

innate which are generally assented to as soon as heard, by which they will find themselves plentifully stored with innate principles. For, upon the same ground, namely, of assent at first hearing and understanding the terms, that men would have those maxims pass for innate, they must also admit several propositions about numbers to be innate; and thus, *that one and two are equal to three, that two and two are equal to four*, and a multitude of other like propositions in numbers that every body assents to at first hearing and understanding the terms, must have a place among these innate axioms. Nor is this the prerogative of numbers alone and propositions made about several of them, but even natural philosophy and all the other sciences afford propositions which are sure to meet with assent as soon as they are understood. *That two bodies cannot be in the same place* is a truth that nobody any more sticks at than at these maxims, that "it is impossible for the same thing to be and not to be," that "white is not black," that "a square is not a circle," "that bitterness is not sweetness." [. . .] But since no proposition can be innate unless the *ideas* about which it is innate, this will be to suppose all our *ideas* of colors, sounds, tastes, figure, etc. innate, than which there cannot be anything more opposite to reason and experience. Universal and ready assent upon hearing and understanding the terms is (I grant) a mark of self-evidence; but self-evidence, depending not on innate impressions, but on something else (as we shall show afterward), belongs to several propositions which nobody was yet so extravagant as to pretend to be innate.

19. *Such less general propositions known before these universal maxims.* Nor let it be said that those more particular self-evident propositions which are assented to at first hearing as *that one and two are equal to three, that green is not red*, etc., are received as the consequences of those more universal propositions which are looked on as innate principles, since anyone, who will but take the pains to observe what passes in the understanding will certainly find that these, and the like less general propositions, are certainly known and firmly assented to by those who are utterly ignorant of those more general maxims; and so, being earlier in the mind than those (as they are

called) first principles, cannot owe to them the assent with which they are received at first hearing. [. . .]

21. *These maxims not being known sometimes until proposed does not prove them innate.* But we have not yet done with *assenting to propositions at first hearing and understanding their terms*. It is fit we first take notice that this, instead of being a mark that they are innate, is a proof of the contrary, since it supposes that several who understand and know other things are ignorant of these principles until they are proposed to them, and that one may be unacquainted with these truths, until he hears them from others. For, if they were innate, what need they be proposed in order to gaining assent, when by being in the understanding by a natural and original impression (if there were any such) they could not but be known before? [. . .]

22. *Implicitly known before proposing signifies that the mind is capable of understanding them, or else signifies nothing.* If it is said, "the understanding has an *implicit knowledge* of these principles, but not an *explicit*, before this first hearing," (as they must who will say, "that they are in the understanding before they are known") it will be hard to conceive what is meant by a principle imprinted on the understanding implicitly, unless it is this, that the mind is capable of understanding and assenting firmly to such propositions. And thus all mathematical demonstrations as well as first principles must be received as native impressions on the mind. [. . .]

Book II. Of Ideas. Chapter I. Of Ideas in General, and Their Origin.

1. *Idea is the object of thinking.* Every man being conscious to himself that he thinks, and that which his mind is applied about while 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 from where 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 everyone'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 does it come to be furnished? From where does it come by that vast store which the busy and boundless fancy of man has painted on it with an almost endless variety? From where does it have all the materials of reason and knowledge? To this I answer, in one word, from *experience*; our knowledge is founded in all that, 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 which 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 in which 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 furnishes 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 gotten—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 is 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 of which there come to be *ideas* of these operations in the understanding. These two, I say, namely, 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 origins from which 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 does 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 anyone 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 however great a mass of knowledge he imagines to be lodged there, he will, upon taking a strict view, see

that he *does not have 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.

6. *Observable in children.* He who attentively considers the state of a *child* at his first coming into the world will have little reason to think him stored with plenty of *ideas* that are to be the matter of his future knowledge. It is by degrees he comes to be furnished with them. And though the *ideas* of obvious and familiar qualities imprint themselves before the memory begins to keep a register of time or order, yet it is often so late before some unusual qualities come in the way that there are few men who cannot recollect the beginning of their acquaintance with them. And if it were worthwhile, no doubt a child might be so ordered as to have but a very few even of the ordinary *ideas* until he were grown up to a man. But all who are born into the world being surrounded with bodies that perpetually and diversely affect them, variety of *ideas*, whether care is taken of it or not, are imprinted on the minds of children. Light and colors are busy at hand everywhere, when the eye is but open; sounds and some tangible qualities do not fail to solicit their proper senses and force an entrance to the mind; but yet, I think, it will be granted easily that if a child were kept in a place where he never saw any other but black and white until he were a man, he would have no more *ideas* of scarlet or green than he who from his childhood never tasted an oyster or a pineapple has of those particular relishes.

7. *Men are differently furnished with these, according to the different objects they converse with.* Men then come to be furnished with fewer or more simple *ideas* from without, according as the objects they converse with afford greater or less variety, and from the operations of their minds within, according as they more or less *reflect* on them. For though he who contemplates the operations of his mind cannot but have plain and clear *ideas* of them, yet, unless he turns his thoughts that way and considers them *attentively*, he will no more have clear and distinct *ideas* of all the *operations of his mind*, and all that may be observed in there, than he will have all the particular *ideas* of any landscape or of the parts and motions of

a clock, who will not turn his eyes to it and with attention heed all the parts of it. The picture or clock may be so placed that they may come in his way every day, but yet he will have but a confused *idea* of all the parts they are made up of until he applies himself with attention to consider them each in particular.

