follow, several of the opinions offered by Lockean scholars will be examined, enlarged upon, and evaluated. Such an undertaking is valuable, for it helps one both to see more clearly whom Locke might have been attacking, and, also, to see (in addition to those aspects discussed in SECTION ONE of this chapter) the intellectual climate in and against which Locke philosophized. When this discussion is completed, an answer to the question "Precisely what were the targets of his attacks?" will be sought. This discussion will appear under number "4" below.

49 Richard AARON, John Locke, Oxford, Clarendon Press, 1963, p. 94.

1. DESCARTES IS THE TARGET
OF LOCKE'S ATTACKS UPON INNATE KNOWLEDGE

Frank Thilly⁵⁰ maintains that "Locke stands on Baconian ground in his battle against the doctrine of innate ideas, and Descartes is undoubtedly the opponent against whom he directs his attacks."⁵¹ Professor Thilly grants that Locke's Essay antagonizes the teachings of the Cartesian school and all the Cambridge Platonists who maintained the existence of innate ideas. Nevertheless, Thilly argues:

Locke aims chiefly at Descartes in his polemic, and understands by innate ideas exactly what the latter understands by them in his main works. I am well aware that Descartes occasionally modifies his teaching, especially in his letters, and formulates a doctrine of innate ideas which Locke's criticism does not reach. But it must not be forgotten that this modified view is inconsistent with Descartes's fundamental notions. The opposition between the two philosophers is a thorough-going one; they differ in principle.⁵²

Professor Thilly points out the well known fact that for Descartes the entire essence of the mind consists in conscious thinking; it is a thinking substance, a res cogitans. From this it follows, then, that the mind always thinks, even in the mother's womb. The mind must,

50 Cf. Frank THILLY, "Locke's Relation to Descartes", in The Philosophical Review, 9 (1900), p. 597-612.

51 Ibid., p. 597.

52 Ibid., p. 598. To grasp the full strength of this thesis the whole of Thilly's article must, of course, be studied.

accordingly, be conscious of everything that is in it and belongs to it.⁵³ Now according to Descartes, Thilly continues, an idea is something present in the mind, a form of thought, whence it follows that the mind must be conscious of its ideas.⁵⁴ Examples of Cartesian innate ideas and truths are the ideas of God and the soul, and the axioms of causality, identity and contradiction.⁵⁵ But if these Cartesian doctrines are compared with Book One, Chapter One, section one (F.I. 37-38) of Locke's Essay, Thilly concludes that "we can hardly exclude Descartes from the list of Locke's adversaries" because "he affirms exactly what Locke denies."⁵⁶

The two statements of Thilly cited above, namely "Locke aims chiefly at Descartes in his polemic" and "we can hardly exclude Descartes from the list of Locke's adversaries", are by no means equivalent. Many Lockean scholars would agree with the latter but not the former. In spite of this inconsistency in the wording of his thesis

53 Cf. Frank THILLY, "Locke's Relation to Descartes", p. 600. The references to the works of Descartes to substantiate this and the following points are given in Professor Thilly's article.

54 Cf. ibid., p. 601.

55 Cf. ibid., p. 602-603.

56 Ibid., p. 603.

Thilly wishes to uphold, it would seem, that the target of the attacks against innate ideas and principles found in Book One of Locke's Essay is chiefly Descartes.

Whether or not Descartes was the chief target of Locke's attacks upon innate knowledge is a question, as has already been seen, that simply cannot be definitely answered. That Descartes is not to be excluded from the list of Locke's adversaries, however, is evidently true, for: (i) Locke did possess copies of (and was interested in) Descartes' works;⁵⁷ (ii) he rejects and attacks as innate (as has already been seen) those very ideas and principles which Descartes asserted to be innate; (iii) he considers thinking to be an operation (not the essence, as Descartes did) of the soul;⁵⁸ and (iv) the linking of Descartes or the Cartesians with the target of Locke's attacks upon innate

57 Having made a rather extensive study of the lists of books Locke purchased, borrowed, etc., C.S. Ware says: "It is abundantly clear then, from the multiplicity of references in the papers Locke kept for his private use, that he possessed copies of Descartes' works, and it is clear too, that he was interested in the history of Cartesianism and in the method of studying Descartes." Charlotte S. WARE, "The Influence of Descartes on John Locke. A Bibliographical Study", in Revue Internationale de Philosophie, 4 (1950), p. 218. Speaking of Locke's attack upon innate ideas, Ware says: "It is more than likely that the men of whom he makes mention in the opening paragraph of the Essay are the followers of Descartes, and certainly his contemporaries felt that Locke's most active antagonists were the Cartesians." Ibid., p. 228.

58 Cf. Essay, II, i, 10 (F.I. 128-129).

knowledge is a rather traditional one. Indeed, this association dates back to the very time of Locke. In his New Essays concerning Human Understanding (completed in 1704, laid aside at Locke's death and published in 1765) Gottfried Wilhelm Leibnitz (1646-1716) says:

... I feel myself greatly strengthened by the excellent work which an illustrious Englishman [i.e., John Locke], with whom I have the honor of a particular acquaintance, has since published [...] under the modest title of "An Essay concerning Human Understanding." [...] I have greatly profited by the reading of this work, and indeed from the conversation of the author, [...] This author writes in the spirit of the system of Gassendi, which is at bottom that of Democritus; he is for the vacuum and for atoms; he believes that matter might think; that there are no innate ideas, that our mind is a tabula rasa, and that we do not always think; [...] and I do not at all doubt that now our party will triumph boldly over its adversaries, the Peripatetics and the Cartesians.⁵⁹

Therefore, one may safely agree with Professor Thilly that Descartes is to be numbered amongst the targets of Locke's attacks upon innate knowledge.

2. A NON-ORTHODOX FORM OF SCHOLASTICISM IS THE TARGET OF LOCKE'S ATTACK UPON INNATE KNOWLEDGE

Gunnar Aspelin⁶⁰ maintains that, although it is possible that Locke intended to attack the Cartesians, the

⁵⁹ Gottfried Wilhelm LEIBNITZ, New Essays concerning Human Understanding, Book I, Chapter 1, (Trans. A.G. Langley, LaSalle, Illinois, The Open Court Publishing Company, 1949, p. 64-65).

⁶⁰ Cf. Gunnar ASPELIN, "The Polemics in the First Book of Locke's Essay", in Theoria, 6 (1940), p. 109-122.

Cambridge Platonists, and the dogma of notitiae communes asserted by Herbert of Cherbury in his book De Veritate, in truth "none of them can in reason be considered as the principle [sic] object of his criticism."⁶¹ Professor Aspelin asks:

... why not interpret the first book on the whole as a critical examination of a fundamental conception in the conservative university philosophy? It may be possible, of course, that Locke also intends to combat certain contemporary tendencies in French and English philosophy, extraneous to the wisdom of the schools. But I am unable to find any statement in the text that can be regarded as a sufficient argument for this opinion. When Locke is combating "the defenders of innate principles", he seems generally to identify them with the representatives of academic tradition.⁶²

Aspelin shows that a serious tension existed in the intellectual climate of Locke's day, namely, between, on the one hand, the new scientific conception of the world (as held by members of the Royal Society, for instance), and, on the other hand, the scholastic philosophy as taught at Oxford University, where Locke received his philosophical training.

The mathematicians, naturalists, and technicians of the Royal Society endeavored to realize Francis Bacon's

⁶¹ Gunnar ASPELIN, "The Polemics in the First Book of Locke's Essay", p. 109.

⁶² Ibid., p. 111.

(1561-1626) ideal of scientific investigation. Aspelin comments:

They aimed at gaining positive results by experiment and observation, and their researches had for their ends to serve the demands of practical life. They were conscious of their affinity with the currents modern on the continent, especially to the new tendencies in the country of Descartes and Gassendi.⁶³

This new scientific perspective appeared to be in irreconcilable opposition to the scholastic philosophy as taught

⁶³ Gunnar ASPELIN, "The Polemics in the First Book of Locke's Essay", p. 113. In November 1660 a group of London scientists met at Gresham College and formally proposed the foundation of a "College for the promotion of Physico-Mathematical Experimental Learning." In 1663 Charles II issued a charter to them, and this group became known as "The Royal Society for the Improvement of Natural Knowledge", or simply, "The Royal Society". Robert Hooke (1635-1703), its Curator, relates that the business and design of the Royal Society "is to improve the knowledge of natural things, and all useful Arts, Manufactures, Mechanick practices, Engynes, and Inventions by Experiments,—(not meddling with Divinity, Metaphysics, Moralls, Politicks, Grammar, Rhetorick, or Logick). To attempt the recovering of such allowable arts and inventions as are now lost. To examine all systems, theories, principles, hypotheses, elements, histories, and experiments of things natural, mathematical, and mechanical, invented, recorded, or practiced, by any considerable author, ancient or modern. In order to the compiling of a complete system of solid philosophy for explicating all phenomena produced by nature or art, and recording a rationall account of the causes of things." (Quoted by Stephen F. MASON, A History of the Sciences, New York, Collier Books, 1962, p. 259.)

Lord Brouncker, a mathematician, became the first president of the Royal Society. Among its original members were such scientists as Sir Robert Moray, Dr. Wilkins and Sir Robert Boyle. On November 23, 1664 John Locke was elected a Fellow of the Royal Society. Sir Isaac Newton, professor of mathematics at Cambridge, became a Fellow of the Society on January 11, 1671, and in 1703 was appointed its president—a post which he held until his death.

at Oxford. In fact, Thomas Barlow (1607-1691), even though he was an associate of Robert Boyle (1627-1691), was a declared enemy of the "new philosophy" of the Royal Society, and stigmatised it as "impious" if not plainly "atheistical", for it, according to Barlow, rendered the truths of the Protestant faith indefensible.

Now in order to give his reader a representative example of the official Oxford philosophy at the time of Locke, Professor Aspelin cites excerpts from the philosophical lectures of Thomas Barlow which were given at Oxford and published under the title of Exercitationes aliquot Metaphysicae de Deo (editio secunda Oxoniae MDCLVIII). Thomas Barlow, who had received his B.A. in 1630 and M.A. in 1633 at Queen's College, Oxford, was among the most prominent and authoritative teachers at Oxford: he was considered to be a master of casuistry, logic, and philosophy, in which subjects he had as his pupil John Owen (1580-1651), who, as dean of Christ Church (John Locke was a student there at that time) and perpetual vice-chancellor, was the ruling power at Oxford during the Protectorate. Barlow taught that all men have certain innate speculative and practical principles: "Omne totum est majus sua parte" and "Deus est colendus", and so on; also "Innata est homini deitatis

notio."⁶⁴ These ideas and principles, according to Barlow, are innate potential knowledge, necessarily proceeding to the stage of an actual knowledge of them. It is this type of innatism, as Aspelin correctly points out, which Locke seems to be attacking, for instance, in his Essay, Book One, Chapter One, section five (F.I. 40-42).

Professor Aspelin admits that one cannot conclude from the above that Locke had Barlow's book in mind when he worked out his refutation of innate principles. Nevertheless, he points out that Barlow's:

... position as a man in authority and his great reputation for learning and penetration argue in favour of the assumption that general opinion in Oxford corresponded to his philosophical views. The doctrine of innate principles thus probably formed a material part of the established system, which was implanted in the minds of the young students. Assaulting the traditional way of thinking, Locke polemises in part against innatism, in part against the idea of scientific thinking as being a chain of syllogisms ex praecognitis et praeconcessis.⁶⁵

Thus, it is Gunnar Aspelin's contention that the target of Locke's attack is not principally the Cartesians, the Cambridge Platonists or Herbert of Cherbury's De Veritate, but, rather, the established system of philosophy at Oxford.

⁶⁴ Thomas BARLOW, Exercitationes aliquot Metaphysicae de Deo, editio secunda, Oxoniae, MDCLVIII, p. 170 and 156. (Quoted by Gunnar ASPELIN, "The Polemics in the First Book of Locke's Essay", p. 117-118.)

⁶⁵ Gunnar ASPELIN, op. cit., p. 120-121.

Now a somewhat similar thesis is advanced by James Gibson. In his excellent book entitled Locke's Theory of Knowledge and its Historical Relations Professor Gibson admits that there is no actual representative of the innatist hypothesis as formulated by Locke in Book One of his Essay. However, one must not conclude from this that Locke has merely set up and overthrown a man of straw. Gibson insists,

An examination of Locke's references to his opponents fully bears out the suggestion that, in attacking the theory of innate principles and the theory of knowledge which rested upon it, he conceived himself to be engaged in conflict with the current procedure of the Schools.⁶⁶

Gibson reports that during Locke's student days at the University of Oxford a diluted or non-orthodox form of scholasticism was taught. It consisted of the following elements: (i) it was supposed that one had a set of innate principles, maxims or axioms such as the Laws of Identity and Contradiction, which were non-empirical in origin and neither open to question nor in need of proof; and (ii) it was supposed that all reasonings are ex praecognitis et praeconcessis, i.e., reason is nothing else but the faculty of deducing unknown truths from these principles or

⁶⁶ James GIBSON, Locke's Theory of Knowledge and its Historical Relations, Cambridge, University Press, 1960, p. 41. Cf. ibid., p. 29-44 and 182-204.

propositions that are already known. This non-orthodox form of scholasticism is summarized by Locke as follows:

The rules established in the schools, that all reasonings are Ex praecognitis et praeconcessis, seem to lay the foundation of all other knowledge in these maxims, and to suppose them to be praecognita. Whereby, I think, are meant these two things: first, that these axioms are those truths that are first known to the mind; and, secondly, that upon them the other parts of our knowledge depend.⁶⁷

In order to substantiate his thesis that the principal target of Locke's attack upon innate principles was the non-orthodox scholasticism of the Schools, Gibson brings his reader's attention to such texts as the following:

"I know not how absurd this [denial of innate principles] may seem to the masters of demonstration"⁶⁸; "a man is not permitted without censure to follow his own thoughts in the search of truth, when they lead him ever so little out of the common road [i.e., the thesis of innate principles]"⁶⁹; and "What censure doubting thus of innate principles may deserve from men, who will be apt to call it pulling up the old foundations of knowledge and certainty, I cannot tell."⁷⁰ Such texts, according to Gibson, clearly indicate

67 Essay, IV, vii, 8 (F.II. 273).

68 Essay, I, i, 28 (F.I. 62). (Italics mine.)

69 Essay, I, i, 1 (F.I. 38). (Italics mine.)

70 Essay, I, iii, 24 (F.I. 114-115). (Italics mine.)

that Locke was engaged in a conflict with the current procedure of the Schools, a non-orthodox scholastic procedure.

The fact that Locke attacked the so-called innate speculative principles of identity and contradiction, which the men of the Schools regarded as the first principles of knowledge and science, is a further indication that he was opposing the current procedure of the Schools. And Gibson concludes:

... the defence of innate principles was in his [Locke's] mind closely connected with the abuse of maxims, and the use of faulty methods of demonstration, [...] But if the opponents he has chiefly in view in Book I are the upholders of maxims of Book IV, his designations of the latter leave no room for doubt as to whom he had in mind. It was 'scholastic men' who indulged in 'a great deal of talk' about 'sciences and the maxims on which they are built.'⁷¹

Thus, according to Gunnar Aspelin and James Gibson the principal target of Locke's attacks upon innate principles was the non-orthodox scholasticism of the Schools.

Further evidence may be set forth to substantiate the suppositions of Professors Aspelin and Gibson. First, however, it is well to recall the meaning of "Scholasticism". By "Scholasticism" is meant, in general, a philosophical and theological system taught by a university professor (a schoolman) during the Middle Ages and early

⁷¹ James GIBSON, Locke's Theory of Knowledge and its Historical Relations, p. 42.

Renaissance. Each scholasticism respected authority in the forms of revealed religion and tradition (which consisted chiefly in the systems of Plato and Aristotle). There were, therefore, various kinds of scholasticisms, for, although the problems discussed by them arose for the most part from the same source (namely, revealed religion), the traditions according to which they were answered differed with one another, that is, some professors answered these problems according to orthodox (or non-orthodox) Platonic principles; other professors answered these same problems according to orthodox (or non-orthodox) Aristotelian principles; and still other schoolmen answered them according to a curious mixture of both Platonic and Aristotelian orthodox (or non-orthodox) principles.

Now, as has been seen in SECTION ONE of this chapter, Thomas Hobbes reports from England in 1640 that the opinions of Aristotle "are at this day, and in these parts, of greater authority than any other human writings." Thus, the scholasticism of seventeenth-century England was chiefly of the Aristotelian type. This does not necessarily mean, of course, that the university professors prepared their lectures according to the principles found in the text itself of Aristotle. Philosophical and theological manuals were common in the seventeenth century, and, as is often the case even today, need not have contained an orthodox

Aristotelian perspective. In fact, John L. Stocks reports that:

What Locke endured [when a student at Oxford] with such ill grace was no doubt the lees of the scholastic tradition. It is not to be supposed that the College tutors of his [i.e. Locke's] day had made a study of the philosopher's [i.e. Aristotle's] works.⁷²

The philosophy of the Oxford Aristotelians, somewhat like that of the Cambridge Platonists, seems to have been a curious mixture of both non-orthodox Aristotelian and Platonic perspectives, as is evident not only in the works of Thomas Barlow, but also, for instance, in those of Sir Matthew Hale (1609-1676) and Robert South (1634-1716).

Sir Matthew Hale was educated at Magdalen Hall, Oxford, and Lincoln's Inn. His studies included mathematics, history, medicine, law, theology and Aristotelian philosophy. Concerning moral and intellectual truths, such as "There is a God", "God is all powerful", "Promises are to be kept", and so on, Hale says:

I come now to consider of those rational Instincts as I call them, the connate Principles engraven in the humane Soul; which though they are Truths acquirable and deducible by rational consequences and Argumentation, yet they seem to be inscribed in the very crasis and texture of the Soul antecedent to any acquisition by industry or the exercise of the discursive Faculty in Man, and therefore they may be well called anticipations, prenotions, or sentiments characterized and

72 John Leofric STOCKS, Aristotelianism, p. 140.

engraven in the Soul, born with it, and growing up with it till they receive a check by ill customs or educations, or an improvement and advancement by the due exercise of the Faculties.⁷³

Certainly this innatist tenet of Sir Matthew Hale is of the type that Locke rejected and attacked in Book One of his Essay. But Hale, like Thomas Barlow, was a prominent and authoritative person in England. Numbered amongst his intimate friends were: John Wilkins (1614-1672, a fellow of the Royal Society); Isaac Barrow (1630-1677, a fellow of the Royal Society); John Tillotson (1630-1694, a personal friend of John Locke); Edward Stillingfleet (1635-1699, an enemy of John Locke); and James Ussher (1581-1656, grandfather of James Tyrrell—1642-1718—, who was an intimate and lifelong friend of John Locke and was present at the meeting that gave rise to the writing of Locke's Essay). Furthermore, Hale was created chief justice of England in the year 1671, the date of "Draft A" and "Draft B" of Locke's Essay. Therefore, it is reasonable to conclude that Locke was acquainted with the innatist theory of Sir Matthew Hale and included him amongst the targets of his attacks upon innate knowledge.

73 Sir Matthew HALE, The Primitive Origination of Mankind, Considered and Examined According to The Light of Nature, London, Wm. Godbid, 1677, folio 5 p. 1, p. 60. (Quoted by John W. YOLTON, John Locke and the Way of Ideas, London, Oxford University Press, 1956, p. 34.)

In 1647 Robert South entered Westminster school (just one year before John Locke). With John Locke, South received his college education at Christ Church (then the most important Oxford College), where in 1655 he received a B.A. degree, in 1657 a M.A. degree, and in 1663 a Doctorate of Divinity. In 1660 South was appointed University Orator (at which time Locke held the senior studentship), and became well known for his preaching.

Although he was a disciple of Aristotle in respect to the greater part of his De Anima and often compared his Ethics with the precepts of Saint Paul, South nevertheless rejected and attacked the Aristotelian doctrine of the tabula rasa. South maintained that the speculative faculty of the soul has several innate truths, such as: "The same thing cannot at the same time be, and not be"; "The whole is bigger than a part"; and "Two propositions severally equal to a third, must also be equal to one another." Such truths, South asserted, "are the rules of Discourse, and the basis of all Philosophy."⁷⁴ They "cannot be infused by observation, because they are the rules by which men take their first apprehension and observations of things, and

⁷⁴ Robert SOUTH, "Sermon on Genesis i. 27", in Twelve Sermons Preached upon Several Occasions, London, J.H. for Thomas Bennet, 1692, 8°, 4 p. 1, p. 62. (Quoted by John W. YOLTON, John Locke and the Way of Ideas, p. 38.)

therefore in order of nature must needs precede them"; hence, "it follows that these were Notions not descending from us, but born with us; not our Offspring, but our brethren; and (as I may so say) such as we were taught without the help of a Teacher."⁷⁵ South also held certain practical truths ("God is to be worshipped", "Parents are to be honoured", for instance) to be innate.

Now, since the innatist thesis of Robert South is of the type that John Locke is rejecting and attacking in Book One of his Essay, and since South and Locke were schoolfellows at both Westminster and Christ Church, it is reasonable to conclude that Locke knew of South's innatist thesis, and that he included him amongst the targets of his attacks upon innate knowledge.

In view of what has been said, then, it is safe to assert that non-orthodox forms of scholasticism (as set forth by Barlow, Hale and South, for instance) were targets of Locke's attacks upon innate knowledge. This conclusion is further substantiated by David Hume (1711-1776). In An Enquiry concerning Human Understanding, note 2 of Section II (which deals with the origin of ideas), Hume states:

⁷⁵ Robert SOUTH, "Sermon on Genesis i. 27", p. 63-64. (Quoted by John W. YOLTON, John Locke and the Way of Ideas, p. 39.)

To be ingenuous, I must own it to be my opinion, that LOCKE was betrayed into this question [of innate ideas] by the schoolmen, who, making use of undefined terms, draw out their disputes to a tedious length, without ever touching the point in question. A like ambiguity and circumlocution seem to run through that philosopher's reasonings on this as well as most other subjects.⁷⁶

3. THE CAMBRIDGE PLATONISTS ARE THE TARGET OF LOCKE'S ATTACK UPON INNATE KNOWLEDGE

In his article, "Locke's Attack upon Innate Ideas", Sterling P. Lamprecht maintains that the principal target of Locke's attack is the dogmatic use of innate ideas by the Cambridge Platonists.⁷⁷ Before pointing out how Lamprecht establishes this thesis, however, it is necessary to examine his earlier article, "Innate Ideas in the Cambridge Platonists", in which Professor Lamprecht endeavors to determine the historical meaning of the theory of innate ideas in the English writers during the forty years before the appearance of Locke's Essay.⁷⁸ To determine this, Lamprecht examines briefly the doctrines of Benjamin

76 David HUME, An Enquiry concerning Human Understanding, Section II, note 2. The English Philosophers From Bacon to Mill, Edwin A. Burt (ed.), New York, The Modern Library, Random House, Inc., 1939, p. 596.

77 Cf. Sterling P. LAMPRECHT, "Locke's Attack Upon Innate Ideas", in The Philosophical Review, 36 (1927), p. 145-165.

78 Cf. Sterling P. LAMPRECHT, "Innate Ideas in the Cambridge Platonists", in The Philosophical Review, 35 (1926), p. 553-573.

Whichcote (1609-1683), John Smith (1616-1652), Nathanael Culverwel (ca. 1618-ca. 1651), Henry More (1614-1687), and Ralph Cudworth (1617-1688). All of these men were Anglican clergymen. Henry More was a graduate of Christ's College, Oxford; all the others, however, were graduates of Emmanuel College, Cambridge (a Puritan foundation and a stronghold of Calvinism).⁷⁹

Between the period of James I and James II Anglicanism and Puritanism were the two main ecclesiastical parties in England. These two parties, according to Lamprecht, "forced upon philosophical thinkers certain problems concerning knowledge which, almost as much as the revolutionary conceptions of modern science, have determined the course of the history of epistemology."⁸⁰ The Anglicans appealed in the final analysis to the Church as the repository of and guarantee for true doctrine: the creeds were the creation of the Church, and the Bible could be understood only

79 As Gilson and Langan point out, "The CAMBRIDGE THINKERS are so much of a mind that there is nothing to be lost by our considering together the great among them—Benjamin Whichcote, John Smith, Ralph Cudworth, and Henry More—as exponents of a single doctrine." Etienne GILSON and Thomas LANGAN, Modern Philosophy, p. 183. Therefore, the major point of Lamprecht's article can be grasped by focusing one's attention principally on the theory of Benjamin Whichcote. This is done in the paragraphs that follow.

80 Sterling P. LAMPRECHT, "Innate Ideas in the Cambridge Platonists", p. 553.

through the exposition of the authorities of the Church. The Puritans, however, taught that apart from the illumination of mind during the reading of the Bible men could get no knowledge of the truths upon which religion is founded. "It was", according to Lamprecht, "the group of men whom we number among the Cambridge Platonists who supplied the philosophical background for a comprehensive and conciliating program within the Church."⁸¹ Thus, "their theory of knowledge aimed above all else at a wise and moderate settlement of the quarrels into which the Church had been plunged."⁸²

The Cambridge Platonists felt that reason alone furnished a foundation for a satisfactory settlement. Thus a characteristic of their philosophy is a confidence in reason, i.e., a confidence in the natural powers of the human mind. This confidence is expressed by Whichcote, for example, in this way:

That which is the Height and Excellency of Humane Nature, viz. our Reason, is not laid aside nor discharged, much less is it confounded by any of the Materials of Religion; but awakened, excited, employed, directed, and improved by it: For the Mind and Understanding of Man, is that Faculty, whereby Man is made capable of God, and apprehensive of him, receptive from him, and able to make returns upon him, and acknowledgments to him. Bring that with you, or else you are not capable

81 Sterling P. LAMPRECHT, "Innate Ideas in the Cambridge Platonists", p. 557.

82 Ibid., p. 553.

Receivers: Unless you drink in these Moral Principles; unless you do receive them by Reason, the Reason of Things by the Reason of your Mind, your Religion is but shallow and superficial. [...] I say, a Man is a Compound of different and several things; he hath several sorts of Faculties, which we are wont in our Philosophy to call his upper and his lower Powers; [...] By the higher Powers, he is able to converse both with God and things Spiritual and Coelestial; and by the lower Powers, with Terrene and Earthy. [...] by Sense, Imagination and brutish Affection, we can only maintain Acquaintance with this outward and lower World. But by this Principle of Reason and Understanding, we are made capable of Religion. So that Man's peculiar Object and proper Business, is in things of the Mind; and therefore he ought to use those high Faculties of his Soul, to enquire after God, and find out Truth, and the Reason of Things ...⁸³

Now this passage along with the following one expresses the basic doctrine of the Cambridge Platonists. Whichcote says:

All Divine truth is of one of these two Emanations:—Either it flows from God, in the first Instant and Moment of God's Creation; and then it is the Light of that Candle which God set up in Man, to light him; and that which by this Light he may discover, are all the Instances of Morality; of good Affection, and Submission towards God; the Instances of Justice and Righteousness to Men, and Temperance to himself:—Or else, it is an after Revelation and Discovery. Man being out of the Way of his Creation, by his Defection from God, is recover'd by this Revelation.⁸⁴

⁸³ Benjamin WHICHCOTE, The Work of Reason. (Quoted by E.T. CAMPAGNAC, The Cambridge Platonists, Oxford, Clarendon Press, 1901, p. 51-52. This work consists of an introduction to and selections from the writings of Benjamin Whichcote, John Smith and Nathanael Culverwel.)

⁸⁴ Benjamin WHICHCOTE, The Glorious Evidence and Power of Divine Truth. (Quoted by E.T. CAMPAGNAC, op. cit., p. 10.) In another place Whichcote expresses the doctrine of innate ideas in this way: "Man's Observance of God in

Thus human reason, the highest faculty in man, is somewhat of a "Candle of the Lord"—this is the favorite metaphor used by all the Cambridge Platonists. Now God not only puts a "Candle" or faculty of reason in each man but He also lights it, i.e., implants some innate ideas and principles in this faculty. But the mere presence in the reason of such cognitive contents does not imply for the Cambridge Platonists that reason is actually conscious of them from birth. For Whichcote says: "Things of Natural Knowledge, or of first Inscription in the Heart of Man by God, these are known to be true as soon as ever they are proposed."⁸⁵ "Experience has for the Cambridge Platonists", according to Lamprecht, "merely the function of furnishing occasions upon which the active energy of the mind comes to full

all Instances of Morality; These are Truths of first Inscription; and these have a deeper Foundation, greater Ground for them, than that God gave the Law on Mount Sinai; or that he did after engrave it on Tables of Stone; or that we find the Ten Commandments in the Bible. For God made Man to them, and did write them upon the Heart of Man, before he did declare them upon Mount Sinai, before he engraved them upon the Tables of Stone, or before they were writ in our Bibles; God made Man to them, and wrought his Law upon Mens Hearts; and, as it were, interwove it into the Principles of our Reason; and the things thereof are the very Sense of Man's Soul, and the Image of his Mind: [...]." Benjamin WHICHCOTE, The Glorious Evidence and Power of Divine Truth. (Quoted by E.T. CAMPAGNAC, The Cambridge Platonists, p.4-5.)

85 Benjamin WHICHCOTE, The Glorious Evidence and Power of Divine Truth. (Quoted by E.T. CAMPAGNAC, op. cit., p. 5.)

consciousness of the virtual knowledge it has always contained."⁸⁶ In other words, the content that is actually known is Divine in origin, not empirical; yet one's actual knowledge of this content is somehow consequent upon experience.

But one of the dangers to which the theory of innate ideas was liable is a tendency toward dogmatism. It was this dogmatic use of innate ideas that Locke found most distasteful. Initially the exponents of this thesis, Nathanael Culverwel for instance, held that there were but a few innate ideas and principles. However, between the years 1650 to 1690 it seems that the Cambridge Platonists, especially Henry More and Ralph Cudworth, added more and more of them to the list as a means of settling controversies on doctrinal issues: if such and such principles and ideas are innate, then one has no grounds for doubting them. This is a radical type of dogmatism. Lamprecht observes:

Cudworth's Treatise concerning Eternal and Im-
mutable Morality is perhaps the most extreme and
loose statement in which the theory of innate ideas
was ever expressed on English soil; and though this
treatise did not appear in print until 1731 (more
than forty years after the death of its author), it
betrays the uncritical spirit which was to bring

⁸⁶ Sterling P. LAMPRECHT, "Innate Ideas in the Cambridge Platonists", p. 567.

about the entire disrepute of the doctrine in the first book of Locke's Essay.⁸⁷

In his second article, "Locke's Attack Upon Innate Ideas", Sterling Lamprecht further endeavors "to defend the position that Locke approached epistemological considerations from the background of theological speculations."⁸⁸ Lamprecht grants that Descartes⁸⁹ and scholastic philosophy helped to form Locke's thinking; nevertheless, he insists that Locke was intensely interested in the theological issues of his day and "was hardly likely to enter upon his speculations because of some tendency in academic circles or some tradition of the past. He meant his writings to

87 Sterling P. LAMPRECHT, "Innate Ideas in the Cambridge Platonists", p. 565. According to Lamprecht, "the theory of innate ideas met a twofold need. It kept the rationalism of the seventeenth century from being empty of specific conclusions, and prevented the 'latitude men' from being denounced as men of little faith; for the innate ideas were central principles of theological and ethical nature upon which the Church's teaching might stand. Also it stretched the Puritans' narrow doctrinal suppositions as to the limits of inspiration. The 'Supreme Judge' could not be 'the Holy Spirit speaking in the Scripture' if the reason of man directly penetrated to some of the mysteries of the supernatural world. Inspiration did not wait for those moments when a man's eyes rested upon the pages of even a sacred book. Inspiration was an internal principle, constantly working within a man no matter what external object attracted the attention of his senses." Ibid., p. 564.

88 Sterling P. LAMPRECHT, "Locke's Attack Upon Innate Ideas", p. 145.

89 Cf. Sterling P. LAMPRECHT, "The Role of Descartes in Seventeenth-Century England", in Studies in the History of Ideas, 3 (1935), p. 228-240.

bear upon current issues."⁹⁰ Lamprecht believes that in writing his Essay Locke considered "the original, certainty, and extent of human knowledge from the standpoint of one who was puzzled over the principles of morality and revealed religion."⁹¹ To establish this thesis Lamprecht sets forth three rather impressive pieces of evidence, one external and two internal.

The external evidence is as follows. In "The Epistle to the Reader", Locke says:

Were it fit to trouble thee with the history of this Essay, I should tell thee, that five or six friends meeting at my chamber, and discoursing on a subject very remote from this, found themselves quickly at a stand, by the difficulties that rose on every side. After we had awhile puzzled ourselves, without coming any nearer a resolution of those doubts which perplexed us, it came into my thoughts that we took a wrong course; and that before we set ourselves upon inquiries of that nature, it was necessary to examine our own abilities, and see what objects our understandings were, or were not, fitted to deal with.⁹²

Now James Tyrrell, who was at this meeting and who was a personal friend of Locke, says that the subject matter under discussion was the "principles of morality and revealed religion." This information is contained in a marginal note

90 Sterling P. LAMPRECHT, "Locke's Attack Upon Innate Ideas", p. 146.

91 Ibid., p. 148.

92 Essay, The Epistle to the Reader (F.I. 9).

of Tyrrell's copy of Locke's Essay.⁹³ Hence, Lamprecht maintains, Locke wrote his Essay from the standpoint of one puzzled over the principles of morality and religion rather than from the standpoint of the physical and physiological research that he was familiar with as a member of the Royal Society.⁹⁴

The two internal evidences are as follows. Lamprecht insists that Book One of the Essay gives the reader internal confirmation of Tyrrell's remark in two ways. In the first place Locke does refer to the principles of identity, contradiction, and so on, and he does bring in various arithmetical truths and trivial propositions. But these principles were often found in theological controversies and credal statements. Lamprecht holds that:

These logical principles are not the burden, however, of Locke's discussion in the first book of the Essay. Rather he referred to the religious and moral articles of common acceptance in seventeenth-century England,—the ideas of justice, the Golden Rule, the existence of God, [...] the content of the principles which he discussed as advanced by his opponents shows that he was taking his departure from the theological and ethical controversies of the day.⁹⁵

93 Cf. F.I. 9, note 2.

94 For the opposite view, see: Fulton H. ANDERSON, "The Influence of Contemporary Science on Locke's Method and Results", in University of Toronto Studies in Philosophy, 2 (1923), passim.

95 Sterling P. LAMPRECHT, "Locke's Attack Upon Innate Ideas", p. 148-149.

In the second place, Lamprecht continues:

... we must notice the fundamental objection which Locke had to innate ideas and relate this objection to the previous history of the theory. Locke's dislike of innate ideas was clearly due above all else to the dogmatism which the assertion of such ideas involved. The earlier appeal to innate ideas had seemed to its proponents to put a rational criterion in place of dogmatic claims. But the implications of this appeal proved unfortunate. Locke saw how the theory had developed into a cloak for new dogmatisms, and hence how it was unsuited for the achievement of the very purpose it had been adopted to promote. [...] He objected that some persons "taking things upon trust, misemploy their power of assent, by lazily enslaving their minds to the dictates and dominion of others, in doctrines which it is their duty to examine, and not blindly, with an implicit faith, to swallow."⁹⁶

Locke's opposition to dogmatism is evident not only in his Essay but also in other works such as The Reasonableness of Christianity (1695) and his Letters on Toleration (1689, 1690, 1692 and 1706). Lamprecht insists that if these latter works are linked with Book One of the Essay one will see even more clearly the target of Locke's attack upon innate ideas. The remainder of the present article touches on this point but need not be discussed here as it takes one beyond the scope of this study.⁹⁷

⁹⁶ Sterling P. LAMPRECHT, "Locke's Attack Upon Innate Ideas", p. 149.

⁹⁷ Cf. Sterling P. LAMPRECHT, The Moral and Political Philosophy of John Locke, New York, Russell and Russell, Inc., 1962, passim.

Thus, as has been seen, it is Lamprecht's theory that Locke approached epistemological considerations from the background of theological^{*} speculations and that the principal target of the attacks of Book One of his Essay is the theory of innate ideas of the Cambridge Platonists.

Now the present writer agrees with Professor Lamprecht that Locke wrote his Essay more from the standpoint of one puzzled over the principles of morality and religion than from the standpoint of the physical and physiological research with which he was familiar as a member of the Royal Society, for when one examines not only the Essay but the works of Locke as a whole the reader cannot help but conclude that Locke's moral and theological interests far outweighed his physical and physiological ones. The present writer also agrees with Professor Lamprecht that the target of Locke's attack was the dogmatic use of innate ideas. But what may be questioned, however, is Professor Lamprecht's singling out of the Cambridge Platonists as the principal target of Locke's attacks, for a tendency toward dogmatism was present in all those who asserted the innatist thesis in the seventeenth century. Also, as John W. Yolton correctly points out, "In every case, it [i.e., the theory of innate knowledge] is invoked as a means of stabilizing morality and religion, of providing men with certain and

sure foundations for the virtuous life."⁹⁸ Furthermore, the Oxford Schoolmen were just as intensely interested in and wrote just as extensively on moral and religious matters as did the Cambridge Platonists. And is it not true that the whole of Descartes' philosophy—save the truth of the thinking self—hinges on his innate idea of God? Finally, one should not underestimate Locke's interests in the physical sciences and the admiration he held for master-builders such as Sir Robert Boyle, the incomparable Mr. Newton, and other fellow members of the Royal Society.⁹⁹ It is very apparent that the empiricism of the new and impressive sciences advanced by members of the Royal Society influenced Locke's moral and religious perspectives. Professor Yolton aptly brings attention to this important point in the following words:

The appeal to innate, pre-experiential principles was opposed to the empiricism of this new movement. When religion ceased to be an affair of the heart, a private, personal relation between a man and his God, men began to find God in nature. Religion became less complex, more open, and more rational. If God is Himself in nature, what need is there for His laws and commands to be written in the heart? The function of these laws was usurped by reason and observation. In his own early Essays on the Law of Nature, Locke exemplified this externalizing tendency by arguing that from the reports

98 John W. YOLTON, John Locke and the Way of Ideas, p. 29.

99 Cf. Essay, The Epistle to the Reader (F.I. 14).

of our senses we infer a God as maker of the world: 'as soon as this is laid down, the notion of a universal law of nature binding on all men necessarily emerges....' The law of nature accordingly lost its innate basis; but in the minds of those who defended this concept of a law of nature, the force and certainty of the law were not rendered any the less powerful. When Locke came to reflect upon the problems of knowledge and religion, he found appealing this new attitude towards a simple naturalistic religion and an empirical basis for values.¹⁰⁰

The Cambridge Platonists, accordingly, were but one of the targets of Locke's attacks upon innate knowledge.

Thus (under numbers "1", "2", and "3" above), the question "Precisely who were the targets of Locke's attacks upon innate knowledge?" has been examined. Although no definitive answer to this question has emerged, it has been seen that one can reasonably assert that Locke was attacking such men as Descartes, Barlow, Hale, South, Whichcote, and their followers.

4. PRECISELY WHAT WERE THE TARGETS OF LOCKE'S ATTACKS UPON INNATE KNOWLEDGE?

When one asks not "who" (i.e. the name of the person or persons) but "what" (i.e. what philosophical and theological perspective or perspectives) were the targets

¹⁰⁰ John W. YOLTON, John Locke and the Way of Ideas, p. 45-46. (The quotation within Yolton's text is from: John LOCKE, Essays on the Law of Nature, ed. and trans. W. von Leyden, Oxford, Clarendon Press, 1954, the second essay, p. 133.) Cf. Essay, IV, x, 1-19 (F.II. 306-324).

of Locke's attacks upon innate knowledge, he is better able to discover a definitive answer.

It is evident that the principal function of Book One of Locke's Essay is to clear the way for his basic thesis of the purely empirical origin of human knowledge: "Whence has it [i.e. the human mind] all the materials of reason and knowledge? To this I answer, in one word, from EXPERIENCE. In that all our knowledge is founded; and from that it ultimately derives itself."¹⁰¹ Undoubtedly, then, the innatist perspective was the target of Locke's attacks, for a thoroughgoing empiricist perspective simply leaves no room for innate truths.

Not only did Locke find the innatist thesis itself distasteful, but he also disliked two factors which accompanied it. First, he disliked the pressure, so to speak, put upon those who questioned the innatist thesis: "And where is the man to be found that can patiently prepare himself to bear the name of whimsical, sceptical, or atheist; which he is sure to meet with, who does in the least scruple any of the common opinions?"¹⁰² Secondly, he disliked the intellectual laziness that accompanied those who held to the innatist thesis, for:

¹⁰¹ Essay, II, i, 2 (F.I. 121-122).

¹⁰² Essay, I, ii, 25 (F.I. 89). Cf. Essay, I, iii, 25 (F.I. 116).

... the wise and considerate men of the world, by a right and careful employment of their thoughts and reason, attained true notions in this [i.e., of God] as well as other things; whilst the lazy and inconsiderate part of men, making far the greater number, took up their notions by chance, from common tradition and vulgar conceptions, without much beating their heads about them. 103

Locke's insistence upon intellectual labor is also found in his posthumous essay Of the Conduct of the Understanding (1706), where he says:

We are born ignorant of every thing. The superficialities of things that surround them make impressions on the negligent, but nobody penetrates into the inside without labour, attention, and industry. Stones and timber grow of themselves, but yet there is no uniform pile with symmetry and convenience to lodge in without toil and pains. God has made the intellectual world harmonious and beautiful without us; but it will never come into our heads all at once; we must bring it home piecemeal, and there set it up by our own industry, or else we shall have nothing but darkness and a chaos within, whatever order and light there be in things without us. 104

This insistence upon intellectual labor undoubtedly stems from two sources: (i) his Puritan background, a religion which views labor as the calling of man; and (ii) the impressive achievements of the scientists of the Royal Society.

103 Essay, I, iii, 16 (F.I. 105). Cf. Essay, I, iii, 23 (F.I. 113).

104 John LOCKE, Of the Conduct of the Understanding, section 38. Works, Vol. 3, p. 272.

Having examined the negative side of Locke's Essay, namely his rejection of the innatist perspective, one is now ready to examine its positive side, namely his empiricist perspective.

SECTION III

THE "RAW MATERIALS" OF HUMAN KNOWLEDGE

A. INTRODUCTORY REMARK

Locke informs his reader that the purpose of his Essay is "to inquire into the original, certainty, and extent of human knowledge, together with the grounds and degrees of belief, opinion, and assent."¹⁰⁵ Thus, both certain knowledge and probable knowledge fall within the scope of his inquiry or examination. The method he intends to employ in this inquiry is the "historical, plain method"¹⁰⁶, that is, a somewhat common sense procedure which consists in observing and describing the actual cognitive operations and objects of the human understanding. He then enumerates the order in which he will examine the principal subjects that fall within the scope of his inquiry. This order is as follows:

105 Essay, Introduction, 2 (F.I. 26).

106 Essay, Introduction, 2 (F.I. 27).

First, I shall inquire into the original of those ideas, notions, or whatever else you please to call them, which a man observes, and is conscious to himself he has in his mind; and the ways whereby the understanding comes to be furnished with them.

Secondly, I shall endeavour to show what knowledge the understanding hath by those ideas; and the certainty, evidence, and extent of it.

Thirdly, I shall make some inquiry into the nature and grounds of faith or opinion: whereby I mean that assent which we give to any proposition as true, of whose truth yet we have no certain knowledge. And here we shall have occasion to examine the reasons and degrees of assent.¹⁰⁷

His initial inquiry into the first of these subjects (one's original or primary ideas and how one's understanding acquires them) is found in Book Two of his Essay, whereas the second and third are examined in Book Four of this same work.

The subject of Book One of Locke's Essay was examined in SECTION TWO above. There it was seen that Locke rejected and attacked the thesis of innate ideas. Thus, having shown that the innatist thesis is inadequate to explain the fact of man's ideas, Locke logically asks: "How he comes by them?"¹⁰⁸ This is the predominant question of the opening chapters of Book Two of his Essay.

SECTION THREE of the present study is entitled: "The raw materials of human knowledge", because ideas as ideas

107 Essay, Introduction, 3 (F.I. 28).

108 Essay, II, 1, 1 (F.I. 121).

are not knowledge. Knowledge, according to Locke, consists in "the perception of the connexion of and agreement, or disagreement and repugnancy of any of our ideas."¹⁰⁹ The minimal unit of knowledge is, accordingly, the proposition or judgment, which is alone capable of being true or false. This section has but one goal, namely, to indicate briefly (and, for the most part, using Locke's own words) his empirical thesis as to the origin of ideas. At this time no attempt will be made to elucidate his thesis, because the question of the origin of ideas is a many-sided problem which involves, for instance, his doctrines concerning the nature of the extramental world and the mind and body, and his position regarding the epistemological subject-object problem. These will be taken up in the next chapter of this study.

It might be well to add that the present problem (like others) is rendered even more difficult by the fact of Locke's imprecise and inconsistent use of philosophical terms. His imprecision is due, in part, to his desire to make his Essay "easy and intelligible to all sorts of readers"¹¹⁰; whereas, his inconsistent use of terms is due, in part, to the fact that the Essay was "written by incoherent

109 Essay, IV, i, 2 (F.II. 167).

110 Essay, The Epistle to the Reader (F.I. 12).

parcels; and after long intervals of neglect, resumed again, as my humour or occasions permitted."¹¹¹ These facts will become immediately evident in the following presentation of his empirical thesis, and, of course, constitute a constant challenge to one seeking to grasp and express his doctrine.

B. EXPERIENCE: THE SOURCE OF THE RAW
MATERIALS OF HUMAN KNOWLEDGE

In his Essay, Book Two, Chapter One, sections one and two, Locke announces his empiricist perspective as to the origin of ideas in this way:

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,—such as are those expressed by the words whiteness, hardness, sweetness, thinking, motion, man, elephant, army, drunkenness, and others: it is in the first place then to be inquired, How he comes by them?

[.]
Whence has it all the materials of reason and knowledge? To this I answer, in one word, from EXPERIENCE. In that all our knowledge is founded; and from that it ultimately derives itself. Our observation employed either, about external sensible objects, or about the operations of our minds perceived and reflected on by ourselves, is that which supplies our understandings with all the materials of thinking. These two are the fountains of knowledge, from whence all the ideas we have, or can naturally have, do spring.¹¹²

¹¹¹ Essay, The Epistle to the Reader (F.I. 10).

¹¹² Essay, II, i, 1 and 2 (F.I. 121-122).

Thus, Locke affirms, when a man thinks, he can be aware of the fact that he is thinking. Furthermore, when he is thinking, he is thinking (according to this text) about the ideas that are in his mind. The question at issue, then, is not whether man has ideas in his mind—it is an indubitable fact that he does; rather, the question is: "From what fountains or sources are one's original ideas derived?" And Locke, the Empiricist, answers "from EXPERIENCE". Sterling P. Lamprecht asserts that "empiricists differ strikingly with one another concerning what experience and its instruction are. [...] So, it might fairly be said, does John Locke differ with himself, as he goes from chapter to chapter of his Essay."¹¹³ Be this as it may, in the text now under examination the term "experience" definitely designates for Locke one's cognitive operations (or, in view of his description of knowledge, it would seem to be more accurate to say "pre-cognitive operations"), which are focused upon two kinds of objects, namely, external sensible objects and operations of one's own mind. Hence, there are, according to this text, two kinds of experience, that is, two kinds of operations of experiencing. And on the basis of the two kinds of objects of which experience takes notice

¹¹³ Sterling P. LAMPRECHT, "Empiricism and Natural Knowledge", Howison Lecture for 1938, in University of California Publications in Philosophy, 16 (1932-1953), p. 72.

(namely, external sensible objects and operations of one's own mind), Locke calls the one kind of experience "sensation" and the other kind "reflection", and the resultant ideas: "ideas of sensation" and "ideas of reflection" respectively. Locke seems anxious to impress upon his reader the fact of his thoroughgoing empiricist perspective, for toward the end of Book Two, Chapter One (entitled "Of Ideas in General, and their Original") of his Essay, Locke says:

Thus the first capacity of human intellect is, —that the mind is fitted to receive the impressions made on it; either through the senses by outward objects, or by its own operations when it reflects on them. This is the first step a man makes towards the discovery of anything, and the groundwork whereon to build all those notions which ever he shall have naturally in this world. All those sublime thoughts which tower above the clouds, and reach as high as heaven itself, take their rise and footing here: in all that great extent wherein the mind wanders, in those remote speculations it may seem to be elevated with, it stirs not one jot beyond those ideas which sense or reflection have offered for its contemplation.¹¹⁴

Throughout this study one should keep in mind the latter statement, namely, that the mind, according to Locke, "stirs not one jot beyond those ideas which sense or reflection have offered for its contemplation."

¹¹⁴ Essay, II, i, 24 (F.I. 142). Cf. Essay, II, i, 5 (F.I. 124-125).

1. SENSATION: THE FIRST TYPE OF EXPERIENCE

"We know certainly, by experience," according to Locke, "that we sometimes think; and thence draw this infallible consequence,—that there is something in us that has a power to think."¹¹⁵ To think, which in one sense means to perceive or to contemplate ideas, is not the soul's essence, "but one of its operations."¹¹⁶ Now, "I see no reason, therefore, to believe that the soul thinks before the senses have furnished it with ideas to think on."¹¹⁷ And, a man begins to have ideas "when he first has any sensation."¹¹⁸ What, then, is meant by "sensation"?

It has been shown above that sensation, according to Locke, is the first of two kinds of experience: it is a pre-cognitive operation focused upon external sensible objects. Such a description, however, is not very enlightening, so one must seek others. In his Essay, Book Two, Chapter One, section three, Locke describes sensation in this way:

115 Essay, II, i, 10 (F.I. 128).

116 Essay, II, i, 10 (F.I. 128).

117 Essay, II, i, 20 (F.I. 139).

118 Essay, II, i, 23 (F.I. 141).

... our Senses, conversant about particular sensible objects, do convey into the mind several distinct perceptions of things, according to those various ways wherein those objects do affect them. [...] when I say the senses convey into the mind, I mean, they from external objects convey into the mind what produces there those perceptions. This great source of most of the ideas we have, depending wholly upon our senses, and derived by them to the understanding, I call SENSATION.¹¹⁹

Accordingly, in the situation in which sensation occurs there are several factors involved. First, an external object affects one's sense or senses. Secondly, the sense or senses convey into one's mind what produces perceptions in the mind. Now as sensation, as has been seen above, is an operation of experiencing, it seems quite obvious that the first factor does not constitute the essence of sensation, but, rather, is an extrinsic cause of it. Its essence, then, must be found in the second factor. Before continuing this examination it might be well to cite another of Locke's descriptions of sensation. He says,

For, since there appear not to be any ideas in the mind before the senses have conveyed any in, I conceive that ideas in the understanding are coeval with sensation: which is such an impression or motion made in some part of the body, as (produces some perception) in the understanding.¹²⁰

In this text, as well as in the former, the words "perception" and "idea" mean the same thing, namely, "one uniform

¹¹⁹ Essay, II, i, 3 (F.I. 122-123).

¹²⁰ Essay, II, i, 23 (F.I. 141).

appearance, or conception in the mind."¹²¹ The idea or perception itself does not constitute the essence of sensation, but is, rather, caused by sensation. Although no definitive answer to the question of what constitutes the essence of sensation emerges from these texts, the word "sensation" seems to designate: (i) the impression or motion (the kind of which being determined by the stimulus coming from the external thing) in the bodily sense (including nerves and brain); and (ii) the conveyance of that impression to the mind. Coeval with (but not a part of the essence of) sensation is the idea in the mind that is produced by that which the sense conveys, namely, the impression.¹²² How the impression that is conveyed can produce

¹²¹ Essay, II, ii, 1 (F.I. 145). The number and variety of particular ideas derived from sensation are dependent upon the number and variety of external objects which one's senses encounter: "Men [...] come to be furnished with fewer or more simple ideas from without, according as the objects they converse with afford greater or less variety." Essay, II, i, 7 (F.I. 126).

¹²² Professor Aaron suggests that Locke's account of sensation which is implied in his Essay may be as follows: "In the world of nature are certain physical objects, composed of a very great number of corpuscles. These affect our sense-organs by emitting effluences or species which strike the sense-organs. This affection is then carried on to the brain, which in turn affects the mind. The consequence is the idea in the mind." Richard I. AARON, John Locke, p. 108.

the idea in question Locke does not say—he simply assumes that it can and does produce it.¹²³

Professor Gibson, it seems, would not object to the interpretation of Locke's theory of sensation that has just been presented. But he says:

It must not, however, be supposed, on this account, that there is any tendency on his part to confuse or to identify the physical process and the state of consciousness, which are as sharply distinguished by him as by Descartes.¹²⁴

And he goes on to say that "Sensation is a 'mode of thinking,' and the mere reception of the simple idea involves an operation of the understanding by which its content is 'noticed' or 'perceived.'"¹²⁵ Now to substantiate this statement Gibson refers his reader to Locke's Essay, Book Two, Chapter Nineteen (entitled "Of the Modes of Thinking"), section one, where he says:

123 In fact, in his An Examination of P. Malebranche's Opinion of Seeing all Things in God, Locke asserts that it is beyond the power of the human mind to understand how it happens. He says: "Impressions made on the retina by rays of light, I think I understand; and motions from thence continued to the brain may be conceived, and that these produce ideas in our minds, I am persuaded, but in a manner to me incomprehensible. This I can resolve only into the good pleasure of God, whose ways are past finding out." John LOCKE, An Examination of P. Malebranche's Opinion of Seeing all Things in God, section 10. Works, Vol. 9, p. 217.

124 James GIBSON, Locke's Theory of Knowledge and its Historical Relations, p. 54.

125 Ibid., p. 55.

When the mind turns its view inwards upon itself, and contemplates its own actions, thinking is the first that occurs. In it the mind observes a great variety of modifications, and from thence receives distinct ideas. Thus the perception or thought which actually accompanies, and is annexed to, any impression on the body, made by an external object, being distinct from all other modifications of thinking, furnishes the mind with a distinct idea, which we call sensation;—which is, as it were, the actual entrance of any idea into the understanding by the senses.¹²⁶

In this text Locke states that a distinct mode of thinking "actually accompanies, and is annexed to" what he seems previously to have described as sensation, that is, "an impression or motion made in some part of the body, as (produces some perception) in the understanding."¹²⁷ Now to say that a distinct mode of thinking "actually accompanies, and is annexed to" a sensation does not necessarily imply that it is a part of the very essence of that sensation. Nevertheless, in another text which Professor Gibson cites,¹²⁸ it is quite evident that Locke considers "a mode of thinking" or "an activity of the mind" to be an essential part of each sensation, for without it there is no sensation. The text in question reads as follows:

¹²⁶ Essay, II, xix, 1 (F.I. 298).

¹²⁷ Essay, II, i, 23 (F.I. 141).

¹²⁸ James GIBSON, Locke's Theory of Knowledge and its Historical Relations, p. 55.

How often may a man observe in himself, that whilst his mind is intently employed in the contemplation of some objects, and curiously surveying some ideas that are there, it takes no notice of impressions of sounding bodies made upon the organ of hearing, with the same alteration that uses to be for the producing the idea of sound? A sufficient impulse there may be on the organ; but it not reaching the observation of the mind, there follows no perception: and though the motion that uses to produce the idea of sound be made in the ear, yet no sound is heard. Want of sensation, in this case, is not through any defect in the organ, or that the man's ears are less affected than at other times when he does hear: but that which uses to produce the idea, through conveyed in by the usual organ, not being taken notice of in the understanding, and so imprinting no idea in the mind, there follows no sensation. So that wherever there is sense or perception, there some idea is actually produced, and present in the understanding.¹²⁹

Therefore it may be said that the term "sensation" designates for Locke sometimes one, sometimes two, and other times all three, of the following: (i) the impression or motion (the kind of which being determined by the stimulus coming from the external thing) in the bodily sense (including nerves and brain); (ii) the conveyance of that impression to the mind; and (iii) the coeval mode of thinking that "takes notice of" or "perceives" the simple idea or mental-content that is produced in the mind.

In view of this more extensive description of sensation, Locke's designation of sensation as one type of experience, that is, "Our observation employed [...] about

129 Essay, II, ix, 4 (F.I. 184).

external sensible objects"¹³⁰, becomes somewhat more intelligible. Apparently, however, the object being thought in such an experience is not the "external sensible object", but, rather, the simple idea or mental-content, which is an "appearance, or conception in the mind."¹³¹ And, if knowledge consists in "the perception of the connexion of and agreement, or disagreement and repugnancy of any of our ideas"¹³², then, knowledge is not knowledge of "external sensible objects" as such.¹³³ Whether or not, on the one hand, Locke wants to avoid this consequence, or, on the other hand, is able to do so in view of this empiricist perspective, are problems that will be examined in subsequent chapters of this study.

