

AN ESSAY CONCERNING HUMAN UNDERSTANDING

by John Locke

BOOK I. Of Innate Notions

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Chapter II. No Innate Speculative Principles

1. *The way shown how we come by any knowledge, sufficient to prove it not innate.* It is an established opinion amongst some men, that there are in the understanding certain innate principles; some primary notions, *κοινὰ ἔννοια* [*koinai ennoiai*], characters, as it were stamped upon the mind of man; which the soul receives in its very first being, and brings into the world with it. It would be sufficient to convince unprejudiced readers of the falseness of this supposition, if I should only show (as I hope I shall in the following parts of this Discourse) how men, barely by the use of their natural faculties, may attain to all the knowledge they have, without the help of any innate impressions; and may arrive at certainty, without any such original notions or principles. For I imagine any one will easily grant that it would be impertinent to suppose the ideas of colours innate in a creature to whom God hath given sight, and a power to receive them by the eyes from external objects: and no less unreasonable would it be to attribute several truths to the impressions of nature, and innate characters, when we may observe in ourselves faculties fit to attain as easy and certain knowledge of them as if they were originally imprinted on the mind.

But because 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 shall set down the reasons that made me doubt of the truth of that opinion, as an excuse for my mistake, if I be in one; which I leave to be considered by those who, with me, dispose themselves to embrace truth wherever they find it.

2. *General assent the great argument.* 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 world with them, as necessarily and really as they do any of their inherent faculties.

3. *Universal consent proves nothing innate.* This argument, drawn from universal consent, has this misfortune in it, that if it were true in matter of fact, that there were certain truths wherein all mankind agreed, it would not prove them innate, if there can be any other way shown how men may come to that universal agreement, in the things they do consent in, which I presume may be done.

4. *“What is, is,” and “It is impossible for the same thing to be and not to be,” not universally assented to.* But, which is worse, this argument of universal consent, which is made use of to prove innate principles, seems to me a demonstration that there are none such: because there are none to which all mankind give an universal assent. I shall begin with the speculative, and instance in those magnified principles of demonstration, *“Whatsoever is, is,”* and *“It is impossible for the same thing to be and not to be”*; which, of all others, I think have the most allowed title to innate. These have so settled a reputation of maxims universally received, that it will no doubt be thought strange if any one should seem to question it. But yet I take liberty to say, that these propositions are so far from having an universal assent, that there are a great part of mankind to whom they are not so much as known.

5. *Not on the mind naturally imprinted, because not known to children, idiots, &c.* For, first, it is evident, that all children and idiots have not the least apprehension or thought of them. And the want of that is enough to destroy that universal assent which must needs be the necessary concomitant of all innate truths: 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. If therefore children and idiots have souls, have minds, with those impressions upon them, they must unavoidably perceive them, and necessarily know and assent to these truths; which since they do not, it is evident that there are no such impressions. For if they are not notions naturally imprinted, how can they be innate? and if they are notions imprinted, how can they be unknown? 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 be said to be in the mind which it never yet knew, which it was never yet conscious of. For if any one may, then, by the same reason, all propositions that are true, and the mind is capable ever of assenting to, may be said to be in the mind, and to be imprinted: since, if any one can be said to be in the mind, which it never yet knew, it must be only because it is capable of knowing it; and so the mind is of all truths it ever shall know....

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14. *If coming to the use of reason were the time of their discovery it would not prove them innate....* I agree then 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 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. All that can with any truth be meant by this proposition, that men “assent to them when they come to the use of reason,” is no more but this, that the making of general abstract ideas, and the understanding of general names, being a concomitant of the rational faculty, and growing up with it, children commonly get not those general ideas, nor learn the names that stand for them, till, having for a good while exercised their reason about familiar and more particular ideas, they are, by their ordinary discourse and actions with others, acknowledged to be capable of rational conversation....