8. *Ideas of reflection later, because they need attention.* And hence we see the reason why it is pretty late before most children get *ideas* of the operations of their own minds; and some do not have any very clear or perfect *ideas* of the greatest part of them all their lives, because, though they pass there continually, yet, like floating visions, they make not deep impressions enough to leave in their mind clear, distinct, lasting *ideas*, until the understanding turns inward upon itself, *reflects* on its own *operations*, and makes them the objects of its own contemplation. Children, when they come first into it, are surrounded with a world of new things, which, by a constant solicitation of their senses, draw the mind constantly to them, ready to take notice of new and apt to be delighted with the variety of changing objects. Thus the first years are usually employed and diverted in looking abroad. Men's business in them is to acquaint themselves with what is to be found without. And so growing up in a constant attention to outward sensation, [they] seldom make any considerable reflection on what passes within them until they come to be of riper years, and some scarcely ever at all.

9. *The soul begins to have ideas when it begins to perceive.* To ask at what time a man has first any ideas is to ask when he begins to perceive—having *ideas* and perception being the same thing. I know it is an opinion that the soul always thinks, and that it has the actual perception of *ideas* in itself constantly as long as it exists, and that actual thinking is as inseparable from the soul as actual extension is from the body—which if true, to inquire after the beginning of a man's *ideas* is the same as to inquire after the beginning of his soul. For by this account soul and its *ideas* as body and its extension will begin to exist both at the same time.

10. *The soul does not always think, for this wants proofs.* But whether the soul is supposed to exist antecedent to, or coeval with, or some time after the

first rudiments of organization or the beginnings of life in the body, I leave to be disputed by those who have better thought of that matter. I confess myself to have one of those dull souls that does not perceive itself always to contemplate *ideas*; nor can conceive it any more necessary for the *soul* always to think than for the body always to move, the perception of *ideas* being (as I conceive) to the soul what motion is to the body—not its essence, but one of its operations. And therefore, though thinking is supposed never so much the proper action of the soul, yet it is not necessary to suppose that it should be always thinking, always in action; that perhaps is the privilege of the infinite author and preserver of things who never slumbers nor sleeps, but is not competent to any finite being, at least not to the soul of man. We know certainly by experience that we sometimes think—and from there draw this infallible consequence that there is something in us that has a power to think—but whether that substance perpetually thinks or not, 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 in question and not to prove it by reason—which is necessary to be done, if it is not a self-evident proposition. But whether this, “that the soul always thinks,” is a self-evident proposition that everybody assents to at first hearing, I appeal to mankind. It is doubted whether I thought at all last night or not; the question being about a matter of fact, it is begging it to bring, as a proof for it, an hypothesis, which is the very thing in dispute. In this way one may prove anything, and it is but supposing that all watches think while the balance beats; and it is sufficiently proved, and past doubt that my watch thought all last night. But he who would not deceive himself ought to build his hypothesis on matter of fact, and make it out by sensible experience, and not presume on matter of fact, because of his hypothesis, that is, because he supposes it to be so. This way of proving amounts to this, that I must necessarily think all last night, because another supposes I always think, though I myself cannot perceive that I always do so.

But men in love with their opinions may not only suppose what is in question, but allege wrong matter

of fact. How else could anyone make it an inference of mine that a thing is not, because we are not sensible of it in our sleep? I do not say there is no soul in a man because he is not sensible of it in his sleep. But I do say he cannot think at any time, waking or sleeping, without being sensible of it. Our being sensible of it is not necessary to anything but to our thoughts; and to them it is, and to them it always will be necessary, until we can think without being conscious of it.

11. *It is not always conscious of it.* I grant that the soul in a waking man is never without thought because it is the condition of being awake. But whether sleeping without dreaming is not an affection of the whole man, mind as well as body, may be worth a waking man's consideration, it being hard to conceive that anything should think and not be conscious of it. If the *soul* does think in a sleeping man without being conscious of it, I ask, whether during such thinking it has any pleasure or pain or is capable of happiness or misery? I am sure the man is not, no more than the bed or earth he lies on. For to be happy or miserable without being conscious of it seems to me utterly inconsistent and impossible. Or if it is possible that the soul can, while the body is sleeping, have its thinking, enjoyments and concerns, its pleasures or pain, apart, which the man is not conscious of nor partakes in, it is certain that *Socrates* asleep and *Socrates* awake is not the same person. But his soul when he sleeps and *Socrates* the man, consisting of body and soul when he is waking, are two persons, since waking *Socrates* has no knowledge of, or concern for that happiness or misery of his soul which it enjoys alone by itself while he sleeps, without perceiving anything of it, no more than he has for the happiness or misery of a man in the Indies, whom he does not know. For if we take wholly away all consciousness of our actions and sensations, especially of pleasure and pain, and the concern that accompanies it, it will be hard to know in what to place personal identity.

12. *If a sleeping man thinks without knowing it, the sleeping and waking man are two persons.* “The soul, during sound sleep, thinks,” say these men. While it thinks and perceives, it is capable certainly of those of delight or trouble, as well as any other perceptions, and it must necessarily be conscious of its

own perceptions. But it has all this apart; the sleeping man, it is plain, is conscious of nothing of all this. Let us suppose then the soul of *Castor*, while he is sleeping, retired from his body—which is no impossible supposition for the men I have here to do with, who so liberally allow life without a thinking soul to all other animals. These men cannot then judge it impossible, or a contradiction, that the body should live without the soul, nor that the soul should subsist and think, or have perception, even perception of happiness or misery, without the body. Let us then, as I say, suppose the soul of *Castor* separated during his sleep from his body, to think apart. Let us suppose too, that it chooses for its scene of thinking the body of another man, e.g., *Pollux*, who is sleeping without a soul. For if *Castor's* soul can think while *Castor* is asleep, what *Castor* is never conscious of, it is no matter what place it chooses to think in. We have here then the bodies of two men with only one soul between them, which we will suppose to sleep and wake by turns; and the soul still thinking in the waking man, of which the sleeping man is never conscious, never has the least perception. I ask then, whether *Castor* and *Pollux*, thus, with only one soul between them, which thinks and perceives in one what the other is never conscious of, nor is concerned for, are not two as distinct persons as *Castor* and *Hercules* or as *Socrates* and *Plato* were? And whether one of them might not be very happy and the other very miserable? Just by the same reason they make the soul and the man two persons who make the soul think apart what the man is not conscious of. For I suppose nobody will make identity of persons to consist in the soul's being united to the very same numerical particles of matter. For if that is necessary to identity, it will be impossible, in that constant flux of the particles of our bodies, that any man should be the same person two days or two moments together.

