

George Berkeley, from *A Treatise Concerning the Principles of Human Knowledge*, §34-end

34. Before we proceed any farther it is necessary we spend some time in answering objections which may probably be made against the principles we have hitherto laid down. In doing of which, if I seem too prolix to those of quick apprehensions, I hope it may be pardoned, since all men do not equally apprehend things of this nature, and I am willing to be understood by every one.

First, then, it will be objected that by the foregoing principles all that is real and substantial in nature is banished out of the world, and instead thereof a chimerical scheme of ideas takes place. All things that exist, exist only in the mind, that is, they are purely notional. What therefore becomes of the sun, moon and stars? What must we think of houses, rivers, mountains, trees, stones; nay, even of our own bodies? Are all these but so many chimeras and illusions on the fancy? To all which, and whatever else of the same sort may be objected, I answer, that by the principles premised we are not deprived of any one thing in nature. Whatever we see, feel, hear, or anywise conceive or understand remains as secure as ever, and is as real as ever. There is a *rerum natura*, and the distinction between realities and chimeras retains its full force. This is evident from §§29, 30, and 33, where we have shown what is meant by *real things* in opposition to *chimeras* or ideas of our own framing; but then they both equally exist in the mind, and in that sense they are alike *ideas*.

35. I do not argue against the existence of any one thing that we can apprehend either by sense or reflection. That the things I see with my eyes and touch with my hands do exist, really exist, I make not the least question. The only thing whose existence we deny is that which philosophers call matter or corporeal substance. And in doing of this there is no damage done to the rest of mankind, who, I dare say, will never miss it. The atheist indeed will want the color of an empty name to support his impiety; and the Philosophers may possibly find they have lost a great handle for trifling and disputation.

36. If any man thinks this detracts from the existence or reality of things, he is very far from understanding what has been premised in the plainest terms I could think of. Take here an abstract of what has been said: there are spiritual substances, minds, or human souls, which will or excite ideas in themselves at pleasure; but these are faint, weak, and unsteady in respect of others they perceive by sense- which, being impressed upon them according to certain rules or laws of nature, speak themselves the effects of a mind more powerful and wise than human spirits. These latter are said to have more *reality* in them than the former, by which is meant that they are more affecting, orderly, and distinct, and that they are not fictions of the mind perceiving them. And in

this sense the sun that I see by day is the real sun, and that which I imagine by night is the idea of the former. In the sense here given of *reality* it is evident that every vegetable, star, mineral, and in general each part of the mundane system, is as much a *real being* by our principles as by any other. Whether others mean anything by the term *reality* different from what I do, I entreat them to look into their own thoughts and see.

37. I will be urged that thus much at least is true, to wit, that we take away all corporeal substances. To this my answer is, that if the word *substance* be taken in the vulgar sense, for a combination of sensible qualities, such as extension, solidity, weight, and the like; this we cannot be accused of taking away: but if it be taken in a philosophic sense for the support of accidents or qualities without the mind: then indeed I acknowledge that we take it away, if one may be said to take away that which never had any existence, not even in the imagination.

38. But after all, say you, it sounds very harsh to say we eat and drink ideas, and are clothed with ideas. I acknowledge it does so, the word *idea* not being used in common discourse to signify the several combinations of sensible qualities which are called *things*; and it is certain that any expression which varies from the familiar use of language will seem harsh and ridiculous. But this does not concern the truth of the proposition, which in other words is no more than to say, we are fed and clothed with those things which we perceive immediately by our senses. The hardness or softness, the color, taste, warmth, figure, or suchlike qualities, which combined together constitute the several sorts of victuals and apparel, have been shown to exist only in the mind that perceives them; and this is all that is meant by calling them *ideas*; which word if it was as ordinarily used as *thing*, would sound no harsher nor more ridiculous than it. I am not for disputing about the propriety, but the truth of the expression. If therefore you agree with me that we eat and drink and are clad with the immediate objects of sense, which cannot exist unperceived or without the mind, I shall readily grant it is more proper or conformable to custom that they should be called things rather than ideas.

39. If it be demanded why I make use of the word *idea*, and do not rather in compliance with custom call them things. I answer, I do it for two reasons: first, because the term *thing*, in contradistinction to *idea*, is generally supposed to denote somewhat existing without the mind; secondly, because *thing* has a more comprehensive signification than *idea*, including spirit or thinking things as well as ideas. Since therefore the objects of sense exist only in the mind, and are withal thoughtless and

inactive, I chose to mark them by the word *idea*, which implies those properties.

40. But, say what we can, some one perhaps may be apt to reply, he will still believe his senses, and never suffer any arguments, how plausible soever, to prevail over the certainty of them. Be it so; assert the evidence of sense as high as you please, we are willing to do the same. That what I see, hear, and feel does exist, that is to say, is perceived by me, I no more doubt than I do of my own being. But I do not see how the testimony of sense can be alleged as a proof for the existence of anything which is not perceived by sense. We are not for having any man turn *skeptic* and disbelieve his senses; on the contrary, we give them all the stress and assurance imaginable; nor are there any principles more opposite to skepticism than those we have laid down, as shall be hereafter clearly shown.