15. *The steps by which the mind attains several truths.* The senses at first let in particular ideas, and furnish the yet empty cabinet, and the mind by degrees growing familiar with some of them, they are lodged in the memory, and names got to them. Afterwards, the mind proceeding further, abstracts them, and by degrees learns the use of general names. In this manner the mind comes to be furnished with ideas and language, the materials about which to exercise its discursive faculty. And the use of reason becomes daily more visible, as these materials that give it employment increase. But though the having of general ideas and the use of general words and reason usually grow together, yet I see not how this any way proves them innate. The knowledge of some truths, I confess, is very early in the mind but in a way that shows them not to be innate. For, if we will observe, we shall find it still to be about ideas, not innate, but acquired; it being about those first which are imprinted by external things, with which infants have earliest to do, which make the most frequent impressions on their senses. In ideas thus got, the mind discovers that some agree and others differ, probably as soon as it has any use of memory; as soon as it is able to retain and perceive distinct ideas. But whether it be then or no, this is certain, it does so long before it has the use of words; or comes to that which we commonly call “the use of reason.” For a child knows as certainly before it can speak the difference between the ideas of sweet and bitter (i.e. that sweet is not bitter), as it knows afterwards (when it comes to speak) that wormwood and sugarplums are not the same thing.

16. *Assent to supposed innate truths depends on having clear and distinct ideas of what their terms mean, and not on their innateness.* A child knows not that three and four are equal to seven, till he comes to be able to count seven, and has got the name and idea of equality; and then, upon explaining those words, he presently assents to, or rather perceives the truth of that proposition. But neither does he then readily assent because it is an innate truth, nor was his assent wanting till then because he wanted the use of reason; but the truth of it appears to him as soon as he has settled in his mind the clear and distinct ideas that these names stand for. And then he knows the truth of that proposition

upon the same grounds and by the same means, that he knew before that a rod and a cherry are not the same thing; and upon the same grounds also that he may come to know afterwards “That it is impossible for the same thing to be and not to be,” as shall be more fully shown hereafter. So that the later it is before any one comes to have those general ideas about which those maxims are; or to know the signification of those general terms that stand for them; or to put together in his mind the ideas they stand for; the later also will it be before he comes to assent to those maxims, whose terms, with the ideas they stand for, being no more innate than those of a cat or a weasel, he must stay till time and observation have acquainted him with them; and then he will be in a capacity to know the truth of these maxims, upon the first occasion that shall make him put together those ideas in his mind, and observe whether they agree or disagree, according as is expressed in those propositions. And therefore it is that a man knows that eighteen and nineteen are equal to thirty-seven, by the same self-evidence that he knows one and two to be equal to three: yet a child knows this not so soon as the other; not for want of the use of reason, but because the ideas the words eighteen, nineteen, and thirty-seven stand for, are not so soon got, as those which are signified by one, two, and three.

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BOOK II. Of Ideas

Chapter I. Of Ideas in general, and their Original

1. *Idea is the object of thinking.* 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? I know it is a received doctrine, that men have native ideas, and original characters, stamped upon their minds in their very first being. This opinion I have at large examined already; and, I suppose what I have said in the foregoing Book will be much more easily admitted, when I have shown whence the understanding may get all the ideas it has; and by what ways and degrees they may come into the mind; for which I shall appeal to every one’s own observation and experience.

2. *All ideas come from sensation or reflection.* Let us then suppose the mind to be, as we say, white paper, void of all characters, without any ideas; How comes it to be furnished? Whence comes it by that vast store which the busy and boundless fancy of man has painted on it with an almost endless variety? 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 internal 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.

3. *The objects of sensation one source of ideas.* First, 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. And thus we come by those ideas we have of yellow, white, heat, cold, soft, hard, bitter, sweet, and all those which we call sensible qualities; which 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.

4. *The operations of our minds, the other source of them.* Secondly, the other fountain from which experience furnisheth the understanding with ideas is, 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. But as I call the other SENSATION, so I Call this REFLECTION, the ideas it affords being such only as the mind gets by reflecting on its own operations within itself. 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. These two, I say, viz. external material things, as the objects of SENSATION, and the operations of our own minds within, as the objects of REFLECTION, are to me the only originals from whence all our ideas take their beginnings. 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.