130 Essay, II, i, 2 (F.I. 122).

131 Essay, II, ii, 1 (F.I. 145).

132 Essay, IV, i, 2 (F.II. 167).

133 Speaking of the history of a child's experiences, Locke says that "it begins to know the objects which, being most familiar with it, have made lasting impressions. Thus it comes by degrees to know the persons it daily converses with, and distinguishes them from strangers;" This statement gives his reader the impression that he is expounding a theory of direct perception; however, Locke immediately adds that such examples of distinguishing "are instances and effects of its coming to retain and distinguish the ideas the senses convey to it." Essay, II, i, 22 (F.I. 140). Thus, it is a theory of representative perception that Locke is advancing.

2. REFLECTION: THE SECOND TYPE OF EXPERIENCE

Reflection, the second type of experience and a source of the materials of knowledge, is described by Locke as:

... the perception of the operations of our own mind within us, as it is employed about the ideas it has got; — which operations, when the soul comes to reflect on and consider, do furnish the understanding with another set of ideas, which could not be had from things without. And such are perception, thinking, doubting, believing, reasoning, knowing, willing, and all the different actings of our own minds; — which we being conscious of, and observing in ourselves, do from these receive into our understandings as distinct ideas as we do from bodies affecting our senses. This source of ideas every man has wholly in himself; and though it be not sense, as having nothing to do with external objects, yet it is very like it, and might properly enough be called internal sense. [...] By reflection then, in the following part of this discourse, I would be understood to mean, that notice which the mind takes of its own operations, and the manner of them, by reason whereof there come to be ideas of these operations in the understanding. [...] The term operations here I use in a large sense, as comprehending not barely the actions of the mind about its ideas, but some sort of passions arising sometimes from them, such as is the satisfaction or uneasiness arising from any thought. 134

Professor Aaron maintains that this definition of reflection "is representationalist. The mind takes notice of its own operations, but does not, apparently, know them directly, but has ideas of these operations as a consequence of the notice it has taken."¹³⁵ This interpretation does not seem

¹³⁴ Essay, II, i, 4 (F.I. 123-124). Cf. Essay, II, i, 8 (F.I. 126); and Essay, II, i, 24 (F.I. 141-142).

¹³⁵ Richard I. AARON, John Locke, p. 130.

to be accurate. Notice Locke's definition once again: "By reflection [...] I would be understood to mean, that notice which the mind takes of its own operations, and the manner of them, by reason whereof there come to be ideas of these operations in the understanding." Locke seems definitely to be saying that the term "reflection" designates for him the mind's act of noticing its various operations directly. The products that somehow occur in the mind from such reflections are the ideas of reflection, that is, representations of the various ways in which the mind operates. As one's mind, for instance, thinks about the idea "red" that it acquires due to a present sensation of a red object, it also notices that it is operating in this manner and, as a result of this reflection, somehow acquires an idea of reflection, namely, the idea "thinking". Professor Gibson is correct in saying that:

... in his statement of the general position of the representative theory of knowledge, Locke makes an exception in favour of the mind itself. This, and this alone, of 'the things the mind contemplates,' is 'present to the understanding,' and does not, consequently need to be represented by an idea as sign. Hence, again, it is that he holds, that of the existence of self, and of no other existence, we have an intuitive knowledge. But although ideas are not required to perform a representative function in the case of self-knowledge, they are none the less involved in the content of this, as of every other, kind of knowledge.¹³⁶

¹³⁶ James GIBSON, Locke's Theory of Knowledge and its Historical Relations, p. 56-57. The quotation within Gibson's statement is from the Essay, IV, xxi, 4 (F.II. 461).

Locke's strict definition of knowledge as consisting in "the perception of the connexion of and agreement, or disagreement and repugnancy of any of our ideas"¹³⁷ is representationalist. But his discussion of reflection as a type of experience concerns a prior question, namely, how one acquires the raw materials of such knowledge. One source is sensation, and the other source is reflection (one might call it introspection), which consists in the mind directly noticing its own modes of operating.

3. THE PASSIVITY OF THE UNDERSTANDING IN THE RECEPTION OF SIMPLE IDEAS

Before terminating this examination of the empirical origin of simple ideas of sensation and reflection, it is essential to give special attention to Book Two, Chapter One, section twenty-five, of Locke's Essay, because in the heading of this section he says: "In the Reception of simple Ideas, the Understanding is for the most part passive"; whereas, in the body of this section he says "the understanding is merely passive". Due to the importance of the doctrine involved, this section must be quoted in its entirety. Locke says:

¹³⁷ Essay, IV, i, 2 (F.II. 167).

In this part the understanding is merely passive; and whether or no it will have these beginnings, and as it were materials of knowledge, is not in its own power. For the objects of our senses do, many of them, obtrude their particular ideas upon our minds whether we will or not; and the operations of our minds will not let us be without, at least, some obscure notions of them. No man can be wholly ignorant of what he does when he thinks. These simple ideas, when offered to the mind, the understanding can no more refuse to have, nor alter when they are imprinted, nor blot them out and make new ones itself, than a mirror can refuse, alter, or obliterate the images or ideas which the objects set before it do therein produce. As the bodies that surround us do diversely affect our organs, the mind is forced to receive the impressions; and cannot avoid the perception of those ideas that are annexed to them.¹³⁸

These two phrases concerning the understanding in the reception of simple ideas, namely, that it is "for the most part passive", and that it is "merely passive", are only verbally inconsistent. This becomes evident when these two phrases are viewed in the light of other texts. First, consider Locke's descriptions of perception. He says:

The power of perception is that which we call the Understanding. Perception, which we make the act of the understanding, is of three sorts:—
1. The perception of ideas in our minds. 2. The perception of the signification of signs. 3. The perception of the (connexion or repugnancy,)

¹³⁸ Essay, II, i, 25 (F.I. 142-143). Notice the following inconsistency: in the text just cited Locke says that when an external object affects one's sense (or senses) the mind necessarily receives an idea of that object, and cannot avoid noticing that idea; whereas, in the Essay, II, ix, 4 (F.I. 184) Locke makes the reception of the idea dependent upon the mind taking notice of the impression being conveyed to it by the bodily sense.

agreement or disagreement, (that there is between any of our) ideas. All these are attributed to the understanding, or perceptive power, though it be (the two latter only that use allows us to say we understand.)¹³⁹

Now it is only the first of these three meanings of perception that is involved, and, hence, need be considered, in connection with the passivity of the understanding in the reception of simple ideas. In this very limited aspect of Locke's theory of the genesis of ideas, the activity of the understanding or perceptive power consists in "perceiving", "observing", or "consciously taking notice of" the ideas that are being received into the mind. As James Collins points out,

Perception, the basic act of the understanding, cannot occur [according to Locke] without at least a minimal conscious attention, on the part of the knower. The contents of sense and reflection cannot be "given" to the understanding in experience, without some observation, conscious attending, or taking notice of the data.¹⁴⁰

Secondly, in order to see why Locke can say without contradicting himself that the understanding or perceptive power is "merely passive" in the reception of simple ideas, when, in fact, a cognitive activity takes place, one must note the following text: "Power [...] is two-fold, viz. as able to make, or able to receive any change. The one may be called

¹³⁹ Essay, II, xxi, 5 (F.I. 314).

¹⁴⁰ James COLLINS, A History of Modern European Philosophy, p. 325.

active, and the other passive power."¹⁴¹ But the understanding's observation of simple ideas involves no making of these; therefore, when Locke says that "In this part the understanding is merely passive", the phrase "merely passive" simply emphasizes the receptive part of this experience. And, when he says that "In the Reception of simple Ideas, the Understanding is for the most part passive", the phrase "for the most part passive" is used in order that his reader may not lose sight of that other essential part of his theory of experience, namely, the coeval act of taking notice of the received ideational content. Professor Gibson remarks that:

... this function of attention is regarded by him as normally controlled by the will, and as accordingly a form of mental activity. All, then, that is signified by the passivity of the mind, in relation to its simple ideas, is that the nature of these primary contents is independent of our will. We can neither make them for ourselves, in the first instance, nor refuse to receive them, as they are presented to us in experience.¹⁴²

¹⁴¹ Essay, II, xxi, 2 (F.I. 309).

¹⁴² James GIBSON, Locke's Theory of Knowledge and its Historical Relations, p. 60-61. Cf. Essay, II, ix, 1 (F.I. 183). "If it be asked, why Locke attached so much importance to this doctrine, the answer is that he conceived this passivity as a guarantee, and, indeed, the only possible guarantee, that there is nothing arbitrary in the ultimate data of our cognition. The need for such a guarantee was, in fact, one of the commonplaces of the thought of his age. In the same way, and for the same purpose, Descartes had insisted upon the passivity of the Understanding, or the faculty by which ideas are apprehended,

C. A FINAL REMARK

From these two types of experience, namely, sensation and reflection, the mind acquires a multitude of "raw materials" or simple ideas. On the basis of the source (or sources) of these ideas, Locke asserts that there are four genera of such ideas. His division is as follows:

First, then, There are some which come into our minds by one sense only [the idea of solidity from the sense of touch, for instance].

Secondly, There are others that convey themselves into the mind by more senses than one [the idea of extension from the sense of sight and the sense of touch, for instance].

Thirdly, Others that are had from reflection only [the idea of thinking, for instance].

Fourthly, There are some that make themselves way, and are suggested to the mind by all the ways of sensation and reflection [the idea of existence, for instance].¹⁴³

Now since an idea of sensation is caused by a stimulus from the external world, and since an idea of reflection is a sign of an operation of the mind, a full understanding of

declaring that it is 'a passion of the mind to receive such an idea, and that only its volitions are actions.' But while the positive counterpart of this view is for Descartes a theory of the innate character of the ultimate cognitive data, Locke insists upon their derivation from experience, and thus obtains, as he thinks, a guarantee, which Descartes' theory does not afford, that they in some way correspond to real existents." James GIBSON, Locke's Theory of Knowledge and its Historical Relations, p. 61. The less the knowing subject contributes to the content of the object known (or the means by which the object is known), the more accurate, of course, one's knowledge will be.

143 Essay, II, iii, 1 (F.I. 148).

Locke's theory of such simple ideas will emerge only from an examination of his theory of the external world and his theory of the operations of the mind. These and related subjects, accordingly, will be examined in the subsequent chapters of this study.

CHAPTER TWO

AN ATOMIC PERSPECTIVE

In order to understand Locke's theory of universals, it is essential that one examine his theory of the extramental world. The principal purpose of CHAPTER TWO, accordingly, is to examine this latter theory.

SECTION ONE will examine various philosophical perspectives which serve to clarify Locke's theory. This will prove most useful, for Locke's theory of the extramental world must be gleaned from texts that are somewhat vague and unmethodically dispersed throughout his writings.

SECTION TWO will examine Locke's theory of space, his theory of an atom, and his theory of aggregates of atoms. It will terminate with an examination of his theory of the mind, the non-atomic part of man.

SECTION THREE will complement SECTION TWO by examining Locke's theory of the qualities of material bodies, which in turn renders more intelligible his theory of simple ideas, the "raw materials" of complex ideas.

SECTION I

HISTORICAL BACKGROUND

One frequently finds when reading historical notes that their authors attempt to point out that "Philosopher A" influenced "Philosopher Z", "Philosopher B" influenced "Philosopher Z", and so on; and, more often than not, one is left with the impression that "Philosopher Z" had little (or nothing) really new to say. Now when one reads Locke's works, he does get the impression that Locke had eclectic tendencies, for one finds numerous similarities between Locke's doctrines and those of his predecessors and contemporaries. But Locke insists that his doctrines are "being spun out of my own coarse thoughts."¹ Perhaps he is sincere and correct in claiming this, for in the ultimate analysis mere similarities do not prove that Locke was influenced by his predecessors and contemporaries; rather, they simply reveal that his doctrines are not unlike theirs.²

1 Essay, The Epistle to the Reader (F.I. 11).

2 Some modern authors have a tendency to write disparagingly of Locke's scientific acumen; however, Thomas Sydenham (1624-1689), an outstanding English physician and associate of Locke, asserts that Locke was "a man whom, in the acuteness of his intellect, in the steadiness of his judgement, in the simplicity, that is, in the excellence of his manners, I confidently declare to have, amongst the men of our time, few equals and no superiors." Thomas SYDENHAM, Observationes Medicae, London, 1676, (3rd ed.), Dedication. (Quoted by Maurice CRANSTON, John Locke, London, Longmans,

The present historical note, accordingly, will not insist upon shaping influences; rather, it will examine two philosophical perspectives concerning material reality that are akin to Locke's (namely, that of Democritus and that of Gassendi), as well as two that are not (namely, that of Aristotle and that of Descartes). These four perspectives will be examined, because Leibnitz, after having studied Locke's Essay and discussed it with Locke himself, indicates that Locke's philosophical perspective concerning material reality is in the Democritean-Gassendian tradition, and is opposed to that of the Peripatetic and Cartesian traditions.³ Therefore, both by comparison and by contrast the present historical note will clarify Locke's perspective, which will be examined in SECTION TWO of this chapter.

A. DEMOCRITUS' THEORY OF MATERIAL REALITY

The intellectual climate into which Democritus was born, and within which and against which he philosophized is stated concisely by G. S. Kirk and J. E. Raven as follows:

Green and Co., 1957, p. 93.) In the field of natural philosophy there are numerous similarities between the doctrines of Sir Robert Boyle and his pupil and associate John Locke; such similarities, however, do not prove that Boyle influenced Locke any more than they prove that Locke influenced Boyle—in view of Boyle's reputation as a scientist, however, the former could more easily be defended.

³ Cf. Gottfried Wilhelm LEIBNITZ, New Essays concerning Human Understanding, Book I, Chapter 1.

Parmenides [fl. ca. 485 B.C.] seemed, to his contemporaries and immediate successors, to have established once and for all certain canons with which, until Plato himself exposed the fallacies on which they were based, all future cosmologists must somehow comply. Being, in the first place, must not be allowed to spring from Not-being: anything that was claimed as real must also be ultimate. Again, the void, being sheer non-existence, can find no place in any account of reality. Third, plurality cannot come from an original unity: if there is to be a plurality, it too, like reality, must be ultimate. And finally, motion must no longer be simply taken for granted; its existence must somehow be explained. Any future system that ignored any one of these four canons would, for the time being at least, have been considered from the outset untenable.⁴

It was this intellectual climate that occasioned an atomic theory of the universe in Greek philosophy, as is evident in the following report of Simplicius (a commentator of Aristotle in the sixth century A.D.):

Leucippus [5th century B.C.] of Elea or Miletus (both accounts are current) had associated with Parmenides in philosophy, but in his view of reality he did not tread the same path as Parmenides and Xenophanes [ca. 570-478 B.C.], but rather, it seems, the opposite path. For while they regarded the whole as one, motionless, uncreated and limited and forbade even the search for what is not, he posited innumerable elements in perpetual motion—namely the atoms—and held that the number of their shapes was infinite, on the ground that there was no reason why any atom should be of one shape rather than another; for he observed too that coming-into-being and change are incessant in the world. Further he held that not-being exists as well as being, and the two are equally the causes

4 G. S. KIRK and J. E. RAVEN, The Presocratic Philosophers, A Critical History with a Selection of Texts, Cambridge, Cambridge University Press, 1957, p. 319.

of things coming-into-being. The nature of atoms he supposed to be compact and full; that, he said, was being, and it moved in the void, which he called not-being and held to exist no less than being. In the same way his associate Democritus of Abdera posited as principles the full and the void.⁵

Aristotle explicates their atomic theory as follows:

Leucippus and his associate Democritus say that the full and the empty are the elements, calling the one being and the other non-being—the full and solid being being, the empty non-being (whence they say being no more is than non-being, because the solid no more is than the empty); and they make these the material causes of things. [...] these philosophers say the differences in the elements are the causes of all other qualities. These differences, they say, are three—shape and order and position. For they say the real is differentiated only by 'rhythm' and 'inter-contact' and 'turning'; and of these rhythm is shape, inter-contact is order, and turning is position; for A differs from N in shape, AN from NA in order, Ξ from H in position. The question of movement—whence or how it is to belong to things—these thinkers, like the others, lazily neglected.⁶

Thus, to Parmenides' first canon that Being must not be allowed to spring from Not-being, both Leucippus and Democritus replied: each atom is a being. There are innumerable (internally unchangeable) atoms in perpetual (local) motion, and one differs from another in shape, order and position (relatively to one another). Each atom is an ultimate,

5 SIMPLICIUS, Phys. 28, 4. (Quoted by G. S. KIRK and J. E. RAVEN, The Presocratic Philosophers, p. 400.) Cf. ARISTOTLE, De Generatione et Corruptione, I, viii, 324b 25–325b 5.

6 ARISTOTLE, Metaphysica, I, iv, 985b 4–19. (Oxford trans.)

that is, an underived, incomposite and indivisible extended unit. To Parmenides' second canon, that the void is sheer non-existence, they replied: the void is not non-existence (i.e. nothing); rather, it is as equally real as the atoms. To Parmenides' third canon, that plurality cannot come from an original unity, they replied: there never has been an original unity—the innumerable atoms have always been distinct from one another. And finally, to Parmenides' fourth canon, that the existence of motion must somehow be explained, Leucippus and Democritus replied: thanks to the void and the self-moving atoms (they do not account for the original cause of motion), the latter collide, and those of suitable shapes become temporarily entangled (hence the perceptible coming-into-being of things); when other atoms collide with such aggregates some of the constituents of these aggregates are disentangled (hence the perceptible passing-away of things). Whether or not this is an adequate explanation of change is, of course, another question.

Democritus' psychology and epistemology are consistent with his philosophy of nature. Man's body consists of an aggregate of non-spherical atoms, and his soul consists of spherical ones. His soul-atoms are dispersed throughout his body; however, some of them are concentrated in one area within him—this group of soul-atoms may be called "mind", and is a finer tool of knowing than the senses are:

There are two sorts of knowledge, one genuine, one bastard (or 'obscure'). To the latter belong all the following: sight, hearing, smell, taste, touch. The real is separated from this. When the bastard can do no more—neither see more minutely, nor hear, nor smell, nor taste, nor perceive by touch—and a finer investigation is needed, then the genuine comes in as having a tool for distinguishing more finely.⁷

In another place he says:

Sweet exists by convention, bitter by convention, colour by convention; atoms and Void (alone) exist in reality... We know nothing accurately in reality, but (only) as it changes according to the bodily condition, and the constitution of those things that flow upon (the body) and impinge upon it.⁸

According to Democritus, then, sensation takes place when certain "images" (assemblages of atoms) coming from objects impinge upon the senses.⁹ Sensible knowledge or "obscure knowledge" consists in apprehending how these received images appear. Now these images of things do appear to be red, sweet, and so on, and by convention or custom things are said to be red, sweet, and so on; but in truth reality consists of atoms and voids that are not red, not sweet,

7 DEMOCRITUS, Fragment 11. (Trans. Kathleen FREEMAN, Ancilla to the Pre-Socratic Philosophers, Oxford, Basil Blackwell, 1948, p. 93. This work is a complete translation of the Fragments in DIELS, Fragmente der Vorsokratiker.)

8 DEMOCRITUS, Fragment 9. (Kathleen FREEMAN, op. cit., p. 93.)

9 Cf. DEMOCRITUS, Fragment 7.

and so on.¹⁰ Following upon sensible knowledge, however, is a higher grade of knowledge, a so-called "genuine knowledge", which explains the (subjective) appearances of things in terms of what is real, namely, atoms and voids. But even this knowledge, that is, the knowledge acquired by the mind itself, is not a knowledge of the atoms and voids as such: "It will be obvious that it is impossible to understand how in reality each thing is",¹¹ for "It has often been demonstrated that we do not grasp how each thing is or is not."¹² Thus, then, the doctrine of Democritus is at once a synthesis of materialism, rationalism, and agnosticism.¹³

10 Notice that Democritus anticipates the distinction between primary qualities and secondary qualities which is found in the doctrines of many modern philosophers. E.J. Dijksterhuis remarks that: "This was the beginning of a development which in Locke was to lead to the definitive discrimination between geometrico-mechanical qualities referred to as primary qualities, and all the others, which are called secondary." E. J. DIJKSTERHUIS, The Mechanization of the World Picture, trans. C. Dikshoorn, Oxford, Clarendon Press, 1964, p. 423. Cf. ibid., p. 431.

11 DEMOCRITUS, Fragment 8. (Kathleen FREEMAN, Anticilla to the Pre-Socratic Philosophers, p. 93.)

12 DEMOCRITUS, Fragment 10. (Kathleen FREEMAN, op. cit., p. 93.)

13 Cf. Cyril BAILEY, The Greek Atomists and Epicurus, Oxford, Clarendon Press, 1928, esp. p. 156-174 and 177-185.

B. ARISTOTLE'S THEORY OF MATERIAL REALITY

Aristotle grants "that the primary materials, whose change (whether it be 'association and dissociation' or a process of another kind) results in coming-to-be and passing-away, are rightly described as 'originative sources, i.e. elements'."¹⁴ These "primary materials" or "elements" (earth, air, fire and water) are substances.¹⁵ Unlike Empedocles (ca. 521-461 B.C.), Aristotle maintains that the elements are neither eternal nor ultimates. They are not eternal, for they are generated out of each other.¹⁶ They are not ultimates, for they are logically analyzable into two distinct but inseparable constitutive principles, namely, prime matter (i.e., the potential principle of intrinsic variability) and substantial form (i.e., the actual principle of substantial diversity). Man discovers both of these facts (i.e., that an element is neither eternal nor ultimate) by observing the radical transformations which the elements undergo. Thus, whereas Empedocles insists that the elements

14 ARISTOTLE, De Generatione et Corruptione, II, i, 329a 5-7. (Oxford trans.) For Aristotle's reasons for rejecting the atomic theory, cf. ARISTOTLE, Physica, VI, i-x, 231a 21-241b 20; and ARISTOTLE, De Caelo, III, iv, 303a 3-303b 8.

15 Cf. ARISTOTLE, Metaphysica, V, viii, 1017b 10-14.

16 Cf. ARISTOTLE, De Caelo, III, vi, 304b 24-305a 33; and ARISTOTLE, De Generatione et Corruptione, II, iv, 331a 7-332a 2.

are as intrinsically permanent, eternal and ultimate as the being of Parmenides, and that the terms "generation" and "corruption" are but conventional words which are used to designate the association and dissociation of the elements, Aristotle has a fundamentally different theory. His theory of substantial change which he so carefully formulated in the Physica finds a new application in both his De Caelo and his De Generatione et Corruptione, in which he theorizes that the elements also substantially change from one kind of substance into another kind. And his linking of the hylomorphic theory and the theory of substantial change with his theory of the elements guarantees that the coming-into-being of the elements will result in no diminution and final evanescence of the physical world, for the corruption of one element involves a temporally concomitant generation of another.¹⁷

Now in his De Respiratione one finds a text which at first seems to destroy the substantial unity of plants and animals, for Aristotle says:

... some have a greater proportion of earth in their composition, like plants, and others, e.g. aquatic animals, contain a larger amount of water; while winged and terrestrial animals have an excess of air and fire respectively. It is always in the

¹⁷ Cf. ARISTOTLE, De Generatione et Corruptione, I, iv, 319b 15-17; and ibid., II, i, 329a 24-33.

region proper to the element preponderating in the scheme of their constitution that things exist.¹⁸

If this text is taken literally, Aristotle's theory approximates that of Empedocles—the only difference being in their conception of the elements as such. However, when this text is viewed in the light of his Physica, De Generatione et Corruptione and Metaphysica, it becomes evident that Aristotle means that these elements are in plants and animals in a potential or virtual state. Paul, for instance, is a primary substance, an actual individual substantial unit, and the forms of earth, air, fire and water are but virtually contained in his one substantial nature.¹⁹

For Aristotle anything is a primary substance of a certain kind by reason of its substantial nature. Now if

18 ARISTOTLE, De Respiratione, xiii, 477a 27-30. (Oxford trans.) It is well to mention that both Empedocles and Aristotle reject the notion of a void, cf. EMPEDOCLES, Fragment 13; and ARISTOTLE, Physica, IV, vii, 214a 29-31. The Peripatetics distinguish between the internal and the external place of a body. By the internal place of a body is meant the outer surface of the body itself, regarded as a receptacle containing the volume of the body. By the external place of a body is meant the immediately surrounding surface, formed by the bodies which circumscribe the body in question, and considered formally as an immovable container of this body. They consider space as a being of reason with a foundation in reality, namely, the relation of distance between one body and another. Cf. ARISTOTLE, Physica, IV, i-ix.

19 Cf. ARISTOTLE, Metaphysica, VII, xiii-xvi, 1038b 1-1041a 5; Meteorologica, I, iii, 339b 1-2; De Generatione et Corruptione, II, iv, 331a 7-332a 3; and De Caelo, III, vi-vii, 304b 24-306b 2.

one examines sensible substances, he will discover determinations of a less radical type. Determinations of this latter type Aristotle calls "accidents", and insists that they also make primary substances to be of such and such a kind but, of course, in a less radical sense. One of the types of accidental determinations of substances Aristotle calls "quality": "By 'quality' I mean that [inherent accidental form of a primary substance] in virtue of which people [or other kinds of primary substances] are said to be such and such [a kind]."²⁰ He then goes on to say that there are four main kinds of qualities, namely: (i) the habits (like knowledge and virtue) and dispositions (like heat, cold, disease, and health) of things; (ii) the capacities (like the capacity to be a good runner) of things; (iii) the affective qualities (like sweetness, bitterness, sourness, heat, cold, whiteness, blackness, and so on) of things; and (iv) the external forms or figures (like triangularity) of things.²¹

There are two aspects of this Aristotelian doctrine of qualities that are of special importance to the present chapter of this study. First, Aristotle maintains that

20 ARISTOTLE, Categoriae, viii, 8b 25. (Oxford trans.)

21 Cf. ibid., 8b 26-11a 39.

qualities are inherent determinations of things.²² Secondly, he insists that affective qualities derive their name from the fact that they "are capable of producing an 'affection' in the way of perception."²³ In his De Anima the latter doctrine is elaborated as follows:

In dealing with each of the senses we shall have first to speak of the objects which are perceptible by each. The term 'object of sense' covers three kinds of objects, two kinds of which are, in our language, directly perceptible, while the remaining one is only incidentally perceptible. Of the first two kinds one (a) consists of what is perceptible by a single sense, the other (b) of what is perceptible by any and all [or at least more than one] of the senses. I call by the name of special object of this or that sense that which cannot be perceived by any other sense than that one and in respect of which no error is possible; in this sense colour is the special object of sight, sound of hearing, flavour of taste. Touch, indeed, discriminates more than one set of different qualities. Each sense has one kind of object which it discerns, and never errs in reporting that what is before it is colour or sound (though it may err as to what it is that is coloured or where that is, or what it is that is sounding or where that is). Such objects are what we propose to call the special objects of this or that sense.

'Common sensibles' are movement, rest, number, figure, magnitude; these are not peculiar to any one sense, but are common to all. There are at any

22 For a brief discussion of the location of qualities according to the doctrines of Aristotle, Saint Thomas Aquinas, John Locke and Emile Meyerson (1859-1933), and some reasons for rejecting the latter's theory, cf. Anthony John HALPIN, "The Location of Qualitative Essence. I: Aristotle and Aquinas" and "The Location of Qualitative Essence. II: Locke and Meyerson", in The New Scholasticism, 10 (1936), p. 145-166 and 226-244.

23 ARISTOTLE, Categoriae, viii, 9b 6. (Oxford trans.)

rate certain kinds of movement which are perceptible both by touch and by sight.

We speak of an incidental object of sense where e.g. the white object which we see is the son of Diares; here because 'being the son of Diares' is incidental to the directly visible white patch we speak of the son of Diares as being (incidentally) perceived or seen by us. Because this is only incidentally an object of sense, it in no way as such affects the senses. Of the two former kinds, both of which are in their own nature perceptible by sense, the first kind—that of special objects of several senses—constitute the objects of sense in the strictest sense of the term and it is to them that in the nature of things the structure of each several sense is adapted.²⁴

Thus, if with Aristotle one calls: (a) the cognitive ability or power to apprehend a quality of a material being that is present to one a sense; (b) the activity of a sense that terminates in one's awareness of that quality a sensation (or act of sensation); (c) that which is perceptible in the thing an object of sense; (d) an object of sense that is directly perceptible by a single sense a special object (or proper sensible); and (e) an object that is perceptible by more than one sense a common sensible, the following chart emerges:

²⁴ ARISTOTLE, De Anima, II, vi, 418a 6-25. (Oxford trans.)

<u>SENSE</u>	<u>SENSATION</u>	<u>SPECIAL OBJECT</u>	<u>COMMON SENSIBLE</u>
Vision	Seeing	The color of things	The size (magnitude, extension) of things
Hearing	Hearing	The sounds of things	The shape (figure) of things
Smell	Smelling	The odors of things	The motion and rest of things
Taste	Tasting	The flavors of things	The number of things
Touch	Touching	The tactile qualities of things: hardness softness smoothness roughness hotness coldness wetness dryness	

For Aristotle, then, the "special objects" are not only the first known aspects of things but also the objects through which the common sensible are known. The former, then, may be called the "primary sensibles" and the latter "secondary sensibles". In Aristotelian philosophy, accordingly, one finds an emphasis placed on the cognitive value of the special objects of sense, for it is primarily through and in virtue of these qualitative aspects of things that one perceives their quantitative aspects and, thanks to intellectual abstractions, ultimately arrives at some understanding of the substantial natures of sensible existents. Therefore, according to the Aristotelian perspective, if

sensible qualities were not inherent aspects of things, other aspects of those same things could not be reached by human cognition.

C. PETER GASSENDI'S THEORY OF MATERIAL REALITY

With the Platonic and Aristotelian traditions dominating the Western theological and philosophical scene from ancient times up to the seventeenth century, an atomic theory of reality was able to make no significant impact upon the intellectual climate during this period. William of Conches (ca. 1080-ca. 1154), a member of the School of Chartres, did advocate an atomic theory in his De Philosophia Mundi, but was criticized intensely for this, and charged with granting too little to faith and too much to reason by William of St. Thierry (b.?-d. 1148) and Walter of St. Victor (b.?-d. ca. 1180).²⁵ Hugh of St. Victor (1096-1141) also adopted a theory of atomism in preference to hylomorphism. Nevertheless, there seems to have been no one who could do what Saint Augustine had done and what Saint Thomas Aquinas would do for Platonism and Aristotelianism respectively. The atomic theory, consequently, remained suspect in the theological and philosophical circles of the twelfth century.

²⁵ Cf. Etienne GILSON, History of Christian Philosophy in the Middle Ages, p. 622-623.

In the following thirteenth century philosophy and science remained within the Aristotelian framework. Science used Aristotle's inductive and deductive methods and attempted to understand physical reality in terms of material, formal, efficient and final causality. But mathematics, due to Aristotle's emphasis on the qualitative aspects of physical reality, generally played no significant role in the physics of his successors. However, in the background of the Aristotelian intellectual climate,—thanks to the works of the Arabian mathematicians—there did appear certain exceptional men such as Robert Grosseteste (ca. 1168-1253), Roger Bacon (ca. 1214-ca. 1292) and Thomas Bradwardine (ca. 1295-1349), who were giving a prominent role to mathematics in the study of nature. Bradwardine, in fact, asserted that "... whoever then has the effrontery to study physics while neglecting mathematics should know from the start that he will never make his entry through the portals of wisdom."²⁶ Thus, in the thirteenth century an undercurrent favoring a quantitative physics developed at the time when a traditional Aristotelian qualitative physics was dominant. Indeed, in the fourteenth century Nicholas of Autrecourt (fl. ca. 1347), a successor of

²⁶ Thomas BRADWARDINE. (Quoted by Armand A. MAURER, C.S.B., Medieval Philosophy, p. 256. Cf. ibid., p. 414, note 16.)

William of Ockham, attempted to make Greek atomism theologically acceptable;²⁷ nevertheless, in spite of his and the previous attempts to revive the atomic theory in one form or another, one can say in truth, as has Andrew G. Van Melsen, that it had only a "lingering existence" during the Middle Ages and the Renaissance.²⁸

In more modern times atomic theories were advanced, for instance, by Daniel Sennert (1572-1657), Sebastian Basso (fl. 1621), David Gorlaeus or Gorlée (d. 1612), and Galileo Galilei (1564-1642); nevertheless, credit for introducing the Greek atomic theory into Western thought in a somewhat theologically acceptable form belongs to the French philosopher named Peter Gassendi (1592-1655):

The atomic theory of Democritus and Epicurus [341-270 B.C.], which from its birth had offended many people by its anti-religious character and which therefore, particularly in the Christian world, had never been able to lead more than an underground existence, met with a striking change of fortune in the first half of the seventeenth century. A Catholic priest of great scientific reputation and unsuspected orthodoxy was fascinated by it and regarded it as his life-work to introduce it into Western thought in a theologically acceptable form. He succeeded in this, and consequently this theory, which in the twenties of the century had

27 Cf. Armand A. MAURER, C.S.B., Medieval Philosophy, p. 289-291; and Etienne GILSON, History of Christian Philosophy in the Middle Ages, p. 505-511.

28 Cf. Andrew G. VAN MELSEN, From Atomos to Atom: The History of the Concept Atom, New York, Harper and Brothers, 1960, p. 77.

still been looked upon as a mischief bordering on heresy, rose in a short time to the rank of a respectable theory, of which no Christian scientist need be ashamed.²⁹

That things exist and change in time are, according to Gassendi, experienced facts; to explain these facts he insists that one must admit the existence of three principles which are not able to be experienced, namely, atoms, absolute space and absolute time.³⁰

In his Physica, Sectio I, Liber II, Caput Primum, Gassendi gives a clear statement of his doctrine of the void (or empty space) and time; he maintains that: (i) space and time would exist whether or not bodies (atoms) existed; hence, space and time are neither bodies nor corporeal accidents: "Nobis porrò, quia videtur, et si nulla essent corpora, superfore tamen, & Locum constantem, & Tempus decurrens; ideò videntur Locus, & Tempus non pendere à corporibus, corporeaque adeò accidentia non esse."; (ii) Being, when taken in its most general sense, includes substance, accident, space and time among its divisions: "Ens generalissimè acceptum non adaequatè dividatur in Substantiam, &

29 E. J. DIJKSTERHUIS, The Mechanization of the World Picture, p. 425. Cf. ibid., p. 419.

30 Having examined the theories of matter offered by his predecessors, Gassendi concludes that the atomic theory is the more probable one. Cf. Petri GASSENDI, Syntagmatis Philosophici, Part II, Physica, Sectio I, Liber III, Chapter 5. Opera Omnia, Lugduni, Laurentii Anisson, & Joan. Bapt. Devenet, 1658, Vol. 1, p. 258, column 2.

Accidens [as Aristotle claims that it is]; sed adici Locus, & Tempus, ut duo quaedam membra divisioni debeant"; and (iii) all substances and accidents are in space and endure in time. Space and time are real entities and are independent of the intellect; hence, whether or not the intellect thinks absolute space remains and absolute time continues to flow forth: "Locus, & Tempus haberi res verae, Entiave realia debeant; [...] revera sint tamen, neque ab Intellectu, ut Chimaerae dependeant, cum seu cogitet Intellectus, seu non cogitet, & Locus permaneat, & Tempus procurrat."³¹

Gassendi, unlike his Greek predecessors, assumes that atoms are created by God, are not eternal substances, and are limited in number. Like his Greek predecessors, however, Gassendi assumes that size, shape and solidity are properties of individual atoms.³² Although the atoms are finite in number, the unending variety of sensible bodies (aggregates of atoms and voids) is explained on the assumption that atoms differ in shape (some round, others square, and so on): accordingly, somewhat as from a finite number

³¹ Petri GASSENDI, Syntagmatis Philosophici, Part II, Physica, Sectio I, Liber II, Chapter 1. Opera Omnia, Vol. 1, p. 182, column 1.

³² Cf. ibid., Liber III, Chapter 4. Opera Omnia, Vol. 1, p. 261, column 1.

of letters of different shapes authors can compose an unlimited range of sentences, so also God can produce an unlimited variety of sensible bodies simply by changing the positions and orders of the finite number of atoms of diverse shapes which He has created.³³

Now the compiler Aetius (probably of the second century A.D.) reports that:

Democritus named two (sc. properties of atoms), size and shape; but Epicurus added a third to these, namely weight....—Democritus says that the primary bodies (i.e. the solid atoms) do not possess weight but move in the infinite as the result of striking one another.³⁴

Thus Epicurus (341-270 B.C.) considered weight to be an essential property of each atom; by weight he meant a tendency to move consistently in a single direction, namely downward—any local movement in another direction was considered by Epicurus to be the result of the fortuitous collision of the atoms in space. Now Gassendi also considers weight to be an essential property of atoms;³⁵ however, by

³³ Cf. Petri GASSENDI, Syntagmatis Philosophici, Part II, Physica, Sectio I, Liber III, Chapter 6. Opera Omnia, Vol. 1, p. 266, column 1 - p. 273, column 2.

³⁴ AETIUS, I, 3, 18 (DK68A47). (Quoted by G. S. KIRK and J. E. RAVEN, The Presocratic Philosophers, p. 414.) Cf. Cyril BAILEY, The Greek Atomists and Epicurus, p. 129, note 1 and p. 289.

³⁵ Cf. Petri GASSENDI, op. cit., Sectio I, Liber III, Chapter 7. Opera Omnia, Vol. 1, p. 273, column 1 - p. 279, column 2.

the weight of an atom Gassendi means its innate and invariable propensity to motion, i.e., a divinely impressed urge to move in the direction determined by its Creator. Gassendi, unlike the Greek Atomists, considers the changing world to be ordered by an infinite spiritual substance, namely God. Thus the created material constituents (the atoms) of Gassendi's world behave according to the laws of mechanics (and for this reason some of the seventeenth-century scientists found his theory acceptable) under the conscious guidance of God (and for this reason some of the seventeenth-century Christian thinkers found it theologically acceptable).³⁶ Henceforth the atomic theory was able to lead, accordingly, more than a mere "underground existence."³⁷

Gassendi, like the Greek Atomists and the Aristotelians before him, holds the axiom: "Nihil in Intellectu

³⁶ Whereas Aristotle in the fourth century B.C. insisted on the dynamism of form and the passivity of matter qua matter, and St. Thomas Aquinas in the thirteenth century A.D. insisted upon the dynamism of esse (the act of to-be) and the passivity of matter qua matter, Gassendi in the seventeenth century rejected the Aristotelian theory of form, made no distinction between essence and existence as found in the Thomistic ontology, and gave to the seventeenth century scientists an ontology which insists upon the dynamism of matter qua matter. In other words, a particle of matter qua matter is not passive but essentially active, endowed with a mobility that is a property or essential feature of its very being.

³⁷ Cf. Meyrick H. CARRE, "Pierre Gassendi and the New Philosophy", in Philosophy, 33 (1958), p. 112-120.

est, quod prius non fuerit in Sensu."³⁸ Prior to experience, accordingly, the intellect or mind is a "tabulam rasilem."³⁹ Gassendi attempts to explain the genesis of ideas in terms of objects emitting images (i.e., assemblages of atoms with the same motion-patterns as the objects themselves), which cause motion-patterns in one's sense organs, nerves, animal spirits, brain, and cognitive faculty (which resides in one's brain);⁴⁰ and, he explains one's experience of colors, odors, tastes, and the like in terms of groups of atoms of such and such sizes, shapes and motions.⁴¹ Thus, Gassendi insists that the proper sensibles of the Aristotelian tradition are not inherent properties of things, but, rather, subjective appearances that are explicable in terms of the essential properties of

38 Petri GASSENDI, Syntagmatis Philosophici, Part I, Logica, Institutio Logica, Part I, De Simplici Rerum Imaginatione, Canon II. Opera Omnia, Vol. 1, p. 92, column 2.

39 Ibid.

40 Cf. G. S. BRETT, The Philosophy of Gassendi, London, Macmillan and Co., Ltd., 1908, p. 106-149.

41 Cf. Petri GASSENDI, op. cit., Part II, Physica, Liber IV, Chapters 5-14. Opera Omnia, Vol. 1, p. 388, column 1 - p. 457, column 2.

atoms—the latter being for him the only objective and real qualities of material things.⁴²

D. DESCARTES' THEORY OF MATERIAL REALITY

Etienne Gilson has found that "Ever since the fourteenth century there had been men to criticize Aristotle, but Descartes' ambition was quite different: it was to replace him."⁴³ This ambition inspired Descartes to write a textbook of philosophy: The Principles of Philosophy, which was published in 1644. It was his hope that this book would replace the Aristotelian manuals at La Flèche, the Jesuit College where he had received his formal philosophic training.

In The Principles of Philosophy, Part IV, Principle CCI, Descartes dissociates himself from such Aristotelian principles of nature as prime matter and substantial form, and assumes that sensible bodies are composed of insensible particles. He attempts to show the reasonableness of this

42 Gassendi asserts that because one cannot attain a knowledge of the intrinsic causes of things, a demonstrative science of them is impossible, cf. Petri GASSENDI, Exercitationes Peripateticæ, Liber II, Exercitatio VI, Art. 6. Opera Omnia, Vol. 3, p. 203, column 1 - p. 206, column 2. Compare this text with: John LOCKE, Essay, IV, iii, 25-26 (F.II. 216-218).

43 Etienne GILSON, The Unity of Philosophical Experience, p. 125.

assumption in the following manner: if one observes a house in the process of being constructed, for example, it is impossible to comprehend how such a structure could reach its completion save by the addition of more materials; likewise, if one observes a tree grow, it is impossible to comprehend how it could become larger save by the addition of more materials. Now men who take their senses to be the measure of the things they can know will not admit that these two examples coincide, for the materials added to the tree (unlike those added to the house) are so small that they cannot move one's nerves in such a way as to cause a sensation of them—such materials, accordingly, are called insensible particles. But, Descartes concludes,

... we do much better to judge of what takes place in small bodies which their minuteness alone prevents us from perceiving, by what we see occurring in those that we do perceive (and thus explain all that is in nature, as I have tried to do in this treatise), than, in order to explain certain given things, to invent all sorts of novelties, that have no relation to those that we perceive (such as are first matter, substantial forms, and all the great array of qualities which many are in the habit of assuming, any of which it is more difficult to understand than all the things which we profess to explain by their means).⁴⁴

⁴⁴ René DESCARTES, The Principles of Philosophy, Part IV, Principle CCI. (The Philosophical Works of Descartes, trans. E. S. Haldane and G. R. T. Ross, New York, Dover Publications, Inc., 1955, Vol. 1, p. 297-298. Further quotations from this selection of texts will be indicated as follows: H-R. I. 297-298.)

Thus, it was Descartes' hope that his theory of insensible particles would replace the Aristotelian hylomorphic theory of nature that was being taught at La Flèche.

As has been seen, Gassendi, a contemporary of Descartes, brought about a revival of Democritean atomism in the seventeenth century. Hence, Descartes found it necessary to dissociate his own theory of insensible (non-atomic) particles from Democritus' theory of insensible (atomic) particles. Consequently, in his The Principles of Philosophy, Part IV, Principle CCII, Descartes lists four reasons why he dissociates himself from the theory of Democritus: (i) "because it presupposed certain indivisible corpuscles"; (ii) "because Democritus imagined a void about them [i.e., the atoms]"; (iii) "because he attributed to them gravity"; and (iv) "because he had not explained in detail how all things arose from the concourse of the corpuscles alone, or, if he explained it in regard to certain causes, his reasoning was not in all cases by any means coherent."⁴⁵ The purpose of the present part of this study can be

⁴⁵ René DESCARTES, The Principles of Philosophy, Part IV, Principle CCII. (H-R. I. 298.)

achieved by noting Descartes' doctrines in respect to the first two of these four points.⁴⁶

Descartes' first reason for rejecting the theory of Democritus stems from his (Descartes') identification of matter and extension:

... the nature of matter or of body in its universal aspect, does not consist in its being hard, or heavy, or coloured, or one that affects our senses in some other way, but solely in the fact that it is a substance extended in length, breadth and depth.⁴⁷

Now since we know that each material substance is extended in length, breadth and depth,

We also know that there cannot be any atoms or parts of matter which are indivisible of their own nature (as certain philosophers have imagined). For however small the parts are supposed to be, yet because they are necessarily extended we are always able in thought to divide any one of them into two or more parts; and [here is an example of Descartes' INTERIORISM] thus we know that they are divisible. For there is nothing which we can divide in thought, which we do not thereby recognise to be divisible [in extramental reality]; ...⁴⁸

46 For Descartes' theory of gravity, cf. René DESCARTES, The Principles of Philosophy, Part IV, Principles XX-XXVII. (Oeuvres de Descartes, Charles Adam and Paul Tannery [edd.], Paris, Léopold Cerf, 1904, Vol. 9, p. 210-214.) Descartes' mechanistic theory of the universe is found throughout his The Principles of Philosophy, Parts III and IV; a brief discussion of this theory may be found in: Norman Kemp SMITH, New Studies in the Philosophy of Descartes, London, Macmillan and Co., Ltd., 1952, p. 113-122.

47 René DESCARTES, op. cit., Part II, Principle IV. (H-R. I. 255-256.)

48 Ibid., Part II, Principle XX. (H-R. I. 264.)

Thus, Descartes insists that Democritus was wrong in supposing the existence of indivisible corpuscles or atomic particles of matter.

Descartes' second reason for rejecting the theory of Democritus stems from his (Descartes') identification of space with extension (the essence of matter):

Space or internal place and the corporeal substance which is contained in it, are not different otherwise than in the mode in which they are conceived of by us. For, in truth, the same extension in length, breadth, and depth, which constitutes space, constitutes body; ...⁴⁹

This identification of space with extension forced Descartes to deny both the actual and possible existence of a Democritean void or empty space:

As regards a vacuum in the philosophic sense of the word, i.e. a space in which there is no substance, it is evident that such cannot exist, because the extension of space or internal place, is not different from that of body. For, from the mere fact that a body is extended in length, breadth, or depth, we have reason to conclude that it is a substance, because it is absolutely inconceivable that nothing should possess extension, we ought to conclude also that the same is true of the space which is supposed to be void, i.e. that since there is in it extension, there is necessarily also substance.⁵⁰

Now Descartes' identification of matter with extension (and extension with space) enabled him to deduce

⁴⁹ René DESCARTES, The Principles of Philosophy, Part II, Principle X. (H-R. I. 259.)

⁵⁰ Ibid., Part II, Principle XVI. (H-R. I. 262.)

a priori the static features of the universe but not its dynamic ones, because motion is not deducible from the very nature of extension. Hence Descartes assumed that God endowed the extension that He created with a certain quantity of motion or energy, which will remain—thanks to His continuous and invariable ordinary concursus—constant in quantity even though it is being continually transmitted by impact from one part of the universe to another, that is, from one part of matter to another.⁵¹

Thus, Descartes hoped to blot out of the minds of his contemporaries the hylomorphic world theory of Aristotle as well as the atomic world theory of Democritus. He hoped that his contemporaries and all future scientists would adopt the Cartesian world theory: a theory which asserts that the universe is completely occupied at each point—a plenum that is occupied by homogeneous, extended substances;⁵² a universe that is indefinite in boundary and in divisibility;⁵³ a created universe consisting of impenetrable, insensible particles which differ in size, figure and

⁵¹ Cf. René DESCARTES, The Principles of Philosophy, Part II, Principle XXXVI. (Oeuvres de Descartes, Vol. 9, p. 83-84.)

⁵² Cf. ibid., Part II, Principles XXII and XXIII. (H-R. I. 265.)

⁵³ Cf. ibid., Part II, Principle XXI. (H-R. I. 264-265.)

velocity only,—the earth, planets and comets consist of rather large and slow moving particles that are irregular and angular shaped; the seemingly empty heavens consist of smaller and faster moving particles that are spherical in shape; and, the sun and fixed stars consist of the smallest and fastest moving particles which have no fixed shapes (particles of this latter type of matter, moreover, fill all of the interstices between the former two types).⁵⁴ Thus, the Cartesian world picture may be likened to an assembled jigsaw puzzle or mosaic without boundary and without secondary qualities.⁵⁵

To conclude this brief examination of some of Descartes' doctrines, it is well to indicate the influence it

54 Cf. René DESCARTES, The Principles of Philosophy, Part III, Principle LII. (Oeuvres de Descartes, Vol. 9, p. 128-129.)

55 According to Descartes, "... with the exception of motion, magnitude and figure (or the situation of the parts of each body), which things I have explained as they exist in every body, we perceive nothing outside us by means of our senses, but light, colours, smells, tastes, sounds and the tactile qualities; and of all these I have just proven that they are nothing more, as far as is known to us, than certain dispositions of objects consisting of magnitude, figure, and motion." Ibid., Part IV, Principle CXCIX. (H-R. I. 296.) In another place he says that "... we may conclude that we in no way likewise apprehend that in external objects like light, colour, smell, taste, sound, heat, cold, and the other tactile qualities, or what we call their substantial forms, there is anything but the various dispositions of these objects which have the power of moving our nerves in various ways." Ibid., Part IV, Principle CXCVIII. (H-R. I. 296.)

had upon the intellectual climate of Europe; Professor Gilson has found that:

Immediately after Descartes, Leibniz proved that even the Cartesian laws of impact were scientifically wrong, and precisely because Descartes had failed to grasp the importance of such notions as form, force and energy. As soon as Newton published his Mathematical Principles of Natural Philosophy, in 1687, it immediately became apparent that Descartes' physics was a thing of the past. Aristotle's physics had lasted twenty centuries, Descartes' lasted about thirty years in England, and not much more than sixty on the Continent. True, there were still some belated Cartesians both in England and France during the first third of the eighteenth century, but the real scientists regarded them as curious specimens of an actually extinct race.⁵⁶

E. CONCLUDING REMARK

This historical survey is, as any note of this type must be, incomplete. Nevertheless, it does offer a general view of the various theories of matter which were a part of the intellectual climate of Locke's period, for, as Professor Dijksterhuis reports,

About the middle of the seventeenth century there were four different currents of thought about the structure of matter existing side by side and partly blending with each other: (1) The peripatetic doctrine of the four elements [...] (2) The doctrine of the three principia or tria prima (salt, sulphur, mercury), originating from Paracelsus [1493-1541] and referred to as the Spagyristic

⁵⁶ Etienne GILSON, The Unity of Philosophical Experience, p. 206-207. Cf. A. PANNEKOEK, A History of Astronomy, London, George Allen and Unwin Ltd., 1961, p. 297.

doctrine. (3) The Cartesian doctrine that matter is identical with extension, but that it exists in three degrees of fineness. (4) The Democritic-Epicurean theory of atoms revived by Gassend.⁵⁷

Therefore, one is now in a position to examine Locke's own theory of the external world.

SECTION II

LOCKE'S THEORY OF MATERIAL REALITY

A. LOCKE'S THEORY OF SPACE

After having read Locke's Essay and conversed with him, Leibnitz placed Locke's theory of space in the Democritean-Gassendian tradition.⁵⁸ The purpose of the present part of this study is to examine Locke's main texts on space to see precisely in what philosophical tradition (if any) his theory of real space may be placed.

Now in order to grasp Locke's theory of space, one must begin with a series of entries in his Journals (1676-1678), which antedate the first printed edition of his Essay (1690). These statements fall into two categories, namely: 1. those regarding "imaginary space", i.e., space separated in one's thoughts from matter or body, and 2.

⁵⁷ E. J. DIJKSTERHUIS, The Mechanization of the World Picture, p. 433-434.

⁵⁸ Cf. Gottfried Wilhelm LEIBNITZ, New Essays concerning Human Understanding, Book I, Chapter 1.

those regarding "real space", i.e., space not separated in one's thoughts from existent bodies. As some of these entries are rather lengthy, excerpts from the principal ones only will be cited here.

1. In his Journals one finds the following statements concerning his theory of "imaginary space":

- a) Imaginary space seems to me to be noe more any thing then an imaginary world [...]. For space or extension seperated in our thoughts from matter or body seems to have noe more reall existence then number has (sine re numerata) without any thing to be numbered....⁵⁹
- b) Space in its self seemes to be noe thing but a capacity or possibility for extended beings or bodys to be or exist, which we are apt to conceive infinite....⁶⁰
- c) If it be possible to suppose noe thing or in our thoughts to remove all manner of beings from any place then this imaginary space is just noe thing, and signifies noe more but a bare possibility that body may exist where now there is none.
If it be impossible to suppose pure noe thing or to extend our thoughts where there is or we can suppose noe being this space void of body must be something belonging to the being of the deity....⁶¹
- d) But when we speake of Space in generall abstract and seperate from all consideration of any body at all or any other being it seemes not then

⁵⁹ John LOCKE, Journals, entry of Friday, March 27, 1676. (A-G. 77.)

⁶⁰ Ibid., entry of Thursday, September 16, 1677. (A-G. 94.)

⁶¹ Ibid., entry of Thursday, September 16, 1677. (A-G. 96.)

to be any reall thing but the consideration of a bare possibility of body to exist.⁶²

- e) To my supposition that space as it may be conceived antecedent to and void of all bodys or if you will all determinate beings is noe thing but the Idea of the possibility of the existence of body for when one says there is space for an other world as big as this it seemes to me to be noe more then there is noe repugnancy why an other world as big as this might not exist and in this sence space may be said infinite, and soe in effect space as antecedent to body or some determinate being is (in) effect noe thing.

... our haveing Ideas in our head proves not the existence of anything without us.⁶³

Thus, in the years 1676-1678 Locke maintained that "imaginary space" has subjective existence only—a subjective existence that proves nothing about the existence or nature of real space.

2. In Locke's Journals the following statements regarding "real space" are found:

- a) [Real spaces] are only affections of real existences....⁶⁴
- b) [Real space] seemes to me to be but a bare relation,....⁶⁵

⁶² John LOCKE, Journals, entry of Thursday, January 20, 1678. (A-G. 100.)

⁶³ Ibid., entry of Thursday, January 20, 1678. (A-G. 101.)

⁶⁴ Ibid., entry of Friday, March 27, 1676. (A-G. 77.)

⁶⁵ Ibid., entry of Thursday, September 16, 1677. (A-G. 95.)

- c) Relation [...] is that which necessarily makes us consider two things at once or makes the minde looke on two things at once,

Soe that whatsoever necessarily occasions this connection in our thoughts of two things looked on as distinct whatsoever it be founded in that is properly relation, which perhaps may serve to give a little light to that great obscurity which has caused soe much dispute about the nature of space whether it be something or noething, created or eternall For when we speake of space (as ordinarily we doe) as the abstract distance between two bodys it seemes to me to be a pure relation, and we call it distance but when we consider it as the distance or space between the extremitys of a continued body we call it extension and this is lookd on to be a possessive inhaerent property of the body because it keeps constantly with it always the same and every particle has its share of it whereas whether you consider the body in whole masse or in the least particles of the body it appears to me to be noething but the relation of the distance of the extremitys.⁶⁶

Thus, in the years 1676-1678 Locke's theory of "real space" asserts that it is not some thing in itself; rather, it is a bare relation between two bodies—it is the relation of distance between the immediately surrounding surface of one body and that of another body. At this time, accordingly, Locke's theory of space is not to be identified with that of Democritus, Gassendi, or Descartes;⁶⁷ it is, evidently, in the Peripatetic tradition.⁶⁸

⁶⁶ John LOCKE, Journals, entry of Thursday, January 20, 1678. (A-G. 99-100.)

⁶⁷ Cf. Draft A, 27 (A-G. 42-43); and John LOCKE, Journals, entry of Thursday, January 20, 1678. (A-G. 100-101.)

⁶⁸ Cf. Draft A, 44 and 45 (A-G. 69-73); and Draft B, 124-128 (R. 264-271) and 141-144 (R. 283-285).

In his Essay, Book Two, Chapter Five, Locke asserts that the idea of space is a simple idea derived from the sense of sight and the sense of touch.⁶⁹ In Chapter Thirteen of this same Book, however, he treats the idea of space as a complex idea and discusses the various simple modes of this idea.⁷⁰ Throughout Chapter Thirteen Locke is so preoccupied with his desire to point out the errors of the Cartesian theory of space that he scarcely sets forth a theory of his own; this is unfortunate, for if there be any chapter in Locke's writings that might be entitled "A Treatise on Space", it is this one. Nevertheless, if one focuses his attention not upon the psychological and epistemological aspects of this chapter, but, rather, upon the metaphysical ones, Locke's theory of real space—and it is the purpose of the present part of this study to discover it—does emerge.