41. Secondly, it will be objected that there is a great difference between real fire for instance, and the idea of fire, between dreaming or imagining oneself burnt, and actually being so: if you suspect it to be only the idea of fire which you see, do but put your hand into it and you will be convinced with a witness. This and the like may be urged in opposition to our tenets. To all which the answer is evident from what has been already said; and I shall only add in this place, that if real fire be very different from the idea of fire, so also is the real pain that it occasions very different from the idea of the same pain, and yet nobody will pretend that real pain either is, or can possibly be, in an unperceiving thing, or without the mind, any more than its idea.

42. Thirdly, it will be objected that we see things actually without or at distance from us, and which consequently do not exist in the mind; it being absurd that those things which are seen at the distance of several miles should be as near to us as our own thoughts. In answer to this, I desire it may be considered that in a dream we do oft perceive things as existing at a great distance off, and yet for all that, those things are acknowledged to have their existence only in the mind.

43. But, for the fuller clearing of this point, it may be worth while to consider how it is that we perceive distance and things placed at a distance by sight. For, that we should in truth see external space, and bodies actually existing in it, some nearer, others farther off, seems to carry with it some opposition to what has been said of their existing nowhere without the mind. The consideration of this difficulty it was that gave birth to my *Essay towards a New Theory of Vision*, which was published not long since, wherein it is shown that *distance* or outness is neither immediately of itself perceived by sight, nor yet apprehended or judged of by lines and angles, or anything that has a necessary connexion with it; but that it is only suggested to our thoughts by certain visible ideas and sensations attending vision, which in their own nature have no manner of

similitude or relation either with distance or things placed at a distance; but, by a connexion taught us by experience, they come to signify and suggest them to us, after the same manner that words of any language suggest the ideas they are made to stand for; insomuch that a man born blind and afterwards made to see, would not, at first sight, think the things he saw to be without his mind, or at any distance from him. See §41 of the forementioned treatise.

44. The ideas of sight and touch make two species entirely distinct and heterogeneous. The former are marks and prognostics of the latter. That the proper objects of sight neither exist without mind, nor are the images of external things, was shown even in that treatise. Though throughout the same the contrary be supposed true of tangible objects, not that to suppose that vulgar error was necessary for establishing the notion therein laid down; but because it was beside my purpose to examine and refute it in a discourse concerning *vision*. So that in strict truth the ideas of sight, when we apprehend by them distance and things placed at a distance, do not suggest or mark out to us things actually existing at a distance, but only admonish us what ideas of touch will be imprinted in our minds at such and such distances of time, and in consequence of such or such actions. It is, I say, evident from what has been said in the foregoing parts of this Treatise, and in §147 and elsewhere of the Essay concerning Vision, that visible ideas are the Language whereby the Governing spirit on whom we depend informs us what tangible ideas he is about to imprint upon us, in case we excite this or that motion in our own bodies. But for a fuller information in this point I refer to the Essay itself.

45. Fourthly, it will be objected that from the foregoing principles it follows things are every moment annihilated and created anew. The objects of sense exist only when they are perceived; the trees therefore are in the garden, or the chairs in the parlour, no longer than while there is somebody by to perceive them. Upon shutting my eyes all the furniture in the room is reduced to nothing, and barely upon opening them it is again created. In answer to all which, I refer the reader to what has been said in §§3, 4, etc., and desire he will consider whether he means anything by the actual existence of an idea distinct from its being perceived. For my part, after the nicest inquiry I could make, I am not able to discover that anything else is meant by those words; and I once more entreat the reader to sound his own thoughts, and not suffer himself to be imposed on by words. If he can conceive it possible either for his ideas or their archetypes to exist without being perceived, then I give up the cause; but if he cannot, he will acknowledge it is unreasonable for him to stand up in defense of he knows not what, and pretend to charge on me as an absurdity the not assenting to those propositions which at bottom have no meaning in them.

46. It will not be amiss to observe how far the received principles of philosophy are themselves chargeable with those pretended absurdities. It is thought strangely absurd that upon closing my eyelids all the visible objects around me should be reduced to nothing; and yet is not this what philosophers commonly acknowledge, when they agree on all hands that light and colors, which alone are the proper and immediate objects of sight, are mere sensations that exist no longer than they are perceived? Again, it may to some perhaps seem very incredible that things should be every moment creating, yet this very notion is commonly taught in the schools. For the *Schoolmen*, though they acknowledge the existence of matter, and that the whole mundane fabric is framed out of it, are nevertheless of opinion that it cannot subsist without the divine conservation, which by them is expounded to be a continual creation.