5. *All our ideas are of the one or the other of these.* The understanding seems to me not to have the least glimmering of any ideas which it doth not receive from one of these two. External objects furnish the mind with the ideas of sensible qualities, which are all those different perceptions they produce in us; and the mind furnishes the understanding with ideas of its own operations.

These, when we have taken a full survey of them, and their several modes, combinations, and relations, we shall find to contain all our whole stock of ideas; and that we have nothing in our minds which did not come in one of these two ways. Let any one examine his own thoughts, and thoroughly search into his understanding; and then let him tell me, whether all the original ideas he has there, are any other than of the objects of his senses, or of the operations of his mind, considered as objects of his reflection. And how great a mass of knowledge soever he imagines to be lodged there, he will, upon taking a strict view, see that he has not any idea in his mind but what one of these two have imprinted; though perhaps, with infinite variety compounded and enlarged by the understanding, as we shall see hereafter.

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Chapter II. Of Simple Ideas

1. *Uncompounded appearances.* 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. For, though the sight and touch often take in from the same object, at the same time, different ideas; 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. The coldness and hardness which a man feels in a piece of ice being as distinct ideas in the mind as the smell and whiteness of a lily; or as the taste of sugar, and smell of a rose. 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 ideas.

2. *The mind can neither make nor destroy them.* These simple ideas, the materials of all our knowledge, are suggested and furnished to the mind only by those two ways above mentioned, viz. sensation and

reflection. 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. But it is not in the power of the most exalted wit, or enlarged understanding, by any quickness or variety of thought, to invent or frame one new simple idea in the mind, not taken in by the ways before mentioned: nor can any force of the understanding destroy those that are there. The dominion of man, in this little world of his own understanding being much what the same as it is in the great world of visible things; wherein his power, however managed by art and skill, reaches no farther than to compound and divide the materials that are made to his hand; but can do nothing towards the making the least particle of new matter, or destroying one atom of what is already in being. The same inability will every one find in himself, who shall go about to fashion in his understanding one simple idea, not received in by his senses from external objects, or by reflection from the operations of his own mind about them. I would have any one try to fancy any taste which had never affected his palate; or frame the idea of a scent he had never smelt: and when he can do this, I will also conclude that a blind man hath ideas of colours, and a deaf man true distinct notions of sounds.

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Chapter VIII. Some further considerations concerning our Simple Ideas of Sensation

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7. *Ideas in the mind, qualities in bodies.* To discover the nature of our ideas 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 are exactly the images and resemblances of something inherent in the subject; most of those 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.

8. *Our ideas and the 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 powers to produce those ideas in us, as they are in the snowball, I call qualities; and as they are sensations or perceptions in our understandings, 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.

9. *Primary qualities of bodies.* Qualities thus considered in bodies are,

First, such as 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.

10. *Secondary qualities of bodies.* Secondly, such qualities which in truth are nothing in the objects themselves but power 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. These I call secondary qualities. To these might be added a third sort, which are allowed to be barely powers; though they are as much real qualities in the subject as those which I, to comply with the common way of speaking, call qualities, but for distinction, secondary qualities. For the power in fire to produce a new colour, or consistency in wax or clay by its primary qualities, is as much a quality in fire, as the power it has to produce in me a new idea or sensation of warmth or burning, which I felt not before, by the same primary qualities, viz. the bulk, texture, and motion of its insensible parts.

11. *How bodies produce ideas in us.* The next thing to be considered is, how bodies produce ideas in us; and that is manifestly by impulse, the only way which we can conceive bodies to operate in.

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13. *How secondary qualities produce their ideas.* After the same manner, that the ideas of these original qualities are produced in us, we may conceive that the ideas of secondary qualities are also produced, viz. by the operation of insensible particles on our senses.... It being no more impossible to conceive that God should annex such

ideas to such motions, with which they have no similitude, than that he should annex the idea of pain to the motion of a piece of steel dividing our flesh, with which that idea hath no resemblance.