In view of Locke's atomic theory of matter—the topic of the next part of this study—one is not surprised to find him appealing to the fact of local motion as an argument for the existence of pure space, i.e., an existent void of body. Observe the following texts: "motion being

69 Cf. Essay, II, v (F.I. 158.)

70 Cf. Essay, II, xiii, 1-28 (F.I. 218-237.)

nothing but change of distance between any two things",⁷¹
 "Motion can neither be, nor be conceived, without space"⁷²
 and "the motion of bodies that are in our view and neighbourhood seems to me plainly to evince it [i.e., the existence of a vacuum or pure space]."⁷³ There is neither anything new nor profound in any of these statements: they are commonplace notions of the Democritean tradition as well as the type one would expect to hear from a "man on the street".

In his Physica Aristotle asserts that:

... there is no necessity for there being a void if there is movement. It is not in the least needed as a condition of movement in general,
 ... not even movement in respect of place involves a void; for bodies may simultaneously make room for one another, though there is no interval separate and apart from the bodies that are in movement.⁷⁴

Aristotle and Descartes, accordingly, agree on this point—a point that is opposed to the Democritean-Gassendian tradition. Now in his Essay, Book II, Chapter Thirteen, section twenty-three, Locke sides with the Democritean-Gassendian tradition and attacks the Aristotelian and

71 Essay, II, xiii, 14 (F.I. 227).

72 Essay, II, xiii, 11 (F.I. 226).

73 Essay, II, xiii, 23 (F.I. 233).

74 ARISTOTLE, Physica, IV, vii, 214a 26-30. (Oxford trans.)

Cartesian thesis that local motion can occur without a space void of body. Here Locke argues to the existence of a vacuum from his assumption that a particle of matter cannot move unless there is a void space as big as that particle to move into.⁷⁵ His argument, of course, is valueless, for it involves the fallacy of begging the question: it assumes in the premises of the argument the conclusion which ought to be proved. Be this as it may, Locke seems evidently to have abandoned the purely relational or Aristotelian theory of space that permeated his Journals in favor of a theory of absolute space, i.e., somewhat of a fixed container in which bodies are created and move about.

Now one may prefer to assert with Professor Aaron that the Essay, Book Two, Chapter Thirteen, section twenty-seven, proves that Locke did not wish to commit himself to any specific theory of real space; the text of Locke in question reads as follows:

But whether any one will take space to be only a relation resulting from the existence of other beings at a distance; or whether they will think the words of the most knowing King Solomon, 'The heaven, and the heaven of heavens, cannot contain thee;' or those more emphatical ones of the inspired philosopher St. Paul, 'In him we live, move, and have our being,' are to be understood in a literal sense, I leave every one to consider:....⁷⁶

75 Essay, II, xiii, 23 (F.I. 233).

76 Essay, II, xiii, 27 (F.I. 235). Cf. Essay, II, xv, 2 (F.I. 258-259).

The strength of Aaron's thesis rests on Locke's phrase "I leave every one to consider." But it should be asked: "Since when has this phrase meant that the one who utters it commits one to no specific theory on the topic in question?" Very possibly, Locke may be employing the phrase as a commonplace rhetorical device, and takes it for granted that his reader has seen that he has committed himself to an absolute theory of space in what he has said prior to this text.

Why did Locke change from a relational theory of space (his 1676 to 1678 position) to a theory of absolute space (his position as found in his Essay, which was first published in 1690)? No answer to this question may be found anywhere in his writings. It may be significant to recall, however, that Leibnitz placed Locke's 1690 theory of space in the tradition of Gassendi. Now it is certain that Locke was acquainted with the doctrine of Gassendi, for Locke and François Bernier (ca. 1620-1688)—an exponent of Gassendi's doctrine—were personal friends. In 1678 Bernier published his Abrégé de la philosophie de Gassendi. The date of this publication may be of some significance to the topic under discussion, for, as Maurice Cranston reports in his biography of Locke, "Bernier had only just published his abridgement of Gassendi at the time of his first interviews with

Locke."⁷⁷ It is reasonable to suggest, accordingly, that Locke's decision to adopt a theory of absolute space—a decision that he made sometime after 1678—was influenced by Gassendi's doctrine of absolute space (which at bottom is that of Democritus). If this be the case, then one may readily see why Locke was not ashamed to admit his ignorance as to whether pure space is a substance or an accident: "If it be demanded (as usually it is) whether this space, void of body, be substance or accident, I shall readily answer I know not; nor shall be ashamed to own my ignorance, till they that ask show me a clear distinct idea of substance",⁷⁸ for, according to Gassendi, absolute space is neither a substance nor an accident.⁷⁹

Another such influence was also close at hand, Henry More (1614-1687) and Isaac Newton (1642-1727)—both of whom were distinguished Cambridge philosophers during the period in question here—maintained an atomic theory of matter and a theory of absolute space. Samuel Clarke (1675-1729) expresses correctly how both of these men conceived the relation of absolute space to God; he says:

77 Maurice CRANSTON, John Locke, p. 170.

78 Essay, II, xiii, 17 (F.I. 228).

79 Cf. Petri GASSENDI, Syntagmatis Philosophici, Part II, Physica, Sectio I, Liber II, Chapter 1. Opera Omnia, Vol. 1, p. 182, column 1.

Space is not a Being, an eternal and infinite Being, but a Property (attribute), or a consequence of the Existence of a Being infinite and eternal. Infinite Space, is Immensity. But Immensity is not God: And therefore Infinite Space, is not God.⁸⁰

Now Locke says:

God, every one easily allows, fills eternity; and it is hard to find a reason why any one should doubt that he likewise fills immensity. His infinite being is certainly as boundless one way as another;....⁸¹

... the boundless invariable ocean of duration [time] and expansion [space], which comprehend [embrace] in them all finite beings, and in their full extent belong only to the Deity.⁸²

The similarities between the More-Newton theory of space and that of Locke become apparent: neither theory identifies God and space, and yet both theories imply that God fills space and that space is somehow a consequence of His Being.

Now there are two extrinsic reasons why one may suggest (or, perhaps, even conclude) that Newton exercised an influence upon Locke's theory of space (and, one might add, his atomic theory of matter): (i) Lord King reports that

⁸⁰ Samuel CLARKE, The Leibniz-Clarke correspondence, G. H. Alexander (ed.), Manchester, Manchester University Press, 1956, p. 77. (Quoted by Alexandre KOYRE, From the Closed World to the Infinite Universe, New York, Harper and Brothers, 1958, p. 247.) For a scholarly discussion of the theory of absolute space in the writings of Henry More and Isaac Newton, cf. Alexandre KOYRE, op. cit., chapters 5, 6, 7, 9 and 10.

⁸¹ Essay, II, xv, 3 (F.I. 259).

⁸² Essay, II, xv, 8 (F.I. 263).

Locke probably became acquainted with Newton during his (Locke's) residence in London, which continued about two years after the Revolution of 1688;⁸³ and (ii) Sir David Brewster (1781-1868), Newton's biographer, reports that Locke made a study of Newton's Philosophiae Naturalis Principia Mathematica (published in 1687); he says:

The celebrated Locke, who was incapable of understanding the Principia, from his want of geometrical knowledge, inquired of [Christian] Huygens [1629-1695: a Dutch mathematician and physicist] if all the mathematical propositions in that work were true. When he was assured that he might depend upon their certainty, he took them for granted, and carefully examined the reasonings and corollaries deduced from them. In this manner he acquired a knowledge of the physical truths in the Principia, and became a firm believer in the discoveries it contained. In the same manner he studied the treatise on "Optics [published in 1704]," and made himself master of every part of it which was not mathematical.⁸⁴

This quotation, accordingly, should be a warning to those who have a tendency to identify Locke's theory of space

83 Cf. Lord Peter KING, The Life and Letters of John Locke, with extracts from His Journals and Common-Place Books, London, Henry G. Bohn, 1858, p. 209. The letters (dated from 1690 to 1703) which Locke received from and sent to Newton are found in: ibid., p. 217-229; they deal principally with Biblical matters and say nothing about their theories of space and matter. In a letter (dated April 30th, 1703) which Locke wrote to his cousin, Mr. King, he says: "Mr. Newton, in Autumn last, made me a visit here [Oates];" ibid., p. 262.

84 Sir David BREWSTER, Memoirs of the Life, Writings and Discoveries of Sir Isaac Newton, Edinburgh, 1855, Vol. 1, p. 339. (Quoted by James GIBSON, Locke's Theory of Knowledge and its Historical Relations, p. 251, note 2.) Cf. Maurice CRANSTON, John Locke, p. 337.

(and so on) with that of Newton, for he simply lacked the mathematical knowledge needed to grasp the full import of the Newtonian doctrine. And, granting that one's written words are good indicators of one's thoughts, it may well be that Locke had not formulated clearly in his mind his own theory of absolute space, for his texts on this point are anything but clear. Be this as it may, it is reasonable to suggest that the theories of space announced by both Gassendi and Newton influenced Locke's decision to change from a relational theory of space to a theory of absolute space. And one may safely place Locke's theory of space as found in his Essay in the Democritus-Gassendi-More-Newton tradition.

B. LOCKE'S ATOMIC THEORY

In the Essay, Book Two, Chapter Twenty-one, section seventy-five, Locke asserts that the problems of natural philosophy lie outside the scope of his investigation:

... I shall not, contrary to the design of this Essay, set myself to inquire philosophically into the peculiar constitution of bodies, and the configuration of parts, whereby they have the power to produce in us the ideas of their sensible qualities.⁸⁵

⁸⁵ Essay, II, xxi, 75 (F.I. 374). Cf. Essay, Introduction, 2 (F.I. 26-27).

Nevertheless, he is confident that if he were to inquire into the objective causes of his ideas, he would be led to assume that these causes are the atomic structures and motions of bodies:⁸⁶

... when we go beyond the bare ideas in our minds, and would inquire into their causes, we cannot conceive anything else to be in any sensible object, whereby it produces different ideas in us, but the different bulk, figure, number, texture, and motion of its insensible parts [i.e. atoms].⁸⁷

Although his Essay is by design an epistemological treatise, Locke in fact delves into problems which pertain to other branches of philosophy. Now since Locke assumes that the ultimate objective causes of one's atoms of consciousness (i.e., simple ideas or "building-blocks" of complex ideas

⁸⁶ Locke's estimation of the epistemological value of the atomic theory varies considerable, cf. Essay, III, x, 14 (F.II, 133); Essay, IV, iii, 16 (F.II. 205); Essay, IV, iii, 25 (F.II. 216); Essay, IV, xi, 8 (F.II. 332); and Essay, IV, xii, 13 (F.II. 353-354).

⁸⁷ Essay, II, xxi, 75 (F.I. 374). The expression "insensible parts" may designate either the atoms taken singly, or an aggregate of atoms too small to be sensed—in any given instance Locke's meaning can only be determined from the context in which the expression occurs. Locke says that one cannot by any means come to discover these insensible parts, and hence, shall remain in a state of incurable ignorance concerning them, cf. Essay, IV, iii, 16 (F.II. 205); and Essay, IV, iii, 25 (F.II. 216). Were God to alter one's senses, i.e., make them much quicker and acuter, these "insensible parts" would then lie within the ambit of one's certain knowledge, cf. Essay, II, xxiii, 12 (F.I. 402-404). Should God do this, then Locke would experience no difficulty in admitting the probability of the philosophy of nature becoming a science, cf. Essay, IV, iii, 25-26 (F.II. 216-218); and Essay, IV, xii, 10 (F.II. 349-350).

of material substances) are the atomic structures and motions of bodies, it is the design or purpose of the present part of this study to examine his atomic theory. As there is no chapter of his Essay (or any other of his writings) that might be entitled correctly: "A Treatise on the Constitution of Bodies", the following examination must necessarily bear upon a series of texts that are unmethodically dispersed throughout his writings.⁸⁸

1. LOCKE'S THEORY OF AN ATOM

Locke's conception of an atom can be gleaned from the following series of texts:

a) An atom is CREATED by God. The theory that matter is co-eternal with an Eternal Mind—the theory of Aristotle, for instance—"denies", according to Locke, "one and

⁸⁸ C. R. Morris correctly remarks that Locke does not "ask how it is to be proved that there is in reality such a thing as an atom—a particle of matter of finite size, which is further indivisible and unchangeable—and that all material inanimate bodies are aggregates of such atoms. All these things Locke takes for granted on the credit of the physical science of his day." C. R. MORRIS, Locke Berkeley Hume, London, Oxford University Press, 1963, p. 42-43. R. I. Aaron grossly oversimplifies the problem of discovering Locke's atomic theory when he says: "The physics of the Essay is the corpuscular physics of Boyle, and if the reader has any doubts in his mind as to what Locke means he may turn to Boyle's works for a fuller exposition of the same views." R. I. AARON, John Locke, p. 13. The similarities between the two doctrines are numerous; nevertheless, Locke's doctrine is so incomplete that one simply cannot be assured of its identity with any single physics of the seventeenth century.

the first great piece of his [God's] workmanship, the creation [of matter out of nothing]."⁸⁹ Locke believes that:

... if we would emancipate ourselves from vulgar notions, and raise our thoughts, as far as they would reach, to a closer contemplation of things, we might be able to aim at some dim and seeming conception how matter might at first be made, and begin to exist, by the power of that eternal first Being:....⁹⁰

b) An atom CAN BE ANNIHILATED by God. This point is asserted implicitly in the Essay, Book Two, Chapter Thirteen, section twenty-two, which Locke entitled: "The Power of Annihilation proves a Vacuum". Here Locke says,

... those who assert the impossibility of space existing without matter, must not only make body infinite, but must also deny a power in God to annihilate any part of matter. No one, I suppose, will deny that God can put an end to all motion that is in matter, and fix all the bodies of the universe in a perfect quiet and rest, and continue them so long as he pleases. Whoever then will allow that God can, during such a general rest, annihilate either this book or the body of him that reads it, must necessarily admit the possibility of a vacuum.⁹¹

c) The SUPERFICIES of an atom is IMMUTABLE:

[An atom is] a continued body under one immutable superficies, existing in a determined time and place; [...] if two or more atoms be joined together into the same mass, every one of those atoms will be the same [with itself],....⁹²

⁸⁹ Essay, IV, x, 18 (F.II. 320).

⁹⁰ Essay, IV, x, 18 (F.II. 321). Cf. Essay, IV, x, 19 (F.II. 322-324); and Essay, II, xxvi, 2 (F.I. 434-435).

⁹¹ Essay, II, xiii, 22 (F.I. 232).

⁹² Essay, II, xxvii, 4 (F.I. 442).

d) An atom is PHYSICALLY INDIVISIBLE. In his Essay, Book Two, Chapter Fifteen, section nine, Locke asserts that matter is mentally divisible in infinitum. In view of his assertion that the superficies of an atom is immutable, however, he must have assumed that an atom is physically indivisible.⁹³

e) An atom is an INSENSIBLE PARTICLE OF MATTER QUALIFIED BY EXTENSION, SOLIDITY AND FIGURE:

MATTER is an extended solid substance; which being comprehended under distinct surfaces, makes so many particular distinct bodies.⁹⁴

That which thus hinders the approach of two bodies, when they are moved one towards another, I call solidity. [...] if any one think it better to call it impenetrability, he has my consent. [...] And though our senses take no notice of it, but in masses of matter, of a bulk sufficient to cause a sensation in us: yet the mind, having once got this idea from such grosser sensible bodies, traces it further, and considers it, as well as figure, in the minutest particle of matter that can exist; and finds it inseparably inherent in body, wherever or however modified.⁹⁵

f) Atoms considered as particles of matter are HOMOGENEOUS; when considered as figured, however, each atom has its own IMMUTABLE FIGURE which may or may not be like the immutable figure of another atom:

93 Cf. Essay, II, xv, 9 (F.I. 264-267).

94 John LOCKE, Elements of Natural Philosophy, Chapter I. Works, Vol. 3, p. 303.

95 Essay, II, iv, 1 (F.I. 151-152). Cf. Essay, II, xiii, 22 (F.I. 232).

Bodies that are solid, separable, terminated, and moveable, have all sorts of figures, and they are bodies alone that have them: and so figures are properly modifications of bodies, for pure space is not any where terminated, nor can be; whether there be or be not body in it, it is uniformly continued on.⁹⁶

In another place Locke makes a statement which at first seems to be opposed to what is being said here; he says that "Every particle of matter, as matter, is capable of all the same figures and motions of any other; and I challenge any one, in his thoughts, to add anything else to one above another."⁹⁷ Locke's meaning here seems to be as follows: when one considers the nature of matter in general, one finds that it is all of the same kind, and, hence, from this perspective it is indifferent not only to the quantity of motion any particle of it might receive (see below) but also to the figure or shape any particle of it might be given. If one changes from this abstract perspective to a concrete one, however, the situation is as follows: when God creates an atom, He creates an extended solid particle (see above) of a particular figure (there can be no such thing as an extended but unfigured particle of matter), and the latter quality (figure) of that atom is immutable in virtue of the

⁹⁶ John LOCKE, An Examination of P. Malebranche's Opinion on Seeing All Things in God, section 48. Works, Vol. 9, p. 248.

⁹⁷ Essay, IV, x, 15 (F.II. 318).

former (solidity)—unless, of course, God at another moment, as it were, wills to re-figure that atom. If this interpretation is correct, namely, that Locke considered the figure of an atom to be immutable, then his theory of the atom is at one with the traditional view in this respect.

g) The IMMUTABLE SIZE OF ONE ATOM MAY DIFFER FROM THAT OF ANOTHER:

Smelling bodies seem perpetually to send forth effluvia [invisible particles], or streams, without sensibly wasting at all. Thus a grain of musk will send forth odoriferous particles for scores of years together, without its being spent; whereby one would conclude that these particles are very small; and yet it is plain that they are much grosser than the rays of light, which have free passage through glass; and grosser also than the magnetic effluvia, which pass freely through all bodies, when those that produce smell will not pass through the thin membranes of a bladder, and many of them scarce ordinary white paper.⁹⁸

Locke apparently considered the size of an atom to be immutable, for otherwise he would not have (or, at least, should not have) asserted that the superficies of an atom is immutable.

h) An atom is a MOBILE material being, which is indifferent to motion or rest. In his Essay, Book Two, Chapter Eight, section nine, Locke says:

⁹⁸ John LOCKE, Elements of Natural Philosophy, Chapter 11. Works, Vol. 3, p. 326-327. Cf. Essay, IV, ii, 11 (F.II. 183-184). One will not find a detailed classification of atoms on the basis of size in the writings of Locke.

... Take a grain of wheat, divide it into two parts; each part has still solidity, extension, figure, and mobility: divide it again, and it retains still the same qualities; and so divide it on, till the parts become insensible; they must retain still each of them all those qualities. For division (which is all that a mill, or pestle, or any other body, does upon another, in reducing it to insensible parts) can never take away either solidity, extension, figure, or mobility from any body, but only makes two or more distinct separate masses of matter, of that which was but one before; all which distinct masses, reckoned as so many distinct bodies, after division, make a certain number. These I call original or primary qualities of body, which I think we may observe to produce simple ideas in us, viz. solidity, extension, figure, motion or rest, and number.⁹⁹

⁹⁹ Essay, II, viii, 9 (F.I. 169-170). In his Essay, IV, iii, 11, Locke says all secondary qualities depend "upon the primary qualities of their minute and insensible parts; or, if not upon them, upon something yet more remote from our comprehension." Essay, IV, iii, 11 (F.II. 200). (Italics mine.) Does this text indicate that Locke thought an atom to be composed of still finer or more ultimate particles? I think not, for this would argue against all he has said of the nature of an atom—he does admit, of course, that there are insensible aggregates of atoms. This text seems to me to be either (i) a slip of his pen, for it goes against not only what he had previously written on this point (as well as the traditional doctrine) but also what he says in the very next section: "Besides this ignorance of the primary qualities of the insensible parts of bodies, on which depend all their secondary qualities." Essay, IV, iii, 12 (F.II. 201). (Italics mine.); or (ii) an attempt to guard himself, as A. C. Fraser suggests, "against the dogmatic assumption—that the innumerable secondary qualities and powers with which material substances are endowed, and which give them their chief human interest, must be the issue of their primary qualities, i.e. of the variously modified and moved atoms of which each substance consists, and by which it is objectively distinguished from other substances." F.II. 200, note 5. Locke's theory of primary, secondary and tertiary qualities will be examined in SECTION THREE of this chapter.

And in another place he says:

Matter, or body, is indifferent to motion, or rest.

There is as much force required to put a body, which is in motion, at rest, as there is to set a body, which is at rest, into motion.

No parcel of matter can give itself either motion or rest, and therefore a body at rest will remain so eternally, except some external cause puts it in motion; and a body in motion will move eternally, unless some external cause stops it.

A body in motion will always move on in a straight line, unless it be turned out of it by some external cause; because a body can no more alter the determination of its motion, than it can begin it, alter, or stop its motion itself.¹⁰⁰

In view of the series of texts just examined (i.e., "a" to "h"), one may formulate the following rather cumbersome definition: an atom, according to Locke, is a created, annihilative, solid, physically indivisible, insensible, mobile and extended particle of matter, which has an immutable superficies, figure and size. Now when one compares Locke's conception of an atom with that of Democritus and Gassendi, the following chart emerges:

¹⁰⁰ John LOCKE, Elements of Natural Philosophy, Chapter I. Works, Vol. 3, p. 303.

An atom is a particle of matter, which:	<u>DEMOCRITUS</u>	<u>GASSENDI</u>	<u>LOCKE</u>
a) is created	No	Yes	Yes
b) is annihilative	No	Yes	Yes
c) is solid	Yes	Yes	Yes
d) is physically indivisible	Yes	Yes	Yes
e) is insensible	Yes	Yes	Yes
f) is mobile	Yes	Yes	Yes
g) is extended	Yes	Yes	Yes
h) has an immutable:			
(i) superficies	Yes	Yes	Yes
(ii) figure &	Yes	Yes	Yes
(iii) size	Yes	Yes	Yes

Thus, Leibnitz's assertion that Locke's conception of the atom is at one with that of Gassendi (which is at bottom that of Democritus) is evidently correct.¹⁰¹

¹⁰¹ Cf. Gottfried Wilhelm LEIBNITZ, New Essays concerning Human Understanding, Book I, Chapter 1.

2. LOCKE'S THEORY OF AGGREGATES OF ATOMS, i.e., SENSIBLE BODIES¹⁰²

The Lockean world of finite beings is a hierarchy—
a hierarchy that has been created and designed by God:

... in all the visible corporeal world, we see no chasms or gaps. All quite down from us the descent is by easy steps, and a continued series of things, that in each remove differ very little one from the other. There are fishes that have wings, and are not strangers to the airy region: and there are some birds that are inhabitants of the water, [...]. There are animals so near of kin both to birds and beasts that they are in the middle between both: [...]. There are some brutes that seem to have as much knowledge and reason as some that are called men: and the animal and vegetable kingdoms are so nearly joined, that, if you will take the lowest of one and the highest of the other, there will scarce be perceived any great difference between them: and so on, till we come to the lowest and the most inorganical parts of matter, [...]. And when we consider the infinite power and wisdom of the Maker, we have reason to think that it is suitable to the magnificent harmony of the universe, and the great design and infinite goodness of the Architect, that the species of creatures [*viz.* finite spirits] should also, by gentle degrees, ascend upward from us toward his infinite

102 "We have hitherto [namely, in chapters 2-10 of this treatise] considered the great and visible parts of the universe, and those great masses of matter, the stars, planets, and particularly this our earth, together with the inanimate parts, and animate inhabitants of it; it may be now fit to consider what these sensible bodies are made of, and that is of unconceivably small bodies or atoms, out of whose various combinations bigger moleculeae are made: and so, by a greater and greater composition, bigger bodies; and out of these the whole material world is constituted.

By the figure, bulk, texture, and motion, of these small and insensible corpuscles, all the phenomena of bodies may be explained." John LOCKE, Elements of Natural Philosophy, Chapter 12. Works, Vol. 3, p. 330.

perfection, as we see they [viz. sensible bodies] gradually descend from us downwards:....¹⁰³

Further, this text reveals a radical difference between the Democritean and the Lockean theories of the formation of corporeal beings. According to Democritus,

... [uncreated] atoms move in the infinite void, separate one from the other and differing in shapes, sizes, position and arrangement ; overtaking each other they collide, and some are shaken away in any chance direction, while others, becoming intertwined one with another according to the congruity of their shapes, sizes, positions and arrangements, stay together and so effect the coming into being of compound bodies.¹⁰⁴

For Locke, however, corporeal beings, i.e., aggregates of atoms, are formed (not by the fortuitous collision of eternal atoms moving in pure space, but) under the influence of their infinitely wise and powerful Creator. Locke does admit that the formation and continued existence of a corporeal being (e.g., an animal) are dependent upon the concurrence and operations of several bodies (e.g., the air, sun, food, and so on) in its environment.¹⁰⁵ Nevertheless, granting this dependency of one corporeal being upon another, the ultimate, universal and incomprehensible cause of the

¹⁰³ Essay, III, vi, 12 (F.II. 67-68).

¹⁰⁴ SIMPLICIUS, De Caelo, 242, 21. (Quoted by G. S. KIRK and J. E. RAVEN, The Presocratic Philosophers, p. 419.)

¹⁰⁵ Cf. Essay, IV, vi, 11 (F.II. 260-262).

"fabric" or real essence of each corporeal being is God; Locke says,

The workmanship of the all-wise and powerful God in the great fabric of the universe, and every part thereof, further exceeds the capacity and comprehension of the most inquisitive and intelligent man, than the best contrivance of the most ingenious man doth the conceptions of the most ignorant of rational creatures.¹⁰⁶

Although Locke himself does not use the following terms to express his theory of the formation and continued existence of the real essence of a corporeal substance, his meaning seems evidently to be this: the formation and continued existence of the real essence of one corporeal substance is dependent in the order of secondary causality upon the concurrence and operations of several other corporeal substances in its environment; nevertheless, the ultimate explanation of the formation and continued existence of the real essence of any corporeal substance as well as the causal influences one body exercises upon another lies in the primary and universal causality of the infinitely wise, good and powerful Creator and Architect of this hierarchic world of beings.

It may now be asked: "Precisely what does Locke mean by the real essence of a corporeal substance?" Before

¹⁰⁶ Essay, III, vi, 9 (F.II. 65). Cf. Essay, IV, iii, 27 (F.II. 219); and Essay, IV, iii, 29 (F.II. 222).

answering this question, several preliminary points should be noted. First, Locke simply presumes that corporeal substances have real essences: "... as to the real essences of substances, we only suppose their being";¹⁰⁷ "... it is past doubt there must be some real constitution [i.e., some real essence in a corporeal substance], on which any collection of simple ideas co-existing must depend."¹⁰⁸ Secondly, Locke says that these real essences are unknown and unknowable:

Nor indeed can we rank and sort things, and consequently (which is the end of sorting) denominate them, by their real essences; because we know them not. [Why? Because] Our faculties carry us no further towards the knowledge and distinction of substances, than a collection of those sensible ideas which we observe in them [i.e., in one's complex ideas of particular substances]; which, however made with the greatest diligence and exactness we are capable of, yet is more remote from the true internal constitution [i.e., the real essence] from which those qualities flow, than, as I said, a countryman's idea is from the inward contrivance of that famous clock at Strasburg, whereof he only sees the outward figure and motions.¹⁰⁹

What, then, is that "unknown and unknowable X" or real essence which Locke assumes to be in corporeal substances and to be that on which any collection of simple ideas co-existing must depend? Locke describes it as follows:

¹⁰⁷ Essay, III, vi, 6 (F.II. 62).

¹⁰⁸ Essay, III, iii, 15 (F.II. 26).

¹⁰⁹ Essay, III, vi, 9 (F.II. 64). Cf. Essay, IV, vi, 12 (F.II. 263); and Essay, IV, xii, 11 (F.II. 350).

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; that particular constitution which everything has within itself, without any relation to anything without it.¹¹⁰

In another place he says that "the real essence is the constitution of the insensible parts of [a corporeal substance]."¹¹¹ In still another place he asks: "What is that texture of parts, that real essence?"¹¹² By the real essence of a material being, accordingly, Locke evidently means the arrangement of its atoms; in other words, the real essence of a body is its atomic structure. Locke's theory of real essences, therefore, is in the Democritean-Gassendian (and one might add, for instance, the Newtonian-Boylean) tradition. It is opposed to the Aristotelian hylomorphic tradition of the real essences of material beings, which asserts that they consist of two internal principles, namely, substantial form or principle of specification and matter or principle of receptivity, of determinability.¹¹³

¹¹⁰ Essay, III, vi, 6 (F.II. 61). Cf. Essay, III, iii, 15 (F.II. 26); and Essay, III, vi, 9 (F.II. 64).

¹¹¹ Essay, III, vi, 2 (F.II. 57). Cf. Essay, III, iii, 17 (F.II. 27-28); and Essay, IV, vi, 12 (F.II. 263).

¹¹² Essay, III, vi, 9 (F.II. 65).

¹¹³ Cf. Essay, III, vi, 10 (F.II. 65-66).

As will be seen in chapter three of this study, Locke's decision to reject the Aristotelian theory of real essences will necessitate the formulation of a non-Aristotelian theory of universals. His theory of universals, in turn (as will be seen in chapter four of this study), will lead him to the conclusion that the philosophy of nature lies outside the ambit of scientific knowledge, for the mind cannot fabricate adequate ideas of the real essences of material substances.¹¹⁴

The real essences or atomic structures of corporeal substances are, Locke assumes, generable and corruptible:

All things that exist, besides their Author, are all liable to change; especially those things we are acquainted with, and have ranked into bands under distinct names or ensigns. Thus, that which was grass to-day is to-morrow the flesh of a sheep; and, within a few days after, becomes part of a man: in all which and the like changes, it is evident their real essence—i.e. that constitution whereon the properties of these several things depended—is destroyed, and perishes with them.¹¹⁵

Granting that the real essences of corporeal substances are generable and corruptible, they do retain, nevertheless,

114 Cf. Essay, IV, iii, 26 (F.II. 217-218), for instance.

115 Essay, III, iii, 19 (F.II. 30).

their continued existences and self-identities for certain periods of time.¹¹⁶ A vegetable, for instance,

... continues to be the same plant as long as it partakes of the same life, though that life be communicated to new particles of matter vitally united to the living plant, in a like continued organization conformable to that sort of plants.¹¹⁷

The continued existence and self-identity of the real essence of any organism—be it a vegetable, a brute animal,¹¹⁸ or a human body—consists, according to Locke, "in nothing but a participation of the same continued life, by constantly fleeting particles of matter, in succession vitally united to the same organized body."¹¹⁹

Here one must be cautioned against reading Peripatetic theories into Locke's doctrine—there is no question of a unifying and vitalizing principle after the manner of an Aristotelian substantial form or soul in Locke's theory of organisms. Locke assumes that an organism is an

116 Locke's theory of identity and diversity is found in his Essay, II, xxvii, 1-29 (F.I. 439-470). This chapter is discussed and criticized in the following articles: C. D. BROAD, "Locke's Doctrine of Substantial Identity and Diversity", in Theoria, 17 (1951), p. 13-26; Antony FLEW, "Locke and the Problem of Personal Identity", in Philosophy, 26 (1951), p. 53-68; and H. P. GRICE, "Personal Identity", in Mind, 50 (1941), p. 313-350. Professor Broad's article is by far the best of these three.

117 Essay, II, xxvii, 5 (F.I. 443).

118 Essay, II, xxvii, 6 (F.I. 443-444).

119 Essay, II, xxvii, 7 (F.I. 444).

aggregate of atoms with a texture that enables it to perform vital activities. These vital activities—save for some of those which occur in human organisms due to their soul, a distinct immaterial substance—are physical motions which one part of an organism (e.g., one's blood) causes in another part of the same organism (e.g., one's lungs), or, one part of the organism (e.g., one's stomach) exercises on another aggregate of atoms (e.g., the food one consumes).¹²⁰

¹²⁰ Locke expresses this theory in some detail as follows: "The way of nourishment of animals, particularly of man, is by food taken in at the mouth, which being chewed there, is broken and mixed with the saliva, and thereby prepared for an easier and better digestion in the stomach.

When the stomach has performed its office upon the food, it protrudes it into the guts, by whose peristaltic motion it is gently conveyed along through the guts, and, as it passes, the chyle, which is the nutritive part, is separated from the excrementitious, by the lacteal veins; and from thence conveyed into the blood, with which it circulates till itself be concocted into blood. The blood, being by the vena cava brought into the right ventricle of the heart, by the contraction of that muscle, is driven through the arteria pulmonaris into the lungs; where the constantly inspired air mixing with it, enlivens it; and from thence being conveyed by the vena pulmonaris into the left ventricle of the heart, the contraction of the heart forces it out, and, by the arteries, distributes it into all parts of the body; from whence it returns by the veins into the right ventricle of the heart, to take the same course again. This is called the circulation of the blood; by which life and heat are communicated to every part of the body.

In the circulation of the blood, a good part of it goes up into the head; and by the brains are separated from it, or made out of it, the animal spirits; which, by the nerves, impart sense and motion to all parts of the body.

The instruments of motion are the muscles; the fibres whereof contracting themselves, move the several parts of the body.

Locke, as has been seen, does not claim to know the real essences of any organisms—he simply assumes that their real essences are atomic structures; he does not claim to know the reason why the atoms which constitute these structures stick together: "He that could find the bonds that tie these heaps of loose little bodies together so firmly; he that could make known the cement that makes them stick so fast one to another, would discover a great and yet unknown secret";¹²¹ and, finally, he does not claim to know how it is that the mind moves the body, nor how one body moves another body (i.e., how one aggregate of atoms

This contraction of the muscles is, in some of them, by the direction of the mind, and in some of them without it; which is the difference between voluntary and involuntary motions, in the body." John LOCKE, Elements of Natural Philosophy, Chapter 10. Works, Vol. 3, p. 322-323.

¹²¹ Essay, II, xxiii, 26 (F.I. 412). Cf. Essay, II, xxiii, 23 (F.I. 410). In his Opticks (1704) Newton gives a summary of the answers given to this problem: "The Parts of all homogeneal hard Bodies which fully touch one another, stick together very strongly. And for explaining how this may be, some have invented hooked Atoms, which is begging the Question; and others tell us that Bodies are glued together by rest, that is, by an occult Quality, or rather by nothing; and others, that they stick together by conspiring Motions, that is, by relative rest amongst themselves. I had rather infer for their Cohesion, that their Particles attract one another by some Force, which in immediate Contact is exceeding strong, at small distances performs the chymical Operations above-mention'd, and reaches not far from the Particles with any sensible Effect." Isaac NEWTON, Opticks, Book III, Part I, New York, Dover Publications, Inc., 1952, p. 388-389.

moves another aggregate of atoms, or, how one part of an organism moves another part of that same organism):

Another idea we have of body is, the power of communication of motion by impulse; and of our souls, the power of exciting motion by thought. These ideas, the one of body, the other of our minds, every day's experience clearly furnishes us with: but if here again we inquire how this is done, we are equally in the dark. For, in the communication of motion by impulse, wherein as much motion is lost to one body as is got to the other, which is the ordinariest case, we can have no other conception, but of the passing of motion out of one body into another; which, I think, is as obscure and inconceivable as how our minds move or stop our bodies by thought, which we every moment find they do.¹²²

In MR. LOCKE'S REPLY to the Right Reverend The LORD BISHOP OF WORCESTER'S ANSWER to his SECOND LETTER he asserts that the power which one body has to operate on another has been given to it by God; and, due to the influence of Newton's Principia upon his own thinking, Locke admits the possibility though incomprehensibility of action at a distance:

It is true, I say, "that bodies operate by impulse, and nothing else." And so I thought when I writ it, and can yet conceive no other way of their operation. But I am since convinced by the judicious Mr. Newton's incomparable book, that it is too bold a presumption to limit God's power, in this point, by my narrow conceptions. The gravitation of matter towards matter, by ways inconceivable to me, is not only a demonstration that God can, if he pleases, put into bodies powers and ways of operation, above what can be derived from our

¹²² Essay, II, xiii, 28 (F.I. 413). Cf. Essay, II, viii, 11 (F.I. 171); Essay, IV, iii, 13 (F.II. 201-202); and Essay, IV, iii, 25 (F.II. 216-217).

idea of body, or can be explained by what we know of matter, but also an unquestionable and every where visible instance, that he has done so. And therefore in the next edition of my book, I shall take care to have that passage rectified.¹²³

C. A DIGRESSION ON "LOCKE'S THEORY OF THE HUMAN MIND"

For a Peripatetic the mind prior to experience is a tabula rasa. If one wishes to acquire a somewhat adequate idea of the nature of man, for instance, he must begin with evidences that are immediately revealed upon direct contact with reality—such evidences are principally his own activities. Using these data as his starting points, he reflects upon them, analyzes them, and attempts to attain some understanding of the accidental (viz. operative potencies) and substantial (viz. soul and body) principles of his activities and being. It is in this manner that one gradually builds-up, as it were, a somewhat adequate idea of the nature of man.

Now for Locke the mind prior to experience is likewise considered to be devoid of ideas. He uses various metaphors to draw his reader's attention to this doctrine; he says, for instance, that prior to experience the mind

¹²³ John LOCKE, MR. LOCKE'S REPLY to the Right Reverend The LORD BISHOP OF WORCESTER'S ANSWER to his SECOND LETTER. Works, Vol. 4, p. 467-468. Cf. John LOCKE, Elements of Natural Philosophy, Chapter 1. Works, Vol. 3, p. 303-305.

may be compared to an "empty cabinet",¹²⁴ a "white paper, void of all characters",¹²⁵ or a "dark room".¹²⁶ Locke's method of building-up an idea of the nature of man, moreover, seems to be very much like that of the Aristotelians, for he says:

We know certainly, by experience, that we sometimes think; and thence draw this infallible consequence,—that there is something in us that has a power to think. But whether that substance perpetually thinks or no, we can be no further assured than experience informs us. For, to say that actual thinking is essential to the soul, and inseparable from it, is to beg what is the question, and not to prove it by reason;....¹²⁷

In both the Aristotelian and Lockean schools of thought, accordingly, one begins with what is immediately experienceable, namely, one's own activities, and attempts to arrive at some understanding of the power (or powers) and nature (or natures) from which these activities flow.

In his "Introduction" to the Essay, Locke asserts that an examination of the essence of the mind lies outside the design of his treatise:

124 Essay, I, i, 15 (F.I. 48).

125 Essay, II, i, 2 (F.I. 121).

126 Essay, II, xi, 17 (F.I. 212).

127 Essay, II, i, 10 (F.I. 128-129).

This, therefore, being my purpose—to inquire into the original, certainty, and extent of human knowledge, together with the grounds and degrees of belief, opinion, and assent;—I shall not [...] trouble myself to examine wherein its [i.e., the mind's] essence consists;....¹²⁸

Thus, one will not find in his Essay (nor in any other one of his writings) a treatise on the mind or soul; nevertheless, by examining his doctrines concerning how one acquires ideas of power and substance one may come to some understanding of his theory of the mind.

In his Essay, Book Two, Chapter Seven, section eight, Locke indicates the two ways by which one acquires the idea of power; he says,

Power also is another of those simple ideas which we receive from sensation and reflection. For, observing in ourselves that we do and can think, and that we can at pleasure move several parts of our bodies which were at rest; the effects, also, that natural bodies are able to produce in one another, occurring every moment to our senses,—we both these ways get the idea of power.¹²⁹

The first of these two ways of acquiring ideas of powers must now be examined, for it alone pertains to the present topic of this study.

It is necessary here to recall a matter that was examined in CHAPTER ONE, SECTION THREE, B.2, of this study.

¹²⁸ Essay, Introduction, 2 (F.I. 26).

¹²⁹ Essay, II, vii, 8 (F.I. 163). Cf. Essay, II, xxi, 1 (F.I. 308-309).

There it was seen that Locke defined reflection as "that notice which the mind takes of its own operations, and the manner of them, by reason whereof there come to be ideas of these operations in the understanding."¹³⁰ Now when this text is linked with the above text in which he indicates how one acquires ideas of powers, it becomes somewhat evident that Locke maintains that, consequent upon its acts of noticing its various operations, the mind acquires representations or ideas of the various ways that it operates, as well as ideas of the powers by which (or through which) it operates. As one's mind, for instance, thinks about the square-sense-datum that it acquires from a present sensation of a square object, it may notice that it is operating in this manner and, as a result of this experience, somehow acquires both the idea "thinking" (in other words, the idea of this type of operation) and the idea of the "power of thinking" (in other words, the idea of the faculty through which it exerts this type of activity).

There are several additional points to be indicated here. First, Locke, like the Aristotelians, does not hypostatize the powers of the mind or soul, i.e., he does not regard them as separate and distinct substances, agents, or things; this point is evident from the following texts:

¹³⁰ Essay, II, i, 4 (F.I. 124).

These powers of the mind, viz. of perceiving, and of preferring, are usually called by another name. And the ordinary way of speaking is, that the understanding and will are two faculties of the mind; a word proper enough, if it be used, as all words should be, so as not to breed any confusion in men's thoughts, by being supposed (as I suspect it has been) to stand for some real beings in the soul that performed those actions of understanding and volition.¹³¹

I grant, that this or that actual thought may be the occasion of volition, or exercising the power a man has to choose; or the actual choice of the mind, the cause of actual thinking on this or that thing: as the actual singing of such a tune may be the cause of dancing such a dance, and the actual dancing of such a dance the occasion of singing such a tune. But in all these it is not one power that operates on another: but it is the mind [the soul] that operates, and exerts these powers; it is the man that does the action; it is the agent that has power, or is able to do.¹³²

Secondly, Locke asserts that the mind notices its operations or activities—he does not say that the mind notices its powers. The mind, according to Locke, infers from its activities that it has the powers to so act; he says, for instance, that "We know certainly, by experience, that we sometimes think; and thence draw this infallible consequence,—that there is something in us that has a power to think."¹³³ Thirdly, it may be asked: "How many powers or faculties of the mind are there?" According to Locke's

¹³¹ Essay, II, xxi, 6 (F.I. 314).

¹³² Essay, II, xxi, 19 (F.I. 322-323).

¹³³ Essay, II, i, 10 (F.I. 128).

theory as to how one acquires ideas of powers, it would follow that the number of powers the mind has coincides with the number of different types of activities that the mind exerts; however, he seems to ignore this principle when discussing his theory of faculties or powers. The traditional answer to the question just posed is the one given by Professor Aaron, who says: "Within that mind Locke recognizes two powers or 'faculties', those of 'perception or thinking and volition or willing'."¹³⁴ It is true that Locke often speaks of the understanding (i.e., the power of perception) and the will as two powers of the mind,¹³⁵ but he nowhere says that these are the only faculties of the mind.¹³⁶ Locke would not say that the mind has only two or three or any other definite number of faculties, for, as will be seen below, he is convinced that man does not know adequately the essence of the mind. In view of the latter point, one should not expect to find an adequate answer to the following question as well: "What is, according to Locke, the essential nature of a faculty?" In his Journal entry of July 16, 1676—and this seems to be the most

134 Richard I. AARON, John Locke, p. 131.

135 Cf. Essay, II, xxi, 6 and 7 (F.I. 313-314), for instance.

136 Cf. Essay, II, ix-xi (F.I. 183-212).

explicit statement on this point—he says that a faculty or power is an inherent inseparable property of the soul:

This, I say, I imagine, speaking of the soul and finite spirits, that, thinking being their action, it is not necessary to conceive that they would be always in action, i.e. think, any more than that a body would be always in motion. But be that as it will, this is certain, that the inherent inseparable property of the soul is a power to act, i.e. a power to produce some motions in the body and some thoughts in the mind.¹³⁷

When reading this entry one might wish with good reason that Locke would have elucidated the phrase "inherent inseparable property of the soul", but he did not; it might be well to add that one must not read the Aristotelian notions of substantial form and property into this text, for Locke has abandoned these. Notice, here, that Locke is dissociating his theory of the soul from that of Descartes, who maintained that thinking is the essence of the soul.¹³⁸ Fourthly, each idea of a power that has been acquired by reflection is an atom of consciousness or a simple idea. Having acquired these ideas, the mind may then take notice of them, combine them with a vague and obscure notion of a substratum,

¹³⁷ John LOCKE, Journal, entry of July 16, 1676. (John Locke Essays on the Law of Nature, the Latin text with a translation, introduction and notes, together with transcripts of Locke's shorthand in his Journal for 1676, trans. & ed. W. von Leyden, Oxford, Clarendon Press, 1958, p. 271.)

¹³⁸ Cf. Essay, II, i, 9-19 (F.I. 127-139).

and, in this manner, build-up an inadequate complex idea of one's mind, soul, or spiritual substance; this Lockean doctrine may be seen in the following texts:

... our specific ideas of substances are nothing else but a collection of a certain number of simple ideas, considered as united in one thing.¹³⁹

... by the simple ideas we have taken from those operations of our own minds, which we experiment daily in ourselves, as thinking, understanding, willing, knowing, and power of beginning motion, &c., co-existing in some substance, we are able to frame the complex idea of an immaterial spirit.¹⁴⁰

... by supposing a substance wherein thinking, knowing, doubting, and a power of moving, &c., do subsist, we have as clear a notion of the substance of spirit, as we have of body; the one being supposed to be (without knowing what it is) the substratum to those simple ideas we have from without; and the other supposed (with a like ignorance of what it is) to be the substratum to those operations we experiment in ourselves within.¹⁴¹

Therefore, since one knows neither the inner nature of his mind nor the inner nature of his body, one cannot submit within the Lockean perspective an adequate answer to the perennial "Mind-Body" problem.¹⁴²

139 Essay, II, xxiii, 14 (F.I. 405).

140 Essay, II, xxiii, 15 (F.I. 406).

141 Essay, II, xxiii, 5 (F.I. 395). Cf. Essay, III, iii, 27 (F.II. 218-220); and Essay, IV, iii, 6 (F.II. 196).

142 Although Locke usually asserts a dualistic theory of man (cf., for instance, Essay, II, xxiii, 19, 20 and 22), he admits that God may have given some systems of matter the power to think: "We have the ideas of matter and thinking, but possibly shall never be able to know whether

SECTION III

ATOMS OF CONSCIOUSNESS

A. MEANING OF THE PHRASE: "ATOMS OF CONSCIOUSNESS"

In CHAPTER ONE, SECTION THREE, of this study two types of experience (namely, sensation and reflection) were examined; it was found that: (i) the mode of thinking which Locke calls sensation has as the immediate object of its notice a simple idea of sensation, which has been conveyed to the mind by one's bodily senses; (ii) the mode of thinking which Locke calls reflection has as its immediate object an operation or activity of one's mind—the product that somehow occurs in one's mind when it reflects upon one of its operations is a simple idea of reflection, i.e., an ideational content that represents the activity or operation which has been observed; and (iii) these two modes of

(any mere material being) thinks or no; it being impossible for us, by the contemplation of our own ideas, without revelation, to discover whether Omnipotency has not given to some systems of matter, fitly disposed, a power to perceive and think, or else joined and fixed to matter, so disposed, a thinking immaterial substance." Essay, IV, iii, 6 (F.II. 192-193). Cf. John LOCKE, Mr. Locke's Reply to the Bishop of Worcester's Answer to his Second Letter. Works, Vol. 4, p. 468-471. Dr. Clapp has attempted to clarify Locke's doctrine of the mind by considering it as a power, as a substance, and as a knower; cf. Gordon James CLAPP, Locke's Conception of the Mind, New York, The Journal of Philosophy, 1949, p. 25-122. Cf. Richard I. AARON, John Locke, p. 129-153; and Albert HOFSTADTER, Locke and Scepticism, New York, Albee Press, 1935, p. 22-32.

thinking constitute "the first step a man makes towards the discovery of anything, and the groundwork whereon to build all those notions [i.e., complex ideas] which ever he shall have naturally in this world."¹⁴³ For Locke ideas of sensation as well as ideas of reflection are simple ideas, i.e., mental contents or appearances that are not distinguishable into heterogeneous ideas; regarding the former he says,

Though the qualities that affect our senses are, in the things themselves, so united and blended, that there is no separation, no distance between them; yet it is plain, the ideas they produce in the mind enter by the senses simple and unmixed. For, though the sight and touch often take in from the same object, at the same time, different things; —as a man sees at once motion and colour; the hand feels softness and warmth in the same piece of wax: yet the simple ideas thus united in the same subject, are as perfectly distinct as those that come in by different senses. [...] And there is nothing can be plainer to a man than the clear and distinct perception he has of those simple ideas; which, being each in itself uncompounded, contains in it nothing but one uniform appearance, or conception in the mind, and is not distinguishable into different [i.e., in kind] ideas.¹⁴⁴

Each simple idea, accordingly, is an atomic datum in one's mind, which, however, may be a composite of homogeneous parts; and, since Locke defines consciousness as "the

¹⁴³ Essay, II, i, 24 (F.I. 142).

¹⁴⁴ Essay, II, ii, 1 (F.I. 144-145). Cf. Essay, II, xv, 9 (F.I. 264-267).

perception of what passes in a man's own mind",¹⁴⁵ simple ideas may be called "atoms of consciousness".

Having discussed simple ideas of sensation and reflection in his Essay, Book Two, Chapters Three through Seven, Locke then adds in Chapter Eight of this same Book some further considerations concerning simple ideas of sensation. Here he insists that

To discover the nature of our ideas [of sensation] the better, and to discourse of them intelligibly, it will be convenient to distinguish them as they are ideas or perceptions in our minds; and as they are modifications of matter in the bodies that cause such perceptions in us: that so we may not think (as perhaps usually is done) that they [i.e., simple ideas of sensation] are exactly the images and resemblances of something inherent in the subject [i.e., the extramental body]; most of those [ideas] of sensation being in the mind no more the likeness of something existing without us, than the names that stand for them are the likeness of our ideas, which yet upon hearing they are apt to excite in us.¹⁴⁶

In this text Locke asserts that ideas of sensation are in one's mind as well as in extramental bodies; in the text which follows, however, his meaning is evidently that ideas of sensation, i.e., those uncompounded appearances which are the immediate objects of the mind's notice, are in one's mind only, and that the objective causes of (or powers to produce) those simple ideas in one's mind are in

¹⁴⁵ Essay, II, i, 19 (F.I. 138).

¹⁴⁶ Essay, II, viii, 7 (F.I. 168).

extramental bodies only, and are properly called (not ideas, but) qualities of bodies:

Whatsoever the mind perceives in itself, or is the immediate object of perception, thought, or understanding, that I call idea; and the power to produce any idea in our mind, I call quality of the subject wherein that power is. Thus a snowball having the power to produce in us the ideas of white, cold, and round,—the power to produce those ideas in us, as they are in the snowball, I call qualities; and as they are sensations or perceptions in our understanding, I call them ideas; which ideas, if I speak of sometimes as in the things themselves, I would be understood to mean those qualities in the objects which produce them in us.¹⁴⁷

Locke's theory of qualities will now be examined; this in turn will lead to a clarification of the epistemological subject-object problem which is involved in his representative theory of perception.

B. HOW ONE ACQUIRES SIMPLE IDEAS OF THE QUALITIES OF MATERIAL BODIES

As has been seen, Locke defines the quality of a body as its "power to produce any [simple] idea [of sensation] in our mind."¹⁴⁸ In other words, the qualities of material bodies are the remote extramental causes of the simple ideas one's mind has of those qualities. The process by

¹⁴⁷ Essay, II, viii, 8 (F.I. 169). Cf. Draft B, 61 (R. 123-124).

¹⁴⁸ Essay, II, viii, 8 (F.I. 169).

which one acquires such ideas Locke describes as follows: a material body causes a motion-pattern in one's sense-organs either immediately (as in the cases of touch and taste), or mediately (i.e., by emitting light rays that affect the pupil of one's eye; by causing the air to vibrate, which in turn affects one's ear; and, by emitting odoriferous particles, which in turn affect one's olfactory nerves);¹⁴⁹ the motion-patterns thus caused in one's sense-organs are

... thence continued by our nerves, or animal spirits, by some parts of our bodies, to the brains or the seat of sensation, there to produce [in an incomprehensible manner¹⁵⁰] in our minds the particular ideas [i.e., the simple ideas of the qualities of material bodies] we have of them [i.e., the qualities of material bodies].¹⁵¹

C. THE QUALITIES OF MATERIAL BODIES

For Locke the qualities of material bodies are of three types, namely, primary or original qualities, secondary or sensible qualities, and tertiary qualities. Each of these types will now be examined.

149 Cf. John LOCKE, Elements of Natural Philosophy, Chapter 11. Works, Vol. 3, p. 323-328.

150 Cf. John LOCKE, An Examination of P. Malebranche's Opinion of Seeing all Things in God, section 10. Works, Vol. 9, p. 217.

151 Essay, II, viii, 12 (F.I. 171-172).

1. THE PRIMARY QUALITIES OF MATERIAL BODIES

Locke's principal description of primary qualities must be cited in full, for it contains extremely important points that are apt to be overlooked. He says that the primary or original qualities of material bodies are those powers which

... are utterly inseparable from the body, in what state soever it be; and such as in all the alterations and changes it suffers, all the force can be used upon it, it constantly keeps; and such as sense constantly finds in every particle of matter which has bulk enough to be perceived; and the mind finds inseparable from every particle of matter, though less than to make itself singly be perceived by our senses: v.g. Take a grain of wheat, divide it into two parts; each part has still solidity, extension, figure, and mobility: divide it again, and it retains still the same qualities; and so divide it on, till the parts become insensible; they must retain still each of them all those qualities. For division (which is all that a mill, or pestle, or any other body, does upon another, in reducing it to insensible parts) can never take away either solidity, extension, figure, or mobility from any body, but only makes two or more distinct separate masses of matter, of that which was but one before; all which distinct masses, reckoned as so many distinct bodies, after division, make a certain number. These I call original or primary qualities of body, which I think we may observe to produce simple ideas in us, viz. solidity, extension, figure, motion or rest, and number.¹⁵²

¹⁵² Essay, II, viii, 9 (F.I. 169-170). The simple idea of solidity is received from the sense of touch, cf. Essay, II, iv, 1 (F.I. 151-152); the simple ideas of extension, figure, motion and rest are received from the sense of sight and the sense of touch, cf. Essay, II, v (F.I. 158); and the simple idea of number is received from each of the five senses, cf. Essay, II, xvi, 1 (F.I. 270).

Notice that the following principle is implicit in this text: "Every material body (be it an atom, or an aggregate of atoms) is solid, is extended, is figured, is in motion or at rest, and is a number, i.e., is a unity." Another principle is likewise implied here: "One acquires ideas of the primary qualities of those material bodies that are of sufficient bulk to cause motion-patterns in one's sense-organs." This means, then, that Locke's atomic theory is not justified by sensation: sensory experiences do not yield simple ideas of atoms, nor of their primary qualities. Speaking of solidity, for example, Locke says

... though our senses take no notice of it, but in masses of matter, of a bulk sufficient to cause a sensation in us: yet the mind, having once got this [simple] idea [of solidity] from such grosser sensible bodies, traces it further, and considers it, as well as figure, in the minutest particle [i.e., in an atom] of matter that can exist; and finds it inseparably inherent in body, wherever or however modified.¹⁵³

Now when one recalls that for Locke a simple idea is an immediate object of perception, an immediate object that "contains in it nothing but one uniform appearance, or conception in the mind, and is not distinguishable into different ideas",¹⁵⁴ his statement that "the mind finds [primary qualities] inseparable from every particle [even an

153 Essay, II, iv, 1 (F.I. 152).

154 Essay, II, ii, 1 (F.I. 145).

atom] of matter",¹⁵⁵ as well as his statement that the mind in possession of simple ideas of the primary qualities of gross material bodies "traces it [solidity] further, and considers it, as well as figure, in the minutest particle [i.e., in an atom] of matter",¹⁵⁶ can only mean that the mind assumes that each atom of a gross material body is endowed with the same primary qualities that one's simple ideas reveal a gross aggregate of atoms to have. In his Essay, Book Two, Chapter Eight, section fifteen, Locke asserts "that the ideas of primary qualities of bodies are resemblances of them, and their patterns do really exist in the bodies themselves."¹⁵⁷ In other words, one's simple ideas of primary qualities do correspond with and resemble the outward primary qualities of gross material bodies;¹⁵⁸ they do not, however, correspond with and resemble the supposed primary qualities of each of the atoms of such bodies:

These insensible corpuscles, being the active parts of matter, and the great instruments of nature, on which depend not only all their secondary qualities, but also most of their natural operations, our want of precise distinct ideas of their primary qualities keeps us in an incurable

155 Essay, II, viii, 9 (F.I. 169).

156 Essay, II, iv, 1 (F.I. 152).

157 Essay, II, viii, 15 (F.I. 173).

158 Cf. Essay, III, vi, 9 (F.II. 64); Essay, IV, vi, 12 (F.II. 263); and Essay, IV, xii, 11 (F.II. 350).

ignorance of what we desire to know about them. I doubt not but if we could discover the figure, size, texture [i.e., the order and situation], and motion of the minute constituent parts [i.e., the atoms] of any two bodies [in other words, if we could discover the real essences of any two bodies], we should know without trial several of their operations one upon another; as we do now the properties of a square or a triangle.¹⁵⁹

And as a consequence of this "want of precise distinct ideas of their primary qualities"—a consequence that will be examined in Chapter Four of this study—Locke is

... apt to doubt that, how far soever human industry may advance useful and experimental philosophy in physical things, scientific will still be out of our reach: because we want perfect and adequate [complex] ideas [i.e., one cannot construct perfect and adequate complex ideas out of the simple ones that he has received in sensation] of those very bodies [i.e., material substances or aggregates of atoms] which are nearest to us, and most under our command. [...] Thus, having no ideas of the particular mechanical affections of the minute parts of bodies that are within our view and reach, we are ignorant of their constitutions [i.e., their real essences or atomic structures], powers, and operations:....¹⁶⁰

¹⁵⁹ Essay, IV, iii, 25 (F.II. 216).