47. Farther, a little thought will discover to us that though we allow the existence of matter or corporeal substance, yet it will unavoidably follow, from the principles which are now generally admitted, that the particular bodies, of what kind soever, do none of them exist whilst they are not perceived. For, it is evident from § 11 and the following sections, that the matter philosophers contend for is an incomprehensible somewhat, which has none of those particular qualities whereby the bodies falling under our senses are distinguished one from another. But, to make this more plain, it must be remarked that the infinite divisibility of matter is now universally allowed, at least by the most approved and considerable philosophers, who on the received principles demonstrate it beyond all exception. Hence, it follows there is an infinite number of parts in each particle of matter which are not perceived by sense. The reason therefore that any particular body seems to be of a finite magnitude, or exhibits only a finite number of parts to sense, is, not because it contains no more, since in itself it contains an infinite number of parts, but because the sense is not acute enough to discern them. In proportion therefore as the sense is rendered more acute, it perceives a greater number of parts in the object, that is, the object appears greater, and its figure varies, those parts in its extremities which were before unperceivable appearing now to bound it in very different lines and angles from those perceived by an obtuser sense. And at length, after various changes of size and shape, when the sense becomes infinitely acute the body shall seem infinite. During all which there is no alteration in the body, but only in the sense. Each body therefore, considered in itself, is infinitely extended, and consequently void of all shape or figure. From which it follows that, though we should grant the existence of matter to be never so certain, yet it is withal as certain, the materialists themselves are by their own principles forced to acknowledge, that neither the particular bodies perceived by sense, nor anything like them, exists without the mind. Matter, I say, and each particle thereof, is according to them infinite and shapeless, and it is the

mind that frames all that variety of bodies which compose the visible world, any one whereof does not exist longer than it is perceived.

48. If we consider it, the objection proposed in § 45 will not be found reasonably charged on the principles we have premised, so as in truth to make any objection at all against our notions. For, though we hold indeed the objects of sense to be nothing else but ideas which cannot exist unperceived; yet we may not hence conclude they have no existence except only while they are perceived by us, since there may be some other spirit that perceives them though we do not. Wherever bodies are said to have no existence without the mind, I would not be understood to mean this or that particular mind, but all minds whatsoever. It does not therefore follow from the foregoing principles that bodies are annihilated and created every moment, or exist not at all during the intervals between our perception of them.

49. Fifthly, it may perhaps be objected that if extension and figure exist only in the mind, it follows that the mind is extended and figured; since extension is a mode or attribute which (to speak with the schools) is predicated of the subject in which it exists. I answer, those qualities are in the mind only as they are perceived by it, that is, not by way of *mode* or *attribute*, but only by way of *idea*; and it no more follows the soul or mind is extended, because extension exists in it alone, than it does that it is red or blue, because those colors are on all hands acknowledged to exist in it, and nowhere else. As to what philosophers say of subject and mode, that seems very groundless and unintelligible. For instance, in this proposition “a die is hard, extended, and square,” they will have it that the word *die* denotes a subject or substance, distinct from the hardness, extension, and figure which are predicated of it, and in which they exist. This I cannot comprehend: to me a die seems to be nothing distinct from those things which are termed its modes or accidents. And, to say a die is hard, extended, and square is not to attribute those qualities to a subject distinct from and supporting them, but only an explication of the meaning of the word *die*.

50. Sixthly, you will say there have been a great many things explained by matter and motion; take away these and you destroy the whole corpuscular philosophy, and undermine those mechanical principles which have been applied with so much success to account for the *phenomena*. In short, whatever advances have been made, either by ancient or modern philosophers, in the study of nature do all proceed on the supposition that corporeal substance or matter does really exist. To this I answer that there is not any one *phenomenon* explained on that supposition which may not as well be explained without it, as might easily be made appear by an induction of particulars. To explain the *phenomena*, is all one as to shew why, upon such and such occasions, we are affected with such and such ideas. But how matter should operate on a spirit, or produce any idea in it, is

what no philosopher will pretend to explain; it is therefore evident there can be no use of matter in natural philosophy. Besides, they who attempt to account for things do it not by corporeal substance, but by figure, motion, and other qualities, which are in truth no more than mere ideas, and, therefore, cannot be the cause of anything, as has been already shown. See §25.

51. Seventhly, it will upon this be demanded whether it does not seem absurd to take away natural causes, and ascribe everything to the immediate operation of spirits? We must no longer say upon these principles that fire heats, or water cools, but that a spirit heats, and so forth. Would not a man be deservedly laughed at, who should talk after this manner? I answer, he would so; in such things we ought to *think with the learned, and speak with the vulgar*. They who to demonstration are convinced of the truth of the *Copernican* system do nevertheless say the sun rises, the sun sets, or comes to the meridian; and if they affected a contrary style in common talk it would without doubt appear very ridiculous. A little reflection on what is here said will make it manifest that the common use of language would receive no manner of alteration or disturbance from the admission of our tenets.