13. *Impossible to convince those who sleep without dreaming that they think.* Thus, I think, every drowsy nod shakes their doctrine, who teach that the soul is always thinking. Those, at least, who do at any time sleep without dreaming can never be convinced that their thoughts are sometimes busy for four hours without their knowing of it, and if they are taken in

the very act, waked in the middle of that sleeping contemplation, can give no manner of account of it.

14. *That men dream without remembering it, in vain urged.* It will perhaps be said, "that the soul thinks even in the soundest sleep, but the memory does not retain it." That the soul in a sleeping man should be this moment busy thinking, and the next moment in a waking man not remember nor be able to recollect one jot of all those thoughts, is very hard to be conceived and would need some better proof than bare assertion to make it be believed. For who can without any more ado, but being barely told so, imagine that the greatest part of men do, during all their lives, for several hours every day, think of something, which if they were asked, even in the middle of these thoughts, they could remember nothing at all of? Most men, I think, pass a great part of their sleep without dreaming. I once knew a man who was bred a scholar and had no bad memory, who told me he had never dreamed in his life until he had that fever he was then newly recovered of, which was about the twenty-fifth or twenty-sixth year of his age. I suppose the world affords more such instances. At least everyone's acquaintance will furnish him with examples enough of such, as pass most of their nights without dreaming. [. . .]

19. *That a man should be busy in thinking, and yet not retain it the next moment, very improbable.* To suppose the soul to think and the man not to perceive it is, as has been said, to make two persons in one man. And if one considers well these men's way of speaking, one should be led into a suspicion that they do so. For they who tell us that the soul always thinks do never, that I remember, say that a man always thinks. Can the soul think and not the man? or a man think and not be conscious of it? This perhaps would be suspected of *jargon* in others. If they say the man always thinks but is not always conscious of it, they may as well say his body is extended without having parts. For it is altogether as intelligible to say that a body is extended without parts as that anything thinks without being conscious of it or perceiving that it does so. They who talk thus may, with as much reason, if it is necessary to their hypothesis, say that a man is always hungry, but that he does not always feel

it; whereas hunger consists in that very sensation, as thinking consists in being conscious that one thinks. If they say that a man is always conscious to himself of thinking, I ask how do they know it. Consciousness is the perception of what passes in a man's own mind. Can another man perceive that I am conscious of anything, when I perceive it not myself? No man's knowledge here can go beyond his experience. Wake a man out of a sound sleep and ask him what he was that moment thinking of. If he himself is conscious of nothing he then thought on, he must be a notable diviner of thoughts that can assure him that he was thinking. May he not with more reason assure him he was not asleep? This is something beyond philosophy, and it cannot be less than revelation that discovers to another thoughts in my mind when I can find none there myself; and they must necessarily have a penetrating sight who can certainly see that I think when I cannot perceive it myself and when I declare that I do not, and yet can see that dogs or elephants do not think when they give all the demonstration of it imaginable, except only telling us that they do so. This some may suspect to be a step beyond the Rosicrucians, it seeming easier to make one's self invisible to others than to make another's thoughts visible to me, which are not visible to himself. But it is but defining the soul to be "a substance that always thinks," and the business is done. If such definition is of any authority, I do not know what it can serve for, but to make many men suspect that they have no souls at all, since they find a good part of their lives pass away without thinking. For no definitions that I know, no suppositions of any sect, are of force enough to destroy constant experience; and perhaps it is the affectation of knowing beyond what we perceive that makes so much useless dispute and noise in the world.

20. No ideas but from sensation or reflection evident, if we observe children. I see no reason therefore to believe that the soul thinks before the senses have furnished it with ideas to think on; and as those are increased and retained, so it comes by exercise to improve its faculty of thinking, in the several parts of it as well as afterwards, by compounding those ideas and reflecting on its own operations, [and so] it increases

its stock as well as facility in remembering, imagining, reasoning, and other modes of thinking. [. . .]

23. If it shall be demanded then *when a man begins to have any ideas*, I think the true answer is when he first has any *sensation*. For since there does not appear 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. It is about these impressions made on our senses by outward objects that the mind seems first to employ itself in such operations as we call perception, remembering, consideration, reasoning, etc.

24. *The origin of all our knowledge*. In time the mind comes to reflect on its own *operations* about the *ideas* gotten by *sensation* and in this way stores itself with a new set of *ideas*, which I call *ideas* of reflection. These are the *impressions* that are made on our *senses* by outward objects that are extrinsic to the mind and its *own operations*, proceeding from powers intrinsic and proper to itself, which, when *reflected* on by itself, become also objects of its contemplation, and *are*, as I have said, *the origin of all knowledge*. 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 on which 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 in which the mind wanders, in those remote speculations it may seem to be elevated with, it does not stir one jot beyond those *ideas* which *sense* or *reflection* have offered for its contemplation.

25. *In the reception of simple ideas the understanding is most of all passive*. In this part the understanding is merely *passive*; and whether or not 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 produce there. 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.