¹⁶⁰ Essay, IV, iii, 26 (F.II. 217-218). And, it might be asked, how one might construct even imperfect and inadequate complex ideas of those bodies without violating the Lockean principle which states that: "All those sublime thoughts which tower above the clouds, and reach as high as heaven itself, take their rise and footing here: in all that great extent wherein the mind wanders, in those remote speculations it may seem to be elevated with, it stirs not one jot beyond those ideas which sense or reflection have offered for its contemplation." Essay, II, i, 24 (F.I. 142).

2. THE SECONDARY QUALITIES OF MATERIAL BODIES

Locke's theory of secondary qualities comes as no surprise to anyone who is acquainted with the history of atomism. Among Locke's principal statements concerning his theory of the secondary qualities of material bodies are the following:

- a) ... [secondary qualities] in truth are nothing in the objects themselves but powers to produce various sensations in us by their primary qualities, i.e. by the bulk, figure, texture, and motion of their insensible parts, as colours, sounds, tastes, &c.¹⁶¹
- b) ... the [simple] ideas [of sensation] produced in us by these secondary qualities have no resemblance of them at all. There is nothing like our ideas [e.g., of blue colour and sweet scent], existing in the bodies themselves [e.g., the violet or bluebonnet]. They are, in the bodies we denominate from them, only a power to produce those sensations in us: and what is sweet, blue, or warm in idea, is but the certain bulk, figure, and motion of the insensible parts, in the bodies themselves, which we call so.¹⁶²
- c) ... secondary and imputed qualities, [...] are but the powers of several combinations of those primary ones, when they operate without being distinctly discerned;....¹⁶³
- d) The reason why the one [i.e., secondary qualities] are ordinarily taken for real qualities, [...] seems to be, because the ideas we have of distinct colours, sounds, &c., containing nothing at all in

¹⁶¹ Essay, II, viii, 10 (F.I. 170). Cf. Essay, II, viii, 14 (F.I. 173).

¹⁶² Essay, II, viii, 15 (F.I. 173).

¹⁶³ Essay, II, viii, 22 (F.I. 178).

them of bulk, figure, or motion, we are not apt to think them [i.e., the ideas of secondary qualities] the [mental] effects of these primary qualities; which appear not, to our senses, to operate in their production, and with which they have not any apparent congruity or conceivable connexion. Hence it is that we are so forward to imagine, that those ideas [of secondary qualities] are the resemblances of something really existing in the objects themselves: since sensation discovers nothing of bulk, figure, or motion of parts in their production; nor can reason show how bodies, by their bulk, figure, and motion, should produce in the mind the ideas of blue or yellow, &c.¹⁶⁴

Thus, the secondary qualities of material bodies, according to Locke, cause in one's mind a distinct set of simple ideas of sensation,—such as colors, tastes, odors, sounds, and temperatures. Unlike one's ideas of primary qualities, one's ideas of secondary qualities do not resemble (are not copies of) their causes; in other words, the material bodies that are causing the motion-patterns in one's sense-organs which thence produce simple ideas of red and sweet, for instance, are not red and sweet bodies.¹⁶⁵ Such ideas,

¹⁶⁴ Essay, II, viii, 25 (F.I. 180).

¹⁶⁵ Dr. Thompson asserts correctly that: "From one standpoint Locke's statement of the relation between our ideas of secondary qualities and the qualities of things themselves is rationalistic. The nature of those qualities is never given in experience. The secondary qualities are really, in bodies, the primary qualities of their minute parts; this is what we are forced to think, Locke holds, on the basis of the atomic theory of matter. Hence, so far as their secondary qualities are concerned things are not really what they appear to be to perception but are really what we conceive them to be. From another aspect the theory of secondary qualities is a step toward an agnostic realism;

however, are not totally subjective, for their remote causes are objective, namely, "the certain bulk, figure, and motion of the insensible parts, in the bodies themselves",¹⁶⁶ i.e., the atomic structures of material bodies that are immediately or mediately causing motion-patterns in one's sense-organs.

Locke does not claim to know what figure, size, or motion of the insensible parts of bodies produce simple

it definitely distinguishes between the external world as it is in itself and the world as it appears, and states that some appearances fail to reveal the real nature of what appears. This doctrine is the entering wedge which forces the realm of sense experience apart from the things to which this experience refers, separating the world of ideas from the world of things in themselves." Samuel Martin THOMPSON, A Study of Locke's Theory of Ideas, Monmouth, Illinois, Commercial Art Press, 1934, p. 56. It is of interest to note that Galileo Galilei (1564-1642) in his The Assayer (1623) says: "... whenever I conceive any material or corporeal substance, I immediately feel the need to think of it as bounded, and as having this or that shape; as being large or small in relation to other things, and in some specific place at any given time; as being in motion or at rest; as touching or not touching some other body; and as being one in number, or few, or many. From these conditions I cannot separate such a substance by any stretch of my imagination. But that it must be white or red, bitter or sweet, noisy or silent, and of sweet or foul odor, my mind does not feel compelled to bring in as necessary accompaniments. [...] I think that tastes, odors, colors, and so on are no more than mere names so far as the object in which we place them is concerned, and that they reside only in the consciousness." Galileo GALILEI, The Assayer. (Discoveries and Opinions of Galileo, a selection of texts trans. with an introduction and notes by Stillman Drake, Garden City, New York, Doubleday and Company, Inc., 1957, p. 274.)

166 Essay, II, viii, 15 (F.I. 173).

ideas of secondary qualities in one's mind; on this point he says:

We are so far from knowing what figure, size, or motion of parts produce a yellow colour, a sweet taste, or a sharp sound, that we can by no means conceive how any size, figure, or motion of any particles, can possibly produce in us the idea of any colour, taste, or sound whatsoever: there is no conceivable connexion between the one and the other.¹⁶⁷

Strictly speaking, Locke does not claim to know that the figures, the sizes, and the motions of the atoms of material

¹⁶⁷ Essay, IV, iii, 13 (F.II. 202). Cf. Essay, II, viii, 13 (F.I. 172-173). Attempts to indicate the types of atoms and their motions that cause subjective appearances are, according to Thomas Hobbes who was a contemporary of Gassendi, the endeavors of soothsayers, not philosophers: "By what variety of motions the different kinds of tastes, which are innumerable, may be distinguished, I know not. I might with others derive them from the diverse figures of those atoms, of which whatsoever may be tasted consisteth; or from the diverse motions which I might, by way of supposition, attribute to those atoms; conjecturing, not without some likelihood of truth, that such things as taste sweet have their particles moved with slow circular motion, and their figures spherical; which makes them smooth and pleasing to the organ; that bitter things have circular motion, but vehement, and their figures full of angles, by which they trouble the organ; and that sour things have strait and reciprocal motion, and their figures long and small, so that they cut and wound the organ. And in like manner I might assign for the causes of other tastes such several motions and figures of atoms, as might in probability seem to be the true causes. But this would be to revolt from philosophy to divination." Thomas HOBBS, Elements of Philosophy, Part IV, Physics, Chapter 29, section 17. The English Works of Thomas Hobbes of Malmesbury, Germany, Scientia Aalen, 1962 (Reprint of the edition 1839), Vol. 1, p. 507. Hobbes, accordingly, would consider the following to be the text of a soothsayer: Petri GASSENDI, Syntagmatis Philosophici, Part II, Physica, Liber VI, Chapters 5-14. Opera Omnia, Vol. 1, p. 388, column 1 - p. 457, column 2.

bodies produce simple ideas in one's mind; his entire discussion of the qualities of material bodies rests upon an assumption, as is evident in the following text:

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.¹⁶⁸

3. THE TERTIARY QUALITIES OF MATERIAL BODIES

While examining Locke's theory of the tertiary qualities of material bodies, it is necessary to keep the following terms before one's mind. The quality of a body is its power to produce a simple idea of sensation in one's mind.¹⁶⁹ Now powers may be active or passive: the active powers of things enable them to make changes; the passive powers of things enable them to receive changes.¹⁷⁰ Thus, the qualities of material bodies are active powers. For instance, "the sun has a [active] power to blanch wax, and wax a [passive] power to be blanched by the sun, whereby the yellowness is destroyed, and whiteness made to exist in its

¹⁶⁸ Essay, IV, iii, 16 (F.II. 205).

¹⁶⁹ Cf. Essay, II, viii, 8 (F.I. 169).

¹⁷⁰ Cf. Essay, II, xxi, 2 (F.I. 309).

room."¹⁷¹ The active power that enables the sun to produce a simple idea of heat in one's mind is called a secondary quality of the sun; and, that same active power may also be called (though Locke himself does not use this term) a tertiary quality of the sun, because it enables the sun to produce a change in the consistency of the atomic structure of wax, i.e., change it from a hard to a fluid state. The active powers (or secondary and tertiary qualities) of material bodies are nothing "but the certain bulk, figure, and motion of the insensible parts, in the bodies themselves",¹⁷² "resulting from the different modifications of the original [primary or real] qualities."¹⁷³ In other words, a material body has this or that secondary and tertiary quality at this moment, because it has this or that atomic structure at this same moment. Thus Locke attempts to reduce all of the qualities of material bodies to their primary ones. Finally, the qualities or active powers of things are likewise called causes; the powers as acting may be called causal activities; and, the modifications which such activities produce in a mind or a body are called effects. In Locke's philosophy of nature the term "cause" means "efficient cause":

171 Essay, II, xxi, 1 (F.I. 309).

172 Essay, II, viii, 15 (F.I. 173).

173 Essay, II, viii, 24 (F.I. 179).

"What I have hitherto spoken of causes I would be understood to meane of Efficient causes for as for the other three sorts of causes soe cald [i.e., material, formal and final causes] I doe not at present soe well understand their efficacy or causality."¹⁷⁴

Now the tertiary qualities of material bodies are, according to Locke,

... The power that is in any body, by reason of the particular constitution of its primary qualities, to make such a change in the bulk, figure, texture, and motion of another body, as to make it [i.e., that other body] operate on our senses differently from what it did before. Thus the sun has a power to make wax white, and fire to make lead fluid.¹⁷⁵

A tertiary quality, accordingly, is in a material body: it is a power in a body resulting from the peculiar constitution of the primary qualities of that body. In virtue of its tertiary quality a body can cause a change in the bulk, figure, texture, and motion of another body; consequently, some of the simple ideas a percipient now receives from the latter are different from those it received before the former body (in virtue of its tertiary quality) changed the latter body. For instance, prior to the causal activity of

¹⁷⁴ Draft A, 15 (A-G. 30). Cf. Gilson's and Langan's critique of this point: Etienne GILSON and Thomas LANGAN, Modern Philosophy, p. 206-207.

¹⁷⁵ Essay, II, viii, 23 (F.I. 179).

the sun upon a piece of wax, the atomic structure of that wax was such that it caused simple ideas of hardness and yellowness in Paul's mind; however, after the sun altered the atomic structure of the wax, the latter caused simple ideas of softness and whiteness in Paul's mind.

Locke then goes on to say that the secondary and tertiary qualities of material bodies

... are nothing else but several powers in them, depending on those primary qualities; whereby they are fitted, either by immediately operating on our bodies to produce several different ideas in us; or else, by operating on other bodies, so to change their primary qualities as to render them capable of producing ideas in us different from what before they did. The former of these, I think, may be called secondary qualities immediately perceivable: the latter, secondary qualities, mediately perceivable.¹⁷⁶

Notice that in this text Locke calls both secondary and tertiary qualities "secondary qualities"; he does so, because these qualities in things are the same active powers of those things. For instance, it is the same very brisk agitation of the insensible parts of the sun that both (a) causes the simple idea of a degree of heat in Paul's mind, and (b) causes an alteration in the atomic structure of wax (i.e., modifies it in such a way that it may now cause a simple idea of a lesser degree of hardness in Paul's mind than it did before). The important point to see in this

176 Essay, II, viii, 26 (F.I. 181-182).

text is why Locke says that secondary qualities are immediately perceivable, whereas tertiary qualities are mediately perceivable. To understand this point, the following text is somewhat helpful:

IN the notice that our senses take of the constant vicissitude of things, we cannot but observe that several particular, both qualities and substances, begin to exist; and that they receive this their existence from the due application and operation of some other being. From this observation we get our ideas of cause and effect. That which produces any simple or complex idea we denote by the general name, cause, and that which is produced, effect. Thus, finding that in that substance which we call wax, fluidity, which is a simple idea that was not in it before, is constantly produced by the application of a certain degree of heat we call the simple idea of heat, in relation to fluidity in wax, the cause of it, and fluidity the effect.¹⁷⁷

When this text is considered in the light of the above discussion of Locke's theory of the qualities of material bodies, the meaning of his assertion that their secondary qualities are immediately perceivable and their tertiary qualities mediately perceivable becomes somewhat intelligible. According to Locke's theory of perception, the sun, for instance, produces in one's mind a group of simple ideas out of which the mind constructs a complex idea to which one gives the name "sun". Now one of the elements in that complex idea or aggregate of simple ideas is the simple

¹⁷⁷ Essay, II, xxvi, 1 (F.I. 433-434). Cf. Draft A, 14-16 (A-G. 27-31); and Draft B, 131-134 (R. 273-276).

idea of heat—a simple idea which regularly occurs (or begins to exist) in that sequence of simple ideas out of which one constructs one's complex idea of the sun. But Locke calls that which produces a simple idea in one's mind a "cause", and the idea itself an "effect". Therefore, that in the sun which enables it to produce a simple idea of heat in one's mind is a cause—and, this cause is likewise called an "active power" or "secondary quality" of the sun. Here, three points ought to be noted: (1) The idea of this secondary quality is produced immediately, i.e., it is not acquired through the mediation of other ideas;¹⁷⁸ this is why Locke says that secondary qualities are immediately perceivable. (2) This simple idea of heat is not a resemblance or copy of its cause, which Locke assumes to be the very brisk agitation of the insensible parts of the sun.¹⁷⁹ And (3) the mind does not perceive in this simple idea of heat a tertiary quality of the sun; in other words, it does

178 Cf. Essay, II, xxiii, 7 (F.I. 397-398).

179 In fact, Locke says that one's ideas of the secondary qualities of bodies would disappear, if one could discover the primary qualities of their minute parts; for instance, he says: "Had we senses acute enough to discern the minute particles of bodies, and the real constitution on which their sensible qualities depend, I doubt not but they would produce quite different ideas in us: and that which is now the yellow colour of gold, would then disappear, and instead of it we should see an admirable texture of parts, of a certain size and figure." Essay, II, xxiii, 11 (F.I. 401).

not reveal that the sun has the power to produce an effect in another body. To acquire ideas of the tertiary qualities of the sun, one's mind must broaden the scope of its notice; it must notice, for instance, that the simple idea of hardness in the sequence of simple ideas out of which one constructs one's complex idea of wax is regularly displaced by the simple idea of fluidity because of a due application of a certain degree of the sun's heat. This is why, therefore, Locke says that the tertiary qualities are mediately perceivable.

Now what ideational content does the mind somehow acquire upon taking notice of such a regular succession of ideas? Does it acquire an "idea of an active power, a tertiary quality, of the sun making wax fluid"?—this seems to be what Locke is asserting.¹⁸⁰ But such an ideational content does not resemble the cause (which, according to Locke's atomic theory, is the very brisk agitation of the insensible parts of the sun) of this effect. True, and he does not maintain that one's ideas of the tertiary qualities of material bodies resemble those active powers or efficient causes in them; experience simply reveals that the sun, for instance, makes wax fluid, not how it does so:

¹⁸⁰ One's ideas of the active and passive powers of material beings are complex ideas: cf. Essay, II, xxiii, 7 (F.I. 397).

... I can have noe other certein undoubted knowledg of the constant connection of assigned causes and effects then what I have by my senses. Which too is but a grosse kinde of knowledg is noe more then this, that I see when I apply fire to gold it melts it; a load stone neare iron it moves it, that snow and salt put into a vessell of water in the inside hardens the water that touches it on the outside: but in many nay most of these I have noe knowledg of the modus operandi, the way how these effects are producd i.e. how these simple Ideas viz motion in the iron, fluidity in the gold and consistence in the water are in those several subjects producd, because these alterations being made by particles soe small and minute that they come not within the observation of my senses I cannot get any knowledg how they operate, but only am informd by my senses that the alterations are indeed made from whence by the by we may take a litle light how much in the information of our understandings we are beholding to our senses. For had we but senses that could discover to us the particles of water their figure size motion &c. when it is fluid. And also the different postures of those very particles, or the addition or separation of some particles &c. when the water was frozen i.e. hardend, we should as well know the very modus or way whereby cold produces hardnesse and consistency in water, as we doe the way how a joyner puts several peices of wood togeather to make a box or table which by tenants nails and pins we well enough perceive how it hangs togeather. And the motions of an animal would be as intelligible to us as those of a watch. But our senses faileing us in the discovery of those fine and insensible particles our understandings are unavoidably in the darke.¹⁸¹

And these lacunae in the mind of the tertiary qualities of material bodies are one of the reasons why—as will be seen

¹⁸¹ Draft A, 15 (A-G 29-30).

in Chapter Four of this study—Locke does not consider natural philosophy or physics to be a science.¹⁸²

D. A CONCLUDING REMARK

As has been seen, Locke asserts that simple ideas of the qualities of material bodies are in one's mind, and, furthermore, are the immediate objects of perception—qualities are in extramental things. And in another context he says, "since the things the mind contemplates are none of them, besides itself, present to the understanding, it is necessary that something else, as a sign or representation of the thing it considers, should be present to it: and these are ideas."¹⁸³ Now, when these two theories (i.e., Locke's theory of the qualities of material bodies and his representative theory of perception) are viewed together,

182 Cf. Essay, IV, iii, 25 (F.II. 216-217). For somewhat clarifying discussions of Locke's theory of qualities, cf. John DEWEY, "Substance, Power and Quality in Locke", in The Philosophical Review, 35 (1926), p. 22-38; Reginald JACKSON, "Locke's Distinction Between Primary and Secondary Qualities", in Mind, 38 (1929), p. 56-76; Samuel Martin THOMPSON, A Study of Locke's Theory of Ideas, p. 41-81; and Gregory D. WALCOTT, "Primary and Secondary Qualities", in The Philosophical Review, 35 (1926), p. 465-472. For a clarifying discussion of Locke's theory of cause and effect, cf. Richard I. AARON, John Locke, p. 182-190.

183 Essay, IV, xxi, 4 (F.II. 461). Regarding the phrase "besides itself", cf. F.II. 461, note 3.

one may agree with Professor Copleston (and many others) who observes that:

... the main difficulty which arises on Locke's premisses arises from the fact that for him an idea is 'the immediate object of perception, thought or understanding'. We do not know things immediately but mediately, by means of ideas. And these ideas [...] are regarded as representing things, as signs of them. Ideas of primary qualities really resemble things; ideas of secondary [and tertiary] qualities do not. But if what we know immediately are ideas, how can we ever know whether these ideas do or do not resemble things? How, for the matter of that, can we be certain that things other than our ideas even exist? [And, one might add: How can we know that what we know are ideas and not things—would this not require a knowledge of both?] For if we know only ideas immediately, we are in no position to compare ideas with things and ascertain whether the former resemble the latter or not, or even to establish whether there are any things other than ideas. On Locke's representative theory of perception he has no means of establishing the validity of his distinction between primary and secondary qualities.¹⁸⁴

¹⁸⁴ Frederick COPLESTON, S.J., A History of Philosophy. Hobbes to Hume, London, Burns Oates & Washbourne Ltd., 1959, p. 89. Regarding the topic of this concluding remark, cf. Virgil C. ALDRICH, "Locke's Theory of Perception", in The Rice Institute Pamphlet, 20 (1933), p. 238-259; Justus BUCHLER, "Act and Object in Locke", in The Philosophical Review, 46 (1937), p. 528-535; Henry H. FERGUSON, "Locke's Theory of Knowledge", in The Australasian Journal of Psychology and Philosophy, 12 (1934), p. 107-118 and 186-198; P. S. NAIDU, "Critical Realism and John Locke", in The Journal of Philosophy, 32 (1935), p. 431-437; Reginald JACKSON, "Locke's Version of the Doctrine of Representative Perception", in Mind, 39 (1930), p. 1-25; William Curtis SWABEY, "Locke's Theory of Ideas", in The Philosophical Review, 42 (1933), p. 573-593; and Samuel Martin THOMPSON, A Study of Locke's Theory of Ideas, p. 16-40.

CHAPTER THREE

A CONCEPTUALISTIC PERSPECTIVE

When a person begins to philosophize, he finds that the problem of universals is both interesting and challenging. The principal purpose of CHAPTER THREE is to examine John Locke's solution to this problem.

SECTION ONE has a two-fold purpose: (i) to indicate what the problem of universals is; and (ii) to examine briefly four pre-Lockean solutions to this problem.

In order to come to some understanding of Locke's theory of universals, it is necessary that one first examine the various types of activities which Locke attributes to the human mind. The principal aim of SECTION TWO, accordingly, is to examine those sections of Locke's works which deal with these activities. Now it should be mentioned at the outset that Locke's treatment of mental activities is scant and perfunctory; moreover, he never clearly indicates the precise contribution which each of these activities makes to the genesis of complex ideas. This is most unfortunate, for it renders a definitive interpretation of Locke's theory of universals impossible.

SECTIONS THREE, FOUR and FIVE will examine Locke's theory of "modes", "ideas of relations" and "ideas of

substances" respectively; these sections will endeavor to show in what way those ideas may constitute facets of Locke's theory of universals.

SECTION I

THE PROBLEM OF UNIVERSALS AND FOUR PRE-LOCKEAN SOLUTIONS

A. THE PROBLEM OF UNIVERSALS

As both knowledge (be it sense or intellectual) and the communication of it involve signs of one type or another, it will be instructive to indicate briefly (i) the general nature of a sign, and (ii) two basic types of signs. A sign may be defined as anything that stands for, or points to, or gives knowledge of something other than itself. And the two basic types of signs that are of special importance to the present topic of this study are called "instrumental signs" and "formal signs". An instrumental sign may be defined as that which is itself first grasped and then gives knowledge of something else, namely, that which it signifies or points to. A formal sign may be defined as that which gives knowledge of something other than itself without first being known itself.

Knowledge involves signs: this is evident from the fact that when one comes to know a thing, he does not become that thing in a physical manner; rather, he receives a

non-physical sign of it. Philosophic tradition has given to these signs such names as "species", "phantasm", "idea", "concept", and so on. Some philosophers maintain that what they first know are these ideational contents—this is Locke's position, for instance; hence, for him an idea is an instrumental sign. Other philosophers insist that what they first know are things—this is Saint Thomas Aquinas' position, for instance; hence, for him an idea is a formal sign.

Now the phantasms and concepts involved in a person's sense and intellectual knowledge cannot be arbitrary or conventional, for they must give him a knowledge of something other than themselves, namely, the sensible and intelligible aspects of things. Granting this, it would seem that there should be a one-to-one correspondence between the sensory or intellectual sign and the sensible or intelligible aspect of the thing signified, for how could one sign give a person a knowledge of an aspect of many individual things? On the level of sense knowledge, this one-to-one correspondence does seem to obtain. For example, the sensory image or sign in Paul's sense power of the index finger of this man Mark does give him (this man Paul) sense knowledge of the distinctive configuration of the lines and whorls of the epidermis of the index finger of this man Mark, but does not give Paul sense knowledge of that

sensible aspect of that man James, or that man George, and so on. Thus, universality, in the strict sense of the word, is not a property of sensory images or signs.

As has been said, the communication of knowledge involves signs; ordinarily one communicates his ideas or thoughts by means of a language, the basic elements of which are signs or words (graphic or oral). Now words are instrumental signs; moreover, they are conventional signs, as is evidenced by the numerous translations of books and speeches. But (and this is an extremely important point) the meaning or signification of a word is not to be identified with its graphic or oral expression. A graphic or oral expression signifies an idea or thought, and the meaning of the word which is used to point to that idea or thought is identical with that idea or thought—and, as has been seen above, an idea or a thought is not a conventional or arbitrary sign.

Now in the paragraph which immediately precedes the latter one, the one word "man" was said of Paul, Mark, James, George, and so on—each of which is a concrete individual man, an individuated, singular, incommunicable existent that is independent of one's knowledge. But, as has been seen, a word is an instrumental and conventional sign that points to another sign which is not a conventional sign, namely, an idea or thought. It seems, then, that one

does possess signs which (unlike sensory images or signs) do enjoy the property of universality. And there is no apparent one-to-one correspondence between these signs—which may be called intellectual signs or ideas, to distinguish them from sensory signs or images—and the intelligible aspects of the objects they signify, for each is one sign (say the idea "man") and there are many individuals (say this man Paul, that man Mark, and so on), which are signified by that sign. But, it may be objected, universality is not a property of individuals, and, hence, it must be a property that the mind adds to its ideas. To this interjection one must answer: Yes! Is there, however, any justification for this addition of universality thus given by the mind? If there is no foundation in many things for the universality of one's intellectual signs, then no one of them is a sign or presentative species of intelligible aspects of many individual things—in other words, one's universal knowledges have no objects, are not knowledges of things. Granted. But does not universal knowledge have a foundation in reality? The most impressive evidences, perhaps, that universal knowledges do have foundations in reality are the undeniable and tremendous successes scientists in each field have had and are having in controlling individual realities. But scientific knowledges have the characteristics of universality and necessity—the chemical law of the conservation of

energy, for instance, which states that: "In a chemical change there is no loss or gain but merely a transformation of energy from one form to another", is a universal and necessary proposition that is evidently a sign of a multitude of individuals, each of which has the characteristics of singularity and contingency.

Now, if one grants that there is not a one-to-one correspondence between his ideas or intellectual signs and the intelligible aspects of the many individuals that he insists they point to or signify, he must (or, at least, he should) indicate common elements in that multiplicity which justify his common, general or universal ideas. Is it sufficient to simply point to the obvious fact that some realities do resemble one another, and assert that these observable resemblances justify one's universal ideas? Or, should not a "lover of wisdom" seek to discover in a multiplicity of similar individuals a non-observable ontological element that is numerically different but specifically identical, which may both account for their similarity and serve as a foundation and justification for conceiving them as one?

In conclusion, it may be said that man is actively and knowingly present to the world—a world which appears to his senses to be composed of individual and singular things. The problem of universals only arises within this context. Man's intellectual knowledge, on the one hand, is universal,

necessary (at least men strive to make it such) and pretends to be and is knowledge of things; the things known, on the other hand, are singular and contingent. The problem is, then, how to reconcile these two apparently contradictory notions: (i) universality and singularity, and (ii) necessity and contingency. One way to "solve" the problem is to assert that there is no problem. Why? Because all one's ideas are singular and contingent through and through. One can say this, of course; but then what about the universality of this statement? Is it not meant to assert a universal and necessary truth, namely, that all one's ideas are singular and contingent through and through? But to assert that this is a universal and necessary truth is to deny that all one's ideas are singular and contingent. Therefore, to affirm with universal necessity that all one's ideas are singular and contingent through and through, is obviously a contradiction. The other way to solve the problem is to face up to both horns of the dilemma, and then attempt to find an adequate solution to them.¹

¹ As the problem of universals is a perennial one, the literature on this subject is legion; the following, accordingly, are but a few of the many works which the present writer has found to be of value on this topic: Richard I. AARON, The Theory of Universals, Oxford, Clarendon Press, 1952, passim; Richard I. AARON, "Two Senses of the Word Universal", in Mind, 48 (1939), p. 168-185; Etienne GILSON, Elements of Christian Philosophy, Garden City, New York, Doubleday and Company, Inc., 1960, p. 95-99 and

B. FOUR PRE-LOCKEAN SOLUTIONS TO THE PROBLEM OF UNIVERSALS

Since the problem of universals dates back at least to the time of Heraclitus of Ephesus (fl. ca. 500 B.C.), and since it is a fundamental and perennial philosophic problem, one simply cannot trace its history in the space of a few pages. Therefore, "SECTION I, B" of the present study will be limited to two things, namely, (i) it will examine briefly the doctrines of four prominent pre-Lockean philosophers which are basic to an understanding of their solutions to the problem of universals, and (ii) it will describe in a general way the four types of solutions (namely, Exaggerated Realism, Moderate Realism, Conceptualism and Nominalism), that have been given to this problem—the phrase "in a general way" is used, because there are,

220-222; Morris LAZEROWITZ, "The Existence of Universals", in Mind, 55 (1946), p. 1-24; Wm. P. MONTAGUE, "The Psychological Genesis of Universals", in Philosophy of Knowledge, Selected Readings, Roland Houde and Joseph P. Mullally (edd.), Chicago, J. P. Lippincott Co., 1960, p. 137-144; Jared S. MOORE, "Why a Realism of Universals?", in The Journal of Philosophy, 36 (1939), p. 684-688; Arthur PAP, "On the Meaning of Universality", in The Journal of Philosophy, 40 (1943), p. 505-514; H. H. PRICE, Thinking and Experience, London, Hutchinson's University Library Hutchinson House, 1953, p. 7-32; N. K. SMITH, "Nature of Universals", in Mind, 36 (1927), p. 137-157, 265-280 and 393-422; and D. C. WILLIAMS, "Nature of Universals and of Abstractions", in Monist, 41 (1931), p. 583-593.

of course, varieties of solutions within each of these four principal perspectives.²

1. EXAGGERATED REALISM

William of Champeaux (a town near Melun and Paris) was born about 1070 and died around 1121. He studied logic at Compiègne under Roscelin (ca. 1050-ca. 1123), the leading Nominalist of that time. After having adopted a Realist perspective, William taught logic and rhetoric at the Cathedral School of Paris. Peter Abelard (ca. 1079-1142), who was soon to become a Moderate Realist, was one of William's (as well as Roscelin's) pupils. As there are no extant works by William concerning his theory of universals, his doctrine must be gleaned from the works of Abelard.

In his Historia Calamitatum, Chapter Two, Abelard reports the theory of universals taught initially by William of Champeaux to be as follows:

2 In addition to the many excellent histories of philosophy that have been written, one will find the following works enlightening: for the ancient period, cf. Francis H. PARKER, "A Realistic Appraisal of Knowledge", in Philosophy of Knowledge. Selected Readings, Roland Houde and Joseph P. Mullally (edd.), p. 18-48; for the Middle Ages, cf. Etienne GILSON, The Unity of Philosophical Experience, p. 3-30, and Meyrick H. CARRE, Realists and Nominalists, London, Oxford University Press, 1950, passim; and for the modern and contemporary period, cf. the articles by Robert G. Miller, C.S.B., in the forthcoming edition of the Catholic Encyclopedia.

Moreover that opinion concerning the community of universals would maintain that one and the same thing [namely, genus or species] is essentially, totally and simultaneously present in its singular individuals. In fact, between them there would be no essential diversity, but merely a diversity by reason of a multitude of accidents.³

In other words, William of Champeaux maintained that a universal (genus or species) is a unitary extramental thing, a unitary substance (essence or nature) that is totally and simultaneously present in (or possessed by) each of the individual members of the class in question. One and the same substance of humanity, for instance, is totally and simultaneously present in this man Paul, that man Mark, and so on. Paul, Mark, and so on, are individual men, but they are not diversified substantially (for they possess, according to William of Champeaux, totally and simultaneously one and the same substance of humanity); rather, they are diversified accidentally: the unitary substance of humanity is here made "Paul" through the qualities and quantities which are peculiar to him, there made "Mark" through the qualities and quantities which are peculiar to him, and so on.

Since Abelard's attacks upon this doctrine (as well as William's modified version of it) are well known, they

³ "Erat autem in ea sententia de communitate universalium, ut eandem essentialiter rem totam simul singulis suis inesse astrueret individuus; quorum quidem nulla esset in essentia diversitas, sed sola multitudine accidentium varietas." Petri ABAELARDI, Historia Calamitatum, c. 2 (P.L., Vol. 178, column 119, sections A and B).

need not be examined here. Of importance to the present section of this study is (a) to see why such a doctrine is called Realism, and (b) to see the three types of universals that Realists in general admit. William of Champeaux's theory of universals (as well as the doctrines of other philosophers that are basically akin to his) is called a doctrine of Realism (or Exaggerated Realism to distinguish it from that of Moderate Realism), not because he admits that there are universal words and universal ideas, but, rather, because he asserts that there are universal elements in extramental things (res)—the latter being the justification of the former.

Basic to (Exaggerated) Realism is the belief that there are universal words, universal ideas and universal things—the latter's universality being independent of one's mind and paralleling the universal ideas that one has of them.

2. MODERATE REALISM

In order to understand the position of Saint Thomas Aquinas on the nature of universals, one must first note several of his basic philosophic tenets. Thomas asserts that the natural capacity to possess the form of another in an immaterial way is precisely what distinguishes knowers from non-knowers:

... intelligent beings are distinguished from non-intelligent beings in that the latter possess only their own form; whereas the intelligent being is naturally adapted to have also the form of some other thing; for the idea [species] of the thing known is in the knower.⁴

Knowledge consists in possessing the form of another in an immaterial manner: "The noblest way of possessing a thing is to possess it formally and not materially, that is, in an immaterial manner, and this is the definition of knowledge."⁵ But "Knowledge is according to the mode of the one who knows; for the thing known is in the knower according to the mode of the knower."⁶ Consequently,

... the more immaterially a thing receives the form of the thing known, the more perfect is its knowledge. Therefore the intellect which abstracts the species not only from matter, but also from the individuating conditions of matter, has more perfect knowledge than the senses, which receive the form of the thing known, without matter indeed, but subject to material conditions.⁷

4 Saint THOMAS AQUINAS, Summa Theologica, Part I, Question 14, article 1, c. (Summa Theologica, trans. Fathers of the English Dominican Province, New York, Benziger Brothers, Inc., 1947, Vol. 1, p. 72.) Future references to this work will be cited as follows: S.T., I, 14, 1, c. (Vol. 1, p. 72.)

5 "Sicut autem habere aliquid in se formaliter et non materialiter, in quo consistit ratio cognitionis, est nobilissimus modus habendi, vel continendi aliquod, ..." Saint THOMAS AQUINAS, Opera Omnia, Stanislai Eduardi Fretté (ed.), Paris, Vivès, 1875, Vol. 26, p. 553.

6 S.T., I, 14, 1, ad 3. (Vol. 1, p. 73.)

7 S.T., I, 84, 2, c. (Vol. 1, p. 423.)

Saint Thomas, accordingly, distinguishes two levels of human knowledge, namely, sense knowledge and intellectual knowledge, and insists that the latter type apprehends aspects of reality which are not grasped by the former:

Although the operation of the intellect has its origin in the senses: yet, in the thing apprehended through the senses, the intellect knows many things which the senses cannot perceive.⁸

Human sense powers (both external and internal) are, according to Saint Thomas, acts of corporeal organs,⁹ and "for the operation of the senses, a spiritual immutation is required, whereby an intention [i.e., a sensible species or presentative likeness] of the sensible form [of the thing] is effected in the sensible organ."¹⁰ Although it is beyond the scope of this study to examine each of the five external and four internal senses, the general meaning of Saint Thomas' position may be brought out somewhat by considering the sense of sight and its activity as follows: (a) material bodies are able to emit, reflect or refract light rays of various wave lengths through translucent media; (b) when these light rays impinge upon the retina of the eye, they cause stimuli to be sent to the visual center of the brain

8 S.T., I, 78, 4, ad 4. (Vol. 1, p. 396.)

9 Cf. S.T., I, 78, 4, c. (Vol. 1, p. 395.)

10 S.T., I, 78, 3, c. (Vol. 1, p. 393.)

via waves of depolarization in the optic nerve; (c) this quantitative part of the human body (i.e., the visual sense organ—the eye, optic nerve and visual center of the brain) possesses its specific physiological organization or structure because it is being informed, structuralized or actualized by the human soul; (d) the soul exercises its immanent act of seeing or visual knowing through its distinctive sense power of sight in this quantitative part of the body; and (e) the physical stimuli (i.e., the light rays) that modify the sensory organ of vision (i.e., the physiological aspect of the sense power) are but carriers of immaterial influences (i.e., sensible species or presentative likenesses) which determine or specify the vital activities of the soul's power of vision (the psychological aspect of the sense power) in such a way that the person sees or knows the color aspect of the material thing present to him.

Now of special significance to the present topic of this study are the following two points: 1. by means of his senses alone a person grasps only the outward accidents of a thing:

Sense does not apprehend the essences of things, but only their outward accidents. In like manner neither does the imagination; for it apprehends only the images of bodies. The intellect alone

apprehends the [substantial as well as the accidental] essences of things.¹¹

And 2. the sensible species which are in one's external and internal senses are not universal presentative or representative likenesses: "... the sensible image in sense is the likeness of only one individual thing, and can give the knowledge of only one individual."¹²

In his De Veritate, Question One, Article Twelve, Saint Thomas asserts that:

The name intellect arises from the intellect's ability to know the most profound elements of a thing; for to understand (intelligere) means to read what is inside a thing (intus legere). Sense and imagination know only external accidents, but the intellect alone penetrates to the interior and to the essence of a thing.¹³

For Saint Thomas the intellect penetrates to the essence of a thing in the following manner:

... phantasms [or sensible species], since they are images of individuals, and exist in corporeal organs, have not the same mode of existence as the human intellect, and therefore have not the power of themselves to make an impression on the possible intellect. This is done by the power of the active intellect which by turning towards the phantasm

¹¹ S.T., I, 57, 1, ad 2. (Vol. 1, p. 283.) "And to be cognizant of the natures of sensible qualities does not pertain to the senses, but to the intellect." S.T., I, 78, 3, c. (Vol. 1, p. 393.)

¹² S.T., I, 14, 12, c. (Vol. 1, p. 82.)

¹³ Saint THOMAS AQUINAS, De Veritate, Question 1, article 12, reply. (Truth, trans. Robert W. Mulligan, S.J., Chicago, Henry Regnery Co., 1952, Vol. 1, p. 50.)

produces in the passive intellect a certain likeness which represents, as to its specific conditions only [i.e., its essence], the thing reflected in the phantasm. It is thus that the intelligible species is said to be abstracted from the phantasm; ...¹⁴

... the [possible] intellect, having been informed by the species of the thing, by an act of understanding forms within itself a certain intention [concept or likeness of the essence] of the thing understood, that is to say, its notion, which the definition signifies.¹⁵

Having seen how one acquires a concept that represents the essence of a thing, the point which remains to be seen is Saint Thomas' philosophic theory of universals (which is called Moderate Realism). For Saint Thomas universality is a property of an essence only as it exists in one's intellect—it is not a property of any essence as it exists in extramental reality.¹⁶ In extramental reality the essence man, for example, is an ontological principle that is individualized or restricted to this person called Paul; and this ontological principle or essence in Paul is numerically different from though specifically identical with that essence which is individualized or restricted to

¹⁴ S.T., I, 85, 1, ad 3. (Vol. 1, p. 433.) (*Italics mine.*)

¹⁵ Saint THOMAS AQUINAS, Summa Contra Gentiles, Book I, Chapter 53. (On the Truth of the Catholic Faith, trans. Anton C. Pegis, Garden City, New York, Image Books, 1955, p. 188.)

¹⁶ Cf. S.T., I, 85, 2, ad 2. (Vol. 1, p. 434.)

that person called Mark. The essence man, however, as it exists in one's intellect is a universal concept, a common representation of all men, for it is a likeness of their essence only. Moreover, since words are, according to Saint Thomas, signs of one's concepts,¹⁷ he admits not only the existence of universal concepts but also the existence of universal words; and his justification for these is founded on that ontological principle (the essence) in extramental things, which is numerically different from though specifically identical with all of the members of the class of beings in question.

Moderate Realism, accordingly, is that philosophic theory on the nature of universals, which asserts that one has universal concepts and words, and that the universality of these is justified by the numerically distinct though specifically identical ontological principle or essence in individual members of the class of beings in question.

3. CONCEPTUALISM

Given the fact that William of Ockham's epistemological perspective constituted one of the three principal ones in the intellectual climate of Locke's period, and since William's theory of universals exemplifies what is known

¹⁷ Cf. Saint THOMAS AQUINAS, In IX Metaphys., Lectio 3, n. 1805.

today as "Conceptualism", his theory of universals will now be examined. It has already been discussed in part in CHAPTER ONE, SECTION I, C, of this study. Therefore, all previously treated aspects will simply be re-stated, except where their further elucidation seems necessary to bring out more fully the meaning of Conceptualism in general.

For Ockham it is self-evident that each thing outside one's intellect is an individual. He maintains that God does cause some things to resemble one another, but there is absolutely no ontological root of universality in things.

Now one's initial experience of an individual Ockham calls an "intuitive cognition": it is an intellectual intuitive awareness (accompanied by a sense intuition, when that individual is a sensible thing) of an individual object that is now in front of, or present to, the knower. For Ockham this initial intuitive cognition or act of intellection is a distinct particular concept, a state of the mind that is capable by its very nature of standing for an individual object that is now present to the knower. In addition to this initial type of intuitive cognition—that is, the type the mind evokes when an object is present to it—one's mind may engender also an act of intellection of an absent object: the mind may simply think about a man, for instance, that is not present, and leave out of consideration

whether or not that man exists. This second type of intuitive cognition Ockham calls "abstractive cognition", precisely because such acts of intellection do not take into consideration the existence or non-existence of their objects. For instance, by means of the first type of intuitive cognition, Paul thinks about this man Mark who is actually here and now present to him; by means of the second type of intuitive cognition, that is, abstractive cognition, Paul thinks about this man Mark, but does not consider whether or not Mark actually exists. Like one's initial intuitive cognitions, the abstractive cognitions just described are not universal concepts. How, then, does one evoke acts of intellection that are universal concepts?

Having evoked a series of abstractive cognitions (for instance, of this man Mark, of that man James, of this oak tree, of that dog Fido, and so on), and having somehow stored these in one's memory, the mind may then, according to Ockham, compare these stored abstractive cognitions, discover that some of them are similar (the one of this man Mark and the one of that man Paul, for instance), and thence engender a more general (a less distinct) abstractive cognition (the universal concept man, for instance). An abstractive cognition of this latter type is, according to Ockham, a universal concept (a universal conceptus—whence the name

Conceptualism)—a universal concept that is identical with the very act of the second type of abstractive cognition.

Some of the points of Ockham's theory of universals that have just been examined are found in the following text:

... a concept [be it particular or universal] is the same as the act of knowing. [...] these concepts really exist in the soul as a subject, like true qualities of the soul;....

... the intellect apprehending a singular thing performs within itself a [intuitive] cognition of this singular only. This cognition is called a state of mind [or particular concept], and it is capable of standing for this singular thing by its very nature. Hence, just as the spoken word 'Socrates' stands by convention for the thing it signifies, so that one who hears this utterance, 'Socrates is running', does not conceive that this word, 'Socrates', which he hears, is running, but rather that the thing signified by this word is running; so likewise one who knew or understood that something was affirmatively predicated of this cognition of a singular thing would not think that the cognition was such and such, but would conceive that the thing to which the cognition refers is such and such. Hence, just as the spoken word stands by convention for a thing, so the act of intellect [the concept], by its very nature, and without any convention, stands for the thing to which it refers.

Besides this intellectual grasp of a singular thing the intellect also forms other acts [abstract universal cognitions or universal concepts] which do not refer more to one thing than to another. For instance, just as the spoken word 'man' does not signify Socrates more than Plato, and hence does not stand more for Socrates than Plato, so it would be with an [indistinct] act of intellect which does not relate to Socrates any more than to Plato or any other man. And in like manner there would be also a knowledge whereby this animal is not more known than that animal; and so with other notions [or universal concepts].

To sum up: The mind's own intellectual acts are called states of mind [or concepts]. By their nature they stand for the actual things outside the mind or for other things in the mind, just as the spoken words stand for them by convention.¹⁸

Thus, according to the Conceptualist Ockham: (i) God does cause some things to resemble one another, but does not place (so to speak) in those individuals any ontological root of universality; (ii) universal concepts are indistinct

¹⁸ William of OCKHAM, Expositio super librum Perihermenias, 8. (Philotheus BOEHNER, O.F.M., Ockham. Philosophical Writings, p. 43-44. A lucid discussion of Ockham's theory of universals may be found on pages xxiii-xxxi of this same work.) Cf. Stephen Chak TORNAY, "William of Ockham's Nominalism", in The Philosophical Review, 45 (1936), p. 245-261. Professor Aaron reports that "The term 'nominalist' was frequently used in this period [viz. the three centuries between Ockham and Locke] to describe a position that was in effect conceptualist. The term seems to have come into general usage in the late fourteenth and fifteenth centuries. A realist was a person who gave an affirmative answer to Porphyry's [ca. 232-304 A.D.] question whether genera and species really existed outside the mind. Those who, for one reason or another, gave a negative answer to the question were all dubbed 'nominalist'. Yet most of them were in fact conceptualist. Thus Ockham and his school were certainly described in the fifteenth and sixteenth centuries as nominalists". Richard I. AARON, The Theory of Universals, p. 20. However, as Maurice De Wulf points out, "it certainly does violence to the thought of Ockham to represent him as a nominalist." Maurice DE WULF, History of Medieval Philosophy, trans. P. Coffey, London, Longmans, Green, and Co., 1909, p. 423. As Professor J. R. Weinberg correctly asserts, Ockham's "positive view can best be called conceptualism, insofar as this term carries the implication that universals are concepts, and insofar as it is well understood that such concepts are properly applicable to singular things only insofar as these things resemble one another and insofar as the concept resembles each of them." Julius R. WEINBERG, A Short History of Medieval Philosophy, Princeton, New Jersey, Princeton University Press, 1964, p. 245.

acts of abstractive cognition, each of which stands for all of those extramental individuals that do in fact resemble one another and, hence, cause particular concepts that resemble one another; and (iii) a universal word by convention stands for a universal concept and the extramental individuals in question.

In conclusion, it may be said that Conceptualism is that philosophic theory of universals which teaches, on the one hand, that concepts and words can be universal, and, on the other hand, that extramental realities are absolutely devoid of any ontological root of universality—there is absolutely no ontological root in things that parallels one's universal concepts.

4. NOMINALISM

In his Leviathan, Part Two, Chapter Thirty One, Thomas Hobbes asserts that acts of sense, knowledge and understanding are "nothing else, but a tumult of the mind, raised by external things that press the organical parts of man's body";¹⁹ and, in Part One, Chapter One, of this same work, he says that "there is no conception in a man's mind,

¹⁹ Thomas HOBBS, Leviathan, Part II, Chapter 31. The English Works of Thomas Hobbes of Malmesbury, Sir William Molesworth (ed.), Germany, Scientia Aalen, 1962 (Reprint of the edition 1839-1845), Vol. 3, p. 352; future references to this edition will be given as follows: English Works, Vol. 3, p. 352.

which hath not at first, totally, or by parts, been begotten upon the organs of sense. The rest are derived from that original."²⁰

Basic to Hobbes's theory of knowledge is the principle that "motion produceth nothing but motion."²¹ He insists that external bodies either immediately or mediately impinge upon one's sense organs and produce diverse motion-patterns therein; these motion-patterns are thence transmitted to the sense-center in one's brain and heart:

The cause of sense, is the external body, or object, which presseth the organ proper to each sense, either immediately, as in the taste and touch; or mediately, as in seeing, hearing, and smelling; which pressure, by the mediation of the nerves, and other strings and membranes of the body, [is] continued inwards to the brain and heart,....²²

When these diverse motion-patterns reach the sense-center in one's brain and heart, they cause one's heart to react to them; these diverse reactions or counter-motions of one's heart produce in the knowing subject phantasms (ideas, images, conceptions, or thoughts) that represent some motions in the external bodies. In his Elements of Philosophy, Hobbes says,

20 Thomas HOBBS, Leviathan, Part I, Chapter 1. (English Works, Vol. 3, p. 1.)

21 Ibid. (English Works, Vol. 3, p. 2.)

22 Ibid. (English Works, Vol. 3, p. 1-2.)

... I shall give you the whole definition of sense, as it is drawn from the explication of the causes thereof and the order of its generation, thus: SENSE [or sensation] is a phantasm, made by the reaction and endeavour outwards in the organ of sense, caused by an endeavour inwards from the object, remaining for some time more or less.²³

Now Hobbes's theory of universals (as will be seen below) is opposed to those of Exaggerated Realism, Moderate Realism and Conceptualism. The Exaggerated Realists err, Hobbes insists, because they transfer the property that belongs to a name (viz. its universality) to the things themselves:

The universality of one name to many things, hath been the cause that men think the things are themselves universal: and so seriously contend, that besides Peter and John, and all the rest of the men that are, have been, or shall be in the world, there is yet something else that we call man, viz. man in general, deceiving themselves, by taking the universal, or general appellation, for the thing it signifieth:....²⁴

Moderate Realists and Conceptualists err, however, because they transfer the property that belongs to a name (viz. its universality) to the idea itself:

... they err, that say the idea of anything is universal; as if there could be in the mind an image of a man, which were not the image of some one man, but a man simply, which is impossible; for every idea is one, and of one thing; but they are

²³ Thomas HOBBS, Elements of Philosophy, Part IV, Chapter 25, section 2. (English Works, Vol. 1, p. 391.)

²⁴ Thomas HOBBS, Human Nature, Chapter 5, section 6. (English Works, Vol. 4, p. 22.)

deceived in this, that they put the name of the thing for the idea thereof.²⁵

For Hobbes, then, there are neither universal ideas in one's mind nor universal things or natures in extramental reality.

For Hobbes a name is a word that is a conventional and personal mark—a mark that may arouse in one's mind an idea that is like an idea he had previously. A name or word, when used as an instrument of communication, may be a conventional and impersonal sign—a sign that may inform another of the thoughts of the communicator. On these two points Hobbes says:

A NAME is a word taken at pleasure to serve for a mark, which may raise in our mind a thought like to some thought we had before, and which being pronounced to others, may be to them a sign of what thought the speaker had, or had not before in his mind. An it is for brevity's sake that I suppose the original of names to be arbitrary, judging it a thing that may be assumed as unquestionable.²⁶

For instance, the name "a man" may arouse in Paul's mind the thought (idea, image, conception, or phantasm) of a man—in this sense the name is a mark for Paul, and signifies the idea so aroused in him. When Paul uses this same name when speaking to Mark, however, it is a sign to the latter of the

²⁵ Thomas HOBBS, Elements of Philosophy, Part I, Chapter 5, section 8. (English Works, Vol. 1, p. 60.)

²⁶ Ibid., Chapter 2, section 4. (English Works, Vol. 1, p. 16.)

former's thought. Names such as "a man", "a tree", "a stone", and the like, signify ideas directly, and (because they are representations of their extramental causes, they signify) things indirectly.²⁷

Having insisted that universality is neither a property of a concept nor of a thing, Hobbes grants that it is a property of some names (nomina—whence the name Nominalism). Universal names are justified, "because from divers things we receive like conceptions".²⁸ Nevertheless, one must always remember that (and here is a clear illustration of Nominalistic doctrine):

... this word universal is never the name of any thing existent in nature, nor of any idea or phantasm formed in the mind, but always the name of some word or name; so that when a living creature, a stone, a spirit, or any other thing, is said to be universal, it is not to be understood, that any man, stone, &c. ever was or can be universal, but only that these words, living creature, stone, &c. are universal names, that is, names common to many things; and the conceptions answering them in our mind, are the images and phantasms of several living creatures, or other things.²⁹

Nominalism, accordingly, is that philosophical position on the nature of universals which maintains that there

27 Cf. Thomas HOBBS, Elements of Philosophy, Part I, Chapter 2, section 5. (English Works, Vol. 1, p. 17.)

28 Thomas HOBBS, Human Nature, Chapter 5, section 5. (English Works, Vol. 4, p. 21.)

29 Thomas HOBBS, Elements of Philosophy, Part I, Chapter 2, section 9. (English Works, Vol. 1, p. 20.)

are universal names, but that these have no parallel either in the mind or in things.

C. A COMPARATIVE CHART REGARDING THEORIES OF UNIVERSALS

<u>THEORIES:</u>	<u>RE. WORDS</u>	<u>RE. IDEAS</u>	<u>RE. THINGS</u>
1. EXAGGERATED REALISM (E.g., Wm. of Cham- peaux.)	Universal	Universal	Contain an ontological principle that is both numerically and specifically identical in each member of the class of beings in question. The justification of one's universal words and ideas is founded on that ontological principle.
2. MODERATE REALISM (E.g., St. Thomas Aquinas.)	Universal	Universal	Contain an ontological principle that is numerically different though specifically identical in each member of the class of beings in question. The justification of one's universal words and ideas is founded on that ontological principle.
3. CONCEPTUAL- ISM (E.g., Wm. of Ockham.)	Universal	Universal	Are absolutely devoid of any ontological root of universality. The justification of one's universal words and ideas is founded on the fact that some things do resemble each other and cause particular ideas that resemble one another.

4. NOMINALISM	Universal	Singular	Are absolutely devoid
(E.g.,			of any ontological
Thomas			root of universality.
Hobbes.)			The justification of
			one's universal words
			is founded on the fact
			that some things cause
			ideas which do in fact
			resemble each other.

SECTION II

PRELIMINARY REMARKS CONCERNING SECTIONS III-V OF CHAPTER III

A. THE INITIAL CONDITION OF THE GIVEN DATA OF EXPERIENCE

According to Locke's strict definition, knowledge consists in "the perception of the connexion of and agreement, or disagreement and repugnancy of any of our ideas."³⁰

In other words, for Locke "Knowing", as Professor R. I. Aaron points out, "is the apprehending or perceiving of relations between ideas; it is not the apprehending of any particular fact or particular thing in the external world."³¹ Thus, knowledge is not to be identified with that first act of perception in which the mind simply takes notice of the simple ideas supplied to it by sense and reflection—Locke maintains that only those who are intellectually

³⁰ Essay, IV, i, 2 (F.II. 167). This definition is not found in the "Drafts" of the Essay.

³¹ Richard I. AARON, "Locke's Theory of Universals", in Proceedings of the Aristotelian Society, New Series, 33 (1932-1933), p. 197.

lazy and negligent tend to make such an identification; this view is evident, for instance, in the following text:

The superficialities of things that surround them make impressions on the negligent, but nobody penetrates into the inside without labour, attention, and industry. Stones and timber grow of themselves, but yet there is no uniform pile with symmetry and convenience to lodge in without toil and pains. God has made the intellectual world harmonious and beautiful without us; but it will never come into our heads all at once; we must bring it home piecemeal, and there set it up by our own industry, or else we shall have nothing but darkness and a chaos within, whatever order and light there be in things without us.³²

In other words, the connexions and agreements, or the disagreements and repugnances of one's ideas are not immediately evident—they only become evident after a number of laborious and painstaking activities on the part of one's understanding or mind. Somewhat as laborers (carpenters, masons, and so on) cannot (so to speak) refuse, alter, blot out or create the raw materials given to them for the building of a house, so also the human understanding cannot refuse, alter, blot out or create the raw materials (simple ideas) given to it in experience (sense and reflection);³³ moreover, somewhat as laborers must perceive, discern, compare, compound, and so on, the given raw materials in order to

³² John LOCKE, Of the Conduct of the Understanding, section 38. Works, Vol. 3, p. 272.

³³ Cf. Essay, II, i, 25 (F.I. 142-143); and Essay, II, ii, 2 (F.I. 145-146).

build a house, so also the mind must perform a number of activities upon the given data of experience in order to construct its knowledge; and finally, somewhat as the laborers must not put into the house any raw materials that have not been supplied to them by the contractor for this end, so also the mind must not incorporate into its knowledge any elements or data which experiences have not supplied for this end.³⁴ For Locke simple ideas represent man's encounters with the real world, and, hence, the world of knowledge (the world which one's understanding constructs) must not include elements that have not been derived from sense and reflection. What, then, are those basic faculties and activities which a person must exercise upon the given data of experience, in order to remove the "darkness" and "chaos" which initially characterizes those data?