52. In the ordinary affairs of life, any phrases may be retained, so long as they excite in us proper sentiments, or dispositions to act in such a manner as is necessary for our well-being, how false soever they may be if taken in a strict and speculative sense. Nay, this is unavoidable, since, propriety being regulated by custom, language is suited to the received opinions, which are not always the truest. Hence it is impossible, even in the most rigid, philosophic reasonings, so far to alter the bent and genius of the tongue we speak, as never to give a handle for cavillers to pretend difficulties and inconsistencies. But, a fair and ingenuous reader will collect the sense from the scope and tenor and connexion of a discourse, making allowances for those inaccurate modes of speech which use has made inevitable.

53. As to the opinion that there are no Corporeal Causes, this has been heretofore maintained by some of the Schoolmen, as it is of late by others among the modern philosophers, who though they allow matter to exist, yet will have God alone to be the immediate efficient cause of all things. These men saw that amongst all the objects of sense there was none which had any power or activity included in it; and that by consequence this was likewise true of whatever bodies they supposed to exist without the mind, like unto the immediate objects of sense. But then, that they should suppose an innumerable multitude of created beings, which they acknowledge are not capable of producing any one effect in nature, and which therefore are made to no manner of purpose, since God might have done everything as well without them: this I say, though we should allow it possible, must yet be a very unaccountable and extravagant supposition.

54. In the eighth place, the universal concurrent assent of mankind may be thought by some an invincible argument in behalf of matter, or the existence of external things. Must we suppose the whole world to be mistaken? And if so, what cause can be assigned of so widespread and predominant an error? I answer, first, that, upon a narrow inquiry, it will not perhaps be found so many as is imagined do really believe the existence of matter or things without the mind. Strictly speaking, to believe that which involves a contradiction, or has no meaning in it, is impossible; and whether the foregoing expressions are not of that sort, I refer it to the impartial examination of the reader. In one sense, indeed, men may be said to believe that matter exists, that is, they act as if the immediate cause of their sensations, which affects them every moment, and is so nearly present to them, were some senseless unthinking being. But, that they should clearly apprehend any meaning marked by those words, and form thereof a settled speculative opinion, is what I am not able to conceive. This is not the only instance wherein men impose upon themselves, by imagining they believe those propositions which they have often heard, though at bottom they have no meaning in them.

55. But secondly, though we should grant a notion to be never so universally and steadfastly adhered to, yet this is weak argument of its truth to whoever considers what a vast number of prejudices and false opinions are everywhere embraced with the utmost tenaciousness, by the unreflecting (which are the far greater) part of mankind. There was a time when the *antipodes* and motion of the earth were looked upon as monstrous absurdities even by men of learning: and if it be considered what a small proportion they bear to the rest of mankind, we shall find that at this day those notions have gained but a very inconsiderable footing in the world.

56. But it is demanded that we assign a cause of this prejudice, and account for its obtaining in the world. To this I answer, that men knowing they perceived several ideas, whereof they themselves were not the authors- as not being excited from within nor depending on the operation of their wills- this made them maintain those ideas, or objects of perception had an existence independent of and without the mind, without ever dreaming that a contradiction was involved in those words. But, philosophers having plainly seen that the immediate objects of perception do not exist without the mind, they in some degree corrected the mistake of the vulgar; but at the same time run into another which seems no less absurd, to wit, that there are certain objects really existing without the mind, or having a subsistence distinct from being perceived, of which our ideas are only images or resemblances, imprinted by those objects on the mind. And this notion of the philosophers owes its origin to the same cause with the former, namely, their being conscious that they were not

the authors of their own sensations, which they evidently knew were imprinted from without, and which therefore must have some cause distinct from the minds on which they are imprinted.

57. But why they should suppose the ideas of sense to be excited in us by things in their likeness, and not rather have recourse to *spirit* which alone can act, may be accounted for, first, because they were not aware of the repugnancy there is, as well in supposing things like unto our ideas existing without, as in attributing to them power or activity. Secondly, because the Supreme spirit which excites those ideas in our minds, is not marked out and limited to our view by any particular finite collection of sensible ideas, as human agents are by their size, complexion, limbs, and motions. And thirdly, because His operations are regular and uniform. Whenever the course of nature is interrupted by a miracle, men are ready to own the presence of a superior agent. But, when we see things go on in the ordinary course they do not excite in us any reflection; their order and concatenation, though it be an argument of the greatest wisdom, power, and goodness in their creator, is yet so constant and familiar to us that we do not think them the immediate effects of a free *spirit*; especially since inconsistency and mutability in acting, though it be an imperfection, is looked on as a mark of *freedom*.