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Chapter XXII. Of Mixed Modes

1. *Mixed modes, what.* ... We are now in the next place to consider those we call mixed modes; such are the complex ideas we mark by the names obligation, drunkenness, a lie, &c.; which consisting of several combinations of simple ideas of different kinds, I have called mixed modes, to distinguish them from the more simple modes, which consist only of simple ideas of the same kind. These mixed modes, being also such combinations of simple ideas as are not looked upon to be characteristic marks of any real beings that have a steady existence, but scattered and independent ideas put together by the mind, are thereby distinguished from the complex ideas of substances.

2. *Made by the mind.* That the mind, in respect of its simple ideas, is wholly passive, and receives them all from the existence and operations of things, such as sensation or reflection offers them, without being able to make any one idea, experience shows us. But if we attentively consider these ideas I call mixed modes, we are now speaking of, we shall find their original quite different. The mind often exercises an active power in making these several combinations. For, it being once furnished with simple ideas, it can put them together in several compositions, and so make variety of complex ideas, without examining whether they exist so together in nature. And hence I think it is that these ideas are called notions: as if they had their original, and constant existence, more in the thoughts of men, than in the reality of things; and to form such ideas, it sufficed that the mind put the parts of them together, and that they were consistent in the understanding, without considering whether they had any real being: though I do not deny but several of them might be taken from observation, and the existence of several simple ideas so combined, as they are put together in the understanding. For the man who first framed the idea 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 that idea in his mind without having any such pattern to fashion it by. For it is evident that, in the beginning of languages and societies of men, several of those complex ideas, which were consequent to the constitutions established amongst them, must needs have been in the minds of men, before they existed anywhere else; and that many names that stood for such complex ideas were in use, and so those ideas framed, before the combinations they stood for ever existed.

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Chapter XXIII. Of our Complex Ideas of Substances

1. *Ideas of particular substances, how made.* 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.

2. *Our obscure idea of substance in general.* So that if any one 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; which qualities are commonly called accidents. If any one should be asked, what is the subject wherein colour or weight inheres, he would have nothing to say, but the solid extended parts; and if he were demanded, what is it that solidity and extension adhere in, he would not be in a much better case than the Indian before mentioned who, saying that the world was supported by a great elephant, was asked what the elephant rested on; to which his answer was, a great tortoise: but being again pressed to know what gave support to the broad-backed tortoise, replied, something, he knew not what....

3. *Of the sorts of substances.* An obscure and relative idea of substance in general being thus made we come to have the ideas of particular sorts of substances, by collecting such combinations of simple ideas as are, by experience and observation of men's senses, taken notice of to exist together; and are therefore supposed to flow from the particular internal constitution, or unknown essence of that substance. Thus we come to have the ideas of a man, horse, gold, water, &c.; of which substances, whether any one has any other clear idea, further than of certain simple ideas co-existent together, I appeal to every one's own experience. It is the ordinary qualities observable in iron, or a diamond, put together, that make the true complex idea of those substances, which a smith or a jeweller commonly knows better than a philosopher; who, whatever substantial forms he may talk of, has no other idea of those substances, than what is framed by a collection of those simple ideas which are to be found in them: only

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: and therefore when we speak of any sort of substance, we say it is a thing having such or such qualities; as body is a thing that is extended, figured, and capable of motion; spirit, a thing capable of thinking; and so hardness, friability, and power to draw iron, we say, are qualities to be found in a loadstone. These, and the like fashions of speaking, intimate that the substance is supposed always something besides the extension, figure, solidity, motion, thinking, or other observable ideas, though we know not what it is.

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BOOK III. Of Words

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Chapter VI. Of the Names of Substances

1. *The common names of substances stand for sorts.* The common names of substances, as well as other general terms, stand for sorts: which is nothing else but the being made signs of such complex ideas wherein several particular substances do or might agree, by virtue of which they are capable of being comprehended in one common conception, and signified by one name. I say do or might agree: for though there be but one sun existing in the world, yet the idea of it being abstracted, so that more substances (if there were several) might each agree in it, it is as much a sort as if there were as many suns as there are stars. They want not their reasons who think there are, and that each fixed star would answer the idea the name sun stands for, to one who was placed in a due distance: which, by the way, may show us how much the sorts, or, if you please, genera and species of things (for those Latin terms signify to me no more than the English word sort) depend on such collections of ideas as men have made, and not on the real nature of things; since it is not impossible but that, in propriety of speech, that might be a sun to one which is a star to another.