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 color, 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 mentioned above, namely, *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, is much the same as it is in the great world of visible things—in which his power, however managed by art and skill, reaches no further than to compound and divide the materials that are made to his hand—but it 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 everyone will find in himself, who shall go about to fashion in his understanding any 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 anyone 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 has *ideas* of colors, and a deaf man true distinct notions of sounds.

3. This is the reason why, though we cannot believe it impossible to God to make a creature with other organs and more ways to convey into the understanding the notice of corporeal things than those five, as they are usually counted, which he has given to man; yet I think it is *not possible* for anyone to *imagine* any other *qualities* in bodies, however constituted, by which they can be taken notice of, besides sounds, tastes, smells, visible, and tangible qualities. And had mankind been made but with four senses, the qualities then, which are the objects of the fifth sense, had been as far from our notice, imagination, and conception, as now any *belonging to a sixth, seventh, or eighth sense* can possibly be. Whether some other creatures yet, in some other parts of this vast and stupendous universe, may not have this, will be a great presumption to deny. He who will not set himself proudly at the top of all things, but will consider the immensity of this fabric and the great variety that is to be found in this little and inconsiderable part of

it which he has to do with, may be apt to think that in other mansions of it there may be other and different intelligent beings of whose faculties he has as little knowledge or apprehension, as a worm shut up in one drawer of a cabinet has of the senses or understanding of a man—such variety and excellency being suitable to the wisdom and power of the maker. I have here followed the common opinion of man's having but five senses, though, perhaps, there may be justly counted more. But either supposition serves equally to my present purpose.

Chapter III. Of Ideas of One Sense.

1. *As colors, of seeing; sounds, of hearing.* The better to conceive the *ideas* we receive from sensation, it may not be amiss for us to consider them in reference to the different ways by which they make their approaches to our minds and make themselves perceivable by us.

First, then, there are some which come into our minds by *one sense* only.

Secondly, there are others that convey themselves into the mind by *more senses than one*.

Thirdly, others that are had from *reflection* only.

Fourthly, there are some that make themselves [a] way and are suggested to the mind by *all the ways of sensation and reflection*.

We shall consider them apart under these several heads.

First, there are *some ideas which have admittance only through one sense*, which is peculiarly adapted to receive them. Thus light and colors, as white, red, yellow, blue, with their several degrees or shades and mixtures, as green, scarlet, purple, sea-green, and the rest, come in only by the eyes; all kinds of noises, sounds, and tones, only by the ears; the several tastes and smells, by the nose and palate. And if these organs, or the nerves which are the conduits to convey them from without to their audience in the brain, the mind's presence-room (as I may so call it) are any of them so disordered as not to perform their functions, they have no postern to be admitted by, no other way to bring themselves into view and be perceived by the understanding.

The most considerable of those belonging to the touch are heat and cold and solidity. All the rest, consisting almost wholly in the sensible configuration, as smooth and rough, or else more or less firm adhesion of the parts, as hard and soft, tough and brittle, are obvious enough.

2. *Few simple ideas have names.* I think it will be needless to enumerate all the particular *simple ideas* belonging to each sense. Nor indeed is it possible if we would, there being a great many *more* of them belonging to most of the senses *than we have names for*. The variety of smells, which are as many almost, if not more, than species of bodies in the world, do most of them want names. Sweet and stinking commonly serve our turn for these *ideas*, which in effect is little more than to call them pleasing or displeasing, though the smell of a rose and violet, both sweet, are certainly very distinct *ideas*. Nor are the different tastes that we receive *ideas* of by our palates much better provided with names. Sweet, bitter, sour, harsh, and salt are almost all the epithets we have to denominate that numberless variety of relishes, which are to be found distinct, not only in almost every sort of creatures, but all the different parts of the same plant, fruit, or animal. The same may be said of colors and sounds. I shall, therefore, in the account of simple *ideas* I am here giving, content myself to set down only such as are most material to our present purpose, or are in themselves less apt to be taken notice of, though they are very frequently the ingredients of our complex *ideas*, among which, I think, I may well account solidity—which therefore I shall treat of in the next chapter.

Chapter IV. Of Solidity.

1. *We receive this idea from touch.* The *idea* of *solidity* we receive by our touch. And it arises from the resistance which we find in body to the entrance of any other body into the place it possesses, until it has left it. There is no *idea* which we receive more constantly from sensation than *solidity*. Whether we move or rest, in whatever posture we are, we always feel something under us that supports us and hinders our further sinking downwards, and the bodies which we daily handle make us perceive that, while they

remain between them, they do by an insurmountable force hinder the approach of the parts of our hands that press them. That which thus hinders the approach of two bodies, when they are moved one towards another, I call *solidity*. I will not dispute whether this acceptance of the word solid is nearer to its original signification than that which mathematicians use it in. It suffices that I think the common notion of solidity will allow, if not justify, this use of it, but, if anyone thinks it better to call it *impenetrability*, he has my consent. Only I have thought the term *solidity* the more proper to express this *idea*, not only because of its vulgar use in that sense, but also because it carries something more of positive in it than *impenetrability*, which is negative and is perhaps more a consequence of *solidity* than *solidity* itself. This, of all other, seems the *idea* most intimately connected with and essential to body, so as nowhere else to be found or imagined, but only in matter. 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 gotten this *idea* from such grosser sensible bodies, traces it further, and considers it, as well as figure, in the most minute particle of matter that can exist, and finds it inseparably inherent in body, wherever or however modified.

2. *Solidity fills space*. This is the *idea* which belongs to body, by which we conceive it to *fill space*. The *idea* of which filling of space is that, where we imagine any space taken up by a solid substance, we conceive it so to possess it, that it excludes all other solid substances, and will forever hinder any other two bodies that move towards one another in a straight line from coming to touch one another, unless it removes from between them in a line not parallel to that which they move in. This *idea* of it the bodies which we ordinarily handle sufficiently furnish us with.