58. Tenthly, it will be objected that the notions we advance are inconsistent with several sound truths in philosophy and mathematics. For example, the motion of the earth is now universally admitted by astronomers as a truth grounded on the clearest and most convincing reasons. But, on the foregoing principles, there can be no such thing. For, motion being only an idea, it follows that if it be not perceived it exists not; but the motion of the earth is not perceived by sense. I answer, that tenet, if rightly understood, will be found to agree with the principles we have premised; for, the question whether the earth moves or no amounts in reality to no more than this, to wit, whether we have reason to conclude, from what has been observed by astronomers, that if we were placed in such and such circumstances, and such or such a position and distance both from the earth and sun, we should perceive the former to move among the choir of the planets, and appearing in all respects like one of them; and this, by the established rules of nature which we have no reason to mistrust, is reasonably collected from the phenomena.

59. We may, from the experience we have had of the train and succession of ideas in our minds, often make, I will not say uncertain conjectures, but sure and well-grounded predictions concerning the ideas we shall be affected with pursuant to a great train of actions, and be enabled to pass a right judgment of what would have appeared to us, in case we were placed in circumstances very different from those we are in at present. Herein consists the knowledge of nature, which may preserve its use and certainty very consistently with what has been

said. It will be easy to apply this to whatever objections of the like sort may be drawn from the magnitude of the stars, or any other discoveries in astronomy or nature.

60. In the eleventh place, it will be demanded to what purpose serves that curious organization of plants, and the animal mechanism in the parts of animals; might not vegetables grow, and shoot forth leaves of blossoms, and animals perform all their motions as well without as with all that variety of internal parts so elegantly contrived and put together; which, being ideas, have nothing powerful or operative in them, nor have any necessary connexion with the effects ascribed to them? If it be a spirit that immediately produces every effect by a *fiat* or act of his will, we must think all that is fine and artificial in the works, whether of man or nature, to be made in vain. By this doctrine, though an artist has made the spring and wheels, and every movement of a watch, and adjusted them in such a manner as he knew would produce the motions he designed, yet he must think all this done to no purpose, and that it is an Intelligence which directs the index, and points to the hour of the day. If so, why may not the Intelligence do it, without his being at the pains of making the movements and putting them together? Why does not an empty case serve as well as another? And how comes it to pass that whenever there is any fault in the going of a watch, there is some corresponding disorder to be found in the movements, which being mended by a skilful hand all is right again? The like may be said of all the clockwork of nature, great part whereof is so wonderfully fine and subtle as scarce to be discerned by the best microscope. In short, it will be asked, how, upon our principles, any tolerable account can be given, or any final cause assigned of an innumerable multitude of bodies and machines, framed with the most exquisite art, which in the common philosophy have very apposite uses assigned them, and serve to explain abundance of phenomena?

61. To all which I answer, first, that though there were some difficulties relating to the administration of Providence, and the uses by it assigned to the several parts of nature, which I could not solve by the foregoing principles, yet this objection could be of small weight against the truth and certainty of those things which may be proved *a priori*, with the utmost evidence and rigor of demonstration. Secondly, but neither are the received principles free from the like difficulties; for, it may still be demanded to what end God should take those roundabout methods of effecting things by instruments and machines, which no one can deny might have been effected by the mere command of His will without all that *apparatus*; nay, if we narrowly consider it, we shall find the objection may be retorted with greater force on those who hold the existence of those machines without of mind; for it has been made evident that solidity, bulk, figure, motion, and the like have no *activity* or *efficacy* in them, so as to be capable of producing any one effect in nature. See §25. Whoever therefore supposes them to

exist (allowing the supposition possible) when they are not perceived does it manifestly to no purpose; since the only use that is assigned to them, as they exist unperceived, is that they produce those perceivable effects which in truth cannot be ascribed to anything but spirit.

62. But, to come nigher the difficulty, it must be observed that though the fabrication of all those parts and organs be not absolutely necessary to the producing any effect, yet it is necessary to the producing of things in a constant regular way according to the laws of nature. There are certain general laws that run through the whole chain of natural effects; these are learned by the observation and study of nature, and are by men applied as well to the framing artificial things for the use and ornament of life as to the explaining various *phenomena*; which explication consists only in shewing the conformity any particular phenomenon has to the general laws of nature, or, which is the same thing, in discovering the *uniformity* there is in the production of natural effects; as will be evident to whoever shall attend to the several instances wherein philosophers pretend to account for appearances. That there is a great and conspicuous use in these regular constant methods of working observed by the supreme agent has been shown in §31. And it is no less visible that a particular size, figure, motion, and disposition of parts are necessary, though not absolutely to the producing any effect, yet to the producing it according to the standing mechanical laws of nature. Thus, for instance, it cannot be denied that God, or the intelligence that sustains and rules the ordinary course of things, might if He were minded to produce a miracle, cause all the motions on the dial-plate of a watch, though nobody had ever made the movements and put them in it: but yet, if He will act agreeably to the rules of mechanism, by Him for wise ends established and maintained in the creation, it is necessary that those actions of the watchmaker, whereby he makes the movements and rightly adjusts them, precede the production of the aforesaid motions; as also that any disorder in them be attended with the perception of some corresponding disorder in the movements, which being once corrected all is right again.