2. *The essence of each sort of substance is our abstract idea to which the name is annexed.* The measure and boundary of each sort or species, whereby it is constituted that particular sort, and distinguished from others, is that we call its essence, which is nothing but that abstract idea to which the name is annexed; so that everything contained in that idea is essential to that sort. This, though it be all the essence of natural substances that we know, or by which we distinguish them into sorts, yet I call it by a peculiar name, the nominal essence, to distinguish it from the real constitution of substances, upon which depends this nominal essence, and all the

properties of that sort; which, therefore, as has been said, may be called the real essence: v.g. 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. How far these two are different, though they are both called essence, is obvious at first sight to discover.

3. *The nominal and real essence different.* For, though perhaps voluntary motion, with sense and reason, joined to a body of a certain shape, be the complex idea to which I and others annex the name man, and so be the nominal essence of the species so called: yet nobody will say that complex idea is the real essence and source of all those operations which are to be found in any individual of that sort. The foundation of all those qualities which are the ingredients of our complex idea, is something quite different: and had we such a knowledge of that constitution of man, from which his faculties of moving, sensation, and reasoning, and other powers flow, and on which his so regular shape depends, as it is possible angels have, and it is certain his Maker has, we should have a quite other idea of his essence than what now is contained in our definition of that species, be it what it will: and our idea of any individual man would be as far different from what it is now, as is his who knows all the springs and wheels and other contrivances within of the famous clock at Strasburg, from that which a gazing countryman has of it, who barely sees the motion of the hand, and hears the clock strike, and observes only some of the outward appearances.

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BOOK IV. Of Knowledge and Opinion

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Chapter II. Of the Degrees of our Knowledge

1. *Of the degrees, or differences in clearness, of our knowledge: 1. Intuitive.* All our knowledge consisting, as I have said, in the view the mind has of its own ideas, which is the utmost light and greatest certainty we, with our faculties, and in our way of knowledge, are capable of, it may not be amiss to consider a little the degrees of its evidence. 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. For if we will reflect on our own ways of thinking, we will find, that sometimes the mind perceives the agreement or disagreement of two ideas immediately by themselves, without the intervention of any other: and this I think we may call intuitive knowledge. For in this the mind is at no pains of proving or

examining, but perceives the truth as the eye doth light, only by being directed towards it....

2. *II. Demonstrative.* The next degree of knowledge is, where the mind perceives the agreement or disagreement of any ideas, but not immediately.... In this case then, when the mind cannot so bring its ideas together as by their immediate comparison, and as it were juxtaposition or application one to another, to perceive 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....

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Chapter III. Of the Extent of Human Knowledge

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7. *How far our knowledge reaches.* The affirmations or negations we make concerning the ideas we have, may, as I have before intimated in general, be reduced to these four sorts, viz. identity, co-existence, relation, and real existence. I shall examine how far our knowledge extends in each of these:

8. *Our knowledge of identity and diversity in ideas extends as far as our ideas themselves.* First, as to identity and diversity. In this way of agreement or disagreement of our ideas, our intuitive knowledge is as far extended as our ideas themselves: and there can be no idea in the mind, which it does not, presently, by an intuitive knowledge, perceive to be what it is, and to be different from any other.

9. *Of their co-existence, extends only a very little way.* Secondly, as to the second sort, which is the agreement or disagreement of our ideas in co-existence, in this our knowledge is very short; though in this consists the greatest and most material part of our knowledge concerning substances. For our ideas of the species of substances being, as I have showed, nothing but certain collections of simple ideas united in one subject, and so co-existing together; v.g. our idea of flame is a body hot, luminous, and moving upward; of gold, a body heavy to a certain degree, yellow, malleable, and fusible: for these, or some such complex ideas as these, in men's minds, do these two names of the different substances, flame and gold, stand for. When we would know anything further concerning these, or any other sort of substances, what do we inquire, but what other qualities or powers these substances have or have not? Which is nothing else but to know what other simple ideas do, or do not co-exist with those that make up that complex idea?