3. *Distinct from space*. This resistance, by which it keeps other bodies out of the space which it possesses, is so great that no force, however great, can surmount it. All the bodies in the world pressing a drop of water on all sides will never be able to overcome the resistance which it will make, soft as it is, to their approaching one another, until it is removed

out of their way—by which our *idea* of *solidity* is distinguished both from *pure space*, which is capable neither of resistance nor motion, and from the ordinary *idea* of *hardness*. [. . .]

4. *From hardness*. *Solidity* is hereby also distinguished from *hardness*, in that *solidity* consists in repulsion, and so an utter exclusion of other bodies out of the space it possesses, but *hardness* in a firm cohesion of the parts of matter, making up masses of a sensible bulk, so that the whole does not easily change its figure. And, indeed, hard and soft are names that we give to things only in relation to the constitutions of our own bodies—that being generally called hard by us which will put us to pain sooner than change figure by the pressure of any part of our bodies, and that on the contrary soft which changes the situation of its parts upon an easy and unpainful touch. [. . .]

5. *On solidity depend impulse, resistance, and protrusion*. By this *idea* of *solidity* is the extension of body distinguished from the extension of space, the extension of body being nothing but the cohesion or continuity of solid, separable, movable parts, and the extension of space the continuity of unsolid, inseparable, and immovable parts. *Upon the solidity of bodies also depend their mutual impulse, resistance, and protrusion*. Of pure space then, and *solidity*, there are several (among which I confess myself one) who persuade themselves they have clear and distinct *ideas*, and that they can think on space without anything in it that resists or is protruded by body. This is the *idea* of pure space, which they think they have as clear as any *idea* they can have of the extension of body. [. . .]

Chapter V. Of Simple Ideas by More Than One Sense.

The *ideas* we get by more than one sense are of *space* or *extension*, *figure*, *rest*, and *motion*; for these make perceivable impressions, both on the eyes and touch, and we can receive and convey into our minds the *ideas* of the extension, figure, motion, and rest of bodies, both by seeing and feeling. But having occasion to speak more at large of these in another place, I here only enumerate them.

Chapter VI. *Of Simple Ideas of Reflection.*

1. *Simple ideas are the operations of the mind about its other ideas.* The mind receiving the *ideas* mentioned in the foregoing chapters from without, when it turns its view inward upon itself, and observes its own actions about those *ideas* it has, takes from this other *ideas* which are as capable to be the objects of its contemplation as any of those it received from foreign things.

2. The two great and principal actions of the mind, which are most frequently considered and which are so frequent that everyone who pleases may take notice of them in himself, are these two: *perception* or *thinking*; and *volition* or *willing*. The power of thinking is called the *understanding*, and the power of volition is called the *will*, and these two powers or abilities in the mind are denominated *faculties*. Of some of the modes of these simple *ideas* of reflection, such as are *remembrance*, *discerning*, *reasoning*, *judging*, *knowledge*, *faith*, etc. I shall have occasion to speak hereafter.

Chapter VII. *Of Simple Ideas of Both Sensation and Reflection.*

1. *Pleasure and pain.* There are other simple *ideas* which convey themselves into the mind by all the ways of sensation and reflection, namely, *pleasure* or *delight*, and its opposite, *pain* or *uneasiness*; *power*; *existence*; *unity*.

2. *The idea of perception and idea of willing we have from reflection.* *Delight* or *uneasiness*, one or other of them, join themselves to almost all our *ideas* both of sensation and reflection. And there is scarcely any affection of our senses from without, any retired thought of our mind within, which is not able to produce in us *pleasure* or *pain*. By *pleasure* and *pain* I would be understood to signify whatever delights or molests us, whether it arises from the thoughts of our minds or anything operating on our bodies. For whether we call it satisfaction, delight, pleasure, happiness, etc., on the one side, or uneasiness, trouble, pain, torment, anguish, misery, etc., on the other, they are still but different degrees of the same thing and belong to the *ideas* of pleasure and pain, delight

or uneasiness—which are the names I shall most commonly use for those two sorts of *ideas*. [. . .]

7. *Existence and unity.* *Existence* and *unity* are two other *ideas* that are suggested to the understanding by every object without and every *idea* within. When *ideas* are in our minds, we consider them as being actually there as well as we consider things to be actually without us—which is that they exist, or have *existence*. And whatever we can consider as one thing, whether a real being or *idea*, suggests to the understanding the *idea* of *unity*.

8. *Power.* *Power* also is another of those simple *ideas* which we receive from *sensation* and *reflection*. For observing in ourselves 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*.

9. *Succession.* Besides these there is another *idea*, which, though suggested by our senses, yet is more constantly offered to us by what passes in our minds, and that is the *idea* of *succession*. For if we look immediately into ourselves and reflect on what is observable there, we shall find our *ideas* always, while we are awake or have any thought, passing in train, one going and another coming, without intermission.

10. *Simple ideas the materials of all our knowledge.* These, if they are not all, are at least (as I think) the most considerable of those *simple* *ideas* which the mind has and out of which is made all its other knowledge. All which it receives only by the two aforementioned ways of *sensation* and *reflection*.

Nor let anyone think these too narrow bounds for the capacious mind of man to expatiate in, which takes its flight further than the stars and cannot be confined by the limits of the world, that extends its thoughts often even beyond the utmost expansion of matter, and makes excursions into that incomprehensible *inane*. I grant all this, but desire anyone to assign any *simple idea* which is not received from one of those *inlets* before mentioned or any *complex idea* not made out of those *simple ones*. Nor will it be so strange to think these few simple *ideas* sufficient to employ the quickest thought or largest capacity, and to furnish the materials of all that various knowledge,

and more various fancies and opinions of all mankind, if we consider how many words may be made out of the various composition of twenty-four letters—or if, going one step further, we will but reflect on the variety of combinations may be made with barely one of the above mentioned *ideas*, namely, number, whose stock is inexhaustible and truly infinite. And what a large and immense field does extension alone afford the mathematicians.