63. It may indeed on some occasions be necessary that the Author of nature display His overruling power in producing some appearance out of the ordinary series of things. Such exceptions from the general rules of nature are proper to surprise and awe men into an acknowledgement of the divine being; but then they are to be used but seldom, otherwise there is a plain reason why they should fail of that effect. Besides, God seems to choose the convincing our reason of His attributes by the works of nature, which discover so much harmony and contrivance in their make, and are such plain indications of wisdom and beneficence in their Author, rather than to astonish us into a belief of His being by anomalous and surprising events.

64. To set this matter in a yet clearer light, I shall observe that what has been objected in §60 amounts in reality to no more than this:- ideas are not anyhow and at random produced, there being a certain order and connexion between them, like to that of cause and effect; there are also several combinations of them made in a very regular and artificial manner, which seem like so many instruments in the hand of nature that, being hid as it were behind the scenes, have a secret operation in producing those appearances which are seen on the theatre of the world, being themselves discernible only to the curious eye of the philosopher. But, since one idea cannot be the cause of another, to what purpose is that connexion? And, since those instruments, being barely *inefficacious perceptions* in the mind, are not subservient to the production of natural effects, it is demanded why they are made; or, in other words, what reason can be assigned why God should make us, upon a close inspection into His works, behold so great variety of ideas so artfully laid together, and so much according to rule; it not being credible that He would be at the expense (if one may so speak) of all that art and regularity to no purpose.

65. To all which my answer is, first, that the connexion of ideas does not imply the relation of *cause* and *effect*, but only of a mark or *sign* with the thing *signified*. The fire which I see is not the cause of the pain I suffer upon my approaching it, but the mark that forewarns me of it. In like manner the noise that I hear is not the effect of this or that motion or collision of the ambient bodies, but the sign thereof. Secondly, the reason why ideas are formed into machines, that is, artificial and regular combinations, is the same with that for combining letters into words. That a few original ideas may be made to signify a great number of effects and actions, it is necessary they be variously combined together. And, to the end their use be permanent and universal, these combinations must be made by *rule*, and with *wise contrivance*. By this means abundance of information is conveyed unto us, concerning what we are to expect from such and such actions and what methods are proper to be taken for the exciting such and such ideas; which in effect is all that I conceive to be distinctly meant when it is said that, by discerning a figure, texture, and mechanism of the inward parts of bodies, whether natural or artificial, we may attain to know the several uses and properties depending thereon, or the nature of the thing.

66. Hence, it is evident that those things which, under the notion of a cause co-operating or concurring to the production of effects, are altogether inexplicable, and run us into great absurdities, may be very naturally explained, and have a proper and obvious use assigned to them, when they are considered only as marks or signs for our information. And it is the searching after and endeavoring to understand those signs instituted by the Author of nature, that ought to be the employment of the

natural philosopher; and not the pretending to explain things by corporeal causes, which doctrine seems to have too much estranged the minds of men from that active principle, that supreme and wise spirit *in whom we live, move, and have our being*.

67. In the twelfth place, it may perhaps be objected, that though it be clear from what has been said, that there can be no such thing as an inert, senseless, extended, solid, figured, movable substance existing without the mind, such as philosophers describe matter; yet, if any man shall leave out of his idea of *matter* the positive ideas of extension, figure, solidity and motion, and say that he means only by that word an inert, senseless substance, that exists without the mind or unperceived, which is the occasion of our ideas, or at the presence whereof God is pleased to excite ideas in us: it does not appear but that matter taken in this sense may possibly exist. In answer to which I say, first, that it seems no less absurd to suppose a substance without accidents, than it is to suppose accidents without a substance. But secondly, though we should grant this unknown substance may possibly exist, yet where can it be supposed to be? That it exists not in the mind is agreed; and that it exists not in place is no less certain- since all place or extension exists only in the mind, as has been already proved. It remains therefore that it exists nowhere at all.

68. Let us examine a little the description that is here given us of *matter*. It neither acts, nor perceives, nor is perceived; for this is all that is meant by saying it is an inert, senseless, unknown substance; which is a definition entirely made up of negatives, excepting only the relative notion of its standing under or supporting. But then it must be observed that it *supports* nothing at all, and how nearly this comes to the description of a *nonentity* I desire may be considered. But, say you, it is the *unknown occasion*, at the presence of which ideas are excited in us by the will of God. Now, I would fain know how anything can be present to us, which is neither perceivable by sense nor reflection, nor capable of producing any idea in our minds, nor is at all extended, nor has any form, nor exists in any place. The words *to be present*, when thus applied, must needs be taken in some abstract and strange meaning, and which I am not able to comprehend.