B. "COMPARING", "COMPOUNDING" AND "ABSTRACTING"

In Locke's Essay, Book Two, Chapters Nine, Ten and Eleven, the reader will find a perfunctory treatment of several operations of distinct faculties of the human mind: "perceiving", "remembering", "discerning", "naming", "comparing", "compounding" and "abstracting". Since a thorough explication of the first four of these operations lies

34 Cf. Essay, II, i, 24 (F.I. 142).

outside the scope of the present study, they will not be examined in detail in the paragraphs which follow. "Comparing", "compounding" and "abstracting", however, are of special importance to this study, and, consequently, will be examined in some detail.

In his Essay, Book Two, Chapter Nine (entitled "Of Perception"), Locke asserts that "PERCEPTION [...] is the first faculty of the mind exercised about our ideas; [...] in bare naked perception, the mind is, for the most part, only passive; and what it perceives, it cannot avoid perceiving."³⁵ He then goes on to say that bare naked perception is "the first step and degree towards knowledge, and the inlet of all the materials of it".³⁶ It is by means of this faculty, accordingly, that a person takes notice of or perceives those simple ideas of sensation and reflection as they are being given to the mind.

In his Essay, Book Two, Chapter Ten (entitled "Of Retention"), Locke says that retention is that faculty by which a person keeps "those simple ideas which from sensation or reflection it hath received."³⁷ Apparently, this faculty has two functions: (i) contemplation, which consists

35 Essay, II, ix, 1 (F.I. 183).

36 Essay, II, ix, 15 (F.I. 191).

37 Essay, II, x, 1 (F.I. 193).

in "keeping the idea which is brought into it [the mind], for some time actually in view"³⁸ and (ii) memory, which consists in reviving "in our minds those ideas which, after imprinting, have disappeared, or have been as it were laid aside out of sight."³⁹ Locke speaks of memory as a "store-house" or "repository" of ideas, and says that

... this laying up of our ideas in the repository of the memory signifies no more but this,—that the mind has a power in many cases to revive perceptions which it has once had, with this additional perception annexed to them, that it has had them before.⁴⁰

In his Essay, Book Two, Chapter Eleven (entitled "Of Discerning, and Other Operations of the Mind"), Locke says that by means of their discerning faculty people perceive "two ideas to be the same, or different",⁴¹ and by means of

38 Essay, II, x, 1 (F.I. 193).

39 Essay, II, x, 2 (F.I. 193).

40 Essay, II, x, 2 (F.I. 194). Cf. Essay, II, x, 7 (F.I. 198).

41 Essay, II, xi, 1 (F.I. 202). Locke explicates this operation in "Draft B" as follows: "The next faculty of the mind which is exercised about those simple ideas is that of discerning, whereby the understanding clearly perceives every one of these simple ideas which are in it, and distinguishes them one from another; so that those simple ideas, which either the objects of our senses or the operations of our minds imprint on our understandings, are constant, evident, and distinct, and we have little or no doubt or confusion about them. But they are so clear and perfect in the understanding that it never mistakes one for another, or apprehends heat for light, or cold for hot, joy for sorrow, or pain for delight, black for yellow, or green or motion for

their naming faculty people "begin by degrees to learn the use of signs. [...] to signify their ideas to others."⁴²

Having indicated briefly the meaning of "perceiving", "remembering", "discerning" and "naming", three further mental operations (viz. "comparing", "compounding" and "abstracting") will now be examined. This examination will remain within the limits of the Essay, Book Two, Chapter Eleven. Further light will be shed upon these three operations when their products (i.e., the ideas produced by means of them) are examined at length in subsequent paragraphs of this study.

whiteness. And upon this accurate perception which the mind has of these simple ideas that are in it, depends the certainty and evidence of more general propositions, which, having not been taken notice of, the universal assent which usually is given to those propositions has given occasion to many to receive them as innate principles." Draft B, 24 (R. 74). This faculty may also be exercised upon complex ideas: cf. Essay, II, xi, 14 (F.I. 210). Professor R.I. Aaron observes correctly that "were we not able to distinguish between our ideas we could never perceive any agreements or disagreements between them. If pressed Locke must also have admitted that discerning is itself an instance of knowing, even in his limited sense of that term. If the reader compares the account given of intuition in IV, ii, 1 with that of discerning in II, xi, 1, he will see that discerning is one instance of intuition. To perceive that white is not black, a circle not a triangle, is discerning in Book II and intuiting in Book IV." Richard I. AARON, John Locke, p. 139-140. Thus, for Locke by means of his discerning faculty a person intuitively perceives (i.e., perceives without the mediation of other ideas, as he does in demonstrative knowledge) that two of his ideas—be they simple or complex—are the same (i.e., agree with one another), or are different (i.e., disagree with one another).

⁴² Essay, II, xi, 8 (F.I. 206). Cf. Draft B, 25 (R. 74-76).

1. COMPARING

For Locke "comparing" is the name given to the operations of that distinct mental faculty by which persons bring "two ideas, whether simple or complex [and whether of the same kind (e.g., white and white) or different (e.g., white and bitter)], together, and setting them by one another, so as to take a view of them at once, without uniting them into one",⁴³ in order to cognize their heretofore unknown similarities and divergencies "in respect of extent, degrees, time, place, or any other circumstances."⁴⁴ The products of such mental operations or activities are "all that large tribe of ideas comprehended under relation".⁴⁵ Locke's theory of relations will be examined at length in SECTION IV of this chapter, for ideas of relations do constitute a facet of his theory of universals.

2. COMPOUNDING

For Locke simple ideas are mental contents or appearances which are not distinguishable into heterogeneous parts; such ideas are either the given of sensation and reflection, or the result of abstraction. Complex ideas are

43 Essay, II, xii, 1 (F.I. 213).

44 Essay, II, xi, 4 (F.I. 204).

45 Ibid. Cf. Draft A, 3 (A-G. 10-11) and Draft B, 26 (R. 76-77).

aggregates of simple ideas, and may or may not be distinguishable into heterogeneous parts—for instance, the complex idea "man" and the complex idea "three" respectively. Unlike most simple ideas, all complex ideas are products of mental operations. In other words, no complex idea as such is given to the mind.

According to the Essay, Book Two, Chapter Eleven, section six, "compounding" is the name which Locke gives to the operations of that distinct mental faculty by which a person "puts together several of those simple ones [i.e., ideas] it has received from sensation and reflection, and combines them into complex ones."⁴⁶ And in another place Locke says that it is by means of such operations of the mind that "all complex ideas are made."⁴⁷ (When reading this latter text, one should not overlook—as commentators in general so often do—the word "all".) Does Locke mean, then, by his inclusive "all", that acts of compounding are also involved in the production of those complex ideas which he explicitly attributes to acts of comparing and to

46 Essay, II, xi, 6 (F.I. 205).

47 Essay, II, xii, 1 (F.I. 213). When one combines simple ideas of the same kind into one complex idea, Locke calls this mental operation "enlarging". Cf. Essay, II, xi, 6 (F.I. 205). This type of "enlarging", however, must not be identified with that type of "enlarging" which occurs in acts of abstraction.

acts of abstraction? Any attempt to answer this important question at this point would be premature; the reader is asked, however, to keep this question in mind as the present study unfolds.

a) A DIGRESSION. NO COMPLEX IDEA AS SUCH IS
GIVEN TO OR MADE FOR THE MIND

Professor R. I. Aaron—influenced, perhaps, by Professor A. C. Fraser—asserts that "Frequently in the Essay complex ideas, as well as simple, are held to be given."⁴⁸ And in the very next sentence Mr. Aaron cites a part of the following text to substantiate his interpretation of Locke's position; Locke's text reads as follows:

As simple ideas are observed to exist in several combinations united together, so the mind has a power to consider several of them united together as one idea; and that not only as they are united in external objects, but as itself has joined them together.⁴⁹

Now if this text is read carefully, it will be seen that it states neither that some complex ideas are given to the

⁴⁸ Richard I. AARON, John Locke, p. 112. Cf. F.I. 214, note 1, and F.I. 145, note 3. Locke says that "When the understanding is once stored with these simple ideas, it has the power to repeat, compare, and unite them, even to an almost infinite variety, and so can make at pleasure new complex ideas." Essay, II, ii, 2 (F.I. 145). The phrase "new complex ideas" does not imply, as Professor Fraser seems to want it, that some "old complex ideas" are given to the mind—each complex idea which a mind forms is a new complex idea for that mind.

⁴⁹ Essay, II, xii, 1 (F.I. 214).

mind, nor that all complex ideas are products of the mind. But let it be supposed that the former point is being dealt with in this text, and let this text be viewed against the background, so to speak, of a text in which Locke admits that he sometimes uses the word "idea", when, in fact, he means a quality of a thing:

Whatsoever the mind perceives in itself, or is the immediate object of perception, thought, or understanding, that I call idea; and the power to produce any idea in our mind, I call quality of the subject wherein that power is. [...] which ideas, if I speak of sometimes as in the things themselves, I would be understood to mean those qualities in the objects which produce them in us.⁵⁰

Having done this, it becomes rather obvious that the first text should be read as follows:

As simple ideas [i.e., those qualities in the objects which produce simple ideas in us] are observed to exist in several combinations united together [—Locke often expresses himself as a realist does, even though he should not (in view of his representative theory of perception) do so], so the mind has a power to consider several of them [viz. qualities] united together as one idea [i.e., as one external object]; and that not only as they [viz. the qualities] are united in external objects, but as itself [by the exercise of its compounding power or faculty] has joined them together [i.e., has joined the given simple ideas of those qualities into one complex idea].⁵¹

In brief, this text simply does not prove the point which Mr. Aaron is trying to make, namely, that for Locke some of

50 Essay, II, viii, 8 (F.I. 169).

51 Essay, II, xii, 1 (F.I. 214).

the complex ideas in one's mind are not of its own making; indeed, if this text proves anything, it proves that for Locke the very opposite of Mr. Aaron's contention is the case.

Professor Aaron then goes on to say that Locke "constantly speaks of observing ideas 'going together'."⁵² Granted, but does this mean (as Mr. Aaron implies) that for Locke some complex ideas are given? No. Rather it is because a person observes a sequence of simple ideas occurring in his mind and because he remembers that on previous occasions he experienced like sequences of simple ideas, he now realizes that such simple ideas go together constantly; consequently, he finds justification for incorporating the given simple ideas of the present sequence into one complex idea. This point will be discussed in further detail in those subsequent paragraphs of this study which treat of Locke's theory of complex ideas of individual substances.

In spite of the multitude of ambiguous and, at times, apparently inconsistent texts in Locke's writings concerning the topic of the present digression, it is the contention of this study that Locke expresses his basic conviction on this point in the opening section of his chapter on simple ideas; here he says:

52 Richard I. AARON, John Locke, p. 112.

THE better to understand the nature, manner, and extent of our knowledge, one thing is carefully to be observed concerning the ideas we have; and that is, that some of them are simple and some complex.

Though the qualities that affect our senses are, in the things themselves, so united and blended, that there is no separation, no distance between them; yet it is plain, the ideas they produce in the mind enter by the senses simple and unmixed.⁵³

Moreover, Locke re-states this point for Bishop Stillingfleet, who had some difficulty understanding the Essay, in these words:

... understanding, or reason, [...] makes or forms, out of the simple ones that come in by sensation and reflection, all the other ideas, whether general, relative, or complex, by abstracting, comparing, and compounding its positive simple ideas, whereof it cannot make or frame any one, but what it receives by sensation or reflection.⁵⁴

In brief, it is the contention of this study that for Locke no complex idea as such is given to or made for the mind.

3. ABSTRACTING

Before examining the Essay, Book Two, Chapter Eleven, section nine, in which Locke discusses abstraction, it may

53 Essay, II, ii, 1 (F.I. 144).

54 John LOCKE, A LETTER to the Right Reverend EDWARD LORD BISHOP OF WORCESTER, concerning some passages relating to MR. LOCKE'S ESSAY OF HUMAN UNDERSTANDING, in a LATE DISCOURSE OF HIS LORDSHIP'S, IN VINDICATION OF THE TRINITY. Works, Vol. 4, p. 71. Bishop Stillingfleet's discourse was written in 1696. Locke's letter was written in 1697. Future references to Locke's letter will be cited as follows: John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 71.

be well to note Professor R. I. Aaron's interpretation of Locke's theory of universals, for no present day examination of this theory should overlook this critic's informative studies on this matter.

a) A DIGRESSION. THE THREE STRANDS OF LOCKE'S THEORY OF UNIVERSALS ACCORDING TO R. I. AARON

At the meeting of the Aristotelian Society in London on March 27th, 1933, Professor R. I. Aaron delivered a paper entitled "Locke's Theory of Universals".⁵⁵ The interpretation given in this paper may, for the most part, be found in Mr. Aaron's book entitled John Locke,⁵⁶ as well as in his more recent one entitled The Theory of Universals.⁵⁷ Mr. Aaron's interpretation has been severely criticized by several authors; Mr. John Linnell, for instance, asserts that

A careful reading of Locke makes it difficult to see why Aaron claims to find three strands in the Essay. Perhaps, after Vaihinger's "patchwork" interpretation of Kant's Critique, and Wild's "development" interpretation of Berkeley, Aaron thought it necessary to find several theories instead of just one in Locke's Essay.⁵⁸

⁵⁵ Cf. Richard I. AARON, "Locke's Theory of Universals", p. 173-202.

⁵⁶ Cf. Richard I. AARON, John Locke, p. 195-207.

⁵⁷ Cf. Richard I. AARON, The Theory of Universals, p. 23-41.

⁵⁸ John LINNELL, "Locke's Abstract Ideas", in Philosophy and Phenomenological Research, 16 (1956), p. 401. Cf.

It is the contention of the present study that Professor J. Linnell is correct when he asserts that "what we find [in Locke's Essay] is a confused position held continuously, with perhaps different emphases being made in various places, rather than a series of clear-cut distinguishable positions succeeding or replacing each other."⁵⁹

The three "strands", "positions" or "phases" which Professor Aaron distinguishes in Locke's theory of universals will now be summarized—of course, the reader must consult the works of Mr. Aaron, if he wishes to grasp the full import of his interpretation.

In the "first strand" Locke maintains, in Aaron's view, that "A universal is a particular idea which 'represents' many other particulars."⁶⁰ In other words,

... what is actually before the mind when we are generalizing is a particular, but a particular used in a representative capacity. [...] For instance, I take a particular triangle and let it stand for all triangles. I still have a particular before me, but I use this particular to represent

Willis DONEY, "Locke's Abstract Ideas", in Philosophy and Phenomenological Research, 16 (1956), p. 406-409; and William L. REESE, "'The Experimentum Crucis' in Locke's Doctrine of Abstraction", in Philosophy and Phenomenological Research, 21 (1961), p. 490-500.

59 John LINNELL, "Locke's Abstract Ideas", p. 401.

60 Richard I. AARON, "Locke's Theory of Universals", p. 183.

all other particulars of the same sort. In this way I bring into being a general idea of triangle.⁶¹

Mr. Aaron believes that this strand may be found in the following places: Draft B, 59; Essay, II, xi, 9 (Aaron believes that strands two and three are also present here); and Essay, IV, xvii, 8.

In the "first strand" Aaron believes that Locke identifies the universal with the whole of a particular idea, which one's mind has chosen to stand for many; in the "second strand", however, he believes that Locke identifies the universal with a part of a particular idea, which one's mind has framed to stand for many.⁶² According to Aaron,

The second strand consists in the view that universals are the resultant of a certain process of elimination [or abstraction] carried out according to the guidance of experience. We eliminate all qualities except only those which are common. Thus the general term "man" stands for what remains when we have eliminated every quality possessed by James or John or Peter or any other individual man but not by all men, every quality that is peculiar.⁶³

The products of these abstractive processes are called nominal essences. Concerning such products Aaron says that for Locke,

⁶¹ Richard I. AARON, The Theory of Universals, p. 28-29.

⁶² Cf. Richard I. AARON, "Locke's Theory of Universals", p. 186-188.

⁶³ Ibid., p. 186.

It is we, and not nature, who set up the final boundaries. [...] It is we also who decide what content each nominal essence is to possess. Thus the nominal essence is subjective, as being dependent upon the mind creating it. It can be objective only in the sense that the same word conveys the same general idea to more than one person. For instance, the nominal essence may be defined in terms which signify precisely the same ideas to all and so can be public. But it is never public in the sense of existing objectively so that all may discover it.⁶⁴

Mr. Aaron believes that this strand may be found in the following places: Essay, II, xi, 9; Essay, III, iii, especially sections 6 and 7; and Essay, III, vi, 37.

When summarizing the "third strand" which Professor Aaron finds in Locke's theory of universals, it is necessary to cite Aaron's text at greater length, for it is somewhat difficult for many to see precisely how it differs (if it really differs at all) from the "second strand". Mr. Aaron says:

The universal, in this third sense, is neither a particular idea [as it is in the "first strand"] nor a part of a particular idea [as it is in the "second strand"]. It is a meaning. It is a character or group of characters shared by particulars of the same sort. This character (or these characters) frames (or frame) the "essence" of the sort. The universal, therefore, means the "essence" of a sort or species, and in its light we recognize to what species any particular belongs.⁶⁵

64 Richard I. AARON, The Theory of Universals, p. 30.

65 Richard I. AARON, "Locke's Theory of Universals", p. 188.

And in another place Aaron says:

The universal [in this "third strand"] is conceived as a fixed, immutable meaning. We may think of a nominal essence, disregard its reference to individual things, that is, disregard the extension or denotation of the word which signifies it [*viz.* the universal or general concept], and dwell solely upon its content. It is the connotation of the term alone that now concerns us, and we may arbitrarily fix this connotation. Once this is done, the [nominal] essence is from this point forward 'ingenerable and incorruptible'.⁶⁶

... it is not strange that Locke's thought should turn in this direction. For such fixity of meaning would give him objectivity, and we have seen that thus far objectivity is lacking in the account of the universal. If the universal were the real essence it would be objective enough, but Locke has denied this and substituted a nominal essence for it which is subjective. The only objectivity he can hope for is that of precise definition, and this becomes possible only if the essence to be defined is fixed and immutable. Thus conceiving the universal as a fixed, immutable meaning gives objectivity to Locke's thought.

But it does more; it liberates his theory from concern solely with natural species and genera. Up to this point [*viz.* the closing sections of the *Essay*, III, iii] Locke has been concentrating upon the natural sorts and seeking to explain the nature of such universals as man, horse, buttercup. But if we think of the universal as a meaning rather than as a selected common core we shall be freer to think of universals of another kind. When in the next two chapters [*viz.* *Essay*, III, iv and v] Locke discusses the universals which he calls modes, and

⁶⁶ Mr. Aaron's reference is to the *Essay*, III, iii, 19 (entitled "Essences ingenerable and incorruptible"). However, notice that Locke speaks here as an historian, rather than as one who is stating his own position: "That such abstract ideas, with names to them, as we have been speaking of are essences, may further appear by what we are told concerning essences, *viz.* that they are all ingenerable and incorruptible." *Essay*, III, iii, 19 (F.II. 29). (*Italics mine.*)

particularly mixed modes, it is the third strand which is most evident in his thought.⁶⁷

The "third strand", Mr. Aaron maintains, may be found in the following places: Essay, II, xi, 9; the closing sections of the Essay, III, iii, especially section 19; and the Essay, III, iv (entitled "Of The Names Of Simple Ideas") and v (entitled "Of The Names Of Mixed Modes And Relations").

b) Essay, II, xi, 9

In his Essay, Book Two, Chapter Eleven, section nine (entitled "Abstraction") Locke introduces his theory about how "ideas taken from particular beings become general representatives of all of the same kind"; this text reads as follows:

The use of words then being to stand as outward marks of our internal ideas, and those ideas being taken from particular things, if every particular idea that we take in should have a distinct name, names must be endless. To prevent this, the mind makes the particular ideas received from particular objects to become general; which is done by considering them as they are in the mind such appearances, —separate from all other existences, and the circumstances of real existence, as time, place, or any other concomitant ideas. This is called ABSTRACTION, whereby ideas taken from particular beings become general representatives of all of the same kind; and their names general names, applicable to whatever exists conformable to such abstract ideas. Such precise, naked appearances in the mind, without considering how, whence, or with what others they come there, the understanding lays up

⁶⁷ Richard I. AARON, The Theory of Universals, p. 32-33.

(with names commonly annexed to them) as the standards to rank real existences into sorts, as they agree with these patterns, and to denominate them accordingly. Thus the same colour being observed to-day in chalk or snow, which the mind yesterday received from milk, it considers that appearance alone, makes it a representative of all of that kind; and having given it the name whiteness, it by that sound signifies the same quality wheresoever to be imagined or met with; and thus universals, whether ideas or terms, are made.⁶⁸

This text, quite obviously, contains a considerable number of Lockean tenets; several of these have been elucidated in previous paragraphs of this study, and several remain to be explicated in subsequent ones. Now since this text merely introduces Locke's theory of abstract ideas, one would have to examine several other texts in order to grasp the full import of his theory. But such an examination is beyond the scope of this preliminary remark. Here, then, the basic tenets which are contained in the text in question will be brought to the attention of the reader; their full import will be brought to light as the present study unfolds.

First, Locke insists (i) that all existent things are particular beings; (ii) that the ideas which a person takes from such beings are particular; and (iii) that a person uses particular words or names as sensible marks or signs of some particular ideas in his mind. Secondly, Locke

⁶⁸ Essay, II, xi, 9 (F.I. 206-207). There is no section in either "Draft A" or "Draft B" which corresponds to this one.

insists that a person makes his particular ideas become general, that is, he forms general or universal ideas, in order to avoid having an endless number of particular names.

Thirdly, it is quite obvious that in Locke's view this generalizing or universalizing process involves a number of distinct mental activities in addition to abstracting (such as discerning, remembering, comparing and, in some instances, compounding, although Locke nowhere clearly distinguishes these for his reader): 1. The mind inspects several of its particular ideas; 2. The mind—by the exercise of its faculty of abstraction (and some other faculties)—focuses its attention upon an ingredient(s) or unit(s) of meaning which it cognizes to be the same in several of those particular ideas it is now inspecting; 3. Having done this, the mind generates out of its own substance⁶⁹ an abstract representation of that (those) naked appearance(s) or isolated unit(s)

69 In this text Locke says that "the mind makes the particular ideas received from particular objects to become general". This expression is to be taken in its literal sense in the case of particular simple ideas only; this point is expressed in other words in "Draft B" as follows: "There is one thing more to be remembered about these simple ideas, that though that idea, e.g., of blue or bitter, which exists in anyone's understanding, be but one single numerical thing, yet, as it agrees to and represents all the qualities of that kind wheresoever existing, it may be considered as a specific idea, and the word that stands for it a specific word comprehending many particular things; so that the idea of white in the mind which stands for all the white that anywhere exists, and the word white which stands for that idea, though both these in their existence be but

of meaning which it has focused its attention upon; 4. The mind then cognizes that it can (and, hence, it sometimes does) use this new product as a representative of (or that which stands for, or that which signifies) all of the instances of the kind in question (which it has experienced; moreover, it assumes that this product can represent also those instances it has not experienced); And 5. the person then uses a general word or name as a sensible mark or sign of that universal idea. For example, 1. Paul inspects his idea of this snowball, his idea of that glass of milk, and so on; 2. he then focuses his attention upon the white ingredient or appearance which he cognizes to be the same in several of the particular ideas he is now inspecting; 3. Paul then generates out of his own mental substance an abstract idea of these white appearances in the particular complex ideas in question (if Paul were to take this idea out of any one of the particular complex ideas which he is inspecting, that particular complex idea would be destroyed, and, consequently, the abstract idea could not be a

particular things, yet as representatives or in their significations are universals." Draft B, 59 (R. 119). But when it is a question of generalizing or universalizing a particular complex idea, no part of that idea as such becomes general—generalizing or universalizing for Locke is no mere process of elimination; rather, the mind generates out of its own substance an abstract representation of a part (or several parts) of a particular complex idea that it finds to be like those of other particular complex ideas which it has formed.

representative of it); 4. Paul then views this abstract idea of white against the background, as it were, of his particular complex idea of this snowball, of his particular complex idea of that glass of milk, and so on, and cognizes in virtue of these acts of comparing and discerning that it can represent an ingredient (viz. the white appearance) which is the same in each of these. Hence, he considers this new product to be a representative of all instances (even the imaginable ones) of this kind—the past, the present, and the future ones; And 5. Paul then uses the general name "whiteness" primarily to signify this general idea which he has produced in his mind, and secondarily to signify the white quality of this, that, and the other thing.

In conclusion, it might be well to note that Locke does not seem to suggest that any one of the mental activities which are involved in the universalizing or generalizing process penetrates, as it were, beyond the appearance(s) in question, and apprehends the nature(s) of the appearance(s). Thus, the abstract idea presents no new content to the mind.

SECTION III

MODES

A. PRELIMINARY REMARKS

1. THE SCOPE OF CHAPTER III, SECTION III

It should be mentioned at the outset that this section makes no pretension to exhaust Locke's theory of modes. SECTION III will examine modes only in so far as is necessary to indicate this facet of Locke's theory of universals. It is generally admitted that Locke's theory of simple and mixed modes is incomplete and most obscure; consequently, it is open to a variety of interpretations.⁷⁰ An informative study of Locke's theory of simple modes may be found in the work of R. C. Lodge entitled The Meaning and Function of Simple Modes in the Philosophy of John Locke;⁷¹ one would make an invaluable contribution to the field of Lockean studies, if he were to write a work of the same caliber on Locke's theory of mixed modes.

2. WHAT IS A "MODE"?

In "Draft B", section sixty one, Locke says that a mode is a type of complex idea which does not represent

⁷⁰ Cf. Rupert Clendon LODGE, The Meaning and Function of Simple Modes in the Philosophy of John Locke, Minneapolis, Minnesota, Bulletin of the University of Minnesota, Number 12, 1918, p. 1-8.

⁷¹ Ibid., p. 1-86.

either a single substance or a collective substance: "The next sort of complex ideas [viz. modes] are such collections of simple ideas as are not the representations of substances either single or collective."⁷² A mode, accordingly, is a type of complex idea which does not contain the supposition of independent existence. Now when the text of the Essay, Book Two, Chapter Twelve, section four, for instance, is read in the light of "Draft B", section sixty one, it becomes apparent that a mode, according to Locke, is (i) a complex idea which is produced by the mind and (ii) sometimes considered by the mind as a representative of an affection (attribute, property, or accident) of some substances:

... Modes I call such complex ideas which, however compounded, contain not in them the supposition of subsisting by themselves, but are considered as dependences on, or affections of substances;—such as are the ideas signified by the words triangle, gratitude, murder, &c.⁷³

Now Locke will sometimes speak of "ideas of modes", as if modes were something other than ideas; consequently, the reader must keep in mind the above description of modes in which Locke unambiguously asserts that modes are complex ideas—complex ideas which are produced by the mind and

72 Draft B, 61 (R. 126).

73 Essay, II, xii, 4 (F.I. 215).

sometimes considered by it as representatives of affections of some substances.

B. SIMPLE MODES, I.E., VARIATIONS OR DIFFERENT COMBINATIONS OF SIMPLE HOMOGENEOUS IDEAS

1. PRELIMINARY REMARKS

a) THE SCOPE OF CHAPTER III, SECTION III, B

In the Essay, Book Two, Chapters Thirteen through Twenty One, Locke discusses several groups of simple modes: those of expansion, of duration, of number, of power, of thinking, of pleasure and pain, and so on. CHAPTER III, SECTION III, B, of the present study will examine Locke's theory of the simple modes of number and duration only, and it will endeavor to show how such complex ideas become universals.

b) WHAT IS A "SIMPLE MODE"?

In the Essay, Book Two, Chapter Twelve, section five, Locke asserts that simple modes are "variations, or different combinations of the same simple idea, without the mixture of any other [kind of simple idea]".⁷⁴ Now when this text is viewed in the light of Locke's general description of modes, it becomes apparent that for Locke a simple mode

⁷⁴ Essay, II, xii, 5 (F.I. 215).

is a complex idea which is formed by the mind out of two or more simple homogeneous ideas, and sometimes considered by it to represent an affection or property of some substances.

2. SIMPLE MODES OF NUMBER, I.E., DIFFERENT COMBINATIONS OF THE SIMPLE IDEA OF UNITY OR ONE

In the Essay, Book Two, Chapter Sixteen (entitled "Idea of Number"), section one (entitled "Number the simplest and most universal Idea"), Locke states (i) how a person acquires simple ideas of unity or one, and (ii) that the extension of the universal idea of unity or one is greater than any other idea; the text reads as follows:

AMONGST all the ideas we have [...] there is none more simple, than that of unity, or one: it has no shadow of variety or composition in it: every object our senses are employed about; every idea in our understandings; every thought of our minds, brings this idea along with it. And therefore it is the most intimate to our thoughts, as well as it is, in its agreement to all other things, the most universal idea we have. For number [Locke means the universal simple idea of unity or one] applies itself to men, angels, actions, thoughts; everything that either doth exist, or can be imagined.⁷⁵

Thus, a simple idea of unity or one, Locke asserts, accompanies each cognitive activity (each sensation and each reflection, for instance). When Paul senses a red patch, for example, Locke seems to be suggesting that he is

⁷⁵ Essay, II, xvi, 1 (F.I. 270). Cf. Essay, II, vii, 7 (F.I. 163).

experiencing at least two data: a simple idea of "red" and a simple idea of "unity or one". Now Locke is not saying that this particular simple idea of unity or one as such is a universal: the particular simple idea of unity or one which Paul, for instance, is here experiencing simply signifies the unity-property of the idea of the red patch which it accompanies—not the unity-property of "everything that either doth exist, or can be imagined". For such a particular simple idea to become a universal, Paul must cognize that it agrees with the unity-property of "everything that either doth exist, or can be imagined", and, moreover, he must consider it as a representative of each instance of this affection. Having said this, Locke passes immediately to his theory of the formation of the simple modes of number.

In his Essay, Book Two, Chapter Sixteen, section two (entitled "Its Modes made by Addition"), Locke asserts that man constructs the simple modes of unity by mentally repeating the simple idea of unity or one, and then adding the repetitions together:

By repeating this idea in our minds, and adding the repetitions together, we come by the complex ideas of the modes of it [viz. the simple idea of unity or one]. Thus, by adding one to one, we have the complex idea of a couple; by putting twelve units together, we have the complex idea of a dozen;

and so of a score, or a million, or any other number [that is, any other simple mode of unity].⁷⁶

Each simple mode of unity, each number other than the number "one", accordingly, is a complex idea—a product of the mind's faculty of compounding: a faculty whose functions here are, apparently, to repeat the abstract idea "one" (say four times), and to add or combine these repetitions into one complex idea (say the simple mode or number "four"). Now this new particular complex idea, this new simple mode of number, becomes a universal, when (i) its producer cognizes that it agrees with each instance of the affection in question and (ii) considers it as that which signifies and, hence, can be predicated of, any group which has the amount of units in question.

Now it might be well to note here that the faculty of "naming" has an important function in Locke's theory of the simple modes of unity; he asserts that a name should be assigned to each number,

For, without such names or marks, we can hardly well make use of numbers in reckoning, especially where the combination is made up of any great

⁷⁶ Essay, II, xvi, 2 (F.I. 270). Fractions, apparently, are obtained by mentally dividing the simple idea of one. Cf. Essay, II, xvii, 12 (F.I. 284-285). One way of obtaining the idea of infinity is as follows: the "endless addition or addibility (if any one like the word better) of numbers, so apparent to the mind, is that, I think, which gives us the clearest and most distinct idea of infinity". Essay, II, xvi, 8 (F.I. 275).

multitude of units; which put together, without a name or mark to distinguish that precise collection [or number], will hardly be kept from being a heap in confusion.⁷⁷

In conclusion it may be said that each number other than the number "one" is called: (i) a complex idea, because it has been made by the mind and consists of two or more simple ideas; (ii) a mode, because it represents an affection or property of some substances; and (iii) a simple mode, because it is a combination of simple homogeneous ideas.

3. SIMPLE MODES OF DURATION, I.E., DIFFERENT COMBINATIONS OF
A SIMPLE IDEA WHICH ONE MAY CALL
AN "INSTANT" OR A "MOMENT"

In his Essay, Book Two, Chapter Fourteen (entitled "Idea of Duration and its Simple Modes"), Locke asserts that such temporal ideas as hours, days, years, eternity, and so on, are simple modes or different combinations of the simple idea which one may call an "instant" or a "moment". In spite of the fact that Locke's theory of the simple modes of duration is not clearly expressed (and, it seems, not adequately thought out by him), the paragraphs which follow will endeavor to point out: (i) how, in Locke's view, a person acquires the kind of simple ideas which he incorporates into his simple modes of duration; (ii) how a person forms

⁷⁷ Essay, II, xvi, 5 (F.I. 272).

such simple modes; and (iii) how these particular complex ideas become universals.

How does a person acquire the kind of simple ideas which he incorporates into his simple modes of duration? Locke's answer to this question is found in the following two texts:

It is evident to any one who will but observe what passes in his own mind, that there is a train of ideas which constantly succeed one another in his understanding, as long as he is awake. Reflection on these appearances of several ideas one after another in our minds, is that which furnishes us with the idea of succession: and the distance between any parts of that succession, or between the appearance of any two ideas in our minds, is that we call duration. For whilst we are thinking, or whilst we receive successively several ideas in our minds, we know that we do exist; and so we call the existence, or the continuation of the existence of ourselves, or anything else, commensurate to the succession of any ideas in our minds, the duration of ourselves, or any such other thing co-existent with our thinking.⁷⁸

⁷⁸ Essay, II, xiv, 3 (F.I. 239). The text in "Draft B" reads as follows: "I think then that the first notion we have of it [viz. duration] arises from reflection on the operation of our own minds in thinking, i.e., the appearance of several ideas in our own minds one after another; which, though it be commonly very quick, yet the mind cannot but take notice that one is first and another after, and so comes to have the idea of succession; and the distance between any parts of that succession, i.e., between the appearance of any two ideas in our minds, we call duration. For we know that while we are thinking, i.e., while we perceive successively several ideas into our minds, that we do exist, we call the coexistence or continuation of the existence of ourselves, or anything else commensurate to the succession of any ideas in our minds, the duration of ourselves, or any such other thing coexisting with our thinking." Draft B, 103 (R. 224-225).

... men derive their ideas of duration from their reflections on the train of the ideas they observe to succeed one another in their own understandings; without which observation they can have no notion of duration, whatever may happen in the world.⁷⁹

Now since there is a considerable amount of Lockean doctrine contained in these two texts, it may be well to elucidate those doctrines in point form. First, the Lockean principle which states that "In every act of sensation, reasoning, or thinking, we are conscious to ourselves of our own being"⁸⁰ is operative in and essential to the understanding of these two texts—as is evident from the phrases: "in his mind", "in his understanding", "in our minds", "we know that we do exist" and "in their own understandings", which the texts contain. Secondly, Locke insists that acts of reflection or introspection are the principal sources of a person's ideas of succession and duration—these ideas, however, are not derived from merely observing the train of ideas in one's mind; rather, they are derived from acts of reflection which simultaneously take notice of two contrasting objects, namely, (i) the ideas appearing one after another in (ii) a relatively permanent self. In other words, a person derives ideas of succession and duration in virtue of his reflective

⁷⁹ Essay, II, xiv, 4 (F.I. 240). Cf. Essay, II, xiv, 5 (F.I. 240); and Essay, II, xiv, 31 (F.I. 255-256).

⁸⁰ Essay, IV, ix, 3 (F.II. 305).

activities which simultaneously take notice of his changing ideas against the background, so to speak, of his relatively non-changing or relatively permanent and enduring self. Thirdly, the abiding existence of anything commensurate with the succession of one's ideas is called the duration of that thing.⁸¹ And fourthly, Locke's phrase: "... the distance between any parts of that succession, or between the appearance of any two ideas in our minds, is that we call duration" seems to mean that that "moment" or "instant" during which one idea (in the train of ideas) is held before one's mind (a moment or instant during which no succession is experienced) is an instance of duration (in fact, the shortest length of duration that the human mind can experience), and from the experience of it (viz. that instance of duration) one's mind derives a simple idea that may be called an "instant" or a "moment"—a simple idea which

⁸¹ For Locke time is "duration, as set out by certain periods, and marked by certain measures or epochs". Essay, II, xiv, 17 (F.I. 246). Now nothing can "serve well for a convenient measure of time, but what has divided the whole length of its duration into apparently equal portions, by constantly repeated periods." Essay, II, xiv, 18 (F.I. 246). Thus, "The diurnal and annual revolutions of the sun, as having been, from the beginning of nature, constant, regular, and universally observable by all mankind, and supposed equal to one another, have been with reason made use of for the measure of duration." Essay, II, xiv, 19 (F.I. 247). However, "any constant periodical appearance, or alteration of ideas, in seemingly equidistant spaces of duration, if constant and universally observable, would have as well distinguished the intervals of time." Ibid.

stands for the duration-property of that one idea now being held before one's mind. Experiences of this type furnish the mind with the raw materials or simple ideas of duration-units out of which it constructs the simple modes of duration. The following two texts seem to substantiate the interpretation which has just been given.

... a part of duration [...], wherein we perceive no succession, is that which we call an instant, and is that which takes up the time of only one idea in our minds, without the succession of another; wherein, therefore, we perceive no succession at all.⁸²

Every part of duration is duration too; and every part of extension is extension, both of them capable of addition or division in infinitum. But the least portions of either of them, whereof we have clear and distinct ideas, may perhaps be fittest to be considered by us, as the simple ideas of that kind out of which our complex modes of space, extension, and duration are made up, and into which they can again be distinctly resolved. Such a small part in duration may be called a moment, and is the time of one idea in our minds, in the train of their ordinary succession there.⁸³

How does a person form simple modes of duration? The principal faculty which is involved in the production of such complex ideas is, according to Locke, the mind's power of compounding. When producing these temporal ideas, the compounding faculty functions, apparently, in the same manner that it does when it forms simple modes of unity: it simply

82 Essay, II, xiv, 10 (F.I. 243).

83 Essay, II, xv, 9 (F.I. 266).

repeats the abstract simple idea of duration (called an "instant" or a "moment"), and it adds or combines these repetitions together.⁸⁴ The abstract products of such acts of compounding are particular temporal complex ideas or simple modes of duration.

How do simple modes of duration become universals? Locke simply does not answer this question. His theory of the simple modes of duration seems, however, to imply that a simple mode of duration can function as a representative of all imaginable and real beings whose duration-property is cognized to be commensurate to the temporal idea in question.

In conclusion it may be said that each temporal idea—save those simple ideas which may be called "instants" or "moments"—is: (i) a complex idea, because each one has been made by the mind and consists of two or more simple ideas; (ii) a mode, because each of them may stand for an affection or property of some substances; and (iii) a simple mode, because each one is a combination of simple homogeneous ideas.

⁸⁴ Cf. Essay, II, xiv, 30 (F.I. 255); and Essay, II, xv, 9 (F.I. 264-267). Duration is discussed at length in "Draft B", but no clarification of the present problem may be found there. Cf. Draft B, 101-122 (R. 222-259).

C. MIXED MODES, I.E., COMBINATIONS OF SIMPLE
AND/OR COMPLEX HETEROGENEOUS IDEAS

1. WHAT IS A "MIXED MODE"?

Unlike simple modes, the ingredients of mixed modes are ideas of different kinds.⁸⁵ Such ingredients, according to Locke, may be both simple ideas and complex ones:

"... all our complex ideas are ultimately resolvable into simple ideas, [...] though perhaps their immediate ingredients [...] are also complex ideas."⁸⁶ In fact, says Locke, most mixed modes are made out of the complex ideas or simple modes of thinking, motion and power:⁸⁷ "These simple ideas, I say, of thinking, motion, and power, have been those which have been most modified; and out of whose modifications [i.e., simple modes] have been made most complex [i.e., mixed] modes."⁸⁸ Now when these texts are viewed in

⁸⁵ Cf. Essay, II, xii, 5 (F.I. 215-216); and Essay, II, xxii, 1 (F.I. 381).

⁸⁶ Essay, II, xxii, 9 (F.I. 385-386).

⁸⁷ The precise meaning of these three simple modes is somewhat impossible to discover, because Locke treats of them so scantily; the work of Professor Lodge is somewhat helpful. Regarding the simple modes of thinking, cf. Essay, II, xix (F.I. 298-301), and Rupert Clendon LODGE, The Meaning and Function of Simple Modes in the Philosophy of John Locke, p. 11, 19-22 and 34-38; regarding the simple modes of motion, cf. Essay, II, xviii, 2 (F.I. 294-5), and Rupert Clendon LODGE, op. cit., p. 11, 17-18 and 33; and regarding the simple modes of power, cf. Essay, II, xviii, 6 (F.I. 295-6), and Rupert Clendon LODGE, op. cit., p. 11, 18-19 and 33-34.

⁸⁸ Essay, II, xxii, 10 (F.I. 387).

the light of Locke's general description of modes, it becomes apparent that for Locke a mixed mode is a complex idea which is formed by the mind out of simple and/or complex heterogeneous ideas, and sometimes considered by it to represent an affection or property of some substances.

2. THREE WAYS WHEREBY A PERSON OBTAINS MIXED MODES

In his Essay, Book Two, Chapter Twenty Two, section nine, Locke lists three ways whereby a person obtains mixed modes, namely,

... (1) By experience and observation of things themselves: thus, by seeing two men wrestle or fence, we get the idea of wrestling or fencing. (2) By invention, or voluntary putting together of several simple ideas in our own minds: so he that first invented printing or etching, had an idea of it in his mind before it ever existed. (3) Which is the most usual way, by explaining the names of actions we never saw, or motions we cannot see; and by enumerating, and thereby, as it were, setting before our imaginations all those ideas which go to the making them up, and are the constituent parts of them. For, having by sensation and reflection stored our minds with simple ideas, and by use got the names that stand for them, we can by those means represent to another any complex idea we would have him conceive; so that it has in it no simple idea but what he knows, and has with us the same name for.⁸⁹

Thus, Locke asserts, in virtue of one's acts of "experience and observation", or in virtue of one's acts of "invention", a person may frame mixed modes without the aid of an

⁸⁹ Essay, II, xxii, 9 (F.I. 385).

instructor. Usually, however, a person frames a mixed mode only after someone has explained the meaning of the name of it to him. For instance, having obtained the idea "man" and the idea "killing" (the ingredients of which might include such ideas as the intention of taking the life of another, the physical act of pulling the trigger of a gun, and so on), Paul invents the mixed mode or complex idea which he calls "murder". Now, although Mark has obtained the idea "man" and the idea "killing", he has never framed that mixed mode which Paul calls "murder". Consequently, when Paul uses the name "murder", Mark does not know what that word means or signifies. However, when Paul explains the meaning of the name "murder" in terms of the ideas that Mark does have, Mark can then frame that mixed mode in his own mind, and, therefore, know what sort or species of human action Paul is thinking and talking about when he uses the name "murder".⁹⁰

3. THERE ARE THREE BASIC STEPS INVOLVED IN THE PRODUCTION OF A MIXED MODE

In his Essay, Book Three, Chapter Five, section four (entitled "How this is done"), Locke asserts that there are three steps involved in the mental formation of a mixed mode:

⁹⁰ Cf. Essay, II, xxii, 3 (F.I. 382-383); Essay, III, v, 6 (F.II. 45-46); Essay, III, v, 15 (F.II. 53); and Essay, III, ix, 7 (F.II. 107-108).

... First, It chooses a certain number [of ideas that are present in the mind]; Secondly, It gives them connexion, and makes them into one idea; Thirdly, It ties them together by a name.⁹¹

These three steps will now be examined in some detail.

For Locke the first step involved in the formation of a mixed mode consists in choosing a certain number of ideas that are present in one's mind. Unfortunately, Locke nowhere elucidates this point. His meaning, however, seems to be as follows: a person (i) takes notice of the ideas before his mind; (ii) decides to combine several of them into one idea, and so (iii) separates or abstracts each one of those (which he intends to combine into a mixed mode) from their present setting or context—each ingredient of a mixed mode, accordingly, is itself an abstract idea. Thus, the first step in the formation of a mixed mode seems to involve (among other operations) a number of acts of abstraction.⁹²

91 Essay, III, v, 4 (F.II. 44).

92 Locke says that the fact that there are some words found in one language and not in another "plainly shows that those of one country, by their customs and manner of life, have found occasion to make several complex ideas, and given names to them, which others never collected into specific ideas. This could not have happened if these species were the steady workmanship of nature, and not collections made and abstracted by the mind, in order to naming, and for the convenience of communication." Essay, III, v, 8 (F.II. 48). Cf. Essay, III, v, 5 (F.II. 45); and Essay, III, vi, 44 (F.II. 92). Locke calls mixed modes "abstract complex ideas", cf. Essay, III, v, 9 (F.II. 49); and Essay, III, v, 15 (F.II. 53).

The second step in the process of constructing a mixed mode is executed basically by an act of compounding. The principal texts in which Locke elaborates this act read as follows:

... the mind in [i.e., when making] mixed modes arbitrarily unites into complex ideas such as it finds convenient; whilst others that have altogether as much union in nature are left loose, and never combined into one idea, because they have no need of one name. It is evident then that the mind, by its free choice, gives a connexion to a certain number of ideas, which in nature have no more union with one another than others that it leaves out: [...]. And there is nothing more evident than that, for the most part, in the framing these ideas, the mind searches not its patterns in nature, nor refers the ideas it makes to the real existence of things, but puts such together as may best serve its own purposes, without tying itself to a precise imitation of anything that really exists.⁹³

But, though these complex ideas or essences of mixed modes depend on the mind, and are made by it with great liberty, yet they are not made at random, and jumbled together without any reason at all. Though these complex ideas be not always copied from nature, yet they are always suited to the end for which abstract ideas are made: and though they be combinations made of ideas that are loose enough, and have as little union in themselves as several other to which the mind never gives a connexion that combines them into one idea; yet they are always made for the convenience of communication, which is the chief end of language. [...] It suffices that men make and name so many complex ideas of these mixed modes as they find they have occasion to have names for, in the ordinary occurrence of their affairs.⁹⁴

93 Essay, III, v, 6 (F.II. 46).

94 Essay, III, v, 7 (F.II. 46-47).

For Locke, then, mixed modes may or may not be mental likenesses of affections or properties of real beings.⁹⁵ The production of an imitation is not the principal end or purpose of the compounding activity in question. Furthermore, in the production of mixed modes the mind may unite abstract ideas of properties without knowing whether or not such properties are in fact so united in extramental realities.⁹⁶ The arbitrariness that is characteristic of these acts of compounding, however, is not capriciousness; rather the liberty which is characteristic of these acts is a teleological liberty, a liberty purposely oriented towards the end for which all abstract ideas are made, namely, the convenience of communication, which is the chief end of language.⁹⁷

95 Which mixed modes are mental copies of attributes or properties of real beings, and which are not? Locke simply does not answer this question. He does say, however, that "in mixed modes, at least the most considerable parts of them, which are moral beings, we consider the original patterns as being in the mind." Essay, III, v, 12 (F.II. 51). Cf. Essay, II, xxii, 2 (F.I. 382).

96 For instance, Locke asserts that "the man who first framed the idea [i.e., the mixed mode] of hypocrisy, might have either taken it at first from the observation of one who made show of good qualities which he had not; or else have framed the idea in his mind without having any such pattern to fashion it by." Essay, II, xxii, 2 (F.I. 382).

97 Cf. Essay, II, xxii, 2 (F.I. 382); Essay, III, v, 3 (F.II. 43-44); Essay, III, v, 5-6 (F.II. 45-46); Essay, III, ix, 7 (F.II. 107); Essay, III, xi, 15 (F.II. 156); and Essay, III, x, 23-25 (F.II. 142-143).

The third and final step involved in the formation of a mixed mode consists in an act of the mind's faculty of naming: it is in virtue of this activity, Locke maintains, that the product (i.e., the mixed mode) of the act of compounding has a lasting duration. Regarding this point Locke says:

Every mixed mode consisting of many distinct simple [and/or complex] ideas, it seems reasonable to inquire, Whence it has its unity; and how such a precise multitude comes to make but one idea; since that combination does not always exist together in nature? To which I answer, it is plain it has its unity from an act of the mind, combining those several simple [and/or complex] ideas together, and considering them as one complex one, consisting of those parts; and the mark of this union, or that which is looked on generally to complete it, is one name given to that combination.⁹⁸

... it is the name that seems to preserve those [nominal] essences [or mixed modes], and give them their lasting duration. For, the connexion between those loose parts of those complex ideas being made by the mind, this union, which has no particular foundation in nature, would cease again, were there not something that did, as it were, hold it together, and keep the parts from scattering. Though therefore it be the mind that makes the collection, it is the name which is as it were the knot that ties them fast together.⁹⁹

For Locke, then, a mixed mode is an abstract complex idea, the formation of which involves basically three mental faculties: abstraction, compounding and naming.

⁹⁸ Essay, II, xxii, 4 (F.I. 383).

⁹⁹ Essay, III, v, 10 (F.II. 49-50). Cf. Essay, III, v, 11 (F.II. 50-51).

4. EXAMPLES OF MIXES MODES

Throughout his discussion of mixed modes Locke asserts that such names as the following signify abstract complex ideas of this type: "obligation", "drunkenness", "beauty", "theft", "hypocrisy", "sacrilege", "murder", "parricide", "jealousy", "wrestling", "adultery", "incest", "justice", "ambition", and so on. Unfortunately, however, the only two mixed modes whose ingredients he enumerates in some detail are the one signified by the word "lie" and the one signified by the word "murder". Concerning the former he says that

... the mixed mode which the word lie stands for is made of these simple ideas:—(1) Articulate sounds. (2) Certain ideas in the mind of the speaker. (3) Those words the signs of those ideas. (4) Those signs put together, by affirmation or negation, otherwise than the ideas they stand for are in the mind of the speaker. I think I need not go any further in the analysis of that complex idea we call a lie: [...] And it could not be but an offensive tediousness to my reader, to trouble him with a more minute enumeration of every particular simple idea that goes to this complex one;....¹⁰⁰

And concerning the latter he says

... let us consider the complex idea we signify by the word murder: and when we have taken it asunder, and examined all the particulars, we shall find them to amount to a collection of simple ideas derived from reflection or sensation, viz. First, from reflection on the operations of our own minds, we have the ideas of willing, considering, purposing beforehand, malice, or wishing ill to

¹⁰⁰ Essay, II, xxii, 9 (F.I. 386).

another; and also of life, or perception, and self-motion. Secondly, from sensation we have the collection of those simple sensible ideas which are to be found in a man, and of some action, whereby we put an end to perception and motion in the man; all which simple ideas are comprehended in the word murder.¹⁰¹

For Locke mixed modes of human actions—and it is with modes of this type that he is principally concerned throughout his discussion—consist, apparently, of simple ideas of the ends, objects, manners and circumstances of such actions: "Human actions, when with their various ends, objects, manners, and circumstances, they are framed into distinct complex ideas, are, [...] so many mixed modes."¹⁰²

5. HOW DO MIXED MODES BECOME UNIVERSALS?

A mixed mode as such is, according to Locke, an abstract complex idea or meaning. How then does a person generalize or universalize his mixed modes? In other words, how do mixed modes become universals? Locke simply does not answer this question in his treatise on mixed modes. In another context, however, he says that the general or universal meaning of ideas (and words) is "nothing but the capacity they are put into, by the understanding, of signifying or representing many particulars. For the signification

¹⁰¹ Essay, II, xxviii, 14 (F.I. 480-481).

¹⁰² Essay, II, xxviii, 4 (F.I. 473).

they have is nothing but a relation that, by the mind of man, is added to them."¹⁰³ Thus, does a "mixed mode" (and one might add: a "simple mode"), in Locke's view, become a universal when its possessor adds to it the relation of signifying many (real or imaginable) instances of the affection or property in question? Perhaps. But, as has been said, Locke simply does not answer this question when discussing modes.

6. A CONCLUDING REMARK

In conclusion it may be said that the type of mental fabrications just examined are called: (i) complex ideas, because they are formed by the mind and consist of two or more simple and/or complex ideas; (ii) modes, because they may stand for affections or properties of some substances; and (iii) mixed modes, because they are combinations of heterogeneous ideas. Moreover, since the mind can form mixed modes without examining whether they have a counterpart in nature, such complex ideas may be "called notions: as if they had their original, and constant existence, more in the thoughts of men, than in the reality of things."¹⁰⁴

¹⁰³ Essay, III, iii, 11 (F.II. 22).

¹⁰⁴ Essay, II, xxii, 2 (F.I. 382). One should not become confused by the words "as if"—the type of complex idea in question here is called a "mixed mode" or "notion"; its counterpart in nature is called an "affection" of a substance.

SECTION IV

RELATIONS

A. INTRODUCTORY REMARKS

If a philosopher were to make a list of perennial philosophic questions, and if he were then to divide that list into I. LESS DIFFICULT QUESTIONS and II. MORE DIFFICULT QUESTIONS, undoubtedly he would place the question: "What is a predicamental relation?" under the latter heading. Indeed, as the history of philosophy reveals, the human mind can find reasons for asserting that such relations are real properties of things, and reasons for asserting that they are properties which the mind itself superimposes upon realities. Moreover, if this same philosopher were to compile a list of philosophic treatises on predicamental relations, and if he were then to divide that list into I. LESS INSTRUCTIVE TREATISES and II. MORE INSTRUCTIVE TREATISES, undoubtedly he would place Locke's Essay, Chapters Twenty Five through Twenty Eight (to say nothing of his Draft A, sections 3-4, 6 and 17-24, and Draft B, sections 26, 96, 98-100, 131-133 and 145-160), under the former heading, for, as Professor R. I. Aaron (and other commentators) points out, "the analysis that we find here is crude and uncertain."¹⁰⁵

¹⁰⁵ Richard I. AARON, John Locke, p. 179.

Finally, if this philosopher were to subdivide his list of LESS INSTRUCTIVE TREATISES into A. METAPHYSICAL (i.e., treatises which endeavor to explain what a predicamental relation is) and B. PSYCHOLOGICAL (i.e., treatises which endeavor to explain how one acquires ideas of predicamental relations), undoubtedly he would place Locke's Essay under the latter heading, for such, quite obviously, is his principal aim.

The aim of the present paragraph is threefold: first, to state a definition of "relation" which, in general, would have been acceptable in the English speaking world of Locke's era; second, to draw attention to the four distinct factors or elements which are present in a predicamental relation; and third, to indicate that principal factor or element which occasions serious disputes about the nature of a predicamental relation. First, a relation may be defined as "that by which things are connected, either objectively or in the mind",¹⁰⁶ or "That feature or attribute of things which is involved in considering them in comparison or contrast with each other".¹⁰⁷ Secondly, the four distinct

106 A STANDARD DICTIONARY of the English Language, Isaac K. Funk (ed.), New York, Funk & Wagnalls Company, 1897, Vol. 2, p. 1505.

107 A NEW ENGLISH DICTIONARY On Historical Principles, Sir James A. H. Murray (ed.), Oxford, Clarendon Press, 1914, Vol. 8, p. 398.

factors or elements which are present in a predicamental relation are: (i) the subject of the relation, i.e., the thing which has a reference or is related; (ii) the term of the relation, i.e., the thing to which the subject is referred or related; (iii) the foundation for the relation, i.e., the cause or reason on account of which the subject has a reference or is related to the term; and (iv) the relation itself, i.e., the reference or "towardness" which the subject has to the term. For instance, if Paul has a relation of equality of height to Mark, Paul is the subject, Mark is the term, and their correspondence in height is the foundation of the relation of equality. Thirdly, it is the fourth factor or element, namely, the relation itself, the reference, the "towardness" of the subject to the term, which occasions serious disputes about the nature of a predicamental relation. The problem in question may be formulated as follows: "Is the relation, the reference, the towardness of the subject to the term a real property, a real accident inhering in the subject—a property or accident which the human mind can discover in that subject?" "Or is it, on the contrary, a being of reason, a product of a mental act of comparison, an accident or property which the mind somehow creates and superinduces or projects upon the subject?" If the latter, then all quantitative, qualitative and causal relations are logical relations, i.e., mental products which

have no other being than that which they have in and for the mind, and real beings are isolated or unconnected individuals.