Chapter VIII. *Other Considerations Concerning Simple Ideas.*

1. *Positive ideas from privative causes.* Concerning the simple *ideas* of sensation, it is to be considered that whatever is so constituted in nature as to be able, by affecting our senses, to cause any perception in the mind, does thereby produce in the understanding a simple *idea*; which, whatever is the external cause of it, when it comes to be taken notice of by our discerning faculty, it is by the mind looked on and considered there to be a real *positive idea* in the understanding, as much as any other whatsoever, though perhaps the cause of it is but a privation of the subject.

2. Thus the *ideas* of heat and cold, light and darkness, white and black, motion and rest, are equally clear and *positive ideas* in the mind, though perhaps some of the *causes* which produce them are barely *privations* in subjects from which our senses derive those *ideas*. These the understanding, in its view of them, considers all as distinct *positive ideas*, without taking notice of the causes that produce them—which is an inquiry not belonging to the *idea*, as it is in the understanding, but to the nature of the things existing without us. These are two very different things and carefully to be distinguished, it being one thing to perceive and know the *idea* of white or black and quite another to examine what kind of particles they must be, and how arranged in the surfaces, to make any object appear white or black.

3. A painter or dyer who never inquired into their causes has the *ideas* of white and black, and other colors, as clearly, perfectly, and distinctly in his understanding, and perhaps more distinctly, than the philosopher who has busied himself in considering

their natures, and thinks he knows how far either of them is in its cause positive or privative; and the *idea* of black is no less *positive* in his mind than that of white, *however the cause* of that color in the external object may be only a *privation*.

4. If it were the design of my present undertaking to inquire into the natural causes and manner of perception, I should offer this as a reason *why a privative cause might*, in some cases at least, *produce a positive idea*, namely, that all sensation being produced in us only by different degrees and modes of motion in our animal spirits variously agitated by external objects, the abatement of any former motion must as necessarily produce a new sensation as the variation or increase of it, and so introduce a new *idea* which depends only on a different motion of the animal spirits in that organ.

5. But whether this is so or not, I will not here determine, but appeal to everyone's own experience whether the shadow of a man, though it consists of nothing but the absence of light (and the more the absence of light is, the more discernible is the shadow), does not, when a man looks on it, cause as clear and positive *idea* in his mind as a man himself, though covered over with clear sunshine? And the picture of a shadow is a positive thing. Indeed we have *negative names* which do not stand directly for positive *ideas*, but for their absence, such as *insipid*, *silence*, *nil*, etc., which words denote positive *ideas*—e.g., *taste*, *sound*, *being*—with a signification of their absence.

6. And thus one may truly be said to see darkness. For supposing a hole perfectly dark from which no light is reflected, it is certain one may see the figure of it or it may be painted. Or whether the ink I write with makes any other *idea* is a question. The privative causes I have here assigned of positive *ideas* are according to the common opinion, but in truth it will be hard to determine whether there are really any *ideas* from a privative cause, until it is determined *whether rest is any more a privation than motion*.

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, so that 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. Whatever 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 a *quality* of the subject in which 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 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 and secondary qualities.* Qualities thus considered in bodies are, first, such as are utterly inseparable from the body in whatever state it is, 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—e.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 until 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, namely, solidity, extension, figure, motion or rest, and number.

10. *Secondly*, such *qualities* which 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 colors, sounds, tastes, etc.—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 color 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 did not feel before by the same primary qualities, namely, the bulk, texture, and motion of its insensible parts.

11. *How primary qualities produce their ideas.* 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.

12. If then external objects are not united to our minds when they produce *ideas* in there, and yet we perceive *these original qualities* in such of them as singly fall under our senses, it is evident that some motion must be continued from there by our nerves, or animal spirits, by some parts of our bodies to the brains or the seat of sensation, there to *produce in our minds the particular ideas we have of them*. And since the extension, figure, number, and motion of bodies of an observable bigness may be perceived at a distance *by the sight*, it is evident some singly imperceptible bodies must come from them to the eyes, and thereby convey to the brain some *motion* which produces these *ideas* which we have of them in us.

13. *How secondary.* 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*, namely, *by the operation of insensible particles on our senses*. For it being manifest that there are bodies and good store of bodies, each of which are so small that we cannot, by any of

our senses, discover either their bulk, figure, or motion as is evident in the particles of the air and water, and others extremely smaller than those, perhaps as much smaller than the particles of air and water as the particles of air and water are smaller than peas or hailstones. Let us suppose at present that the different motions and figures, bulk and number of such particles, affecting the several organs of our senses, produce in us those different sensations which we have from the colors and smells of bodies—e.g., that a violet, by the impulse of such insensible particles of matter of peculiar figures and bulks and in different degrees and modifications of their motions, causes the *ideas* of the blue color and sweet scent of that flower to be produced in our minds—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* has no resemblance.

14. What I have said concerning *colors* and *smells* may be understood also of *tastes* and *sounds*, and *other the like sensible qualities* which, whatever reality we by mistake attribute to them, are in truth nothing in the objects themselves but powers to produce various sensations in us, and *depend on those primary qualities*, namely, bulk, figure, texture, and motion of parts, as I have said.

15. *Ideas of primary qualities are resemblances; of secondary, not.* From which I think it easy to draw this observation that the *ideas of primary qualities* of bodies *are resemblances* of them and their patterns do really exist in the bodies themselves, but the *ideas produced* in us by these *secondary qualities* have no resemblance of them at all. There is nothing like our *ideas* existing in the bodies themselves. 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.