10. *Because the connexion between simple ideas in substances is for the most part unknown.* This, how weighty and considerable a part soever of human science, is yet very narrow, and scarce any at all. The reason whereof is, 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.

11. *Especially of the secondary qualities of bodies.* The ideas that our complex ones of substances are made up of, and about which our knowledge concerning substances is most employed, are those of their secondary qualities; which depending all (as has been shown) upon the primary qualities of their minute and insensible parts; or, if not upon them, upon something yet more remote from our comprehension; it is impossible we should know which have a necessary union or inconsistency one with another. For, not knowing the root they spring from, not knowing what size, figure, and texture of parts they are, on which depend, and from which result those qualities which make our complex idea of gold, it is impossible we should know what other qualities result from, or are incompatible with, the same constitution of the insensible parts of gold; and so consequently must always co-exist with that complex idea we have of it, or else are inconsistent with it.

12. *Because necessary connexion between any secondary and the primary qualities is undiscoverable by us.* Besides this ignorance of the primary qualities of the insensible parts of bodies, on which depend all their secondary qualities, there is yet another and more incurable part of ignorance, which sets us more remote from a certain knowledge of the co-existence or inco-existence (if I may so say) of different ideas in the same subject; and that is, that there is no discoverable connexion between any secondary quality and those primary qualities which it depends on.

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18. *Of relations between abstracted ideas it is not easy to say how far our knowledge extends.* Thirdly, As to the third sort of our knowledge, viz. the agreement or disagreement of any of our ideas in any other relation: this, as it is the largest field of our knowledge, so it is hard to determine how far it may extend: because the advances that are made in this part of knowledge, depending on our sagacity in finding intermediate ideas, that may show the relations and habitudes of ideas whose co-existence is not considered, it is a hard matter to tell when we are at an end of such discoveries; and when reason has all the helps it is capable of, for the finding of proofs or examining the agreement or disagreement of remote ideas. They that are ignorant of Algebra cannot imagine the wonders in this kind are to be done by it: and what further improvements and helps advantageous to other parts of knowledge the sagacious mind of man may yet find out, it is not easy to determine. This at least I believe, that the ideas of quantity are

not those alone that are capable of demonstration and knowledge; and that other, and perhaps more useful, parts of contemplation, would afford us certainty, if vices, passions, and domineering interest did not oppose or menace such endeavours.

Morality capable of demonstration. The idea of a supreme Being, infinite in power, goodness, and wisdom, whose workmanship we are, and on whom we depend; and the idea of ourselves, as understanding, rational creatures, being such as are clear in us, would, I suppose, if duly considered and pursued, afford such foundations of our duty and rules of action as might place morality amongst the sciences capable of demonstration: wherein I doubt not but from self-evident propositions, by necessary consequences, as incontestible as those in mathematics, the measures of right and wrong might be made out, to any one that will apply himself with the same indifferency and attention to the one as he does to the other of these sciences.... "Where there is no property there is no injustice," is a proposition as certain as any demonstration in Euclid: for the idea of property being a right to anything, and the idea to which the name "injustice" is given being the invasion or violation of that right, it is evident that these ideas, being thus established, and these names annexed to them, I can as certainly know this proposition to be true, as that a triangle has three angles equal to two right ones....

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21. *Of the three real existences of which we have certain knowledge.* Fourthly, As to the fourth sort of our knowledge, viz. of the real actual existence of things, we have an intuitive knowledge of our own existence, and a demonstrative knowledge of the existence of a God: of the existence of anything else, we have no other but a sensitive knowledge; which extends not beyond the objects present to our senses.

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Chapter XII. Of the Improvement of our Knowledge

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9. *Our knowledge of substances is to be improved, not by contemplation of abstract ideas, but only by experience.* 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 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....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....

10. *Experience may procure us convenience, not science.* 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 beyond this I fear our talents reach not, nor are our faculties, as I guess, able to advance.

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