B. THE SUBJECT, TERM AND FOUNDATION OF A RELATION

In "Draft A", "Draft B" and the Essay itself Locke insists that there are four distinct elements or factors present in a relation, namely, (i) a subject, (ii) a term, (iii) a foundation and (iv) the relation itself. Concerning the first three of these distinct elements "Draft A" states that "In all relation [...] there is included the two things which are compared one with another and the occasion or ground of that comparison."¹⁰⁸ "Draft B" states that

... to relation it is necessary that there should be two things or ideas, either in themselves really separate, or considered as distinct, and then some ground or occasion for their comparisons, or quality wherein they agree or differ.¹⁰⁹

And the same point is re-stated in the Essay as follows:

"There must always be in relation two ideas or things, either in themselves really separate, or considered as distinct, and then a ground or occasion for their comparison."¹¹⁰ For example, if Caius has entered into a contract

108 Draft A, 20 (A-G. 34).

109 Draft B, 98 (R. 215).

110 Essay, II, xxv, 6 (F.I. 429).

and ceremony of marriage with Sempronia, he is related to Sempronia by a relation of 'husbandship'. In this relationship Caius is the subject, Sempronia is the term, and the contract and ceremony of marriage is the foundation of or reason for this relation of 'husbandship'.¹¹¹ The fourth factor, namely, the relation itself, will be examined in some detail in subsequent paragraphs of this section.

C. TYPES OF RELATIONS

In "Draft A", "Draft B" and the Essay itself Locke sorts or classifies relations in virtue of the various foundations for comparing things together or referring things one to another.¹¹² Besides the foundations of causality, time, place (mentioned in the Essay, II, xxvi, entitled "Of Cause and Effect, and Other Relations") and the being of things (mentioned in the Essay, II, xxvii, entitled "Of Identity and Diversity"), Locke mentions four other reasons for comparing things together in Chapter Twenty Eight of Book Two of the Essay. First, "the equality and excess of the same simple idea, in several subjects"¹¹³ is the

111 Cf. Essay, II, xxv, 1 (F.I. 427).

112 Cf. Draft A, 19-23 (A-G. 33-35); Draft B, 146-152 (R. 286-292); and Essay, II, xxviii, 1-4 (F.I. 471-474).

113 Essay, II, xxviii, 1 (F.I. 471).

foundation of proportional relations. For example, "hony is sweeter then Liquerish, the Sun brighter then the moone i.e. the sweetnesse in sugr is greater then that in liquerish and the brightnesse in the Sun is greater then that in the moone."¹¹⁴ Secondly, "the circumstances of their origin or beginning"¹¹⁵ is the foundation of natural relations. For example, "father and son, brothers, cousin-germans, &c., which have their relations by one community of blood, wherein they partake in several degrees".¹¹⁶ Thirdly, "some act whereby any one comes by a moral right, power, or obligation to do something"¹¹⁷ is the foundation of instituted or voluntary relations. For example,

... a general is one that has power to command an army; and an army is a collection of armed men, obliged to obey one man. [...] A painter, one that by exercise has got the skill or power to make the resemblances of things with colors.¹¹⁸

Fourthly, moral relations are "the conformity or disagreement men's voluntary actions have to a rule to which they are referred, and by which they are judged of".¹¹⁹ In "Drafts A and B" the reader is told that a moral

114 Draft A, 20 (A-G. 34).

115 Essay, II, xxviii, 2 (F.I. 471).

116 Essay, II, xxviii, 2 (F.I. 471).

117 Essay, II, xxviii, 3 (F.I. 472).

118 Draft B, 149 (R. 288).

119 Essay, II, xxviii, 4 (F.I. 473).

... relation has for its foundation a collection of several simple ideas, and also several of the fore-mentioned relations, all which together concur to the making up or circumstantiating any action, and so taken together are compared to a rule;....¹²⁰

For example,

... a man's holding a gun in his hand and pulling down the trigger may be, either, a rebellion, parricide, murder, homicide, duty, justice, valor, or recreation, and be thus variously diversified and put into those different ranks, when all the circumstances put together are compared to a rule; though the simple action of holding the gun and pulling the trigger may be exactly the same;...¹²¹

In conclusion it should be noted that there are foundations other than those mentioned above for comparing things together—in fact, Locke says that there are "infinite others".¹²² According to Locke, then, there may well be many other types or classes of relations than the four just examined.

D. IDEAS OF RELATIONS

Locke contends that each idea contains or includes in it some kind of secret relation—however, he really does

¹²⁰ Draft B, 151 (R. 291-292). Cf. Draft A, 23 (A-G. 35).

¹²¹ Draft B, 151 (R. 292). Cf. Draft A, 23 (A-G. 35).

¹²² Essay, II, xxviii, 1 (F.I. 471). Cf. Essay, II, xxv, 7 (F.I. 429).

not explain what he means by this "containing" or "including".¹²³ He insists that ideas of relations are not given in experience, i.e., are neither simple ideas of sensation nor simple ideas of reflection; rather, they are products of mental acts of comparing ideas:

BESIDES the ideas, whether simple or complex, that the mind has of things as they are in themselves, there are others [viz. ideas of relations] it gets from their comparison one with another.¹²⁴

The COMPARING them one with another, in respect of extent, degrees, time, place, or any other circumstances, is another operation of the mind about its ideas, and is that upon which depends all that large tribe of ideas comprehended under relation;
....¹²⁵

For instance, when Paul juxtaposes his idea of Caius and his idea of Sempronia, and when he compares them in respect of the contract and ceremony of marriage into which these two persons entered, a new idea, namely, an idea of the relation of 'husbandship', is produced in Paul's mind by this exercise of his comparing faculty.

123 Cf. Essay, II, xxi, 3 (F.I. 310).

124 Essay, II, xxv, 1 (F.I. 426).

125 Essay, II, xi, 4 (F.I. 204). Cf. Draft A, 3 (A-G. 10-11); and Draft B, 26 (R. 76-77).

E. RELATIONS TERMINATE IN SIMPLE IDEAS OF
SENSATION OR REFLECTION

In "Draft A", "Draft B" and the Essay itself the reader is told that each relation "is ultimately founded upon", "terminates in", and so on, simple ideas of sensation or reflection.¹²⁶ This point need not be dwelt upon in the present study, for Locke's meaning is rather apparent; moreover, it has been stated concisely by Professor D. J. O'Connor as follows:

The way in which relations 'terminate in' simple ideas is entirely different from the way in which other complex ideas do so. Modes and substances 'terminate in' simple ideas in the sense that they can be analysed into such simple ideas. Similarly modes and [ideas of particular] substances are 'made up out of', are 'derived from' or 'take their beginning from' simple ideas in the straightforward sense that they are constructed out of them. But it is quite obvious from Locke's analysis that these phrases have a new meaning when he applies them to relations. They have in fact two new meanings, one direct and one indirect. To say that relations 'terminate in' simple ideas may mean (a) merely that the related terms are simple ideas or (b) that the related terms are complex ideas which themselves 'terminate in' simple ideas in the first sense of the phrase.¹²⁷

126 Cf. Draft A, 4 (A-G. 11) and 24 (A-G. 36); Draft B, 100 (R. 220) and 153 (R. 292); and Essay, II, xxv, 9 (F.I. 431) and 11 (F.I. 432); Essay, II, xxvi, 2 (F.I. 435); and Essay, II, xxviii, 18 (F.I. 483).

127 D. J. O'CONNOR, John Locke, London, Penguin Books, 1952, p. 58-59.

F. HOW DO IDEAS OF RELATIONS BECOME UNIVERSALS?

Judging from the examples of relations that Locke uses in his treatise, it would seem that the products of the mind's faculty of comparing are particular ideas. If this be so, how do these ideas of relations become universals? Do they become universals in the same manner that particular ideas of substances become universals? No definitive answer to this question can be given, for Locke simply does not inform his reader as to his position on this matter; as Professor R. I. Aaron correctly observes, Locke has a

... tendency to concentrate upon the problem of species and genera to the exclusion of other problems. [...] this tendency causes Locke to neglect two classes of universals which are of great importance, namely, qualities and relations.¹²⁸

¹²⁸ Richard I. AARON, The Theory of Universals, p. 40. Cf. D. J. O'CONNOR, John Locke, p. 140; and F.II. 55, note 2. It might be well to add here that for Locke ideas of relations are not copies of ontological principles; he says that "in [mixed] modes and relations, I cannot have ideas disagreeing to the existence of things: for modes being complex ideas, made by the mind at pleasure, and relation being but by way of considering or comparing two things together, and so also an idea of my own making, these ideas can scarce be found to disagree with anything existing; since they are not in the mind as the copies of things regularly made by nature, nor as properties inseparably flowing from the internal constitution or essence of any substance; but, as it were, patterns lodged in my memory, with names annexed to them". Essay, III, x, 33 (F.II. 145). Cf. Essay, II, xxx, 4 (F.I. 499); Essay, II, xxxi, 3 (F.I. 504) and 14 (F.I. 512-513); Essay, III, v, 16 (F.II. 53), and then Essay, III, v, 1-15 (F.II. 43-53). Locke says that ideas of relations are complex ideas, cf. Draft A, 3 (A-G. 11) and 18 (A-G. 32); Draft B, 99 (R. 218); and Essay, II, xxv, 8 (F.I. 430), for instance.

G. THE RELATION ITSELF IS A FEATURE WHICH
THE MIND PROJECTS UPON REALITY

As has been said, there are four distinct factors or elements present in a predicamental relation: (i) a subject; (ii) a term; (iii) a foundation and (iv) the relation itself, i.e., the reference or "towardness" of the subject in question to the term (or terms) in question. The point to be considered now is this: "For Locke, is the relation itself a feature in a reality?" "Or is it, on the contrary, a feature which one's mind somehow creates and superinduces or projects upon a reality?" Granting with Professor R. I. Aaron that Locke 'bantered' ideas of relations,¹²⁹ one need not agree with Mr. Aaron's assertion that "no very explicit answer to the question as to whether relations are objective or subjective can be found in the Essay",¹³⁰ for a definite answer to the question just posed does seem to emerge from his writings. Locke's basic texts on this point will now be cited in the chronological order in which they appear in "Draft A", "Draft B", his Journal and the Essay itself:

129 Cf. Richard I. AARON, John Locke, p. 192.

130 Ibid., p. 181.

The minde being furnishd with the Ideas of several things [...] begins to frame other conceptions of them besides what necessarily goe to the makeing them be this thing and that is in compareing and considering them with reference to some other [...]. Those names of relation depending upon comparisons made by our owne mindes are [...] most commonly in that which they expresse as it were superinduced on the substance....¹³¹

Relation [...] I thinke is the Agreeing or disagreeing of two or more things one with an other in any way wherein they are capeable of being compared.¹³²

... those who have far different ideas of a man may yet agree in the notion of a father; which is a notion superinduced to the substance, or man,....¹³³

... I take relation to be any way of comparing or considering two things together, and giving one or both of them some appellation from that comparison; or sometimes giving even the relation itself a name.¹³⁴

... relation being the considering of one thing with another,....¹³⁵

Besides the considering things barely and separately in them selves, the minde considers them also with respect i.e. at the same time lookeing upon some other and this we call relation. Soe that if the minde soe considers any thing that an other is necessarily supposd this is relation. Relation then is that which necessarily makes us consider two things at once or makes the minde looke on two things at once, and hence it is that relative

131 Draft A, 3 (A-G. 10-11).

132 Draft A, 20 (A-G. 34).

133 Draft B, 98 (R. 213).

134 Draft B, 98 (R. 217).

135 Draft B, 100 (R. 220).

termes or words that signifie this relation soe denominate one thing as that they always intimate or denote another, v.g. father, country man biger, distant.¹³⁶

The understanding, in the consideration [of the idea] of anything, is not confined to that precise object: it can carry [its consideration of] any idea as it were beyond itself, or at least look beyond it, to see how it stands in conformity to an other [idea]. When the mind so considers one [idea of a] thing, that it does as it were bring it to, and set it by another, and carries its view from one to the other—this is, as the words import, relation and respect;....¹³⁷

The nature [...] of relation consists in the referring or comparing two things one to another;¹³⁸

... relation is a way of comparing or considering two things together, and giving one or both of them some appellation from that comparison; and sometimes giving even the relation itself a name.¹³⁹

... This further may be considered concerning relation, that though it be not contained in the real existence of things, but something extraneous and superinduced,....¹⁴⁰

... relations, having no other reality but what they have in the minds of men, there is nothing more required to this kind of ideas to make them real, but that they be so framed, that there be a possibility of existing conformable to them.¹⁴¹

¹³⁶ John LOCKE, Journals, entry of Thursday, January 20, 1678. (A-G. 99.)

¹³⁷ Essay, II, xxv, 1 (F.I. 426-427).

¹³⁸ Essay, II, xxv, 5 (F.I. 428).

¹³⁹ Essay, II, xxv, 7 (F.I. 429-430).

¹⁴⁰ Essay, II, xxv, 8 (F.I. 430).

¹⁴¹ Essay, II, xxx, 4 (F.I. 499).

In view of the texts just cited one can say with confidence that for Locke the relation itself is a feature which one's mind somehow creates and superinduces or projects upon reality. In other words, no thing is really related to another—it is one's mind that relates one thing to another.¹⁴²

Now before leaving the series of texts just cited, one further point should be noted. Granting the obscurity of these texts, it is rather evident that Locke identifies relations with mental acts of comparing distinct ideas. Ideas of relations, accordingly, are mental representations of such mental activities. For example, an instance of the relation of 'husbandship' is Paul's mental act of comparing his idea of Caius with his idea of Sempronia in respect of his ideas of the contract and ceremony of marriage into which these two persons entered; and Paul's idea of this relationship is his mental representation of his act of comparing those ideas. Whether or not this is an adequate and correct theory of relations is a question which lies outside the scope of the present study.

¹⁴² Locke seems to insist that even causal relations are beings of reason: "... whatever is considered by us to conduce or operate to the producing any particular simple idea, or collection of simple ideas, whether substance or mode, which did not before exist, hath thereby in our minds the relation of a cause, and so is denominated by us." Essay, II, xxvi, 1 (F.I. 434). Cf. Draft B, 132 (R. 274-275).

H. WHY DOES LOCKE ASSERT THAT THE RELATION ITSELF
IS NOT A REAL PROPERTY OF A THING?

It may be well to conclude the present examination of Locke's theory of relations by posing the following question: "Why does Locke consider relations to be beings of reason rather than properties of entities?" Locke simply does not answer this question; nevertheless, there are several of his texts which do seem to indicate an answer.

First, Locke says that

... when the mind considers Caius as such a positive being, it takes nothing into that idea but what really exists in Caius; v.g. when I consider him as a man, I have nothing in my mind but the complex idea of the species, man. So likewise, when I say Caius is a white man, I have nothing but the bare consideration of a man who hath that white colour. But when I give Caius the name husband, I intimate some other person; and when I give him the name whiter, I intimate some other thing: in both cases my thought is led to something beyond Caius, and there are two things brought into consideration.¹⁴³

Locke may have felt, then, that if these two relations were features or properties inhering in Caius, one's mind should be able to discover them by a mere consideration of Caius as such. Secondly, Locke says that

... one single man may at once be concerned in, and sustain all these following relations, and many more, viz. father, brother, son, grandfather, grandson, father-in-law, son-in-law, husband,

¹⁴³ Essay, II, xxv, 1 (F.I. 427). Cf. Essay, II, xxv, 10 (F.I. 431-432).

friend, enemy, subject, general, judge, patron, client, professor, European, Englishman, islander, servant, master, possessor, captain, superior, inferior, bigger, less, older, younger, contemporary, like, unlike, &c., to an almost infinite number:
¹⁴⁴

Locke may have felt that if relations, like primary qualities, are real properties of a substance, then a substance could no more sustain relations such as "like" and "unlike" at one and the same time, than it could be both "solid" and "nonsolid" at one and the same time. Thirdly, Locke says that

... barely by the mind's changing the object to which it compares anything, the same thing is capable of having contrary denominations at the same time: v.g. Caius, compared to several persons, may truly be said to be older and younger, stronger and weaker, &c.¹⁴⁵

Locke may have felt that if relations, like primary qualities, are real properties of a substance, then no substance could be an apt subject for contrary relative denominations at one and the same time.¹⁴⁶

¹⁴⁴ Essay, II, xxv, 7 (F.I. 429).

¹⁴⁵ Essay, II, xxv, 5 (F.I. 429).

¹⁴⁶ Cf. James GIBSON, Locke's Theory of Knowledge and its Historical Relations, p. 193-196 and 292.

SECTION V

IDEAS OF SUBSTANCES

A. INTRODUCTORY REMARK

Locke avowedly declares that: a) the immediate objects of one's acts of perception, thinking or understanding are ideational contents in his mind, the "little world of his own understanding";¹⁴⁷ b) those simple ideas which one derives from sensation and reflection are "the foundation and materials of all our ideas, and consequently of all our knowledge";¹⁴⁸ c)

We know nothing of things beyond our simple Ideas of them. [...] whensoever we would proceed beyond these simple ideas we have from sensation and reflection, and dive further [i.e., attempt to go beyond these boundaries of our thoughts] into the nature of things, we fall presently into darkness and obscurity, perplexedness and difficulties, and can discover nothing further but our own blindness and ignorance.¹⁴⁹

¹⁴⁷ Essay, II, ii, 2 (F.I. 145). Cf. Essay, II, i, 1 (F.I. 121); Essay, IV, xxi, 4 (F.II. 461); and "CHAPTER TWO, SECTION III, D" of the present study.

¹⁴⁸ John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 20. Cf. Essay, II, i, 2-5 (F.I. 121-125); Essay, II, ii, 2 (F.I. 145-146); Essay, II, vii, 10 (F.I. 164-165); "CHAPTER ONE, SECTION III" and "CHAPTER TWO, SECTION III" of the present study.

¹⁴⁹ Essay, II, xxiii, 32 (F.I. 417-418). Cf. Essay, II, xxiii, 29 (F.I. 415).

and, d) one has no innate idea of substance; moreover, "we neither have nor can have [an idea of substance] by sensation or reflection."¹⁵⁰

Now granting these four points, one might ask Locke the following questions, namely, "How does one form and justify his formation of: 1. a complex idea of this, that, or the other individual (material or immaterial) substance; 2. an abstract idea of pure substance in general; and 3. a general or universal abstract complex idea which he considers to be representative of many individual substances?"

The paragraphs which follow will endeavor to present Locke's answers to these questions. With a view to grasping these answers, the reader is well advised to lay aside those philosophic perspectives to which he may be accustomed, and to place himself within the perspective of a "man on the street".

B. PARTICULAR COMPLEX IDEAS OF INDIVIDUAL SUBSTANCES

In his Essay, Book Two, Chapter Twenty Three (entitled "Of Our Complex Ideas of Substances"), section one (entitled "Ideas of particular Substances, how made"), Locke

¹⁵⁰ Essay, I, iii, 19 (F.I. 107). Locke maintains that material things cannot "furnish the understanding with any ideas but of sensible qualities, because they operate on the senses no other way." Draft B, 19 (R. 63).

sets forth his view concerning how one forms and justifies his formation of a complex idea of this, that, or the other individual (material or immaterial) substance; this text reads as follows:

The mind being, as I have declared, furnished with a great number of the simple ideas, conveyed in by the senses as they are found in exterior things, or by reflection on its own operations, takes notice also that a certain number of these simple ideas go constantly together; which being presumed to belong to one thing, and words being suited to common apprehensions, and made use of for quick dispatch, are called, so united in one subject, by one name; which, by inadvertency, we are apt afterward to talk of and consider as one simple idea, which indeed is a complication of many ideas together: because, as I have said, not imagining how these simple ideas can subsist by themselves, we accustom ourselves to suppose some substratum wherein they do subsist, and from which they do result, which therefore we call substance.¹⁵¹

With a view to grasping the full import of this text, it will be instructive to consider it in some detail and in the light of several other texts; to facilitate this rather lengthy explication, the key elements will be set forth in point form in seven separate paragraphs.

First, sensation and reflection are principles or sources of simple ideas—not of complex ideas.¹⁵² Consequently, one may conclude that for Locke the formation of a

¹⁵¹ Essay, II, xxiii, 1 (F.I. 390-391). Cf. Draft A, 1 (A-G. 3-4); Draft B, 19 (R. 63-65), and 60 (R. 120-122).

¹⁵² Cf. Essay, II, ii, 1 (F.I. 144); Essay, II, xxiii, 15 (F.I. 406); and "CHAPTER THREE, SECTION II, B, 2, a)" of the present study.

complex idea of an individual substance entails an act of the mind's compounding faculty.

Secondly, in his First Letter to Stillingfleet Locke announces a new characteristic of simple ideas of sensation: "... all simple ideas, all sensible qualities, carry with them a supposition of a substratum to exist in, and of a substance wherein they inhere."¹⁵³ Now one might wonder with Bishop Stillingfleet:

... what is the meaning of carrying with them a supposition of a substratum and a substance? [...] for the ideas of accidents [as Locke has led his readers to believe throughout the Essay] are simple ideas, and carry nothing along with them, but the impression made by sensible objects.¹⁵⁴

Locke grants that simple ideas carry nothing along with them but the impression made by sensible objects. But Locke insists that "sensible qualities imply a substratum to exist in."¹⁵⁵ Therefore, since simple ideas of sensation are caused by and are representatives of sensible qualities,

¹⁵³ John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 7. I have not found a text in which Locke states explicitly that ideas of reflection also carry with them a supposition of a substratum to exist in, and of a substance wherein they inhere; however, this point seems to be implied, for example, in: ibid. Works, Vol. 4, p. 21-22.

¹⁵⁴ Edward STILLINGFLEET, The Bishop of Worcester's Answer to Mr. Locke's Second Letter. (Quoted by: John LOCKE, MR. LOCKE'S REPLY to The Right Reverend the LORD BISHOP OF WORCESTER'S ANSWER to his SECOND LETTER. Works, Vol. 4, p. 477.) Bishop Stillingfleet's answer was written in 1698; Locke's reply was written in 1699.

¹⁵⁵ Ibid.

the former implicitly contain a relation to a substance just as the latter do. But, one might ask, "How can a simple idea of a quality or accident contain or imply a relation to that which is radically and avowedly other than itself?" There is no adequate answer to this question in Locke's writings. Be this as it may, Locke is convinced that people do form ideas of substances. He insists that no idea of substance is innate, and that no idea of substance comes in by sensation or reflection. Yet, he just as emphatically insists that one can justify the formation of such ideas, because they are "ultimately grounded on, and derived from, ideas which come in by sensation or reflection."¹⁵⁶

Thirdly, one's mind takes notice of that great number of simple ideas which are presently in it. In addition, and in virtue of its ability to remember previous experiences of sequences of simple ideas caused by and representative of the qualities of the same individual substance, one's mind notices that a certain number of these simple ideas of those qualities go constantly together.

Fourthly, the formation of ideas of substances is justified, according to Locke, not only because each idea of sensation (and, perhaps, each idea of reflection)

¹⁵⁶ John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 21. Cf. ibid. Works, Vol. 4, p. 26.

implicitly contains a relation to a substance, but also because one's mind, when taking notice of the simple ideas of sensation (and reflection?) in it, cannot imagine "how these [qualities of which one has] simple ideas can subsist by themselves, we accustom ourselves¹⁵⁷ to suppose some substratum wherein they [i.e., those qualities] do subsist, and from which they do result, which therefore we call [the supposed support of those qualities a] substance."¹⁵⁸ Now this text is fundamental to a proper understanding of Locke's perspective; due to its brevity, however, his meaning may easily be missed. Consequently, the following texts should be noted as well, for they serve to explicate Locke's perspective:

... because we cannot conceive how they [viz. the sensible qualities of which we have simple ideas] should subsist alone, nor one in another, we suppose them existing in and supported by some common subject; which support we denote by the name substance, though it be certain we have no clear or distinct idea of that thing [that matter or corporeal substance] we suppose a support.¹⁵⁹

... the operations of the mind, viz. thinking, reasoning, fearing, &c., which we concluding [or

157 Cf. James GIBSON, Locke's Theory of Knowledge and its Historical Relations, p. 94.

158 Essay, II, xxiii, 1 (F.I. 390-391).

159 Essay, II, xxiii, 4 (F.I. 395). Cf. John LOCKE, MR. LOCKE'S REPLY to The Right Reverend the LORD BISHOP OF WORCESTER'S ANSWER to his SECOND LETTER. Works, Vol. 4, p. 443-446.

supposing] not to subsist of themselves [...] we are apt to think these the actions of some [...] substance, which we call spirit; [...] by supposing a substance [spirit or mind] wherein thinking, knowing, doubting, and a power of moving, &c., do subsist, we have as clear a notion of the substance of spirit, as we have of body [corporeal substance]; the one being supposed to be (without knowing what it is) the substratum to those [sensible qualities which cause those] simple ideas [of sensation] we have from without; and the other [viz. spirit or mind] supposed (with a like ignorance of what it is) to be the substratum to those operations we experiment [or take notice of] in ourselves within [which observations give rise to one's simple ideas of reflection, i.e., one's ideational contents that represent those observed mental activities or operations].¹⁶⁰

... all the [simple] ideas of all the sensible qualities of a cherry [e.g., the simple idea of the red color of this cherry, the simple idea of the somewhat round shape of this cherry, and so on] come into my mind by sensation; the [simple] ideas of [my act of] perceiving, [my act of] thinking, [my act of] reasoning, [my act of] knowing, &c. come into my mind by [my acts of] reflection: the ideas of these qualities and actions, or powers, are perceived by the mind to be by themselves inconsistent with existence; or, as your lordship [Edward Stillingfleet] well expresses it, "we find that we can have no true conception of any modes or accidents, but we must conceive a substratum or subject, wherein they are;" i.e. that they cannot exist or subsist of themselves.¹⁶¹ Hence the mind

¹⁶⁰ Essay, II, xxiii, 5 (F.I. 395). Cf. "CHAPTER TWO, SECTION II, C" of the present study.

¹⁶¹ In other words, whenever a person pays due attention to a sequence of simple ideas or representations of qualities which go constantly together in his mind, (i) he notices the explicit ideational contents of the sequence of representations, and (ii) he notices that they carry along, i.e., imply, something which is not represented, namely, a support, substratum or substance that is common to the qualities represented in the sequence—for Locke each representation implies a support, but since the representations in

perceives their necessary connexion with inherence or being supported; which being a relative idea superadded to [the simple ideas it has of the qualities of this cherry, such as] the red colour in a [this] cherry, or to [the simple ideas it has of its operations, such as] thinking in a man [viz. one-self],¹⁶² the mind frames the correlative idea of a support. For I never denied, that the mind could frame to itself ideas of relation, but have showed the quite contrary in my chapters about relation [cf. Essay, II, xxv-xxviii]. But because a relation cannot be founded in nothing, or be the relation of nothing, and the thing here related as a supporter or support is not represented to the mind by any clear and distinct idea; therefore the obscure, indistinct, vague idea of thing or something, is all that is left to be the positive idea, which has the relation of a support or substratum to modes or accidents;....¹⁶³

question go constantly together, one presumes that they imply a single common support. If a person notices only the first of these two factors—in other words, if he fails to notice that the representations imply a substratum—, he has no true conception or proper apprehension of any one of the elements in the sequence, and, a fortiori, he has no true conception of the sequence as a whole. In brief, when properly apprehended, representations of qualities must be and are apprehended as representations of accidents of a substance.

¹⁶² For Locke the simple ideas in question implicitly contain the idea of a relation of inherence or being supported. This implicit relative idea may be said to be "superadded" to the simple ideas in question, because it is implicit, i.e., it is not explicitly contained in the ideas of qualities. The idea of "red color", for instance, is not the same as the idea of "inherence or being supported", even though the idea of "red color" implies or is necessarily connected with the idea of "inherence or being supported". Hence, one can say that the relative idea of "inherence or being supported" is superadded to the idea of "red color".

¹⁶³ John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 21. Locke says that "the obscure, indistinct, vague idea of thing or something" is: (i) a positive idea which "the mind frames"—it is not a representation or idea given by sensation or reflection; nevertheless, it is an

Fifthly, "What are the ingredients of a complex idea of a substance?" Locke says "that our complex ideas of substances, besides all those simple ideas they are made up of, have always the confused idea of something to which they belong, and in which they subsist".¹⁶⁴ Such a complex idea of this, that, or the other individual (material or immaterial) entity, of course, is not given to one's mind; rather,

idea that is ultimately grounded on, and derived from, simple ideas of sensation and reflection, for these implicitly contain a relation to a substance, and, accordingly, incite the mind to suppose or infer some substance wherein the qualities subsist and to frame a positive idea of a substance or support; and (ii) a positive "correlative idea"—since all relations are correlative, i.e., imply two terms, or, as Locke says, "because a relation cannot be founded in nothing, or be the relation of nothing" (we are prescinding here from real and logical relations), and since one term is given with its relation (in the present case, the ideas of qualities with the implicit relative idea of "inherence or being supported") to another term which is not itself given, the mind frames a positive, although obscure, indistinct, vague idea of this term (in the present case, the idea of a support, substratum or substance). Mr. Gibson, with his customary perspicacity, presents the real difficulty involved in Locke's account of substance as follows: "The difficulty which really confronts Locke is [...] that of bringing the idea of substance into line with his general account of our ideas of relation. For, an idea of relation, we are told, can only arise as the result of an act of comparison between two distinct terms; whereas, in the case we are now dealing with, only one term of the relation is given. The difficulty is, however, hidden from Locke by his initial assumption that our simple ideas from the first involve a reference beyond themselves." James GIBSON, Locke's Theory of Knowledge and its Historical Relations, p. 95.

¹⁶⁴ Essay, II, xxiii, 3 (F.I. 393). This point is reasserted in: John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 7.

it is a product of one's faculty of compounding.¹⁶⁵ As has been seen, several of the ingredients of this product are given to one's mind, namely, the simple ideas of accidents or qualities. One of the ingredients, however, is not given to the mind, namely, the obscure, indistinct, vague idea of a something or being with the relation of a support to accidents or qualities. In somewhat the same manner that the substance, substratum or support in this, that, or the other individual entity gives unity to the accidents or qualities of the entities in question, the idea of substance, substratum or support of accidents or qualities gives unity to the complex idea in question—a complex idea which consists of simple ideas of certain accidents or qualities of the entity in question plus the obscure, indistinct, vague idea of a something or being with the relation of a support to accidents or qualities.

Sixthly, after having produced a particular complex idea of an individual entity, one's mind then exercises its faculty of naming: it assigns a proper name to that particular idea and entity.

And seventhly, does this mean that in Locke's view the human mind has no idea of what any substance is? Yes!

¹⁶⁵ Cf. Essay, II, xxiii, 15 (F.I. 406), for instance.

According to Locke, "we have no idea of what it is, but only a confused, obscure one of what it does."¹⁶⁶ Again, "our idea of substance [...] is but a supposed I know not what, to support those ideas [or qualities] we call accidents."¹⁶⁷ And, Locke says, "He that would show me a more clear and distinct idea of substance, would do me a kindness I should thank him for."¹⁶⁸

C. ABSTRACT IDEAS OF PURE SUBSTANCE IN GENERAL

Since Locke's treatment of the idea of pure substance in general is so meager and perfunctory, there is very little that can be said about it. His principal texts on this point read as follows:

... if anyone will examine himself concerning his notion of pure substance in general, he will find he has no other idea of it at all, but only a supposition of he knows not what support of such qualities which are capable of producing simple ideas in us;....¹⁶⁹

¹⁶⁶ Essay, II, xiii, 19 (F.I. 230). This point is reasserted in: John LOCKE, MR. LOCKE'S REPLY to The Right Reverend the LORD BISHOP OF WORCESTER'S ANSWER to his SECOND LETTER. Works, Vol. 4, p. 448.

¹⁶⁷ Essay, II, xxiii, 15 (F.I. 406).

¹⁶⁸ John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 8. Concerning how the human mind forms complex ideas of God and unembodied spirits, cf. Essay, II, xxiii, 33-36 (F.I. 418-422); and Essay, III, vi, II (F.II. 66-67).

¹⁶⁹ Essay, II, xxiii, 2 (F.I. 391).

... the substratum to modes or accidents, which is our idea of substance in general, is founded in this, "that we cannot conceive how modes or accidents can subsist by themselves."¹⁷⁰

... my notion of substance in general is quite different from these [viz. my ideas of distinct substances], and has no such combination of simple ideas [of sensation or reflection] in it,....¹⁷¹

... that general indetermined idea of something, is, by the abstraction of the mind, derived also from the simple ideas of sensation and reflection: and thus the mind, from the positive, simple ideas got by sensation or reflection, comes to the general relative idea of substance;....¹⁷²

... I never said that the general idea of substance comes in by sensation and reflection; or, that it is a simple idea of sensation or reflection, though it be ultimately founded in them: for it is a complex idea, made up of the general idea of something, or being, with the relation of a support to accidents. For general ideas come not into the mind by sensation or reflection, but are the creatures or inventions of the understanding,....¹⁷³

Hence, Locke seems to be maintaining that the idea of pure substance in general is gained as follows: one's mind (i) inspects a number of its complex ideas of individual substances or things; (ii) abstracts or separates the ingredient common to each of them from those simple ideas of sensation or reflection they contain; and (iii) frames a

¹⁷⁰ John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 19.

¹⁷¹ Ibid., p. 17.

¹⁷² Ibid., p. 21.

¹⁷³ Ibid., p. 19.

new idea of that common ingredient only, namely, an obscure, indistinct, vague idea of something or being with the relation of a support to accidents or qualities.

D. UNIVERSAL COMPLEX IDEAS OF SORTS OF SUBSTANCES

1. INTRODUCTORY REMARKS

Locke asserts that "GOD, having designed man for a sociable creature," furnished him with organs "to frame articulate sounds, which we call words."¹⁷⁴ He then goes on to say that

... though words, as they are used by men, can properly and immediately signify nothing but the ideas that are in the mind of the speaker; yet they in their thoughts give them a secret reference to two other things.

First, They suppose their words to be marks of the ideas in the minds also of other men, with whom they communicate: for else they should talk in vain, and could not be understood,....¹⁷⁵

Secondly, 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.¹⁷⁶

For Locke, then, the words which a person uses signify primarily the ideas in his own mind, and secondarily (a) the ideas in the minds of those with whom he is communicating and (b) the reality of things.

174 Essay, III, i, 1 (F.II. 3).

175 Essay, III, ii, 4 (F.II. 10).

176 Essay, III, ii, 5 (F.II. 11).

Now since each substance is, according to Locke, a particular, "it may perhaps be thought reasonable that words, which ought to be conformed to things, should be so too,—I mean in their signification".¹⁷⁷ But this is impossible:

For, the signification and use of words depending on that connexion which the mind makes between its ideas and the sounds it uses as signs of them, it is necessary, in the application of names to things, that the mind should have distinct ideas of the things, and retain also the particular name that belongs to every one, with its peculiar appropriation to that idea. But it is beyond the power of human capacity to frame and retain distinct ideas of all the particular things we meet with: every bird and beast men saw; every tree and plant that affected the senses, could not find a place in the most capacious understanding.¹⁷⁸

Moreover, even if the human mind could retain a particular idea and a particular name for each particular substance,

... it would yet be useless; because it would not serve to the chief end of language. Men would in vain heap up names of particular things, that would not serve them to communicate their thoughts. Men learn names, and use them in talk with others, only that they may be understood: which is then only done when, by use or consent, the sound I make by the organs of speech, excites in another man's mind who hears it, the idea I apply it to in mine, when I speak it. This cannot be done by names applied to particular things; whereof I alone having the ideas in my mind, the names of them could not be significant or intelligible to another, who was not acquainted with all those very particular things which had fallen under my notice.¹⁷⁹

177 Essay, III, iii, 1 (F.II. 14).

178 Essay, III, iii, 2 (F.II. 14).

179 Essay, III, iii, 3 (F.II. 15).

Furthermore,

... a distinct name for every particular thing would not be of any great use for the improvement of knowledge: which, though founded in particular things, enlarges itself by general views; to which things reduced into sorts, under general names, are properly subservient.¹⁸⁰

In brief, Locke asserts that: (i) each substance is a particular; (ii) a man is incapable of framing and retaining a particular idea of each substance which he encounters; (iii) the communication of one's knowledge requires the use of general public names; and (iv) one advances his knowledge of particular substances by taking a general view of them, i.e., by considering them as members of this or that class or sort. Now if one grants these four points, he is then confronted with the following question: "How does one generalize or universalize his ideas and names of particular substances?" The remaining paragraphs of the present section of this study will endeavor to set forth Locke's answer to this question.

2. HOW DO PARTICULAR COMPLEX IDEAS OF INDIVIDUAL SUBSTANCES (AS WELL AS THE NAMES OF THESE) BECOME UNIVERSALS?

Locke's chief purpose in Chapter Three of Book Three of the Essay is, quite obviously, to present his theory concerning how particular complex ideas of individual substances

¹⁸⁰ Essay, III, iii, 4 (F.II. 15).

(as well as the names of these) become universals. Now Locke renders it somewhat difficult for his readers to grasp the theory of generalizing or universalizing which he is expounding in this chapter, because (i) he fails to distinguish for his readers the many mental operations which he considers to be involved in this complex process; and, moreover, (ii) he constantly employs expressions which are, to borrow the phrase of Professors Gilson and Langan, "music to a realist's ears".¹⁸¹ In view of this latter point the reader must keep in mind the Lockean principle which states that "since the things the mind contemplates are none of them, besides itself, present to the understanding, it is necessary that something else, as a sign or representation of the thing it considers, should be present to it: and these are ideas".¹⁸² Thus, the entire complex generalizing or universalizing process which Locke expounds in the chapter in question takes place within, to borrow the phrase of Locke, "this little world of his own understanding".¹⁸³

The theory of universals which Locke announces in the Essay, Book Two, Chapter Eleven, section nine, is

¹⁸¹ Etienne GILSON and Thomas LANGAN, Modern Philosophy, p. 199.

¹⁸² Essay, IV, xxi, 4 (F.II. 461-462).

¹⁸³ Essay, II, ii, 2 (F.I. 145).

re-stated in the Essay, Book Three, Chapter Three, section six, as follows:

Words become general by being made the signs of general ideas: and ideas become general, by separating from them the circumstances of time and place, and any other ideas that may determine them to this or that particular existence. By this way of abstraction they are made capable of representing more individuals than one; each of which having in it a conformity to that abstract idea, is (as we call it) of that sort.¹⁸⁴

Now Professor R. I. Aaron considers this text to be an instance of what he calls the "second strand" of Locke's theory of universals; moreover, he tells his reader that such universals are, for Locke, ideas "made by abstraction; but made wholly, it should be added, by omission."¹⁸⁵ But, one might ask, "Is Professor Aaron's interpretation of Locke's text correct?"

When one reads Locke's works, he often finds that the example which is given to illustrate the theory which is being expounded is much more lucid than Locke's statement of the theory itself; moreover, the reader often finds that the example brings into view many facets of the theory which Locke's mere statement of it does not reveal. Consequently, in order to grasp the full import of the Essay, III, iii, 6, the reader should examine carefully the example

¹⁸⁴ Essay, III, iii, 6 (F.II. 16-17).

¹⁸⁵ Richard I. AARON, John Locke, p. 200.

which Locke gives to elucidate this text—furthermore, there is no reason why the reader should hesitate to employ other Lockean texts which serve to elucidate the theory in question. Locke's example will now be quoted in toto (and an endeavor will be made to clarify it by means of insertions and footnotes):¹⁸⁶

But, to deduce this a little more distinctly, it will not perhaps be amiss to trace our notions and names from their beginning, and observe by what degrees we proceed, and by what steps we enlarge our ideas from our first infancy.¹⁸⁷ There is nothing more evident, than that the [complex] ideas of the persons children converse with (to instance in them alone) are, like the persons themselves, only particular. The [particular complex] ideas of the nurse and the mother are well framed in their minds; and, like pictures of them there, represent only those individuals.¹⁸⁸ The [proper] names they first gave to them are confined to these individuals; and the names of nurse and mamma, the child uses, determine themselves to those persons.¹⁸⁹ Afterwards, when time and a larger acquaintance

186 Since the theory expounded in this text is substantially the same as that found in the Essay, II, xi, 9—which has been examined in "CHAPTER THREE, SECTION II, 3,b)" of this study—the present examination need not be a lengthy one.

187 In other words, Locke essays to show by what complex mental process a person produces those abstract ideas or "nominal essences" which (because of their lesser comprehension or connotation) have a greater extension or denotation than his particular complex ideas of individual substances.

188 Cf. "CHAPTER THREE, SECTION V, B" of the present study.

189 That is, these proper names signify primarily and immediately one's particular complex ideas of those persons; they signify secondarily and mediately those individual human substances.

have made them observe that there are [in the little worlds of their own understandings] a great many other [particular complex ideas of individual] things in the world, that in some common agreements of shape, and several other qualities, resemble their [particular complex ideas of their] father and mother, and [their particular complex ideas of] those persons they have been used to,¹⁹⁰ they frame an idea, which they find those many particulars to partake in;¹⁹¹ and to that [general or universal

¹⁹⁰ Here Locke is expressing himself in a manner which is "music to a realist's ears"—in view of Locke's representative theory of perception, however, it really cannot be justified. At this point it is quite obvious that at least acts of remembering, discerning and comparing (cf. "CHAPTER THREE, SECTION II, B" of the present study) are involved in this complex generalizing or universalizing process; however, the only mental activity other than that of abstracting which Locke explicitly states is involved in this process is that of comparing ideas: he tells Bishop Stillingfleet that "the mind 'forms general ideas [of particular substances], not by mere comparing those ideas it has got by sensation and reflection;' for this I do not remember I ever said. But this I say, 'ideas become general, by separating from them the circumstances of time and place, and any other ideas that may determine them to this or that particular existence. By this way of abstraction they are made [Essay, III, iii, 6], ' &c. And to the same purpose I explain myself in another place [Essay, II, xi, 9]." John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 12. But even here Locke does not set forth the precise role which he believes that the faculty of comparing has in this generalizing or universalizing process.

¹⁹¹ After discerning that several of his particular complex ideas of individual substances contain common elements (there will always be more than one common element, for each of the particular ideas in question contains the obscure, indistinct, vague idea of a something or being with the relation of a support to accidents), the mind (exercising its faculty of abstraction) focuses its attention upon those common elements only, and it generates out of its own substance an abstract representation of each of them; then, the mind (exercising its faculty of compounding) combines these new abstract ideas into one idea. After having produced this abstract idea, and after having

idea] they give, with others, the [general or universal] name man, for example. And thus they come to have a general name, and a general idea. Wherein they make nothing new [i.e., their new universal complex ideas represent no features of Peter, James, and so on, which are not already represented by their particular complex ideas of Peter, James, and so on]; but only leave out of the complex idea they had [and still have] of Peter and James, Mary and Jane, that which is peculiar to each, and retain [in their memories as general or universal ideas] only what is common to them all.¹⁹²

According to Locke, therefore, one's particular complex ideas of individual substances strictly speaking DO NOT BECOME universal or general ideas; rather, the latter are partial representations (which are generated out of the mind's own substances) of the former (which are themselves representations of individual substances). For instance, if Paul's particular complex ideas of Peter and James consist of the notes "a, b, c, d, l and m" and "a, b, l, y and z" respectively, then the universal idea or nominal essence "man" which Paul generates out of his own mental substance

cognized (this involves at least the faculties of comparing and discerning) that there is a conformity between the new abstract idea and the common ingredients of the particular ideas in question, the mind (exercising, perhaps, a distinct faculty of relating) then adds to its new product the relation of signifying primarily and immediately the particular ideas in question, and secondarily and mediately the individual substances which the particular ideas themselves represent. Cf. Essay, III, iii, 11 (F.II. 21-22). Finally, the mind (exercising its faculty of naming) assigns a general name to this general idea.

192 Essay, III, iii, 7 (F.II. 17-18).

and sets up as a partial representative of them (viz. the particular ideas and individual substances in question) will consist of the notes "a, b and l" only.¹⁹³ And in view of the explication of the Essay, III, iii, 6 and 7, which has just been given, it is obvious that one would do violence to Locke's theory of the genesis of such universal or general representations, if he were to assert with Professor R. I. Aaron that they are ideas which are "made wholly [...] by omission."¹⁹⁴

193 After having made several universal or general ideas and names, Locke asserts that persons may advance to still more general ideas and names "By the same way that they come by the general name and idea of man". Essay, III, iii, 8 (F.II. 18). For instance, "Of the complex ideas signified by the names man and horse, leaving out but those particulars wherein they differ, and retaining only those wherein they agree, and of those [notice that Locke does not say: "out of those"] making a new distinct complex idea, and giving the name animal to it, one has a more general term, that comprehends with man several other creatures. Leave out of the idea of animal, sense and spontaneous motion, and the remaining complex idea, made up of the remaining simple ones of body, life, and nourishment, becomes a more general one, under the more comprehensive term, vivens. [...] To conclude: this whole mystery of genera and species, which make such a noise in the schools, and are with justice so little regarded out of them, is nothing else but abstract ideas [or nominal essences], more or less comprehensive, with names annexed to them." Essay, III, iii, 9 (F.II. 19).

194 Richard I. AARON, John Locke, p. 200. Cf. "CHAPTER III, SECTION II, B, 3, a)" of the present study.

3. HOW DOES LOCKE, THE CONCEPTUALIST, ATTEMPT TO JUSTIFY THE FORMATION OF UNIVERSAL COMPLEX IDEAS OF SORTS OF SUBSTANCES?

To conclude the present chapter of this study, one final question should be asked, namely, "How may one justify the formation of universal names and universal complex ideas of sorts of substances?" Now before examining Locke's answer to this question, there are three points that should be noted: 1. Locke does not attempt to justify the formation of universal names and complex ideas of sorts of substances in the manner in which Exaggerated Realists do; for Locke "all things that exist are only particulars"¹⁹⁵—"general and universal belong not to the real existence of things; but are the inventions and creatures of the understanding, made by it for its own use, and concern only signs, whether words or ideas."¹⁹⁶ 2. Locke is not a Nominalist, for he admits the existence of general or universal names and ideas; he insists that (i) "the proper and immediate signification of words are ideas in the mind of the speaker"¹⁹⁷ and (ii) "names become general, which are made to stand for general ideas, and those remaining particular,

¹⁹⁵ Essay, III, iii, 6 (F.II. 16).

¹⁹⁶ Essay, III, iii, 11 (F.II. 21). Cf. Essay, III, iii, 9 (F.II. 18-19); and Essay, III, iii, 17 (F.II. 27-28).

¹⁹⁷ Essay, III, ii, 7 (F.II. 11).

where the ideas they are used for are particular."¹⁹⁸ And to Bishop Stillingfleet Locke writes: "You again accuse the way of ideas, to make a common nature no more than a common name. That, my lord, is not my way by ideas. When your lordship shows me where I have said so, I promise your lordship to strike it out".¹⁹⁹ 3. In his Essay, Book Three, Chapter Three, section seventeen, Locke asserts that the Peripatetics (or Moderate Realists) use "the word [real] essence for they know not what, [and they] 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."²⁰⁰ It should be noted here that Locke's statement of the Peripatetic (or Moderate Realist) perspective on this point is not totally accurate: the Peripatetics do assert that the understanding can apprehend that ontological principle, structure or real essence which is numerically distinct though specifically identical in several

¹⁹⁸ Essay, III, i, 3 (F.II. 4). Cf. Essay, III, iii, 6 (F.II. 16); Essay, III, iii, 13 (F.II. 24); Essay, III, iii, 15 (F.II. 26-27); and John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 24-25.

¹⁹⁹ John LOCKE, MR. LOCKE'S REPLY to The Right Reverend the LORD BISHOP OF WORCESTER'S ANSWER to his SECOND LETTER. Works, Vol. 4, p. 430-431.

²⁰⁰ Essay, III, iii, 17 (F.II. 27).

individuals—moreover, the justification of one's universal ideas and words is founded on that very ontological principle. Be this as it may, Locke himself does not attempt to justify universal or general names and ideas in this manner. How then, according to Locke, may one justify the formation of universal names and universal complex ideas of sorts of substances?

In "CHAPTER II, SECTION II, B, 2" of the present study it was seen that for Locke: (i) it is past doubt that there must be real essences in corporeal substances; (ii) God is the ultimate, universal and incomprehensible cause of these real essences; (iii) the real essences of corporeal substances are unknown and unknowable by man; and (iv) the real essences of corporeal substances are their atomic structures.

Now in the Essay, Book Three, Chapter Six, section thirty six, Locke summarizes his view concerning how one may justify the formation of universal names and universal complex ideas of sorts of substances; he says that

... Nature makes many particular things, which do agree one with another in many sensible qualities, and probably too in their internal frame and constitution: but it is not this real essence that distinguishes them into species; it is men who, taking occasion from the qualities they find united in them, and wherein they observe often several individuals to agree, range them into sorts, in order to their naming, for the convenience of comprehensive signs; under which individuals, according to their

conformity to this or that abstract idea, come to be ranked as under ensigns:....²⁰¹

Thus, Locke, the Conceptualist, does not attempt to justify the formation of universal ideas (or nominal essences) of sorts of individual substances on the basis of an ontological principle or real essence which is numerically distinct though specifically identical in several of them—in fact, Locke generally adopts the attitude of an agnostic in respect to real essences. Rather, Locke attempts to justify the formation of universal ideas (or nominal essences) of sorts of individual substances on the basis of similar sets of sensible qualities in several individual substances. In view of his theory of representative perception, however, it is rather obvious that Locke attempts to justify such universals on the basis of similar sets of simple ideas of such qualities in one's particular complex ideas of the individual substances in question.²⁰²

²⁰¹ Essay, III, vi, 36 (F.II. 86). Cf. Essay, III, iii, 13 (F.II. 23-24); Essay, III, iii, 15 (F.II. 25-27); and Essay, III, iii, 17 (F.II. 27-28).

²⁰² In his Logische Untersuchungen (1900-1901) Edmund Husserl (1859-1938) explains Locke's doctrine as follows: "In actual reality there is nothing which resembles a universal, there exist in actuality only individual things which can be arranged into species and genera according to their resemblances and similarities. If we remain in the sphere of the immediately given and experienced or, to speak with Locke, in the sphere of 'ideas', then the phenomena of things are complexes of 'simple ideas', formed in such a way that in many such complexes the same simple ideas, the same

phenomenal characteristics, individually or in groups, are wont to return. We now name the things, and do not merely name them by means of proper names, but predominantly by the use of common names. The fact, however, that we can name several things giving them a unity of sense (einsinnig) by means of one and the same general name proves that the latter must really correspond to a general sense, 'a general idea'." Edmund HUSSERL, Logische Untersuchungen, Halle A.D.S., Max Niemeyer, 1928, Vol. 2, Part I, Chapter 2, paragraph 9, p. 126. (Trans. mine.)

CHAPTER FOUR

AN AGNOSTIC PERSPECTIVE

CHAPTER ONE examined Locke's empiricist perspective on the origin of simple ideas; CHAPTER TWO, his atomic perspective on the real essences of physical things; and CHAPTER THREE, his conceptualistic perspective on universals. The principal purpose of CHAPTER FOUR will be to examine the significant epistemological effects of the relation between Locke's conceptualistic perspective on universal ideas of physical things and his agnostic perspective on the real essences of physical things as far as a science of physical things is concerned.

But before examining the epistemological effects of this relationship, certain significant points arising from several Lockean tenets should be noted briefly: his doctrines on A. the nature of human knowledge in general; B. the nature of intuitive and demonstrative knowledge; and C. the three species of agreements or disagreements between one's ideas. These three will be commented upon in SECTION ONE of this chapter; then the epistemological results of the relation between Locke's conceptualistic perspective on universal ideas of physical things and his agnostic perspective on the real essences of physical things will be

studied in SECTION TWO, which will be entitled: "Hence no Science of Bodies within our reach."

SECTION I

PRELIMINARY REMARKS

A. THE NATURE OF HUMAN KNOWLEDGE IN GENERAL

In his Second Letter to Stillingfleet Locke asserts that

... if I have done any thing new [in my Essay Concerning Human Understanding], it has been to describe to others more particularly than had been done before, what it is their minds do, when they perform that action which they call knowing:....¹

Now when one examines the Essay (especially Book Four), he does find a rather extensive description of that act of the understanding or the perception that is called knowing.

The description which is found there, however, is not wanting in clarity—in fact, in spite of Locke's extensive correspondence with Bishop Stillingfleet (a man of notable acumen), the latter seems never to have been able to decipher the theory of knowledge set forth in Locke's Essay.

¹ John LOCKE, MR. LOCKE'S REPLY to The Right Reverend The LORD BISHOP OF WORCESTER'S ANSWER to his LETTER, concerning some passages relating to MR. LOCKE'S ESSAY OF HUMAN UNDERSTANDING, in a Late Discourse of His Lordship's, in Vindication of the Trinity. Works, Vol. 4, p. 143-144. This reply is dated: June 29, 1697. Future references to Locke's reply will be cited as follows: John LOCKE, Second Letter to Stillingfleet. Works, Vol. 4, p. 143-144.

Thus, a twentieth-century reader (a reader who lacks the opportunity to ask Locke for a clarification of his Essay) should not be surprised if he too finds it somewhat difficult to decipher this theory. Be this as it may, "Preliminary Remark. A" will endeavor to point out what Locke considers to be the nature of knowledge in general.

In Locke's Essay the word "idea" expresses "whatever is meant by phantasm, notion, species, or whatever it is which the mind can be employed about in thinking"²—any personal mental content that can be observed and known by means of the possessor's understanding. Now these ideas, according to Locke, are signs or representations of things:

... since the things the mind contemplates are none of them, besides itself, present to the understanding [the perceptive faculty of the mind], it is necessary that something else, as a sign or representation of the thing it considers, should be present to it: and these are ideas.³

Moreover, Locke insists that one's knowledge is conversant only with one's ideas:

SINCE the mind, in all its thoughts and reasonings, hath no other immediate object but its own ideas, which it alone does or can contemplate, it is evident that our knowledge is only conversant about them.⁴

2 Essay, Introduction, 8 (F.I. 32).

3 Essay, IV, xxi, 4 (F.II. 461-462).

4 Essay, IV, i, 1 (F.II. 167).

Now, although there is a verbal inconsistency in the last two texts (in the first the mind contemplates things, in the second ideas of things), it is clear that the point being stressed is that one contemplates not things but those ideas of things in one's mind. One further point should be added here; Locke nowhere identifies human knowledge with the mere possession of ideas: "I never said nor thought ideas, nor any thing else, could bring us to the certainty of reason [knowledge], without the exercise of reason."⁵ Indeed, for Locke one's knowledge involves both one's ideas and the exercise of one's understanding, reason or perceptive faculty about those ideas:

Nothing truer than that it is not the idea that makes us certain without reason, or without the understanding: but it is as true, that it is not reason, it is not the understanding, that makes us certain without ideas. [...] but the one [viz. one's understanding] employed about the other [viz. one's ideas].⁶

In brief, then, for Locke one's ideas are the immediate objects, the materials, the subject-matter of one's knowledge; however, one's knowledge as such is not to be identified with the mere possession of ideas.

Moreover, for Locke knowledge consists in the perception of the agreements (connections) or disagreements

5 John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 72.

6 Ibid. Works, Vol. 4, p. 59-60.

(repugnancies) of the immediate objects (ideas) of the mind in thinking; that is, in the affirmative or negative judgments concerning the necessary and visible agreements or disagreements between the ideas one possesses. In other words, one's knowledge consists in one's perceptions (not of one's ideas taken singly, but rather) of the necessary and visible relations between one's ideas:

... [knowledge consists in the] perception of the connexion or repugnancy, agreement or disagreement, that there is between any of our ideas.⁷

[Since the mind has no other immediate object but its own ideas] Knowledge then seems to me to be nothing but the perception of the connexion of and agreement, or disagreement and repugnancy of any of our ideas. In this alone it consists. Where this perception is, there is knowledge, and where it is not, there, though we may fancy, guess, or believe, yet we always come short of knowledge.⁸

... it being the proper business of reason [the mind's faculty of understanding], in the search after truth and knowledge, to find out the relations between all these sorts of ideas [viz. simple or complex, positive or relative, general or particular], in the perception whereof knowledge and certainty of truth consists.⁹

Now in his Elements of Natural Philosophy (a posthumous treatise published in 1720) Locke sets forth a definition of knowledge which calls for special consideration,

7 Essay, II, xxi, 5 (F.I. 314).

8 Essay, IV, i, 2 (F.II. 167-168). Cf. Essay, II, xxi, 5 (F.I. 314); and John LOCKE, Second Letter to Stillingfleet. Works, Vol. 4, p. 144-145.

9 John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 71.

because it seems to imply a characteristic of knowledge which is not contained in the definitions examined above. In this treatise Locke says that "Knowledge [...] consists in the perception of the truth of affirmative or negative propositions."¹⁰ In order to grasp the full import of this definition, one must note what Locke means by (i) a proposition and (ii) a true proposition. For Locke one's mental propositions consist of ideas which one's understanding unites (affirmative propositions) or separates (negative propositions), because it perceives or judges that they agree or disagree; one's verbal propositions or sentences consist of words or sensible signs of one's mental propositions:

... to return to the consideration of truth: we must, I say, observe two sorts of propositions that we are capable of making:—

First, mental, wherein the ideas in our understandings are without the use of words put together, or separated, by the mind perceiving or judging of their agreement or disagreement.