16. *Flame* is denominated *hot* and *light*; *snow*, *white* and *cold*; and *manna*, *white* and *sweet*, from the *ideas* they produce in us. Which qualities are commonly thought to be the same in those bodies that

those *ideas* are in us, the one the perfect resemblance of the other, as they are in a mirror, and it would by most men be judged very extravagant if one should say otherwise. And yet he who will consider that *the same fire* that, at one distance *produces* in us the sensation of *warmth*, does at a nearer approach produce in us the far different sensation of *pain*, ought to consider himself what reason he has to say that his *idea* of *warmth*, which was produced in him by the fire, is actually *in the fire*; and his *idea* of *pain*, which the same fire produced in him the same way, is *not* in the fire. Why are whiteness and coldness in snow, and pain not, when it produces the one and the other *idea* in us, and can do neither but by the bulk, figure, number, and motion of its solid parts?

17. The particular *bulk, number, figure, and motion of the parts of fire or snow are really in them*, whether anyone's senses perceive them or not. And therefore they may be called *real qualities*, because they really exist in those bodies. But *light, heat, whiteness or coldness, are no more really in them than sickness or pain is in manna*. Take away the sensation of them; let the eyes not see light, or colors, nor the ears hear sounds; let the palate not taste, nor the nose smell; and all colors, tastes, odors, and sounds as they are such particular *ideas* vanish and cease, and are reduced to their causes, i.e., bulk, figure, and motion of parts.

18. A piece of *manna* of a sensible bulk is able to produce in us the *idea* of a round or square figure and, by being removed from one place to another, the *idea* of motion. This *idea* of motion represents it as it really is in the *manna* moving. A circle or square is the same, whether in *idea* or existence, in the mind or in the *manna*; and this both *motion and figure are really in the manna*, whether we take notice of them or not. This everybody is ready to agree to. Besides, *manna*, by the bulk, figure, texture, and motion of its parts, has a power to produce the sensations of sickness and sometimes of acute pains or gripings in us. That these *ideas of sickness and pain are not in the manna* but effects of its operations on us, and are nowhere when we do not feel them, this also everyone readily agrees to. And yet men are hardly to be brought to think that *sweetness and whiteness are not*

really in *manna*; which are but the effects of the operations of *manna* by the motion, size, and figure of its particles on the eyes and palate, as the pain and sickness caused by *manna* are confessedly nothing but the effects of its operations on the stomach and guts, by the size, motion, and figure of its insensible parts (for by nothing else can a body operate, as has been proved). As if it could not operate on the eyes and palate, and thereby produce in the mind particular distinct *ideas* which in itself it does not have, as well as we allow it can operate on the guts and stomach, and thereby produce distinct *ideas* which in itself it does not have—these *ideas* being all effects of the operations of *manna* on several parts of our bodies by the size, figure, number, and motion of its parts. Why those produced by the eyes and palate should rather be thought to be really in the *manna* than those produced by the stomach and guts, or why the pain and sickness, *ideas* that are the effect of *manna*, should be thought to be nowhere when they are not felt, and yet the sweetness and whiteness, effects of the same *manna* on other parts of the body by ways equally as unknown, should be thought to exist in the *manna* when they are not seen or tasted, would need some reason to explain.

19. Let us consider the red and white colors in *porphyry*. Hinder light from striking on it, and its colors vanish; it no longer produces any such *ideas* in us. Upon the return of light, it produces these appearances on us again. Can anyone think any real alterations are made in the *porphyry* by the presence or absence of light, and that those *ideas* of whiteness and redness are really in *porphyry* in the light, when it is plain it has no color in the dark? It has, indeed, such a configuration of particles, both night and day, as are apt, by the rays of light rebounding from some parts of that hard stone, to produce in us the *idea* of redness and from others the *idea* of whiteness; but whiteness or redness are not in it at any time but such a texture that has the power to produce such a sensation in us.

20. Pound an almond, and the clear white color will be altered into a dirty one and the sweet taste into an oily one. What real alteration can the beating

of the pestle make in any body but an alteration of the texture of it?

21. *Ideas* being thus distinguished and understood, we may be able to give an account how the same water, at the same time, may produce the *idea* of cold by one hand and of heat by the other, whereas it is impossible that the same water, if those *ideas* were really in it, should at the same time be both hot and cold. For if we imagine *warmth*, as it is in our hands, to be nothing but a certain sort and degree of motion in the minute particles of our nerves or animal spirits, we may understand how it is possible that the same water may, at the same time, produce the sensations of heat in one hand and cold in the other; which yet figure never does that, never producing the *idea* of a square by one hand, which has produced the *idea* of a globe by another. But if the sensation of heat and cold are nothing but the increase or diminution of the motion of the minute parts of our bodies caused by the corpuscles of any other body, it is easy to be understood that, if that motion is greater in one hand than in the other, if a body is applied to the two hands, which has in its minute particles a greater motion than in those of one of the hands, and a less than in those of the other, it will increase the motion of the one hand and lessen it in the other, and so cause the different sensations of heat and cold that depend on it.

22. I have, in what just goes before, been engaged in physical inquiries a little further than perhaps I intended. But it being necessary to make the nature of sensation a little understood and to make the difference between the qualities in bodies and the *ideas* produced by them in the mind to be distinctly conceived, without which it would be impossible to discourse intelligibly of them, I hope I shall be pardoned this little excursion into natural philosophy, it being necessary in our present inquiry to distinguish the primary and real qualities of bodies which are always in them (namely, solidity, extension, figure, number, and motion, or rest, and are sometimes perceived by us, namely, when the bodies they are in are big enough singly to be discerned) from those secondary and imputed qualities which are but the powers of several combinations of those primary ones, when

they operate without being distinctly discerned; by which we may also come to know what *ideas* are and what are not resemblances of something really existing in the bodies we denominate from them.