69. Again, let us examine what is meant by *occasion*. So far as I can gather from the common use of language, that word signifies either the agent which produces any effect, or else something that is observed to accompany or go before it in the ordinary course of things. But when it is applied to matter as above described, it can be taken in neither of those senses; for matter is said to be passive and inert, and so cannot be an agent or efficient cause. It is also unperceivable, as being devoid of all sensible qualities, and so cannot be the occasion of our perceptions in the latter sense: as when the burning my finger is said to be the occasion of the pain that attends it. What therefore can be meant by calling matter an

occasion? The term is either used in no sense at all, or else in some very distant from its received signification.

70. You will Perhaps say that matter, though it be not perceived by us, is nevertheless perceived by God, to whom it is the occasion of exciting ideas in our minds. For, say you, since we observe our sensations to be imprinted in an orderly and constant manner, it is but reasonable to suppose there are certain constant and regular occasions of their being produced. That is to say, that there are certain permanent and distinct parcels of matter, corresponding to our ideas, which, though they do not excite them in our minds, or anywise immediately affect us, as being altogether passive and unperceivable to us, they are nevertheless to God, by whom they are perceived, as it were so many occasions to remind Him when and what ideas to imprint on our minds; that so things may go on in a constant uniform manner.

71. In answer to this, I observe that, as the notion of matter is here stated, the question is no longer concerning the existence of a thing distinct from *spirit* and *idea*, from perceiving and being perceived; but whether there are not certain ideas of I know not what sort, in the mind of God which are so many marks or notes that direct Him how to produce sensations in our minds in a constant and regular method; much after the same manner as a musician is directed by the notes of music to produce that harmonious train and composition of sound which is called a *tune*, though they who hear the music do not perceive the notes, and may be entirely ignorant of them. But, this notion of matter seems too extravagant to deserve a confutation. Besides, it is in effect no objection against what we have advanced, viz. that there is no senseless unperceived *substance*.

72. If we follow the light of reason, we shall, from the constant uniform method of our sensations, collect the goodness and wisdom of the *spirit* who excites them in our minds; but this is all that I can see reasonably concluded from thence. To me, I say, it is evident that the being of a *spirit infinitely wise, good, and powerful* is abundantly sufficient to explain all the appearances of nature. But, as for *inert, senseless matter*, nothing that I perceive has any the least connexion with it, or leads to the thoughts of it. And I would fain see any one explain any the meanest *phenomenon* in nature by it, or shew any manner of reason, though in the lowest rank of probability, that he can have for its existence, or even make any tolerable sense or meaning of that supposition. For, as to its being an occasion, we have, I think, evidently shown that with regard to us it is no occasion. It remains therefore that it must be, if at all, the occasion to God of exciting ideas in us; and what this amounts to we have just now seen.

73. It is worth while to reflect a little on the motives which induced men to suppose the existence of material substance; that so having observed the gradual ceasing and expiration of those motives or reasons, we may

proportionably withdraw the assent that was grounded on them. First, therefore, it was thought that color, figure, motion, and the rest of the sensible qualities or accidents, did really exist without the mind; and for this reason it seemed needful to suppose some unthinking *substratum* or *substance* wherein they did exist, since they could not be conceived to exist by themselves. Afterwards, in process of time, men being convinced that colors, sounds, and the rest of the sensible, secondary qualities had no existence without the mind, they stripped this *substratum* or material substance of those qualities, leaving only the primary ones, figure, motion, and suchlike, which they still conceived to exist without the mind, and consequently to stand in need of a material support. But, it having been shown that none even of these can possibly exist otherwise than in a spirit or mind which perceives them it follows that we have no longer any reason to suppose the being of *matter*. Nay, that it is utterly impossible there should be any such thing, so long as that word is taken to denote an *unthinking substratum* of qualities or accidents wherein they exist without the mind.

74. But though it be allowed by the *materialists* themselves that matter was thought of only for the sake of supporting accidents, and, the reason entirely ceasing, one might expect the mind should naturally, and without any reluctance at all, quit the belief of what was solely grounded thereon; yet the prejudice is riveted so deeply in our thoughts, that we can scarce tell how to part with it, and are therefore inclined, since the *thing* itself is indefensible, at least to retain the *name*, which we apply to I know not what abstracted and indefinite notions of *being*, or *occasion*, though without any show of reason, at least so far as I can see. For, what is there on our part, or what do we perceive, amongst all the ideas, sensations, notions which are imprinted on our minds, either by sense or reflection, from whence may be inferred the existence of an inert, thoughtless, unperceived occasion? and, on the other hand, on the part of an *all-sufficient spirit*, what can there be that should make us believe or even suspect He is *directed* by an inert occasion to excite ideas in our minds?