Secondly, Verbal propositions, which are words, the signs of our ideas, put together or separated in affirmative or negative sentences.¹¹

Now for Locke "truth consists in the putting together or separating those signs, according as the things which they

¹⁰ John LOCKE, Elements of Natural Philosophy. Works, Vol. 3, p. 329.

¹¹ Essay, IV, v, 5 (F.II. 246).

stand for agree or disagree."¹² In other words, truth signifies

... 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:...¹³

Thus, when in the Elements of Natural Philosophy Locke asserts that knowledge consists in the perception of the truth of propositions, and when this definition is considered alongside those found in his other treatises, it is somewhat evident that Locke envisages knowledge as consisting of affirmative or negative judgments concerning the necessary and visible agreements or disagreements of words (the signs of ideas), ideas (the signs of things) and things themselves. But how, it might be asked, is this definition of knowledge to be reconciled with those found in his other treatises? Moreover, how is this definition of knowledge to be reconciled with the following two emphatic and unambiguous statements of the Essay: "... the things the mind contemplates [...] are ideas",¹⁴ and "our knowledge is only conversant about them"?¹⁵ There seems to

12 Essay, IV, v, 5 (F.II. 246).

13 Essay, IV, v, 2 (F.II. 244).

14 Essay, IV, xxi, 4 (F.II. 461-462).

15 Essay, IV, i, 1 (F.II. 167).

be no real answers to these questions in Locke's treatises—it seems that Locke merely assumes that if one's mind perceives agreements and disagreements between the ideas it possesses, there are such agreements or disagreements between the things the ideas supposedly represent.

Finally, before concluding this part on the nature of human knowledge in general, there are two further points that should be noted. First, for Locke knowledge is identical with objective certainty; this point is evident, for instance, from the following three texts: (i) "... certainty consists in the perception of the agreement or disagreement of ideas;"¹⁶ (ii) "... certainty consists in the perceived agreement or disagreement of all the ideas that serve to show the agreement or disagreement of distinct ideas, as

¹⁶ John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 72. "... I place certainty where I think every body will find it, and nowhere else, viz. in the perception of the agreement or disagreement of ideas; so that, in my opinion, it is impossible to be placed in any one single idea, simple or complex." Ibid. Works, Vol. 4, p. 57. "... we have ideas as far as we are certain; any beyond that, we have neither certainty, no nor probability. Every thing which we either know or believe, is some proposition: now no proposition can be framed as the object of our knowledge or assent, wherein two ideas are not joined to, or separated from one another." John LOCKE, MR. LOCKE'S REPLY to The Right Reverend The LORD BISHOP OF WORCESTER'S ANSWER to His SECOND LETTER. Works, Vol. 4, p. 357. This reply is dated: May 4th, 1698. Future references to this reply will be cited as follows: John LOCKE, Third Letter to Stillingfleet. Works, Vol. 4, p. 357. Cf. Essay, II, xxxiii, 19 (F.I. 535).

they stand in the proposition, whose truth or falsehood we would be certain of";¹⁷ and (iii)

My lord, your lordship has been pleased to find fault with my use of the new term, ideas, without telling me a better name for the immediate objects of the mind in thinking. Your lordship has also been pleased to find fault with my definition of knowledge, without doing me the favour to give me a better. For it is only about my definition of knowledge, that all this stir, concerning certainty, is made. For with me, to know and be certain, is the same thing; what I know, that I am certain of; and what I am certain of, that I know. What reaches to knowledge, I think may be called certainty; and what comes short of certainty, I think cannot be called knowledge;...¹⁸

Secondly, Locke maintains that there is a radical difference between judgments yielding knowledge, in which the necessary connection between ideas is actually perceived, and those judgments yielding only probability, in which such a connection is not perceived but based upon something extraneous to the very ideas under consideration:

Probability is likeliness to be true, the very notation of the word signifying such a proposition, for which there be arguments or proofs to make it pass, or be received for true. The entertainment the mind gives this sort of propositions is called belief, assent, or opinion, which is the admitting or receiving any proposition for true, upon arguments or proofs that are found to persuade us to receive it as true, without certain knowledge that it is so. And herein lies the difference between

¹⁷ John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 60.

¹⁸ John LOCKE, Second Letter to Stillingfleet. Works, Vol. 4, p. 145.

probability and certainly, faith, and knowledge, that in all the parts of knowledge there is intuition; each immediate idea, each step has its visible and certain connexion: in belief, not so. That which makes me believe, is something extraneous to the thing I believe; something not evidently joined on both sides to, and so not manifestly showing the agreement or disagreement of those ideas that are under consideration.¹⁹

For example: in the demonstration of it a man perceives the certain, immutable connexion there is of equality between the three angles of a triangle, and those intermediate ones which are made use of to show their equality to two right ones; and so, by an intuitive knowledge of the agreement or disagreement of the intermediate ideas in each step of the progress, the whole series is continued with an evidence, which clearly shows the agreement or disagreement of those three angles in equality to two right ones: and thus he has certain knowledge that it is so. But another man, who never took the pains to observe the demonstration, hearing a mathematician, a man of credit, affirm the three angles of a triangle to be equal to two right ones, assents to it, i.e. receives it for true: [...] so that that which causes his assent to this proposition, that the three angles of a triangle are equal to two right ones, that which makes him take these ideas to agree, without knowing them to do so, is [something extraneous to the very ideas under consideration, namely] the wonted veracity of the speaker in other cases, or his supposed veracity in this.²⁰

And where any one assents thus to any proposition, his assent excludes not a possibility that it may be otherwise; and where, in any one's judgment, there is a possibility to be otherwise, there one

¹⁹ Essay, IV, xv, 3 (F.II. 365). — "something extraneous to the thing I believe", i.e., one assents to the proposition in question either because it somewhat conforms with a previous personal experience, or because of the testimony of others. Cf. Essay, IV, xv, 4 (F.II. 365-366).

²⁰ Essay, IV, xv, 1 (F.II. 363-364).

cannot deny but there is some uncertainty; and the less cogent the probabilities appear, upon which he assents, the greater the uncertainty.²¹

B. THE NATURE OF INTUITIVE (IMMEDIATE) AND DEMONSTRATIVE (MEDIATE) KNOWLEDGE

Before examining the three ways in which one's ideas may agree or disagree, it will be instructive to note that there are, according to Locke, three degrees of one's knowledge; that is, three "differences in clearness, of our Knowledge".²² The first degree of knowledge Locke calls "Intuitive Knowledge"; the second, "Demonstrative or Rational Knowledge"; and the third, "Sensitive Knowledge". The following paragraphs will examine the nature of intuitive and demonstrative knowledge.²³

²¹ John LOCKE, Third Letter to Stillingfleet. Works, Vol. 4, p. 299.

²² Essay, IV, ii, 1 (F.II. 176). Cf. F.II. 176, note 2.

²³ For Locke sensitive knowledge consists in an awareness of the actual entrance of ideas from sensible existents: "... we may add to the two former [viz. intuitive and demonstrative] sorts of knowledge this also [viz. sensitive knowledge], of the existence of particular external objects, by that perception and consciousness we have of the actual entrance of ideas from them." Essay, IV, ii, 14 (F.II. 188). What one somehow (Locke is not at all clear on this point) perceives in sensitive knowledge is an effect (an idea) as here and now being received from a cause (that is not perceived). Cf. James GIBSON, Locke's Theory of Knowledge and its Historical Relations, p. 172-177; and Richard I. AARON, John Locke, p. 245-247. It should be noted that Locke's description of sensitive knowledge does not (nor does he attempt to make it) coincide with his definition of knowledge given in: Essay, IV, i, 2 (F.II. 167).

After having asserted that human "Knowledge [...]" consists in the perception of the truth of affirmative or negative propositions", Locke goes on to say, "This perception is either immediate or mediate."²⁴ For Locke an immediate (intuitive) perception (knowledge) consists in an affirmative or negative judgment concerning the necessary and visible agreement or disagreement between two ideas. In an instance of this type of knowing the agreement or disagreement of two ideas is cognized without the aid of other ideas; in other words, no other idea is needed to make the relation (either of necessary connection or of mutual incompatibility) between the two ideas in question evident to the understanding.²⁵ Perhaps Locke's clearest description of this type of knowledge is given in his Elements of Natural Philosophy:

Immediate perception of the agreement or disagreement of two ideas is, when, by comparing them together in our minds, we see, or, as it were, behold, their agreement or disagreement. This, therefore, is called intuitive knowledge. Thus we see that red is not green; that the whole is bigger than a part; and that two and two are equal to four.

The truth of these and the like propositions we know by a bare simple intuition of the ideas

²⁴ John LOCKE, Elements of Natural Philosophy. Works, Vol. 3, p. 329.

²⁵ This is why Locke considers intuitive knowledge to be the "first degree" or clearest type of knowledge. Cf. Essay, IV, ii, 6 (F.II. 180).

themselves, without any more ado; and such propositions are called self-evident.²⁶

Moreover, Locke holds that intuition is (i) the clearest and most certain type of cognition attainable by man; and (ii) the type upon which depends the certainty and evidence of any other kind of human knowledge:

The different clearness of our knowledge seems to me to lie in the different way of perception the mind has of the agreement or disagreement of any of its ideas. [...] this kind of knowledge [*viz.* intuitive] is the clearest and most certain that human frailty is capable of. This part of knowledge is irresistible, and, like bright sunshine, forces itself immediately to be perceived, as soon as ever the mind turns its view that way; and leaves no room for hesitation, doubt, or examination, but the mind is presently filled with the clear light of it. It is on this intuition that depends all the certainty and evidence of all our knowledge; [...]. He that demands a greater certainty than this, demands he knows not what, and shows only that he has a mind to be a sceptic,...²⁷

In his Essay, Book Four, Chapter Two, section two (entitled: "Demonstrative [Knowledge]"), Locke asserts that there is certain knowledge "wherever the mind perceives the agreement or disagreement of any of its ideas". But "it does not always happen, that the mind sees [*i.e.*, immediately perceives, intuit] that agreement or disagreement, which there is between them [ideas], even where it is

²⁶ John LOCKE, Elements of Natural Philosophy. Works, Vol. 3, p. 329-330.

²⁷ Essay, IV, ii, 1 (F.II. 176-178).

discoverable". Why not? Because "those ideas, concerning whose agreement or disagreement the inquiry is made, cannot by the mind be so put together as to show it [without the intervention of other ideas]." Thus, Locke continues,

... when the mind cannot so bring its ideas together as by their immediate comparison, and as it were juxta-position or application one to another, to perceive [intuit] their agreement or disagreement, it is fain, by the intervention of other ideas (one or more, as it happens) to discover the agreement or disagreement which it searches; and this is that which we call reasoning [or demonstration]. Thus, the mind being willing to know the agreement or disagreement in bigness between the three angles of a triangle and two right ones, cannot by an immediate view and comparing them do it: because the three angles of a triangle cannot be brought at once, and be compared with any other one, or two, angles; and so of this the mind has no immediate, no intuitive knowledge. In this case the mind is fain to find out some other angles, to which the three angles of a triangle have an equality; and, finding those equal to two right ones, comes to know their equality to two right ones.²⁸

Locke's example of "Demonstrative Knowledge" may be clarified by the following illustration. In the geometrical figures (see Diagram I) the agreement or relation of equality between $\hat{a} + \hat{b} + \hat{c}$ and $\hat{x} + \hat{y}$ is not had by immediate intuitive knowledge.

(Diagram I.)



²⁸ Essay, IV, ii, 2 (F.II. 178-179).

Thus one must employ other ideas, namely, $\hat{c} + \hat{d} + \hat{e}$ (see Diagram II) in order to discover the agreement of the former. Now in view of the convention that there are 360 degrees in a complete rotation of a line about a point, one may by immediate intuition see that $\hat{x} + \hat{y} = 180$ degrees. It is not immediately intuitive, however, that $\hat{a} + \hat{b} + \hat{c}$ is in agreement with $\hat{x} + \hat{y}$. Intervening ideas are needed, so one constructs:

(Diagram II.)



$$\hat{x} + \hat{y} = 180 \text{ degrees} \quad (\text{intuitive})$$

$$\hat{c} + \hat{d} + \hat{e} = 180 \text{ degrees} \quad (\text{intuitive})$$

Therefore, $\hat{c} + \hat{d} + \hat{e} = \hat{x} + \hat{y} = 180$ degrees
(There is a relation of equality or agreement between them.)

One must show that $\hat{c} + \hat{d} + \hat{e}$ are in agreement with $\hat{a} + \hat{b} + \hat{c}$.

Proof: $\hat{d} = \hat{a}$ (alternate angles)

$\hat{e} = \hat{b}$ (corresponding angles)

$\hat{c} = \text{common}$

$$\hat{d} + \hat{e} + \hat{c} = \hat{a} + \hat{b} + \hat{c}$$

$$\hat{c} + \hat{d} + \hat{e} = 180 \text{ degrees}$$

Therefore, $\hat{a} + \hat{b} + \hat{c} = 180$ degrees.

Therefore, $\hat{a} + \hat{b} + \hat{c}$ is in agreement with $\hat{c} + \hat{d} + \hat{e}$, which itself is in agreement with $\hat{x} + \hat{y}$.

Therefore, $\hat{a} + \hat{b} + \hat{c}$ bears the relation of equality with $\hat{x} + \hat{y}$. Thus the mind intuits the equality or agreement between $\hat{a} + \hat{b} + \hat{c}$ and $\hat{x} + \hat{y}$ through the mediation of the intervening ideas $\hat{c} + \hat{d} + \hat{e}$, which serve to show their agreement and are called proofs. This mediate (as opposed to immediate) intuition "where the agreement and disagreement is [...] plainly and clearly perceived, [...] is called demonstration; it being shown to the understanding, and the mind made to see that it is so."²⁹

To conclude this examination of Locke's thinking on both intuitive and demonstrative knowledge, it might be well to add three corollaries: 1. For Locke one's mind does not project relations upon its ideas; moreover, it does not alter those relations between its ideas (which it discovers through the mediation of other ideas):

All that reason or the mind does, in reasoning or arguing, is to find out and observe that agreement or disagreement [between ideas]: and all that argument does is, by an intervening idea, to show it, where an immediate putting the ideas together will not do it.³⁰

... [reason] when it operates rightly by considering and comparing ideas so as to produce certainty, this showing or demonstration that the thing is so, is called good and sound reason. The ground of this certainty [knowledge] lies in ideas themselves, and their agreement or disagreement,

²⁹ Essay, IV, ii, 3 (F.II. 179).

³⁰ John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 62.

which reason neither does or can alter, but only lays them [ideas] so together as to make it perceivable;...³¹

2. One's demonstrative knowledge is, according to Locke, sometimes less perfect than one's intuitive knowledge, because the former (unlike the latter) is often dependent upon one's exact remembrance of the intervening links in question:

This intuitive perception of the agreement or disagreement of the intermediate ideas, in each step and progression of the demonstration, must also be carried exactly in the mind, and a man must be sure that no part is left out: which, because in long deductions, and the use of many proofs, the memory does not always so readily and exactly retain; therefore it comes to pass, that this is more imperfect than intuitive knowledge, and men embrace often falsehood for demonstrations.³²

3. For Locke, demonstrative knowledge is as certain as intuitive knowledge, because

... in demonstrative knowledge, there is an intuitive knowledge of that agreement or disagreement it [one's mind] seeks with the next intermediate idea which it uses as a proof [i.e., as an intervening link which the mind employs to render perceivable the necessary connection or inconsistency of the terms of the proposition in question]:...³³

Accordingly, a demonstration is a chain of intuitions.

³¹ John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 59.

³² Essay, IV, ii, 7 (F.II. 181-182). Cf. Essay, IV, iii, 6 (F.II. 197).

³³ Essay, IV, ii, 7 (F.II. 180-181). Cf. Essay, IV, ii, 4 (F.II. 179).

C. THE THREE SPECIES OF AGREEMENTS
OR DISAGREEMENTS OF IDEAS

As has been seen, in his Essay, Book Four, Chapter One, section two, Locke asserts that

[Since our mind has no other immediate object but its own ideas, our] Knowledge then seems to me to be nothing but the perception of the connexion of and agreement, or disagreement and repugnancy of any of our ideas.³⁴

Locke then goes on to say that

... to understand a little more distinctly wherein this agreement or disagreement consists, I think we may reduce it all to these [...] sorts:
I. Identity, or diversity. II. Relation. III. Co-existence, or necessary connexion.³⁵

Thus, it will now be instructive to examine each of these sorts of agreement or disagreement. Like Locke's own treatment, the examination presented here can be brief.

34 Essay, IV, i, 2 (F.II. 167).

35 Essay, IV, i, 3 (F.II. 168). This section is entitled: "This Agreement or Disagreement [of two ideas] may be any of four sorts"—the fourth sort or species of agreement or disagreement of two ideas Locke calls "Real existence". But in section seven (entitled: "Fourthly, Of real Existence agreeing to any idea") of the same chapter, the reader is told (by means of one sentence) that this is not a species of agreement or disagreement of two ideas; rather, it is the agreement of any idea with actual real existence: "... The fourth and last sort is that of actual real existence agreeing to any idea." Essay, IV, i, 7 (F.II. 171). It should be noted that this statement does not (nor does Locke himself successfully make it) coincide with the definition of knowledge given in section two of the same chapter. For interesting discussions on this and related matters, see James GIBSON, Locke's Theory of Knowledge and its Historical Relations, p. 166-179; and Richard I. AARON, John Locke, p. 225-226 and 237-247.

In his Essay, Book Four, Chapter One, section four, Locke describes in a scanty and obscure manner how he thinks one perceives the first species of agreement or disagreement (viz. identity or diversity) of any of its ideas. The essential part of this text will be cited here, so that the reader may judge more easily whether or not the interpretation which will follow is correct—the text in question, however, will be divided into two parts, in order to facilitate the interpretation:

1. It is the first act of the mind, when it has any sentiments or ideas at all, to perceive its ideas;
2. and so far as it perceives them, to know each what it is, and thereby also to perceive their difference, and that one is not another. This is so absolutely necessary, that without it there could be no knowledge, no reasoning, no imagination, no distinct thoughts at all. 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.³⁶

In "1." Locke is speaking about an operation of a distinct mental faculty called "perception": "PERCEPTION [...] is the first faculty of the mind exercised about our ideas."³⁷ It is by the exercise of this faculty that one

³⁶ Essay, IV, i, 4 (F.II. 169).

³⁷ Essay, II, ix, 1 (F.I. 183).

first perceives or takes notice of one's simple ideas (of sensation and of reflection) and one's complex ideas (which one has made by the exercise of other mental faculties.³⁸ Moreover, an activity of this distinct mental faculty, like the faculty itself, Locke calls "perception"; for Locke such an act is "the first step and degree towards knowledge" and "is the first operation of all our intellectual faculties".³⁹

Now, in "2." Locke is speaking about an operation called (in the Essay, II, xi) "discerning", "whereby it [viz. one's mind by the exercise of its distinct faculty called 'discerning'] perceives two ideas to be the same, or different."⁴⁰ In the Essay, Book Four (passim), this same operation is considered to be an instance of an act called "intuition"—an act of a mental faculty which Locke here calls "understanding". It is by the exercise of this mental faculty (called "discerning" or "understanding") that one,

³⁸ Cf. Essay, II, ix, 1 (F.I. 183); and Essay, II, xi, 14 (F.I. 210-211).

³⁹ Essay, II, ix, 15 (F.I. 191). Before one can intuit (know) relations between one's simple and/or complex ideas, one must first take notice of one's ideas. Hence, granting that a number of other operations are involved in the making of one's complex ideas, one's taking notice either of a simple idea or a complex idea is the first operation of one's intellectual faculties from the point of view of one's quest for knowledge.

⁴⁰ Essay, II, xi, 1 (F.I. 202).

according to Locke, infallibly and immediately perceives (i.e., grasps unmistakably and without the intervention of other ideas) that the content of idea "A" disagrees with the content of idea "B". In other words, for Locke it is by the exercise of this mental faculty that one judges with certainty that the content of idea "A" (one's idea of this tree, for instance) is related to the content of idea "B" (one's idea of this robin, for instance) by the relation of otherness: "A is not B".

But, it may be asked, how does one perceive that the content of an idea in one's mind agrees with or is identical with itself: "A is A"? Locke emphatically asserts, "By this [act of discerning or intuiting] the mind clearly and infallibly perceives each idea to agree with itself";⁴¹ moreover, he just as emphatically asserts that "identity and coexistence are truly nothing but relations".⁴² But a relation involves two terms. Does Locke mean, accordingly, that the mind generates out of its own substance a representation of the content of one of its ideas, and then clearly and infallibly perceives that the representation of that content is related to the original idea itself by the relation

41 Essay, IV, i, 4 (F.II. 169).

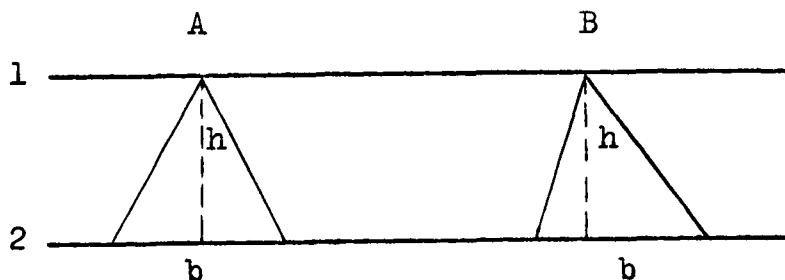
42 Essay, IV, i, 7 (F.II. 171). This entire section should be read carefully; note especially the phrase: "That it is, or is not, the same with some other." (*Italics mine.*)

of sameness? Perhaps, but Locke simply does not answer this question.

In his Essay, Book Four, Chapter One, section five (entitled: "Secondly, Of abstract Relations between ideas"), Locke says that the second species or

... sort of agreement or disagreement the mind perceives in any of its ideas may, I think, be called relative, and is nothing but the perception of the [abstract] relation between any two ideas, of what kind soever, whether substance, modes, or any other.⁴³

Locke cites a proposition of Euclidean geometry as an example of one's relational knowledge: "'Two triangles upon equal bases between two parallels are equal,' is of relation."⁴⁴ In other words, one (by the exercise of one's mental faculty of understanding) mediately (in the example Locke gives) intuits the abstract relation of agreement (of equality) between the areas or surfaces of ideas A and B (see diagram), through the intervening ideas: $S = 1/2 bh$.



43 Essay, IV, i, 5 (F.II. 170).

44 Essay, IV, i, 7 (F.II. 171).

1 and 2 are parallel lines.

Therefore, h of $A = h$ of B .

Given that b of $A = b$ of B ,

S of $A = S$ of B , for $S = 1/2 bh$.

The knowledge of this abstract relation is, according to Locke, necessary (since it stems from the very natures of the mental contents or ideas that the mind is attending to) and universal (since if there be extramental instances of such contents relations of equality must likewise obtain between them).⁴⁵

According to Locke, "The complex ideas we have of substances are [...] certain collections of simple ideas [of their qualities, powers or properties] that have been observed or supposed constantly to exist together."⁴⁶ Now, in his Essay, Book Four, Chapter One, section six (entitled: "Thirdly, Of their necessary Co-existence in Substances"), Locke asserts that

... The third sort of agreement or disagreement to be found in our ideas, which the perception of the mind [i.e., the faculty of understanding] is employed about [i.e., endeavors to grasp], is co-existence or non-co-existence in the same subject;

⁴⁵ Cf. Essay, IV, iii, 31 (F.II. 224-225); and Essay, IV, III, 29 (F.II. 221-222).

⁴⁶ Essay, II, xxxi, 6 (F.I. 507).

and this [relation⁴⁷] belongs particularly to substances.⁴⁸

In this text, then, Locke seems to be asserting that one's mind can (and, indeed, should) endeavor to perceive or to intuit any necessary connections (or non-necessary connections) that there may be between those simple ideas that are contained in each of one's complex ideas of substances. To elucidate his point, Locke uses the following example:

... when we pronounce concerning gold, that it is fixed, our knowledge of this truth amounts to no more but this, that fixedness, or a power to remain in the fire unconsumed, is an idea [i.e., a simple idea] that always accompanies and is joined with [i.e., does always co-exist with] that particular sort [i.e., those other simple ideas] of yellowness, weight, fusibility, malleableness, and solubility in aqua regia, which make our complex idea signified by the word gold,⁴⁹

Whether or not, in Locke's view, one actually does perceive or intuit such necessary connections between the simple ingredients of one's complex ideas of substances is a matter that will be seen as this chapter unfolds.

47 "Though identity and co-existence are truly nothing but relations, yet 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." Essay, IV, i, 7 (F.II. 171-172).

48 Essay, IV, i, 6 (F.II. 170).

49 Essay, IV, i, 6 (F.II. 170-171). This quotation in the Fraser edition ends with a comma.

SECTION II

"Hence no Science of Bodies within our reach."⁵⁰

As has been seen, for Locke one's ideas are the immediate objects (the subject-matter) of one's knowledge; moreover, one's knowledge consists of perceptions or certain judgments concerning the necessary agreements or disagreements between one's ideas. Now in his Essay, Book Four, Chapter Three (entitled: "Of the Extent of Human Knowledge"), Locke asserts that there are two basic factors which determine the scope of one's knowledge: (i) the extent of one's ideas;⁵¹ and (ii) the extent of one's grasp of the necessary relations between one's ideas.⁵² Consequently, Locke is

... apt to doubt that, how far soever human industry may advance useful and experimental philosophy in physical things, scientific [i.e., universal and certain knowledge of physical things] will still be out of our reach:...⁵³

Why? (i) "because we want perfect and adequate [universal] ideas [even] of those very bodies which are nearest to

⁵⁰ Essay, IV, iii, 26 (F.II.217).

⁵¹ "... we can have knowledge no further than we have ideas." Essay, IV, iii, 1 (F.II.190).

⁵² "... we can have no knowledge further than we can have perception of that agreement or disagreement." Essay, IV, iii, 2 (F.II. 190).

⁵³ Essay, IV, iii, 26 (F.II. 217-218).

us";⁵⁴ and (ii) because of "a want of a discoverable connection between those ideas we have. For wherever we want that, we are utterly incapable of universal and certain knowledge; and are [...] left only to observation and experiment".⁵⁵ The remaining paragraphs of this chapter will endeavor to explicate these two points.

A. IF ONE IS TO HAVE A SCIENCE OF MATERIAL SUBSTANCES, ONE MUST HAVE UNIVERSAL IDEAS OF THEM THAT ARE "ADEQUATE"

In his Essay, Book Two, Chapter Thirty, section one (entitled: "Ideas considered in reference to their Archetypes"), Locke asserts that one may consider one's ideas (be they simple or complex)

... in reference to things from whence they are taken, or which they may be supposed to represent; and thus, I think, they may come under a threefold distinction, and are:—

First, either real or fantastical;
Secondly, adequate or inadequate;
Thirdly, true or false.⁵⁶

Now, as has been seen, one reason why Locke insists that men have no science of material substances is because they do not have universal ideas of them that are "adequate". Consequently, in the following paragraphs it will suffice to

54 Essay, IV, iii, 26 (F.II. 218).

55 Essay, IV, iii, 28 (F.II. 220).

56 Essay, II, xxx, 1 (F.I. 497).

examine Locke's teaching on the inadequacy of men's universal ideas of material substances.⁵⁷

For Locke, an "adequate" idea is by definition a real and perfect (a real and complete) mental ectype or copy of its supposed archetype (or pattern) and referent;

57 "... by real ideas, I mean such as have a foundation in nature; such as have a conformity with the real being and existence of things, or with their archetypes. Fantastical or chimerical, I call such as have no foundation in nature, nor have any conformity with that reality of being to which they are tacitly referred, as to their archetypes." Essay, II, xxx, 1 (F.I. 497). "... Our complex ideas of substances, being made all of them in reference to things existing without us, and intended to be representations of substances as they really are, are no further real than as they are such combinations of simple ideas [of qualities, powers or properties] as are really united, and co-exist in things without us." Essay, II, xxx, 5 (F.I. 500). "Whenever the mind refers any of its ideas to anything extraneous to them, they are then capable to be called true or false. Because the mind, in such a reference, makes a tacit supposition of their conformity to that thing; which supposition, as it happens to be true or false, so the ideas themselves come to be denominated." Essay, II, xxxii, 4 (F.I. 515). "That they [viz. our complex ideas of substances] are all false, when looked upon as the representations of the unknown essences of things, is so evident that there needs nothing to be said of it. I shall therefore pass over that chimerical supposition, and consider them as collections of simple ideas in the mind, taken from combinations of simple ideas [i.e., qualities, powers or properties] existing together constantly in things, of which patterns they are the supposed copies; and in this reference of them to the existence of things, they are false ideas:— (1) When they [men] put together simple ideas [of qualities, powers or properties], which [qualities, powers or properties] in the real existence of things have no union [...]. (2) Ideas of substances are, in this respect, also false, when, from any collection of simple ideas that do always exist together, there is separated, by a direct negation, any other simple idea which is constantly joined with them." Essay, II, xxxii, 18 (F.I. 522).

however, an "inadequate" idea is by definition a real but partial mental ectype or copy of its supposed pattern and referent:

Of our real ideas, some are adequate, and some are inadequate. Those I call adequate, which perfectly represent those archetypes which the mind supposes them taken from: which it intends them to stand for; and to which it refers them. Inadequate ideas are such, which are but a partial or incomplete representation of those archetypes to which they are referred.⁵⁸

In Locke's view all simple ideas are real and adequate. Why? "Because, being nothing but the effects of certain powers in things, fitted and ordained by God to produce such sensations [i.e., simple ideas] in us, they cannot but be correspondent and adequate to those powers: and we are sure they agree to the reality of things."⁵⁹ Now a simple idea may be a real and adequate mental ectype of a "quality", "power" or "property" (Locke makes use of all three terms) of a thing, and yet not be a mental image or representation (in the sense of an exact resemblance) of that quality, power or property in question. For Locke, strictly speaking simple ideas of primary qualities only are mental images or representations of extramental qualities, powers or properties:

⁵⁸ Essay, II, xxxi, 1 (F.I. 502).

⁵⁹ Essay, II, xxxi, 2 (F.I. 502). Cf. Essay, II, xxxi, 12 (F.I. 511-512).

... I do not remember that I have any where said, of all our simple ideas, that they are none of them true representations of things without us; [...]. The contrary whereof appears from the words which I have set down out of chap. 30 [i.e., Essay, II, xxx, 2 (F.I. 498)], where I deny only the simple ideas of secondary qualities to be representations; but do everywhere affirm, that the simple ideas of primary qualities are the images or representations of what does exist without us.⁶⁰

However, the reader must remember that for Locke one's simple ideas of primary qualities correspond with and resemble only the outward primary qualities of those gross material bodies (i.e., those aggregates of atoms of sufficient bulk to cause motion-patterns in one's senses) which are now causing them or have in the past caused them; these simple ideas do not correspond with and resemble the supposed primary qualities of any atom taken singly.⁶¹

⁶⁰ John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 75.

⁶¹ Cf. "CHAPTER TWO, SECTION III, C. 1." of the present study. Concerning mixed (Locke does not discuss the adequacy or inadequacy of simple) modes and relations, Locke asserts that "our complex ideas of modes, being voluntary collections of simple ideas, which the mind puts together, without reference to any real archetypes, or standing patterns, existing anywhere, are and cannot but be adequate ideas. Because they, not being intended for copies of things really existing, but for archetypes made by the mind, to rank and denominate things by, cannot want anything; they having each of them that combination of ideas, and thereby that perfection, which the mind intended they should: so that the mind acquiesces in them, and can find nothing wanting. [...] mixed modes and relations, being archetypes without patterns, and so having nothing to represent but themselves, cannot but be adequate, everything being so to itself." Essay, II, xxxi, 3 (F.I. 504). Cf. Essay, II, xxxi, 4, 5 and 14 (F.I. 505 and 512-513).

Now in his Essay, Book Two, Chapter Thirty One, section six, Locke reports: 1. that some men (apparently some of the scholastics of his time) consider each of their universal complex ideas of substances to be a general mental ectype of a discovered real essence (i.e., a known substantial form), which is at once specifically identical though numerically distinct in a certain group of substantial beings; 2. that some other men (Locke, for instance) consider each of their universal complex ideas of substances to be a general mental ectype of the discovered qualities, properties or powers of a certain group of substantial beings, which (qualities, properties or powers) these men suppose to depend on and to flow from humanly unknown real essences (i.e., atomic structures that have not been discovered by man—atomic structures which God in His wisdom and good pleasure has perhaps made to be similar to one another); and 3. that both of these types of universals are inadequate mental ectypes of the archetypes and referents in question. These three points are implicit in the following text:

... ideas [of substances] have in the mind a double reference [i.e., for scholastic minds such ideas have one reference; but for Lockean minds, for instance, another]: 1. Sometimes they are referred to a supposed real essence of each species of things. 2. Sometimes they are only designed to be pictures and representations in the mind of things that do exist, by ideas of those qualities that are discoverable in them. In both which ways

these copies of those originals and archetypes are imperfect and inadequate.⁶²

To explicate points "1." and "3." just noted, Locke relates that it is usual for men ("especially such as have been bred up in the learning taught in this part of the world"—he means, apparently, those trained in a scholastic theory of real essences or substantial forms)

... to make the names of substances stand for things as supposed to have certain real essences, whereby they are of this or that species: and names standing for nothing but the ideas that are in men's minds, they must constantly refer their [universal] ideas [of substances] to such real essences, as to their archetypes.⁶³

62 Essay, II, xxxi, 6 (F.I. 506). Recall what the term "real essence" signifies for Locke. In his First Letter to Stillingfleet, Locke asserts that the real essence of any substance is "that internal constitution, or frame, or modification of the substance, which God in his wisdom and good pleasure thinks fit to give to every particular creature, when he gives a being: and such [real] essences I grant there are in all things that exist." John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 82. In fact, Locke says: "I think the real essences of things [...] are the very real constitution of things, and therefore I easily grant there is reality in them; and it was from that reality that I called them real essences." Ibid., p. 83. And in his Essay, Locke sides with those who maintain the atomic perspective on the real essences of material substances: the real essence of a corporeal substance is that "real, but unknown, constitution of their insensible parts; from which flow those sensible qualities which [cause sequences of simple ideas in us and] serve us to distinguish them [corporeal substances] one from another, according as we have occasion to rank them into sorts, under common denominations." Essay, III, iii, 17 (F.II. 27). Cf. "CHAPTER TWO, SECTION II, B, 1-2" and "CHAPTER TWO, SECTION III, B and C, 1-3" of the present study.

63 Essay, II, xxxi, 6 (F.I. 506).

And Locke goes on to say that "if you demand [i.e., ask these scholastics] what those real essences [those substantial forms of things] are, it is plain [to Locke, at least, that] men [all scholastics?] are ignorant, and know them not."⁶⁴ So Locke tries to lead his reader to the following universal conclusion: "From whence it follows, that the ideas they have in their minds, being referred to real essences, as to archetypes which are unknown, must be so far from being adequate that they cannot be supposed to be any representation of them [viz. real essences or substantial forms] at all."⁶⁵ Thus, if one grants with Locke that if one is to have a science of material substances, one must have universal ideas of them that are "adequate"; and, if one grants with Locke that no scholastic or moderate realist possesses such ideas, then one must indeed assert that if there is a science of physical things, no scholastic or moderate realist participates in that body of universal and certain knowledge.

In order to understand point "2." and especially point "3." of the paragraph which immediately precedes the last one, the reader is well advised to put aside any scholastic theory of real essences or substantial forms with

64 Essay, II, xxxi, 6 (F.I. 506-507).

65 Essay, II, xxxi, 6 (F.I. 507).

which he or she might be acquainted—of "substantial form", Locke says, "I confess I have no idea at all, but only of the sound form; which is far enough from an idea of its [any substance's] real essence or constitution."⁶⁶ For Locke (his reader must bear in mind), the real essence of each material substance is its atomic structure. Such atomic structures or real essences are (Locke repeatedly insists) unknown X's. Locke does not claim to have—nor does he pretend to have—mental ectypes of those supposed "atomic structures", "real essences" or "archetypes" which his atomic theory insists there must be outside one's mind. However, Locke does claim to have both particular and universal complex ideas of corporeal substances; these mental ectypes are collections of three sorts of simple ideas:

The ideas that make our complex ones of corporeal substances, are of these three sorts. First, the ideas of the [outward] primary qualities of things, which are discovered by our senses, and are in them even when we perceive them not; such are the bulk, figure, number, situation, and motion of the parts of bodies; which are really in them, whether we take notice of them or not. Secondly,

66 Essay, II, xxxi, 6 (F.I. 508). In his Essay, Book Three, Chapter Ten (entitled: "Of the Abuse of Words"), Locke asks: "Who is there that has been bred up in the Peripatetic philosophy [...] that is not persuaded that substantial forms [...] are something real? [...] There is scarce any sect in philosophy [that] has not a distinct set of terms that others understand not. But yet this gibberish [...] comes [...] to establish them in the persuasion of the reality of such things..." Essay, III, x, 14 (F.II. 132-133).

the sensible secondary qualities, which, depending on these, are nothing but the powers those substances have to produce several ideas in us by our senses; which ideas are not in the things themselves, otherwise than as anything is in its cause. Thirdly, the aptness we consider in any substance, to give or receive such alterations of primary qualities, as that the substance so altered should produce in us different ideas from what it did before; these are called active and passive powers: all which powers, as far as we have any notice or notion of them, terminate only in sensible simple ideas.⁶⁷

The primary, secondary and tertiary "qualities", "powers" or "properties" of corporeal substances depend on and flow from the supposed real essences or atomic structures of those corporeal substances.⁶⁸ The "qualities", "powers" or "properties" of corporeal substances are efficient causes of simple ideas (of "qualities", "powers" or "properties" of corporeal substances) in one's mind.⁶⁹ Out of these simple ideas (these "raw materials" or effects) of the "qualities", "powers" or "properties" of corporeal

67 Essay, II, xxiii, 9 (F.I. 399-400). And in the same chapter Locke says that "we must take notice, that our complex ideas of substances, besides all those simple ideas they are made up of, have always the confused idea of something to which they belong, and in which they subsist." Essay, II, xxiii, 3 (F.I. 393).

68 Concerning Locke's theory of the primary, secondary and tertiary qualities of corporeal substances, see: "CHAPTER TWO, SECTION III, C, 1-3" of the present study.

69 Concerning Locke's theory regarding how one acquires simple ideas of the qualities of corporeal substances, see: "CHAPTER TWO, SECTION III, B" of the present study.

substances, one constructs particular complex ideas of individual corporeal substances.⁷⁰ Now it is important to note that (in Locke's view) particular complex ideas of individual corporeal substances do not become universal complex ideas of corporeal substances. Rather, using the ingredients (viz. the simple ideas of "qualities", "powers" or "properties" and the obscure, indistinct, vague idea of a something or being with the relation of a support to accidents) that are common to some of its particular ideas of individual corporeal substances as exemplary causes (Locke does not use the term "exemplary"), one's mind generates out of its own mental substance universal ideas of corporeal substances. And these universal ideas (because of their lesser comprehension or connotation) have a greater extension or denotation than their exemplary causes have. Such universals—Locke often calls these "nominal essences"⁷¹—

70 Concerning Locke's theory regarding how one constructs particular complex ideas of individual corporeal substances, see: "CHAPTER THREE, SECTION V, B" of the present study.

71 "There is an internal constitution of things, on which their properties depend. [...] this we call the real essence. There are also certain complex ideas, or combinations of [simple ideas of] these properties [plus an obscure, indistinct, vague idea of a something or being with the relation of a support to accidents] in men's minds, to which they commonly annex specific names, or names of sorts or kinds of things. [...] These [abstract universal] complex ideas, for want of a better name, I have called nominal essences; how properly, I will not dispute. But if any one

are collections of ideas of ideas; that is, collections of those ideas one's mind has found to be common ingredients of several of the particular complex ideas which it (one's mind) has constructed of individual corporeal substances.⁷²

Now special attention should be given to this significant point: the mental process which gives "birth" to these universals does not in Locke's view involve a mental grasp of any ontological principle "behind" (so to speak) the exemplary causes of these universals; as the present study unfolds, it will be seen that this Lockean tenet is at the basis of his insistence that there is "no Science of Bodies within our reach".⁷³

When forming one's complex ideas of (material or spiritual) substances, Locke insists that

will help me to a better name for them, I am ready to receive it; till then I must, to express myself, use this." John LOCKE, First Letter to Stillingfleet. Works, Vol. 4, p. 87. Cf. Essay, III, iii, 15-18 (F.II. 25-29). For example, "the nominal essence of gold is that complex idea the word gold stands for, let it be, for instance, a body yellow, of a certain weight, malleable, fusible, and fixed. But the real essence is the constitution of the insensible parts of that body, on which those qualities and all the other properties of gold depend." Essay, III, vi, 2 (F.II. 57).

72 Concerning Locke's theory regarding how one produces universal complex ideas of corporeal substances, see: "CHAPTER THREE, SECTION V, D, 1-3" of the present study.

73 Essay, IV, iii, 26 (F.II. 217).

... we have not the liberty, as in mixed modes, to frame what combinations we think fit, to be the characteristical notes to rank and denominate things by. In these we must follow Nature, suit our complex ideas to real existences, and regulate the signification of their names by the things themselves, if we will have our names to be signs of them, and stand for them.⁷⁴

And Locke grants that one does intend to form adequate mental ectypes of these substances; nevertheless, he insists that all such mental ectypes are always inadequate:

[When forming ideas of substances,] desiring to copy things as they really do exist, and to represent to ourselves that constitution [that supposed internal real essence] on which all their [qualities, powers or] properties depend, we perceive our ideas attain not that perfection we intend: we find they still want something we should be glad were in them; and so are all inadequate.⁷⁵

This inadequacy of all of one's complex ideas (be they particular or universal) of individual substances or of groups of similar substances is, according to Locke, twofold:

1. no one of these ideas is a collection of simple ideas of all of the "qualities", "powers" or "properties" of the substance or the group of substances in question; and 2. no one of these ideas contains a mental copy of the supposed real essence of the substance or the supposed similar real essences of the substances in question. Here, then, two questions arise: 1. "Why are one's complex ideas (be they

74 Essay, III, ix, 11 (F.II. 111).

75 Essay, II, xxxi, 3 (F.I. 504).

particular or universal) of substances not complete collections of simple ideas of the 'qualities', 'powers' or 'properties' of the substance(s) in question?", and 2. "Why do not one's complex ideas of substances contain a mental copy of the supposed real essence(s) in question?" (In view of the scope of the present chapter, the following discussion will be limited to complex ideas of material substances.)

In Locke's view, "The complex ideas we have of substances are [...] certain collections of simple ideas [of their qualities, powers or properties] that have been observed or supposed constantly to exist together."⁷⁶ Although "the mind of man, in making its complex ideas of substances, never puts any together that do not really, or are not supposed to, co-exist [in nature]; [...] Men generally content themselves with some few sensible obvious qualities".⁷⁷ And it is no surprise that men in general do content themselves with such inadequate collections of simple ideas of the qualities, powers or properties of material substances,

... since it requires much time, pains, and skill, strict inquiry, and long examination to find out what, and how many, those simple ideas are,

76 Essay, II, xxxi, 6 (F.I. 507).

77 Essay, III, vi, 29 (F.II. 79).

which are constantly and inseparably united in nature, and are always to be found together in the same subject. Most men, wanting either time, inclination, or industry enough for this, even to some tolerable degree, content themselves with some few obvious and outward appearances of things, thereby readily to distinguish and sort them for the common affairs of life: and so, without further examination, give them names, or take up the names already in use. Which, though in common conversation they pass well enough for the signs of some few obvious qualities co-existing, are yet far enough from comprehending, in a settled signification, a precise number of simple ideas, much less all those which are united in nature.⁷⁸

Now Locke is of the opinion that men should not consider any one of their own (or, for that matter, another's) complex ideas of material substances to be an adequate

⁷⁸ Essay, III, vi, 30 (F.II. 80-81). And in chapter nine, Locke expands this point by saying: "It is true, as to civil and common conversation, the general names of substances, regulated in their ordinary signification by some obvious qualities, (as by the shape and figure in things of known seminal propagation, and in other substances, for the most part by colour, joined with some other sensible qualities,) do well enough to design the things men would be understood to speak of: and so they usually conceive well enough the substances meant by the word gold or apple, to distinguish the one from the other. But in philosophical inquiries and debates, where general truths are to be established, and consequences drawn from propositions laid down, there the precise signification of the names of substances will be found not only not to be well established, but also very hard to be so. For example: he that shall make malleability, or a certain degree of fixedness, a part of his complex idea of gold, may make propositions concerning gold, and draw consequences from them, that will truly and clearly follow from gold, taken in such a signification: but yet such as another man can never be forced to admit, nor be convinced of their truth, who makes not malleableness, or the same degree of fixedness, part of that complex idea that the name gold, in his use of it, stands for." Essay, III, ix, 15 (F.II. 114).

collection of the simple ideas in question; moreover, Locke is also of the opinion that even if a man does consider one (or more) such collection(s) to be complete, that man (practically speaking) cannot be sure of its (their) adequacy:

[Like simple ideas taken singly,] complex ideas of substances are ectypes, copies too; but not perfect ones, not adequate: which is very evident to the mind, in that it plainly perceives, that whatever collection of simple ideas it makes of any substance that exists, it cannot be sure that it exactly answers all that are in that substance. Since, not having tried all the operations of all other substances upon it, and found all the alterations it would receive from, or cause in, other substances, it cannot have an exact adequate collection of all its active and passive capacities; and so not have an adequate complex idea of the powers of any substance existing, and its relations; which is that sort of complex idea of substances we have.⁷⁹

And Locke immediately adds a point that is basic to the present topic of this study: he says

... after all, if we would have, and actually had, in our complex idea, an exact collection of all the secondary qualities or powers [viz. those that are immediately perceivable as well as those that are mediately perceivable (in other words, tertiary qualities)—and, one may add, the outward primary qualities] of any substance, we should not yet thereby have an idea of the [real] essence of that thing. For, since the powers or qualities that are observable by us are not the real essence of that substance, but depend on it, and flow from it, any collection whatsoever of these qualities cannot be [an idea of] the real essence of that thing. Whereby it is plain, that our ideas of substances are not adequate; are not what the mind intends them to be.⁸⁰

79 Essay, II, xxxi, 13 (F.I. 512).

80 Essay, II, xxxi, 13 (F.I. 512).

In Locke's view, therefore, complex ideas (be they particular ones or universal ones) of material substances are inadequate collections of simple ideas of qualities, powers or properties (plus, of course, a "confused idea of something to which they belong, and in which they subsist"⁸¹): and such complex ideas, Locke insists, simply cannot be a mental ectype of the supposed real essence of any material substance. And to convince his readers of this, Locke argues as follows:

The complex ideas we have of substances are [...] certain collections of simple ideas that have been observed or supposed constantly to exist together. But such a complex idea cannot be [an idea of] the real essence of any substance; for then [i.e., if it were] the properties we [would] discover in that body [i.e., in that idea of that substance] would depend on that complex idea [of the real essence], and be deducible from it [viz. the idea of the real essence], and their [viz. the properties] necessary connexion with it [viz. the idea of the real essence would] be known; as all properties of a triangle depend on, and, as far as they are discoverable, are deducible from the complex idea of three lines including a space. But it is plain that in our complex ideas of substances are not contained such ideas [of real essences], on which all the other qualities [i.e., qualities other than those now represented in the complex ideas in question] that are to be found in them do depend.⁸²

For instance, if one's universal complex idea of rhubarb, of hemlock, of opium, and of man contained mental ectypes

81 Essay, II, xxiii, 3 (F.I. 393).

82 Essay, II, xxxi, 6 (F.I. 507).

of the real essences of these substances, Locke believes that

... we should be able to tell beforehand [i.e., without any further experimentation than was required to acquire the complex ideas we now have] that rhubarb will purge, hemlock kill, and opium make a man sleep: as well as a watchmaker can, that a little piece of paper laid on the balance will keep the watch from going till it be removed; or that, some small part of it being rubbed by a file, the machine would quite lose its motion, and the watch go no more.⁸³

As has been seen, Locke teaches: (i) that a material substance is an aggregate of atoms; (ii) that a material substance has a real essence; (iii) that the real essence of a material substance is its atomic structure; (iv) that a material substance causes a motion-pattern in one's sense, which somehow causes a simple idea in one's mind of a quality, power or property of that material substance; and (v) that one's mind "stirs not one jot beyond those [simple] ideas which sense or reflection have offered for its contemplation."⁸⁴ With these five Lockean tenets in mind, then, one might pose this question: "For Locke, why is no human complex idea of a material substance a mental ectype

83 Essay, IV, iii, 25 (F.II. 216-217).

84 Essay, II, i, 24 (F.I. 142). "... we can attain to nothing but those simple ideas, which we originally received from sensation or reflection." Essay, II, xxiii, 37 (F.I. 422). Simple ideas of reflection do not enter into one's complex ideas of material substances.

of the real essence or atomic structure of any material substance?" Locke's answer would be as follows: no human complex idea of a material substance is a mental ectype of the real essence or atomic structure of any material substance, because "we are destitute of senses acute enough to discover the minute particles of bodies, and to give us ideas of their mechanical affections".⁸⁵ Thus, since in Locke's view

⁸⁵ Essay, IV, iii, 25 (F.II. 217). Locke makes this same point in a number of places, sometimes with interesting amplifications; for instance, "For, our senses failing us in the discovery of the bulk, texture, and figure of the minute parts of bodies, on which their real constitutions and differences depend, we are fain to make use of their secondary qualities as the characteristical notes and marks whereby to frame ideas of them in our minds, and distinguish them one from another". Essay, II, xxiii, 8 (F.I. 398-399); "... we having but some few superficial ideas of things, discovered to us only by the senses from without, or by the mind, reflecting on what it experiments in itself within, have no knowledge beyond that, much less of the internal constitution, and true nature of things, being destitute of faculties to attain it. [...] whensoever we would proceed beyond these simple ideas we have from sensation and reflection, [...] we fall presently into darkness". Essay, II, xxiii, 32 (F.I. 417-418); "Our faculties carry us no further towards the knowledge and distinction of substances, than a collection of those sensible ideas which we observe in them; which, however made with the greatest diligence and exactness we are capable of, yet is more remote from the true internal constitution from which those qualities flow, than, as I said, a countryman's idea is from the inward contrivance of that famous clock at Strasburg, whereof he only sees the outward figure and motions. [...] we in vain pretend to range things into sorts, and dispose them into certain classes under names, by their real essences, that are so far from our discovery or comprehension." Essay, III, vi, 9 (F.II. 64-65); "If a great, nay, far the greatest part of the several ranks of bodies in the universe escape our notice by their remoteness, there are others that are no less concealed from us by their minuteness. These insensible

one's senses are not acute enough to supply one's mind with the simple ideas necessary for constructing particular complex ideas of the real essences of individual material substances, one's mind, consequently, lacks the exemplary causes necessary for generating out of its own mental substance universal complex ideas of the real essences of material substances.

Thus, as has just been seen, Locke maintains an agnostic perspective on the real essences of material substances. Moreover, as has been seen in CHAPTER THREE of this study, Locke also maintains a conceptualistic perspective on universal complex ideas of material substances. For Locke, then, what follows from a combination of these two

corpuscles, being the active parts of matter, and the great instruments of nature, on which depend not only all their secondary qualities, but also most of their natural operations, our want of precise distinct ideas of their primary qualities keeps us in an incurable ignorance of what we desire to know about them. I doubt not but if we could discover the figure, size, texture, and motion of the minute constituent parts of any two bodies, we should know without trial several of their operations one upon another; as we do now the properties of a square or a triangle." Essay, IV, iii, 25 (F.II. 216); "[To make universal propositions with certainty concerning the several sorts of material substances, one would need] faculties acute enough to perceive the precise bulk, figure, texture, and motion of bodies, in those minute parts, by which they operate on our senses, so that we might by those frame our abstract ideas of them." Essay, IV, vi, 14 (F.II. 264). See also Essay, II, xxiii, 3 (F.I. 392-393); Essay, II, xxiii, 11 (F.I. 401); Essay, II, xxiii, 12 (F.I. 403); Essay, III, vi, 3 (F.II. 58); Essay, III, ix, 21 (F.II. 118); Essay, IV, iii, 23-26 (F.II. 213-218); Essay, IV, vi, 11-13 (F.II. 260-264); and Essay, IV, vi, 15 (F.II. 265-266).

perspectives? Locke seems to answer this question in his Essay, Book Four, Chapter Six, section four (entitled: "No Proposition can be certainly known to be true, where the real Essence of each Species mentioned is not known"):

... because we cannot be certain of the truth of any general proposition, unless we know the precise bounds and extent of the species its terms stand for, it is necessary we should know the essence of each species, which is that which constitutes and bounds it.

This, in all simple ideas and modes, is not hard to do. For in these the real and nominal essence being the same, or, which is all one, the abstract idea which the general term stands for being the sole essence and boundary that is or can be supposed of the species, there can be no doubt how far the species extends, or what things are comprehended under each term; which, it is evident, are all that have an exact conformity with the idea it stands for, and no other.

But in substances, wherein a real essence, distinct from the nominal, is supposed to constitute, determine, and bound the species, the extent of the general word is very uncertain; because, not knowing this real essence, we cannot know what is, or what is not of that species; and, consequently, what may or may not with certainty be affirmed of it.⁸⁶

In conclusion, it may be said that for Locke one of the two basic reasons why there is no science, no universal and certain knowledge of physical things, is because men

86 Essay, IV, vi, 4 (F.II. 252-253).

lack adequate universal ideas of physical things.⁸⁷ The universals men do acquire are mental ectypes neither of all of the qualities, powers or properties of the material substances in question nor of the real essences of any of those material substances. And the basic reason for this twofold inadequacy is, according to Locke, the inadequacy of human senses.

B. IF ONE IS TO HAVE A SCIENCE OF MATERIAL SUBSTANCES,
ONE MUST INTUIT VISIBLE NECESSARY CONNECTIONS AND
REPUGNANCIES BETWEEN THOSE SIMPLE IDEAS WHICH
MAKE UP ONE'S UNIVERSAL IDEAS (NOMINAL ESSENCES)
OF MATERIAL SUBSTANCES

If one is to have a science (a universal and necessary knowledge) of material substances, Locke insists that:

87 In Locke's view, "general certainty is never to be found but in our [universal] ideas. Whenever we go to seek it elsewhere, in experiment or observations without us, our knowledge goes not beyond particulars. It is the contemplation of our own abstract ideas that alone is able to afford us general knowledge." Essay, IV, vi, 16 (F.II. 266). "Distinct ideas of the several sorts of bodies that fall under the examination of our senses perhaps we have: but adequate ideas, I suspect, we have not of any one amongst them. And though the former of these [viz. distinct ideas] will serve us for common use and discourse, yet whilst we want the latter [viz. adequate ideas], we are not capable of scientific knowledge; nor shall ever be able to discover general, instructive, unquestionable truths concerning them. Certainty and demonstration are things we must not, in these matters, pretend to." Essay, IV, iii, 26 (F.II. 218). For Locke, "a distinct idea is that wherein the mind perceives a difference from all other; and a confused idea is such an one as is not sufficiently distinguishable from another, from which it ought to be different." Essay, II, xxix, 4 (F.I. 487). Cf. Essay, The Epistle to the Reader (F.I. 22-24).

A. One must possess universal ideas of them that are adequate; and B. One must intuit visible necessary connections and repugnancies between those simple ideas that make up the universal ideas in question. Now, Locke's teaching on the twofold inadequacy of one's universals of material substances has just been examined; this twofold inadequacy is one of two basic reasons why Locke insists that there is no science of physical things. Accordingly, the present task of this study will be to examine Locke's other basic reason for insisting that there is no science of physical things.