23. The *qualities* then that are in *bodies* rightly considered are of *three sorts*.

First, the *bulk, figure, number, situation, and motion, or rest* of their solid parts. Those are in them, whether we perceive them or not; and when they are of that size that we can discover them, we have by these an *idea* of the thing as it is in itself, as is plain in artificial things. These I call *primary qualities*.

Secondly, the *power* that is in any body by reason of its insensible *primary qualities* to operate after a peculiar manner on any of our senses and thereby produce in us the *different ideas* of several colors, sounds, smells, tastes, etc. These are usually called sensible qualities.

Thirdly, 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 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. These are usually called powers.

The first of these, as has been said, I think, may be properly called *real, original, or primary qualities*, because they are in the things themselves, whether they are perceived or not. And upon their different modifications it is that the secondary qualities depend.

The other two are only powers to act differently upon other things, which powers result from the different modifications of those primary qualities.

24. *Reason of our mistake in this.* But though the two latter sorts of *qualities* are powers barely and nothing but powers, relating to several other bodies and resulting from the different modifications of the original qualities, yet they are generally otherwise thought of. For the *second sort*, namely, the powers to produce several *ideas* in us by our senses, are looked upon as *real qualities in the things* thus affecting us. But the *third sort* are called and esteemed barely powers—e.g., the *idea* of heat or light which we receive by our eyes or touch from the sun are commonly thought *real qualities*, existing in the sun, and something more

than mere powers in it. But when we consider the sun, in reference to wax which it melts or blanches, we look on the whiteness and softness produced in the wax, not as qualities in the sun, but effects produced by powers in it. Whereas, if rightly considered, these qualities of light and warmth, which are perceptions in me when I am warmed or enlightened by the sun, are no otherwise in the sun than the changes made in the wax, when it is blanched or melted, are in the sun. They are all of them equally powers in the sun, depending on its primary qualities, by which it is able, in the one case, so to alter the bulk, figure, texture, or motion of some of the insensible parts of my eyes or hands as thereby to produce in me the *idea* of light or heat, and in the other it is able so to alter the bulk, figure, texture, or motion of the insensible parts of the wax as to make them fit to produce in me the distinct *ideas* of white and fluid.

25. The reason why the one is ordinarily taken for *real qualities* and the other only for *bare powers* seems to be, because the *ideas* we have of distinct colors, sounds, etc. containing nothing at all in them of bulk, figure, or motion, we are not apt to think them the effects of these primary qualities, which do not appear to our senses to operate in their production, and with which they do not have any apparent congruity or conceivable connection. Hence it is that we are so ready to imagine that those *ideas* 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, etc. But in the other case, in the operations of bodies changing the qualities one of another, we plainly discover that the quality produced has commonly no resemblance with anything in the thing producing it, for which reason we look on it as a bare effect of power. For though receiving the *idea* of heat or light from the sun, we are apt to think it is a perception and resemblance of such a quality in the sun, yet when we see wax, or a fair face, receive change of color from the sun, we cannot imagine that to be the reception or resemblance of anything in the sun, because we do not find those

different colors in the sun itself. For our senses being able to observe a likeness or unlikeness of sensible qualities in two different external objects, we readily enough conclude the production of any sensible quality, in any subject, to be an effect of bare power and not the communication of any quality which was really in the efficient, when we find no such sensible quality in the thing that produced it. But our senses not being able to discover any unlikeness between the *idea* produced in us and the quality of the object producing it, we are apt to imagine that our *ideas* are resemblances of something in the objects and not the effects of certain powers placed in the modification of their primary qualities, with which primary qualities the *ideas* produced in us have no resemblance.

26. *Secondary qualities two-fold; first, immediately perceivable; secondly, mediately perceivable.* To conclude, besides those before mentioned *primary qualities* in bodies, namely, bulk, figure, extension, number, and motion of their solid parts, all the rest by which we take notice of bodies and distinguish them one from another are nothing else but several powers in them depending on those primary qualities, by which 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*.

Chapter IX. Of Perception.

1. *It is the first simple idea of reflection.* Perception, as it is the first faculty of the mind exercised about our *ideas*; so it is the first and simplest *idea* we have from reflection, and is by some called thinking in general. Though thinking, in the propriety of the *English* tongue, signifies that sort of operation in the mind about its *ideas* in which the mind is active, where it, with some degree of voluntary attention, considers anything. For in bare naked *perception*, the mind is for the most part only passive. And what it perceives, it cannot avoid perceiving.

2. *Perception is only when the mind receives the impression.* What *perception* is everyone will know better by reflecting on what he does himself when he sees, hears, feels, etc., or thinks, than by any discourse of mine. Whoever reflects on what passes in his own mind cannot miss it. And if he does not reflect, all the words in the world cannot make him have any notion of it.

3. This is certain, that whatever alterations are made in the body, if they do not reach the mind, whatever impressions are made on the outward parts, if they are not taken notice of within, there is no perception. Fire may burn our bodies with no other effect than it does a billet, unless the motion is continued to the brain and there the sense of heat, or *idea* of pain, is produced in the mind—in what consists *actual perception*.

4. How often may a man observe in himself that while 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*, though 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 *whenever there is sense or perception, there some idea is actually produced and present in the understanding*.

5. *Children, though they have ideas in the womb, have none innate.* Therefore, I do not doubt but *children*, by the exercise of their senses about objects that affect them *in the womb*, receive some few *ideas* before they are born, as the unavoidable effects either of the bodies that surround them or else of those wants or diseases they suffer; among which (if one may conjecture concerning things not very capable