His second basic reason is this: there is no science of physical things because men seldom perceive or intuit any necessary connections or necessary repugnancies between the simple ideas which are contained in their universal ideas or nominal essences of physical things, material substances.⁸⁸

⁸⁸ Professor R.I. Aaron correctly points out that Locke "makes an interesting effort to find a few instances of certain knowledge in this sphere. 'Figure necessarily supposes extension' and 'receiving or communicating motion by impulse supposes solidity' [See: Essay, IV, iii, 14 (F.II. 203)]. These co-existences we know with certainty. But, on examination, the first seems to be tautologous, and the second so vague, the terms (for instance, solidity) so ill-defined, that the propositions do not carry conviction as instances. Even so, these are the only two instances of absolutely certain knowledge of co-existences as universal and necessary relations which Locke can find. He adds that one 'in-co-existence' may be known, namely, that no opposite qualities will co-exist in a thing at one and the same time and in respect to the same part of it [See: Essay, IV, iii,

Now it is the contention of this study that Locke's second basic reason for insisting that there is no science of physical things (viz. because men seldom perceive or intuit any necessary connections or necessary repugnancies between the simple ideas which are contained in their universal ideas or nominal essences of physical things) stems primarily from two of his basic principles: 1. the true method of advancing scientific knowledge is by considering (a) universals that are both nominal and real essences, or (b) universals that are mental ectypes of non-mental-real-essences; and 2. one's universal ideas of physical things are not mental ectypes of their supposed real essences or atomic structures (this principle has been adequately discussed above, see "CHAPTER FOUR, SECTION II, A"). Many texts may be cited to substantiate this contention, and the following four are typical:

... in respect of universality [...] our knowledge follows the nature of our ideas. If the ideas are abstract, whose agreement or disagreement we perceive, our knowledge is universal. For what is known of such general ideas, will be true of every particular thing in whom that essence, i.e. that abstract idea, is to be found: and what is once known [intuitively or demonstratively] of such ideas, will be perpetually and for ever true. So

15 (F.II. 204)]. But of particular concrete 'in-co-existences' we have, apparently, no certain and necessary knowledge. Thus, to all intents and purposes, we have no necessary knowledge of the co-existences of qualities in material substances." Richard I. AARON, John Locke, p. 236-237.

that as to all general knowledge [i.e., all scientific knowledge, all universal and certain knowledge] we must search and find it only in our minds; and it is only the examining of our own [universal] ideas that furnisheth us with that.⁸⁹

We must, therefore, if we will proceed as reason advises, adapt our methods of inquiry to the nature of the ideas we examine, and the truth we search after. General and certain truths are only founded in the habitudes and relations of abstract ideas. A sagacious and methodical application of our thoughts, for the finding out these relations, is the only way to discover all that can be put with truth and certainty concerning them into general propositions. By what steps we are to proceed in these, is to be learned in the schools of the mathematicians, who, from very plain and easy beginnings, by gentle degrees, and a continued chain of reasonings, proceed to the discovery and demonstration of truths that appear at first sight beyond human capacity. The art of finding proofs, and the admirable methods they have invented for the singling out and laying in order those intermediate ideas that demonstratively show the equality or inequality of unapplicable quantities, is that which has carried them so far, and produced such wonderful and unexpected discoveries: but whether something like this, in respect of other ideas, as well as those of magnitude, may not in time be found out, I will not determine. This, I think, I may say, that if other ideas that are the real as well as nominal essences of their species, were pursued in the way familiar to mathematicians, they would carry our thoughts further, and with greater evidence and clearness than possibly we are apt to imagine.⁹⁰

In our search after the knowledge of substances, our want of ideas that are suitable to such a way of proceeding obliges us to a quite different

⁸⁹ Essay, IV, iii, 31 (F.II. 224).

⁹⁰ Essay, IV, xii (entitled: "Of the Improvement of Our Knowledge"), 7 (entitled: "The true Method of advancing Knowledge is by considering our abstract Ideas") (F.II. 346-347).

method. We advance not here, as in the other, (where our abstract ideas are real as well as nominal essences) by contemplating our ideas, and considering their relations and correspondences; that helps us very little, for the reasons, that in another place we have at large set down. By which I think it is evident, that substances afford matter of very little general knowledge; and the bare contemplation of their abstract ideas will carry us but a very little way in the search of truth and certainty. What, then, are we to do for the improvement of our knowledge in substantial beings? Here we are to take a quite contrary course: the want of ideas of their real essences sends us from our own thoughts to the things themselves as they exist. Experience here must teach me what reason cannot: and it is by trying alone, that I can certainly know, what other qualities co-exist with those of my complex idea, v.g. whether that yellow, heavy, fusible body I call gold, be malleable, or no; which experience (which way ever it prove in that particular body I examine) makes me not certain, that it is so in all, or any other yellow, heavy, fusible bodies, but that which I have tried. Because it is no consequence one way or the other from my complex idea: the necessity or inconsistency of malleability hath no visible connexion with the combination of that colour, weight, and fusibility in any body. What I have said here of the nominal essence of gold, supposed to consist of a body of such a determinate colour, weight, and fusibility, will hold true, if malleableness, fixedness, and solubility in aqua regia be added to it. Our reasonings from these ideas [viz. our universals or nominal essences of material substances] will carry us but a little way in the certain discovery of the other properties in those masses of matter wherein all these are to be found. Because the other properties of such bodies, depending not on these [viz. the properties represented in the universal one has made], but on that unknown real essence on which these also depend, we cannot by them discover the rest; we can go no further than the simple ideas of our nominal essence will carry us, which is very little beyond themselves; and so afford us but very sparingly any certain, universal, and useful truths. For, upon trial, having found that particular piece (and all others of that colour, weight, and fusibility, that I ever tried)

malleable, that also makes now, perhaps, a part of my complex idea, part of my nominal essence of gold: whereby though I make my complex idea to which I affix the name gold, to consist of more simple ideas than before; yet still, it not containing the real essence of any species of bodies, it helps me not certainly to know (I say to know, perhaps it may be to conjecture) the other remaining properties of that body, further than they have a visible connexion with some or all of the simple ideas that make up my nominal essence. For example, I cannot be certain, from this complex idea, whether gold be fixed or no; because, as before, there is no necessary connexion or inconsistency to be discovered betwixt a complex idea of a body yellow, heavy, fusible, malleable; betwixt these, I say, and fixedness; so that I may certainly know, that in whatsoever body these are found, there fixedness is sure to be. Here, again, for assurance, I must apply myself to experience; as far as that reaches, I may have certain knowledge, but no further.⁹¹

I deny not but a man, accustomed to rational and regular experiments, shall be able to see further into the nature of bodies, and guess righter at their yet unknown properties, than one that is a stranger to them: but yet, as I have said, this is but judgment and opinion, not knowledge and certainty. This way of getting and improving our knowledge 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. We are able, I imagine, to reach very little general knowledge concerning the species of bodies, and their several properties. Experiments and historical observations we may have, from which we may draw advantages of ease and health, and thereby increase our stock of conveniences for this life; but

⁹¹ Essay, IV, xii, 9 (entitled: "Our Knowledge of Substances is to be improved, not by contemplation of abstract ideas, but only by Experience") (F.II. 347-349).

beyond this I fear our talents reach not, nor are our faculties, as I guess, able to advance.⁹²

Locke's position on the matter under discussion may be stated briefly as follows: 1. The true method of advancing one's scientific knowledge is (a) to focus one's faculty of understanding upon the universal ideas one possesses, and (b) to endeavor to intuit necessary agreements and necessary disagreements between them—this is the only way to come to know all that can be put with truth and certainty concerning them into general propositions; 2. One's universal ideas of material substances are all inadequate: they are all collections of simple ideas of qualities, powers or properties of material substances—the real essences of such substances are not represented in these abstract collections of simple ideas or these universal complex ideas (or nominal essences) of material substances. But according to Locke's atomic theory, all qualities, powers or properties of material substances necessarily depend on and flow from the real essences or atomic structures of material substances. Consequently, when one focuses one's faculty of understanding upon these abstract collections of simple ideas, one perceives merely a factual togetherness of simple ideas, because the roots (the real essences) in

⁹² Essay, IV, xii, 10 (entitled: "Experience may procure us Convenience, not Science") (F.II. 349-350).

question on which all the qualities, powers or properties in question necessarily depend and from which they necessarily spring are not represented in the universal ideas under consideration—necessary relations between them are neither immediately nor mediately intuited;⁹³ and 3. The true method of advancing one's scientific knowledge, accordingly, is not applicable to one's universal ideas of material substances. Thus, in Locke's words, "the want of ideas of their real essences sends us from our own thoughts to the things themselves as they exist. Experience here must teach me what reason cannot: and it is by trying alone, that I can certainly know, what other qualities co-exist with those of my complex idea"⁹⁴—but, Locke is quick to add: "Experience may procure us Convenience, not Science."⁹⁵

93 Locke's discussion of this topic is rather lengthy, and the operative principle throughout is his agnostic perspective on the real essences of material substances, see: Essay, IV, iii, 9-16 (F.II. 199-206); Essay, IV, iii, 28-29 (F.II. 220-223); and Essay, IV, vi, 6-16 (F.II. 255-266). It is interesting to note that Locke insists that "the simple ideas whereof our complex ideas of substances are made up are, for the most part, such as carry with them, in their own nature, no visible necessary connexion or inconsistency with any other simple ideas, whose co-existence with them we would inform ourselves about." Essay, IV, iii, 10 (F.II. 200). Cf. Essay, IV, vi, 6 (F.II. 255) and Essay, IV, xii, 9 (F.II. 349). Regarding the phrase: "for the most part", cf. Essay, IV, iii, 14-15 (F.II. 203-204); and Richard I. AARON, John Locke, p. 236-237.

94 Essay, IV, xii, 9 (F.II, 348).

95 Essay, IV, xii, 10 (F.II. 349-350). This point would make an interesting topic for another thesis.

CONCLUSION

At the very outset of his most famous work, An Essay Concerning Human Understanding, Locke states his opposition to theories of innate principles and ideas. In his Essay, Book One, Locke reports that it is commonly held that certain speculative principles (e.g., "Whatsoever is, is") and practical principles (i.e., principles of morality and conduct, such as: "God is to be worshipped") are innate, because they are universally agreed upon by all mankind. But in the first chapter of this book Locke endeavors to show: (i) that universal knowledge of and assent to a speculative principle is not a matter of fact, and, hence, anyone attempting to prove the existence of innate speculative principles on the basis of universal consent to any one of them is arguing contrary to fact; (ii) that men do not in fact discover and observe speculative principles when they come to the use of reason, and, hence, anyone attempting to prove the existence of innate speculative principles on the basis of such a theory simply cannot justify his stand; and (iii) that to claim that the discoverability of a speculative principle by the use and exercise of reason is a criterion and verification of its innateness is an absurd thesis, for it would involve holding also that each truth that one's

reasoning discovers is innate. Further, in the second chapter of this book Locke deals with practical principles of the cognitive order, and he insists that these too are not innate. If practical principles were innate, Locke argues: (i) they would be universally known and assented to; (ii) men would not question their validity; (iii) they would not be deduced from other truths; and (iv) in the majority of instances men's actions would be regulated by them. Such, Locke insists, is evidently not the case. Then in the third chapter of this same book, Locke attacks the most fundamental aspect of the innatist hypothesis, the thesis of innate ideas. Here, for instance, Locke argues that if one attentively considers new-born children, one will not observe the least appearance of any settled ideas at all in them. Evidently then, the principal purpose of Locke's Essay, Book One, is to "clear the way" for his empiricist position on the origin of ideas—a cardinal doctrine of Lockean philosophy.

Precisely who was (were) the target(s) of Locke's attacks on innate ideas and principles? A definitive answer to this question simply cannot be formulated. There are several reasons for this: 1. Locke does not name his target(s); 2. no one can identify with certainty who the target(s) might have been, for Locke does not adequately elucidate the doctrine of any innatist; and 3. Locke refuses to

consider the possibility of attaching to an innatist theory any meaning other than a determinate mental content that is: (a) infused into one's mind at birth; (b) explicitly reflected upon by the recipient of it at birth; and (c) either actually now present in the recipient's consciousness or, at least, lodged in his memory. Historians agree that such an extreme meaning simply was not attached to the innatist hypotheses in the intellectual climate of Locke's day. Be this as it may, it is not unreasonable to suggest that when Locke wrote Book One of his Essay, he had in mind such men as Descartes, Barlow, Hale, South, Whichcote, and their followers.

Since Locke assumes: (i) that the objective causes of simple ideas of sensation are the qualities, powers or properties of material substances; (ii) that all such qualities, powers or properties flow from and depend on the real essences of material substances; and (iii) that the real essences of material substances are atomic structures, an understanding of Locke's atomism is, evidently, essential to an understanding of that facet of his empiricist position which deals with the origin of simple ideas of sensation.

If one wishes to come to some understanding of Locke's theory of material reality, one will find the task both somewhat difficult and somewhat easy—"difficult", because Locke's theory must be gleaned from a number of texts

that are often vague and unmethodically dispersed throughout his writings; "easy", because Locke's theory seems to be neither original nor profound. Some fundamental aspects of Locke's theory of material reality may be set forth as follows: 1. Sometime after 1678 Locke abandoned the Peripatetic relational theory of space in favor of the Democritus-Gassendi-More-Newton theory of absolute space: absolute space is somewhat of a fixed container in which bodies come to be and move about; 2. An atom, according to Locke, is a created, annihilative, solid, physically indivisible, insensible, mobile and extended particle of matter, which has an immutable superficies, figure and size. Locke's conception of an atom is at one with that of Gassendi (which, as Leibnitz asserts, is at bottom that of Democritus); 3. For Locke, corporeal beings are aggregates of atoms—aggregates that are formed (not as Democritus held, viz. by the fortuitous collision of eternal atoms moving in pure space, but rather as Gassendi held, viz.) under the influence of their infinitely wise and powerful Creator; 4. Like the Peripatetics, Locke insists that material beings have real essences—however, unlike the hylomorphic theory of the Peripatetics, Locke insists that the real essences of material substances are their atomic structures. All of the primary, secondary and tertiary qualities (powers or properties) of material substances depend on and flow from the real

essences or atomic structures of these bodies. It might be well to add a related point here. Locke's position on the nature of man falls within that philosophical tradition (which dates back at least as far as Plato) called "Exaggerated Dualism": a man consists of two distinct and separate substances, viz. a material substance or body and an immaterial substance or soul. In Locke's view, the human soul is endowed with a number of accidental powers or faculties; Locke often speaks of the understanding and the will as two powers of the mind or soul, but he nowhere says that these are the only faculties one's mind or soul has,—in fact, he often mentions and discusses several others. Like the real essences of material substances, the real essences of immaterial substances are unknown "X's" according to Locke.

Having rejected and attacked the thesis of innate ideas, Locke, the Empiricist, insists that one derives one's original and simple ideas from experience. There are two kinds of experience: sensation and reflection. For Locke, the term "sensation" designates sometimes one, sometimes two, and other times all three, of the following: (i) the impression or motion (the kind of which being determined by the stimulus coming from the external thing) in the bodily sense (including nerves and brain); (ii) the conveyance of that impression to the mind; and (iii) the coeval

mode of thinking that "takes notice of" or "perceives" the simple idea or mental-content that is somehow produced in the mind. The term "reflection" designates for Locke the mind's act of noticing its various operations directly. The products that somehow occur in the mind from such reflections are ideas of reflection, that is, representations of various ways in which the mind operates.

For Locke "simple ideas" are mental contents which are not distinguishable into heterogeneous parts; such ideas are either the given of sensation and reflection, or the result of abstraction. "Complex ideas" are aggregates of simple ideas, and may or may not be distinguishable into heterogeneous parts—for instance, the complex idea "gold" and the complex idea "two" respectively. Unlike most simple ideas, all complex ideas are products of a number of distinct mental activities. Now, Locke never clearly indicates the precise contributions made by the various mental activities involved in the genesis of these complex ideas or products. Consequently, a precise and definitive interpretation of Locke's position on the genesis of complex ideas will always be impossible for his commentators.

In Locke's view a "mode" is (i) a complex idea which is produced by the mind and (ii) sometimes considered by the mind as a representative of an affection (attribute, property, or accident) of some substances. A mode may be either

"simple" or "complex". A "simple mode" is a complex idea which is formed by the mind out of two or more simple homogeneous ideas, and sometimes considered by it to represent an affection or property of some substances. A "mixed mode" is a complex idea which is formed by the mind out of simple and/or complex heterogeneous ideas, and sometimes considered by it to represent an affection or property of some substances. How does a person generalize or universalize his simple modes (his complex idea "two", for instance) and mixed modes (his complex idea "murder", for instance)? Locke simply does not answer this question.

Like simple and mixed modes, ideas of relations are also complex ideas. For Locke, "ideas of relations" are products of mental acts of comparing ideas. For instance, when Paul juxtaposes his idea of John and his idea of Mary, and when he compares them in respect of the contract and ceremony of marriage into which these two persons entered, a new complex idea, namely, an idea of the relation of 'husbandship', is produced in Paul's mind by the exercise of his comparing faculty. Judging from the examples of relations that Locke uses in his treatises, it would seem that ideas of relations are particular ideas. How, then, does one generalize or universalize one's ideas of relations? Here again, Locke simply does not answer this question.

Locke insists that no idea of substance is innate and that no idea of substance comes into a person's mind by sensation or reflection. Yet, he just as emphatically insists that a person can justify the formation of such an idea, because it is ultimately grounded on, and derived from, those simple ideas which do come into one's mind by sensation or reflection. In Locke's view, whenever a person pays due attention to a sequence of simple ideas or representations of qualities (powers or properties) which go constantly together in his mind, (i) he notices the explicit ideational contents of this sequence, and (ii) he notices that each simple ingredient of this sequence carries along, i.e., implicitly contains the idea of a relation of inherence or being supported—when properly apprehended, a representation of a quality (power or property) must be and is apprehended as a representation of an accident of a substance. Now, because certain sequences of simple ideas go constantly together, one's mind presumes that these simple ideas or representations of accidents (qualities, powers or properties) imply a single common support, substratum or substance. One's mind, accordingly, is incited to frame a positive correlative idea, namely, an obscure, indistinct, vague idea of a something or a being with the relation of a support to accidents (qualities, powers or properties). And when one combines certain simple ideas of accidents

(qualities, powers or properties) with its positive correlative idea of a something or a being with the relation of a support to accidents (qualities, powers or properties), the product is, according to Locke, an inadequate particular complex idea of an individual substance.

Two basic questions really remain unanswered in Locke's treatises on the point just noted: 1. "How can a simple idea of an accident (quality, power or property) contain or imply a relation to that which is radically and avowedly other than itself?"; and 2. "How can a positive correlative idea of a support, substratum or substance arise in this manner, for Locke often and unambiguously insists that all of one's ideas of relations are products of one's mental acts of comparing two distinct ideas?" In the ultimate analysis, Locke's position on the genesis of particular ideas of individual substances seems quite evidently to do violence to that very empiricist position of which he is so anxious to convince his readers.

How, in Locke's view, does one obtain universal complex ideas of substances? The complex generalizing or universalizing process that gives "birth" to such ideas seems to be as follows: 1. Having produced several particular complex ideas of individual substances, one's mind discerns (an activity of one's mental faculty called "discerning") that two or more of these complex ideas contain common

elements; 2. Using these common elements as exemplary causes, one's mind (by the exercise of its faculty of abstraction) generates out of its own mental substance an abstract representation of each of those common elements; 3. By the exercise of its faculty of compounding, one's mind then combines these new abstract elements into one abstract complex idea; 4. Exercising at least its faculties of comparing and discerning, the mind then cognizes that there is a conformity between its new abstract complex idea and the common ingredients of those particular ideas that functioned as exemplary causes in the generation of this new abstract complex idea; 5. Exercising its faculty of relating, the mind then adds to its new product the relation of signifying primarily and immediately the particular ideas in question, and secondarily and mediately the individual substances which the particular ideas themselves represent. (By the exercise of its faculty of naming, one's mind assigns a general name to this general idea.) Accordingly, universal complex ideas of substances are not particular complex ideas of substances that somehow become universals. Rather, using ingredients that are common to some of its particular ideas of individual substances as exemplary causes, one's mind generates out of its own mental substance universal ideas of substances. Such universals—Locke often calls these "nominal essences"—are collections of ideas of ideas; that

is, collections of those ideas one's mind has found to be common ingredients of several of the particular complex ideas which it (one's mind) has constructed of individual substances. And the mental process which gives "birth" to these universals does not, in Locke's view, involve a mental grasp of any ontological principle "behind" (so to speak) the exemplary causes of these universals. Because of their lesser comprehension or connotation these universals, of course, have a greater extension or denotation than have their exemplary causes (viz. the particular ideas in question).

For Locke, one's ideas are the immediate objects (the subject-matter) of one's knowledge—he nowhere identifies human knowledge with the mere possession of ideas; moreover, one's knowledge consists of perceptions or certain judgments concerning the necessary agreements (connections) or disagreements (repugnancies) between one's ideas. The scope of one's knowledge, accordingly, is determined by (i) the extent of one's ideas; and (ii) the extent of one's perceptions or certain judgments concerning the necessary relations between one's ideas.

Now (in keeping with the above), Locke insists that (i) if one is to have a science (i.e., universal and certain knowledge) of material substances, one must have universal ideas of them that are "adequate" (i.e., universal mental

ectypes which perfectly represent material substances); and (ii) if one is to have a science of material substances, one must intuit visible necessary connections and repugnancies between those simple ideas which make up one's universal ideas of material substances.

But (i) one's universal ideas of material substances are mental ectypes neither of all of the qualities, powers or properties of the material substances in question nor of the real essences of any of those substances—the basic reason for this twofold inadequacy is, according to Locke, the inaccuracy of one's senses; and (ii) when one focuses one's faculty of understanding upon one's universal ideas of material substances (one's inadequate abstract collections of simple ideas of qualities, powers or properties of material substances), one perceives merely factual togethernesses (factual copresences) of simple ideas, because the roots (the real essences) in question on which all the qualities, powers or properties in question necessarily depend and from which they necessarily spring are not represented in the universal ideas under consideration—necessary relations between them are neither immediately nor mediately intuited.

Therefore, Locke insists that there is "no science of Bodies within our reach". And in view of his EMPIRICIST PERSPECTIVE on the origin of simple ideas, his ATOMIC PERSPECTIVE on the real essences of physical things, his

CONCEPTUALISTIC PERSPECTIVE on universal ideas, and his AGNOSTIC PERSPECTIVE on the real essences of physical things, Locke's conclusion that man has no universal and certain knowledge of physical things comes, indeed, as no surprise to his readers.

A BIBLIOGRAPHY OF THE SOURCES CONSULTED

I. PRIMARY SOURCES

ABELARD, Peter, Historia Calamitatum (P.L., Vol. 178, columns 113-182).

ARISTOTLE, Aristotle's Metaphysics [A Revised Greek Text with Introduction and Commentary by W.D. Ross], [1st ed. 1924] 2nd ed., Oxford, Clarendon Press, 1953, Vol. 1: clxvi, 366 p.; Vol. 2: 528 p.

-----, Aristotle's Physics [A Revised Greek Text with Introduction and Commentary by W.D. Ross], [1st ed. 1936] 2nd ed., Oxford, Clarendon Press, 1955, xii, 750 p.

-----, The Works of Aristotle Translated into English, W.D. Ross (ed.), Oxford, Clarendon Press, 1928-1952, 12 vols.

DESCARTES, René, Oeuvres de Descartes, publiées par Charles Adam & Paul Tannery, Paris, Léopold Cerf, 1897-1913, 13 vols.

-----, The Philosophical Works of Descartes Rendered into English [A selection of texts], [1st ed. 1911] 2nd ed. [1931], trans. Elizabeth S. Haldane and G.R.T. Ross, New York, Dover Publications, Inc., 1955, 2 vols.

GALILEO, Discoveries and Opinions of Galileo, 1st ed., Garden City, New York, Doubleday and Co., Inc., 1957, viii, 302 p. This work includes: The Starry Messenger (1610), Letters on Sunspots (1613), Letter to the Grand Duchess Christina (1615), and excerpts from The Assayer (1623); trans., intro. and notes by Stillman Drake.

GASSENDI, Peter, Opera Omnia, Lugduni, Sumptibus Laurentii Anisson et Joannis Baptistae Devenet, 1658, 6 vols.

HOBBS, Thomas, The English Works of Thomas Hobbes of Malmesbury, Sir William Molesworth (ed.), Germany, Scientia Aalen, 1962 [Reprint of the edition 1839-1845], 11 vols.

- HUME, David, An Enquiry concerning Human Understanding, in The English Philosophers From Bacon to Mill, Edwin A. Burt (ed.), 1st ed., New York, The Modern Library, Random House, 1939, xxiv, 1041 p.
- HUSSERL, Edmund, Logische Untersuchungen, 4th ed., Halle A.D.S., Max Niemeyer, 1928, Band 2, xi, 508 p.
- LEIBNITZ, Gottfried Wilhelm, New Essays concerning Human Understanding, trans. Alfred Gideon Langley [3rd ed.], LaSalle, Illinois, The Open Court Publishing Co., 1949, xix, 861 p.
- LOCKE, John, An Essay concerning Human Understanding, collated and annotated, with biographical, critical and historical prolegomena by Alexander Campbell Fraser [1st ed., Oxford, Clarendon Press, 1894, 2 vols.], New York, Dover Publications, Inc., 1959, 2 vols.
- , [Draft A] An Early Draft of Locke's Essay Together with Excerpts from His Journals, ed. with intro. & appendix by Richard I. Aaron and Jocelyn Gibb, 1st ed., Oxford, Clarendon Press, 1936, xxviii, 132 p.
- , [Draft B] An Essay concerning the Understanding, Knowledge, Opinion, and Assent, ed. with intro. by Benjamin Rand, 1st ed., Cambridge, Harvard University Press, 1931, lx, 307 p.
- , Essays on the Law of Nature, 1st ed. [1954], trans. and ed. W. von Leyden, Oxford, Clarendon Press, 1958 [From corrected sheets of the 1st ed.], xi, 292 p. This book includes the Latin text with a translation, introduction and notes, together with transcripts of Locke's shorthand in his Journal for 1676.
- , KING, Lord Peter, The Life and Letters of John Locke, with extracts from His Journals and Common-Place Books, 3rd ed., London, Henry G. Bohn, 1858, viii, 503 p.
- , Locke's Travels in France, 1675-1679, As Related in His Journals, Correspondence and Other Papers, ed. with intro. & notes by John Lough, 1st ed., Cambridge, University Press, 1953, lxvi, 309 p.
- , The Correspondence of John Locke and Edward Clarke, 1st ed., ed. & biographical study by Benjamin Rand, Cambridge, Harvard University Press, 1927, xvi, 607 p.

LOCKE, John, The Works of John Locke, 12th ed., London, Thomas Tegg, 1823 [Reprinted by Scientia Verlag Aalen, Germany, 1963], 10 vols. Of major importance to this thesis are the following:

- a) Essay concerning Human Understanding, vol. 1, p. 1-301; vol. 2, p. 1-397; & vol. 3, p. 1-176.
- b) Of the Conduct of the Understanding, vol. 3, p. 205-289.
- c) Elements of Natural Philosophy, vol. 3, p. 303-330.
- d) A LETTER to the Right Reverend EDWARD, LORD BISHOP OF WORCESTER, concerning some passages relating to MR. LOCKE'S ESSAY OF HUMAN UNDERSTANDING, in a LATE DISCOURSE OF HIS LORDSHIP'S, IN VINDICATION OF THE TRINITY, vol. 4, p. 1-96. Often referred to as: First Letter to Stillingfleet.
- e) MR. LOCKE'S REPLY to the Right Reverend The LORD BISHOP OF WORCESTER'S ANSWER to his LETTER, vol. 4, p. 97-184. Often referred to as: Second Letter to Stillingfleet.
- f) MR. LOCKE'S REPLY to the Right Reverend The LORD BISHOP OF WORCESTER'S ANSWER to his SECOND LETTER, vol. 4, p. 191-498. Often referred to as: Third Letter to Stillingfleet.
- g) Some Thoughts concerning Education, vol. 9, p. 6-205.
- h) An Examination of P. Malebranche's Opinion of Seeing All Things in God, vol. 9, p. 211-255.

NEWTON, Isaac, [Philosophiae Naturalis Principia Mathematica; 1st ed. 1687] Mathematical Principles of Natural Philosophy and His System of the World, trans. Andrew Motte in 1729; trans. revised, and supplied with an historical and explanatory appendix, by Florian Cajori, Berkeley, California, University of California Press, 1947, xxxv, 680 p.

-----, Opticks or a Treatise of the Reflections, Refractions, Inflections and Colours of Light, 1st ed.

[Based on the 4th ed., London, 1730], New York, Dover Publications, Inc., 1952, cxiv, 406 p.

PRE-SOCRATIC PHILOSOPHERS. FREEMAN, Kathleen, Ancilla to the Pre-Socratic Philosophers. A Complete Translation of the Fragments in Diels, Fragmente der Vorsokratiker, 1st ed., Oxford, Basil Blackwell, 1948, x, 162 p.

THOMAS AQUINAS, St., In Duodecim Libros Metaphysicorum Aristotelis Expositio, M.R. Cathala et R.M. Spiazzi (edd.), Romae, Marietti, 1950, xxiii, 648 p.

-----, On Being and Essence [De Ente et Essentia], 1st ed., trans. with intro. and notes by Armand A. Maurer, C.S.B., Toronto, Ontario, The Pontifical Institute of Mediaeval Studies, 1949, 63 p.

-----, Opera Omnia, Stanislaw Eduardi Fretté (ed.), Paris, Vives, 1871-1880, 34 vols.

-----, On the Truth of the Catholic Faith [Summa contra Gentiles], 1st ed., trans. with intro. and notes by A.C. Pegis, J.F. Anderson, V.J. Bourke, and C.J. O'Neil, Garden City, New York, Doubleday and Co., Inc., 1955-1957, 5 vols.

-----, Truth [Quaestiones Disputatae De veritate], 1st ed., trans. with intro., references and glossary by R.W. Mulligan, S.J., Chicago, Henry Regnery Co., 1952-1954, 3 vols.

-----, Summa Theologica, 1st ed., trans. with appendices, indices and synoptical charts by Fathers of the English Dominican Province, New York, Benziger Brothers, Inc., 1947-1948, 3 vols. This work includes articles on various aspects of the Summa Theologica.

WILLIAM OF OCKHAM, Ockham. Philosophical Writings, 1st ed., [a selection of Latin texts] ed. & trans. by Philotheus Boehner, O.F.M., New York, Thomas Nelson and Sons, 1957, lix, 154 p. This work includes an introduction to several major doctrines of Ockham.

II. SECONDARY SOURCES

AARON, Richard I., "Great Thinkers (X) John Locke", in Philosophy, 12 (1937), p. 19-32.

-----, John Locke, [1st ed. 1937; 2nd ed. 1955] 2nd ed., Oxford, Clarendon Press, 1963 [From corrected sheets of the 2nd ed.], xi, 326 p.

-----, "Locke's Theory of Universals", in Proceedings of the Aristotelian Society, New Series, 33 (1932-1933), p. 173-202.

-----, The Theory of Universals, 1st ed., Oxford, Clarendon Press, 1952, viii, 247 p.

-----, "Two Senses of the Word Universal", in Mind, 48 (1939), p. 168-185.

-----, see LOCKE, John.

ALDRICH, Virgil C., "Locke's Theory of Perception", in The Rice Institute Pamphlet, 20 (1933), p. 238-259.

ANDERSON, Fulton H., "The Influence of Contemporary Science on Locke's Method and Results", in University of Toronto Studies in Philosophy, 2 (1923), p. 1-31.

ANDERSON, J.F., see THOMAS AQUINAS, St.

ASPELIN, Gunnar, "The Polemics in the First Book of Locke's Essay", in Theoria, 6 (1940), p. 109-122.

BAILEY, Cyril, The Greek Atomists and Epicurus, 1st ed., Oxford, Clarendon Press, 1928, viii, 619 p.

BAKER, John Tull, "The Emergence of Space and Time in English Philosophy", in Studies in the History of Ideas, 3 (1935), p. 273-293.

BALZ, Albert G.A., Cartesian Studies, 1st ed., New York, Columbia University Press, 1951, vi, 328 p.

-----, Descartes and the Modern Mind, 1st ed., New Haven, Yale University Press, 1952, xiv, 492 p.

BECK, L.J., The Method of Descartes. A Study of the Regulae, 1st ed., Oxford, Clarendon Press, 1952, x, 316 p.

- BECK, Lewis White, "Secondary Quality", in The Journal of Philosophy, 43 (1946), p. 599-610.
- BEDOYERE, Michael, de la, "John Locke and Jeremy Bentham: 1632-1832", in Thought, 9 (1934), p. 236-248.
- BENJAMIN, A.C., "The Essential Problem of Empiricism", in Philosophy of Knowledge. Selected Readings, Roland Houde and Joseph P. Mullally (edd.), 1st ed., Chicago, J.B. Lippincott Co., 1960, p. 379-384 [Book contains: xiii, 427 p.].
- BOAS, George, Dominant Themes of Modern Philosophy, 1st ed., New York, Ronald Press, 1957, x, 660 p.
- BOEHNER, Philotheus, O.F.M., see WILLIAM OF OCKHAM.
- BONNO, Gabriel, "The Diffusion and Influence of Locke's Essay concerning Human Understanding in France before Voltaire's Lettres Philosophiques", in Proceedings of the American Philosophical Society, 91 (1947), p. 421-425.
- BORING, Edwin G., Sensation and Perception in the History of Experimental Psychology, 1st ed., New York, Appleton-Century-Crofts, Inc., 1942, xv, 644 p.
- BOURKE, V.J., see THOMAS AQUINAS, St.
- BRETT, G.S., The Philosophy of Gassendi, 1st ed., London, Macmillan and Co., 1908, xlv, 310 p.
- BROAD, C.D., "John Locke", in The Hibbert Journal, 31 (1933), p. 249-267.
- , "Locke's Doctrine of Substantial Identity and Diversity", in Theoria, 17 (1951), p. 13-26.
- BUCHDAHL, Gerd, The Image of Newton and Locke in the Age of Reason, 1st ed., London, Sheed and Ward, 1961, 116 p.
- BUCHLER, Justus, "Act and Object in Locke", in The Philosophical Review, 46 (1937), p. 528-535.
- BURTT, Edwin Arthur, The Metaphysical Foundations of Modern Physical Science, [1st ed. 1924] 2nd ed. [1932], Garden City, New York, Doubleday & Co., 1954, 352 p.
- , see HUME, David.

- CAJORI, Florian, see NEWTON, Isaac.
- CAMPAGNAC, E.T., The Cambridge Platonists, 1st ed., Oxford, Clarendon Press, 1901, xxxvi, 327 p. This work consists of an introduction to and selections from the writings of Benjamin Whichcote, John Smith and Nathanael Culverwel.
- CARRE, Meyrick H., Phases of Thought in England, 1st ed., Oxford, Clarendon Press, 1949, xix, 392 p.
- , "Pierre Gassendi and the New Philosophy", in Philosophy, 33 (1958), p. 112-120.
- , Realists and Nominalists, 1st ed. [1946], London, Oxford University Press, 1950, vi, 128 p.
- CARTER, Walter Baillie, The Status of Universals in Locke, Berkeley and Hume, unpublished Doctor's thesis presented to the Faculty of Philosophy of the University of Toronto, Toronto, Ontario, 1953, 365 p.
- CASSIRER, Ernst, The Platonic Renaissance in England [Die platonische Renaissance in England und die Schule von Cambridge, Leipzig, B.G. Teubner, 1932], 1st ed., trans. James P. Pettegrove, Austin, University of Texas Press, 1953, vii, 207 p.
- CLAPP, Gordon James, Locke's Conception of the Mind, 1st ed., New York, The Journal of Philosophy, 1949, v, 122 p.
- COLLINS, James, A History of Modern European Philosophy, 1st ed. [1954; 3rd printing with bibliographical continuation], Milwaukee, Bruce Publishing Co., 1959, x, 854 p.
- COPLESTON, Frederick, S.J., A History of Philosophy. Hobbes to Hume, 1st ed., London, Burns, Oates & Washbourne Ltd., 1959, ix, 440 p.
- CRANSTON, Maurice, John Locke, 1st ed., London, Longmans, Green and Co., 1957, xvi, 496 p.
- DEWEY, John, "An Empirical Survey of Empiricisms", in Studies in the History of Ideas, 3 (1935), p. 3-22.
- , "Substance, Power and Quality in Locke", in The Philosophical Review, 35 (1926), p. 22-38.

- DIJKSTERHUIS, E.J., The Mechanization of the World Picture [De Mechanisering van het Wereldbeeld, Amsterdam, 1950], 1st [English] ed., trans. C. Dikshoorn, Oxford, Clarendon Press, [First published 1961] 1964, viii, 539 p.
- DONEY, Willis, "Locke's Abstract Ideas", in Philosophy and Phenomenological Research, 16 (1956), p. 406-409.
- DOWDELL, Victor Lyle, Aristotle and Anglican Religious Thought, 1st ed., Ithaca, New York, Cornell University Press, 1942, xi, 103 p.
- DRAKE, Stillman, see GALILEO.
- ELLOS, William J., "Lockean Perception: Discovery and Difficulty", in The New Scholasticism, 39 (1965), p. 323-329.
- EWING, A.C., "Some Points in the Philosophy of Locke", in Philosophy, 12 (1937), p. 33-46.
- FARBER, Marvin, The Foundation of Phenomenology, Edmund Husserl and the Quest for a Rigorous Science of Philosophy, 2nd ed., New York, Paine-Whitman Publishers, 1962, xvii, 585 p.
- FATHERS OF THE ENGLISH DOMINICAN PROVINCE, see THOMAS AQUINAS, St.
- FERGUSON, Henry H., "Locke's Theory of Knowledge", in The Australian Journal of Psychology and Philosophy, 12 (1934), p. 107-118, 186-198.
- FLEW, Antony, "Locke and the Problem of Personal Identity", in Philosophy, 26 (1951), p. 53-68.
- FOWLER, Thomas, Locke, 1st ed. [1880], London, Macmillan & Co. Ltd., 1902, viii, 205 p.
- FRASER, Alexander Campbell, "John Locke as a Factor in Modern Thought" [Read October 28, 1904], in Proceedings of the British Academy, 1 (1905), p. 221-235.
- , Locke, 1st ed., Edinburgh, William Blackwood & Sons, 1890, x, 299 p.
- , see LOCKE, John.

FREEMAN, Kathleen, The Pre-Socratic Philosophers. A Companion to Diels, Fragmente der Vorsokratiker, 1st ed., Oxford, Basil Blackwell, 1946, xiii, 486 p.

-----, see PRE-SOCRATIC PHILOSOPHERS.

FUNK, Isaac K. (ed.), A Standard Dictionary of the English Language, 1st ed. [1890], New York, Funk & Wagnalls Co., 1897, 2 vols.

GIBB, Jocelyn, see LOCKE, John.

GIBSON, A. Boyce, The Philosophy of Descartes, 1st ed., London, Methuen & Co. Ltd., 1932, xiii, 382 p.

GIBSON, James, "John Locke" [Annual Lecture on a Master Mind, Henriette Hertz Trust, read November 16, 1932], in Proceedings of the British Academy, 19 (1933), p. 29-51.

-----, Locke's Theory of Knowledge and its Historical Relations, 1st ed., Cambridge, University Press, [First printed 1917] 1960, xiv, 338 p.

GILSON, Etienne, Elements of Christian Philosophy, 1st ed., Garden City, New York, Doubleday & Co., Inc., 1960, 358 p.

-----, History of Christian Philosophy in the Middle Ages, 1st ed., New York, Random House, 1955, xvii, 829 p.

----- and Thomas LANGAN, Modern Philosophy. Descartes to Kant, 1st ed., New York, Random House, 1963, xvii, 570 p.

-----, The Christian Philosophy of Saint Augustine [Introduction à l'étude de saint Augustin, 2nd ed., Paris, Vrin, 1943], 1st [English] ed., trans. L.E.M. Lynch, London, Victor Gollancz, 1961, xii, 398 p.

-----, The Christian Philosophy of St. Thomas Aquinas [Le Thomisme. Introduction à la philosophie de saint Thomas d'Aquin, 5th ed., Paris, 1948], 1st [English] ed., trans. L.K. Shook, C.S.B., New York, Random House, 1956, x, 502 p.

-----, The Unity of Philosophical Experience, 1st ed., New York, Charles Scribner's Sons, 1952, xii, 331 p.

- GILSON, Etienne, "Vade Mecum of a Young Realist", in Philosophy of Knowledge, Selected Readings, Roland Houde and Joseph P. Mullally (edd.), 1st ed., Chicago, J.B. Lippincott Co., 1960, p. 385-394 [Book contains: xii, 427 p.].
- GIVNER, David A., "Scientific Preconceptions in Locke's Philosophy of Language", in Journal of the History of Ideas, 23 (1962), p. 340-354.
- GRICE, H.P., "Personal Identity", in Mind, 50 (1941), p. 313-350.
- HALEVY, Elie, The Growth of Philosophic Radicalism [La Formation du Radicalisme philosophique], 1st ed., trans. Mary Morris, Boston, The Beacon Press, 1955, xix, 554 p.
- HALPIN, Anthony John, "The Location of Qualitative Essence. I: Aristotle and Aquinas", in The New Scholasticism, 10 (1936), p. 145-166.
- , "The Location of Qualitative Essence. II: Locke and Meyerson", in The New Scholasticism, 10 (1936), p. 226-244.
- HOFSTADTER, Albert, Locke and Scepticism, 1st ed., New York, Albee Press, 1935, iii, 134 p.
- JACKSON, Reginald, "Locke's Distinction Between Primary and Secondary Qualities", in Mind, 38 (1929), p. 56-76.
- , "Locke's Version of the Doctrine of Representative Perception", in Mind, 39 (1930), p. 1-25.
- JAMES, David Gwilym, The Life of Reason: Hobbes, Locke, Bolingbroke, 1st ed., London, Longmans, Green, 1949, xiii, 272 p.
- JOHNSTON, Charlotte, "Locke's Examination of Malebranche and John Norris", in Journal of the History of Ideas, 19 (1958), p. 551-558.
- KALLICH, Martin, "The Association of Ideas and Critical Theory: Hobbes, Locke, and Addison", in Journal of English Literary History, 12 (1945), p. 290-315.
- KING, Lord Peter, see LOCKE, John.

- KIRK, G.S., and J.E. RAVEN, THE PRESOCRATIC PHILOSOPHERS. A Critical History with a Selection of Texts, 1st ed., Cambridge, University Press, 1957, xi, 487 p.
- KIRK, Russell, "John Locke Reconsidered", in Month, 14 (1955), p. 294-303.
- KOYRE, Alexandre, From the Closed World to the Infinite Universe, 1st ed., [Baltimore, The John Hopkins Press, 1957] New York, Harper & Brothers, 1958, viii, 312 p.
- LAIRD, John, Hobbes, 1st ed., London, Ernest Benn Ltd., 1934, xii, 324 p.
- LAMPRECHT, Sterling P., "Empiricism and Natural Knowledge", in University of California Publications in Philosophy [Howison Lecture for 1938], 16 (1932-1953), p. 71-94.
- , "Innate Ideas in the Cambridge Platonists", in The Philosophical Review, 35 (1926), p. 553-573.
- , "Locke's Attack Upon Innate Ideas", in The Philosophical Review, 36 (1927), p. 145-165.
- , The Moral and Political Philosophy of John Locke, 1st ed., New York, [Columbia University Press, 1918], Russell and Russell, Inc., 1962, viii, 168 p.
- , "The Role of Descartes in Seventeenth-Century England", in Studies in the History of Ideas, 3 (1935), p. 181-240.
- LANGAN, Thomas, see GILSON, Etienne.
- LANGLEY, Alfred Gideon, see LEIBNITZ, Gottfried Wilhelm.
- LASLETT, Peter, "Locke and the First Earl of Shaftesbury: another early writing on the understanding", in Mind, 61 (1952), p. 89-92.
- LAWRENCE, Nathaniel, "Locke and Whitehead on Individual Entities", in Review of Metaphysics, 4 (1950-1951), p. 215-238.
- LAZEROWITZ, Morris, "The Existence of Universals", in Mind, 55 (1946), p. 1-24.

LEYDEN, W. von, see LOCKE, John.

LICHTENSTEIN, Aharon, Henry More. The Rational Theology of a Cambridge Platonist, 1st ed., Cambridge, Mass., Harvard University Press, 1962, xiii, 250 p.

LINNELL, John, "Locke's Abstract Ideas", in Philosophy and Phenomenological Research, 16 (1956), p. 400-405.

LODGE, Rupert Clendon, The Meaning and Function of Simple Modes in the Philosophy of John Locke, 1st ed., Minneapolis, Bulletin of the University of Minnesota [Number 12], 1918, 86 p.

LOUGH, John, "Locke's Reading during his Stay in France (1675-79)", in Library [5th series], 8 (1953), p. 229-258.

-----, see LOCKE, John.

LUIJPEN, William A., Existential Phenomenology, 1st ed., Pittsburgh, Duquesne University Press, 1960, xiii, 362 p.

MACLEAN, Kenneth, John Locke and English Literature of the Eighteenth Century, 1st ed. [1936, Yale University Press], New York, Russell and Russell, Inc., 1962, viii, 176 p.

MALLET, Charles Edward, A History of the University of Oxford [Vol. 2, The sixteenth and seventeenth centuries], 1st ed., London, Methuen & Co. Ltd., 1924, xv, 502 p.

MARITAIN, Jacques, Distinguish to Unite or The Degrees of Knowledge [Distinguer pour unir, ou Les degrés du savoir], 4th ed., trans. Gerald B. Phelan, New York, Charles Scribner's Sons, 1959, xix, 476 p.

MASON, Stephen F., A History of the Sciences, 1st ed., New York, Collier Books, 1962, 638 p.

MAURER, Armand A., C.S.B., Medieval Philosophy, 1st ed., New York, Random House, 1962, xxiv, 435 p.

-----, "Ockham's Conception of the Unity of Science", in Mediaeval Studies, 20 (1958), p. [98]-[112].

MAURER, Armand A., C.S.B., "Scotism and Ockhamism", in A History of Philosophical Systems, Vergilius Ferm (ed.), 1st ed., New York, The Philosophical Library, 1950, p. 212-224 [Book contains: xiv, 642 p.].

-----, see THOMAS AQUINAS, St.

MCCOLLEY, Grant, "John Wilkins — A Precursor of Locke", in The Philosophical Review, 47 (1938), p. 642-643.

MCRAE, Robert, The Problem of the Unity of the Sciences: Bacon to Kant, 1st ed., Toronto, University of Toronto Press, 1961, x, 148 p.

MELSEN, Andrew G. van, FROM ATOMOS TO ATOM: The History of the Concept ATOM [Wetenschappelijk-Wijsgerige Bibliotheek, A. de Froe, W. Hellinga, and H. Groot (edd.), Amsterdam, J.M. Meulenhoff, 1949], [1st ed., trans. Henry J. Koren, C.S.Sp., Pittsburgh, Duquesne University Press, 1952] 2nd ed., New York, Harper & Brothers, 1960, xii, 240 p.

MILLER, Robert G., C.S.B., "Realistic and Unrealistic Empiricisms", in The New Scholasticism, 35 (1961), p. 311-337.

-----, "The Empiricist's Dilemma: Either Metaphysics Or Nonsense", in Proceedings of the American Catholic Philosophical Association, 29 (1955), p. 151-176.

-----, see articles by, in the forthcoming edition of The Catholic Encyclopedia.

MINTZ, Samuel I., The Hunting of Leviathan. Seventeenth-Century Reactions to the Materialism and Moral Philosophy of Thomas Hobbes, 1st ed., London, Cambridge University Press, 1962, x, 189 p.

MISIAK, Henryk, The Philosophical Roots of Scientific Psychology, 1st ed., New York, Fordham University Press, 1961, xii, 142 p.

MONTAGUE, Wm. P., "The Psychological Genesis of Universals", in Philosophy of Knowledge. Selected Readings, Roland Houde and Joseph P. Mullally (edd.), 1st ed., Chicago, J.B. Lippincott Co., 1960, p. 137-144 [Book contains: xiii, 427 p.].

- MOODY, Ernest A., The Logic of William of Ockham, 1st ed., London, Sheed & Ward, 1935, xiv, 322 p.
- MOORE, Jared S., "Why a Realism of Universals?", in The Journal of Philosophy, 36 (1939), p. 684-688.
- MORRIS, C.R., Locke Berkeley Hume, 1st ed. [1931], London, Oxford University Press, 1963. 174 p.
- MUIRHEAD, John H., "The Cambridge Platonists", in Mind, 36 (1927), p. 158-178, 326-341.
- , The Platonic Tradition in Anglo-Saxon Philosophy, 1st ed., London, George Allen & Unwin Ltd., 1931, 446 p.
- MULLIGAN, R.W., see THOMAS AQUINAS, St.
- MURRAY, James A.H. (ed.), A New English Dictionary on Historical Principles, Oxford, Clarendon Press, 1888-1933, 11 vols.
- NAIDU, P.S., "Critical Realism and John Locke", in The Journal of Philosophy, 32 (1935), p. 431-437.
- O'CONNOR, D.J. (ed.), A Critical History of Western Philosophy, 1st ed., London, The Free Press of Glencoe, 1964, x, 604 p.
- , John Locke, 1st ed., London, Penguin Books, 1952, 224 p.
- O'NEIL, C.J., see THOMAS AQUINAS, St.
- OWENS, Joseph, C.Ss.R., A History of Ancient Western Philosophy, 1st ed., New York, Appleton-Century-Crofts, Inc., 1959, xv, 437 p.
- , "Our Knowledge of Nature", in Proceedings of the American Catholic Philosophical Association, 29 (1955), p. 63-86.
- , The Doctrine of Being in the Aristotelian Metaphysics. A Study in the Greek Background of Mediaeval Thought, 1st ed., Toronto, Ontario, Pontifical Institute of Mediaeval Studies, 1951, xii, 461 p.

- PANNEKOEK, A., A History of Astronomy [De Groei van ons Wereldbeeld, Amsterdam, Wereld-Bibliotheek, 1951], 1st ed., trans. n.n., London, George Allen & Unwin Ltd., 1961, 521 p.
- PAP, Arthur, "On the Meaning of Universality", in The Journal of Philosophy, 40 (1943), p. 505-514.
- , Semantics and Necessary Truth, 1st ed., New Haven, Yale University Press, 1958, xii, 456 p.
- PARKER, F.H., "A Realistic Appraisal of Knowledge", in Philosophy of Knowledge. Selected Readings, Roland Houde and Joseph P. Mullally (edd.), 1st ed., Chicago, J.B. Lippincott Co., 1960, p. 18-48 [Book contains: xiii, 427 p.].
- PASSMORE, John, A Hundred Years of Philosophy, 1st. ed., London, Gerald Duckworth, 1957, 523 p.
- PAUL, Leslie, The English Philosophers, 1st ed., London, Faber & Faber, 1953, 380 p.
- PAWSON, G.P.H., The Cambridge Platonists and Their Place in Religious Thought, 1st ed., London, Society for Promoting Christian Knowledge, 1930, 95 p.
- PEGIS, A.C., see THOMAS AQUINAS, St.
- PEIFER, John Frederick, The Concept in Thomism, 1st ed., New York, Bookman Associates Inc., 1952, 225 p.
- PETZALL, Ake, "Ethics and Epistemology in John Locke's Essay Concerning Human Understanding", in Goteborgs Hogskolas Arsskrift [Acta Universitatis Gotoburgensis, Goteborg, Wettergren & Kerbers Forlag], 42:2 (1937), p. 1-83.
- POWICKE, Frederick J., The Cambridge Platonists, 1st ed., London, J.M. Dent and Sons Ltd., 1926, x, 219 p.
- PRICE, H.H., Thinking and Experience, 1st ed., London, Hutchinson's University Library Hutchinson House, 1953, v, 365 p.
- RAND, Benjamin, see LOCKE, John.
- RANDALL, John Herman, Jr., Aristotle, 1st ed., New York, Columbia University Press, 1960, xv, 309 p.

- RANDALL, John Herman, Jr., The Career of Philosophy, 1st ed., New York, Columbia University Press, 1962, xiv, 993 p.
- RAVEN, J.E., see KIRK, G.S.
- REESE, William L., "'The Experimentum Crucis' in Locke's Doctrine of Abstraction", in Philosophy and Phenomenological Research, 21 (1961), p. 490-500.
- ROSS, W.D., see ARISTOTLE.
- ROTH, Leon, "Note on the Relationship between Locke and Descartes", in Mind, 44 (1935), p. 414-416.
- RYLE, Gilbert, Locke on the Human Understanding [Tercentenary Address delivered in the Hall at Christ Church, October 1932], London, Oxford University Press, 1933, 15-38 p.
- SANTAYANA, George, Some Turns of Thought in Modern Philosophy, 1st ed., London, Cambridge University Press, 1933, 121 p.
- SCHLICK, Moritz, "The Turning Point in Philosophy" ["Die Wende Der Philosophie", trans. David Rynin], in Logical Positivism, A.J. Ayer (ed.), 1st ed., [1959; 3rd printing], Glencoe, Illinois, The Free Press, 1960, p. [53]-[59] [Book contains: viii, 455 p.].
- SELLARS, Roy Wood, "Critical Realism and Substance", in Mind, 38 (1929), p. 473-488.
- SMITH, Norman Kemp, John Locke (1632-1704) [Manchester University Lectures, No. 28], Manchester, Manchester University Press, 1933, 31 p.
- , New Studies in the Philosophy of Descartes. Descartes as Pioneer, 1st ed., London, Macmillan & Co. Ltd., 1952, xii, 369 p.
- , "The Nature of Universals", in Mind, 36 (1927), p. 137-157, 265-280, 393-422.
- , The Philosophy of David Hume. A Critical Study of its Origins and Central Doctrines, 1st ed. [1941], London, Macmillan & Co. Ltd., 1964, xxiv, 568 p.

- SOLMSSEN, Friedrich, Aristotle's System of the Physical World. A Comparison with His Predecessors, 1st ed., Ithaca, New York, Cornell University Press, 1960, xiv, 468 p.
- SORLEY, W.R., A History of English Philosophy, 1st ed. [1920], Cambridge, University Press, 1937, xvi, 380 p.
- STEPHEN, Leslie (ed. et al.), The Dictionary of National Biography, 1st ed., Oxford, University Press, 1917-1959, 22 vols. + 5 supplements.
- STOCKS, John Leofric, Aristotelianism, 1st ed., London, George G. Harrap and Co., [n.d.], vii, 165 p.
- SWABEY, William Curtis, "Locke's Theory of Ideas", in The Philosophical Review, 42 (1933), p. 573-593.
- THILLY, Frank, "Locke's Relation to Descartes", in The Philosophical Review, 9 (1900), p. 597-612.
- THOMPSON, Samuel Martin, A Study of Locke's Theory of Ideas, 1st ed., Monmouth, Illinois, Commercial Art Press, 1934, 91 p.
- THORNDIKE, Lynn, A History of Magic and Experimental Science, 1st ed., New York, The Macmillan Co. (et al.), 1923-1958, 8 vols.
- TORNAY, Stephen Chak, "William of Ockham's Nominalism", in The Philosophical Review, 45 (1936), p. 245-261.
- WALCOTT, Gregory D., "Primary and Secondary Qualities", in The Philosophical Review, 35 (1926), p. 465-472.
- WARE, Charlotte S., "The Influence of Descartes on John Locke. A Bibliographical Study", in Revue Internationale de Philosophie, 4 (1950), p. 210-230.
- WARNOCK, G.J., Berkeley, 1st ed., London, Penguin Books, 1953, 252 p.
- WEINBERG, Julius R., A Short History of Medieval Philosophy, 1st ed., Princeton, New Jersey, Princeton University Press, 1964, x, 304 p.
- WILD, John, George Berkeley. A Study of His Life and Philosophy, 1st ed. [Cambridge, Mass., Harvard University

Press, 1936], New York, Russell & Russell, Inc., 1962, xi, 552 p.

WILLEY, Basil, The Eighteenth Century Background. Studies on the Idea of Nature in the Thought of the Period, 1st ed. [1940], London, Chatto and Windus, 1961, viii, 302 p.

-----, The Seventeenth Century Background. Studies in the Thought of the Age in Relation to Poetry and Religion, 1st ed. [1934], London, Chatto and Windus, 1962, viii, 315 p.

WILLIAMS, D.C., "Nature of Universals and of Abstractions", in Monist, 41 (1931), p. 583-593.

WRIGHT, William Kelley, A History of Modern Philosophy, 1st ed. [1941], New York, The Macmillan Co., 1960, xvi, 633 p.

WULF, Maurice, de, History of Medieval Philosophy [Histoire de la Philosophie Médiévale]; 1st Fr. ed. 1900; 2nd Fr. ed. 1905], 3rd ed., trans. P. Coffey, London, Longmans, Green, and Co., 1909, xii, 519 p.

YOLTON, John W., John Locke and the Way of Ideas, 1st ed., London, Oxford University Press, 1956, xi, 235 p.

-----, "Locke and the Seventeenth-Century Logic of Ideas", in Journal of the History of Ideas, 16 (1955), p. 431-452.

-----, "Locke's Unpublished Marginal Replies to John Sergeant", in Journal of the History of Ideas, 12 (1951), p. 528-559.

YOST, Robert M., Jr., "Locke's Rejection of Hypotheses about sub-microscopic Events", in Journal of the History of Ideas, 12 (1951), p. 111-130.

-----, Locke's Theory of the External World, unpublished Doctor's thesis presented to the Faculty of Philosophy of Harvard University, Cambridge, Massachusetts, 1947, xv, 357 p.