75. It is a very extraordinary instance of the force of prejudice, and much to be lamented, that the mind of man retains so great a fondness, against all the evidence of reason, for a stupid thoughtless *somewhat*, by the interposition whereof it would as it were screen itself from the Providence of God, and remove it farther off from the affairs of the world. But, though we do the utmost we can to secure the belief of *matter*, though, when reason forsakes us, we endeavor to support our opinion on the bare possibility of the thing, and though we indulge ourselves in the full scope of an imagination not regulated by reason to make out that poor *possibility*, yet the upshot of all is, that there are certain *unknown ideas* in the mind of God; for this, if anything, is all that I conceive to be meant by *occasion* with regard to God.

And this at the bottom is no longer contending for the *thing*, but for the *name*.

76. Whether therefore there are such ideas in the mind of God, and whether they may be called by the name *matter*, I shall not dispute. But, if you stick to the notion of an unthinking substance or support of extension, motion, and other sensible qualities, then to me it is most evidently impossible there should be any such thing, since it is a plain repugnancy that those qualities should exist in or be supported by an unperceiving substance.

77. But, say you, though it be granted that there is no thoughtless support of extension and the other qualities or accidents which we perceive, yet there may perhaps be some inert, unperceiving substance or *substratum* of some other qualities, as incomprehensible to us as colors are to a man born blind, because we have not a sense adapted to them. But, if we had a new sense, we should possibly no more doubt of their existence than a blind man made to see does of the existence of light and colors. I answer, first, if what you mean by the word *matter* be only the unknown support of unknown qualities, it is no matter whether there is such a thing or no, since it no way concerns us; and I do not see the advantage there is in disputing about what we know not *what*, and we know not *why*.

78. But, secondly, if we had a new sense it could only furnish us with new ideas or sensations; and then we should have the same reason against their existing in an unperceiving substance that has been already offered with relation to figure, motion, color and the like. Qualities, as has been shown, are nothing else but *sensations* or *ideas*, which exist only in a *mind* perceiving them; and this is true not only of the ideas we are acquainted with at present, but likewise of all possible ideas whatsoever.

79. But, you will insist, what if I have no reason to believe the existence of matter? What if I cannot assign any use to it or explain anything by it, or even conceive what is meant by that word? Yet still it is no contradiction to say that matter exists, and that this matter is *in general* a *substance*, or *occasion of ideas*; though indeed to go about to unfold the meaning or adhere to any particular explication of those words may be attended with great difficulties. I answer, when words are used without a meaning, you may put them together as you please without danger of running into a contradiction. You may say, for example, that *twice two* is equal to *seven*, so long as you declare you do not take the words of that proposition in their usual acceptation but for marks of you know not what. And, by the same reason, you may say there is an inert thoughtless substance without accidents which is the occasion of our ideas. And we shall understand just as much by one proposition as the other.

80. In the last place, you will say, what if we give up the cause of material substance, and stand to it that matter is an unknown *somewhat*, neither substance nor accident, spirit nor idea, inert, thoughtless, indivisible, immovable, unextended, existing in no place. For, say you, whatever may be urged against *substance* or *occasion*, or any other positive or relative notion of matter, has no place at all, so long as this *negative* definition of matter is adhered to. I answer, you may, if so it shall seem good, use the word *matter* in the same sense as other men use *nothing*, and so make those terms convertible in your style. For, after all, this is what appears to me to be the result of that definition, the parts whereof when I consider with attention, either collectively or separate from each other, I do not find that there is any kind of effect or impression made on my mind different from what is excited by the term *nothing*.

81. You will reply, perhaps, that in the fore-said definition is included what does sufficiently distinguish it from nothing- the positive abstract idea of *quiddity*, *entity*, or *existence*. I own, indeed, that those who pretend to the faculty of framing abstract general ideas do talk as if they had such an idea, which is, say they, the most abstract and general notion of all; that is, to me, the most incomprehensible of all others. That there are a great variety of spirits of different orders and capacities, whose faculties both in number and extent are far exceeding those the Author of my being has bestowed on me, I see no reason to deny. And for me to pretend to determine by my own few, stinted narrow inlets of perception, what ideas the inexhaustible power of the supreme spirit may imprint upon them were certainly the utmost folly and presumption- since there may be, for aught that I know, innumerable sorts of ideas or sensations, as different from one another, and from all that I have perceived, as colors are from sounds. But, how ready soever I may be to acknowledge the scantiness of my comprehension with regard to the endless variety of spirits and ideas that may possibly exist, yet for any one to pretend to a notion of entity or existence, *abstracted* from *spirit* and *idea*, from perceived and being perceived, is, I suspect, a downright repugnancy and trifling with words.- It remains that we consider the objections which may possibly be made on the part of religion.

82. Some there are who think that, though the arguments for the real existence of bodies which are drawn from reason be allowed not to amount to demonstration, yet the holy scriptures are so clear in the point as will sufficiently convince every good Christian that bodies do really exist, and are something more than mere ideas; there being in holy writ innumerable facts related which evidently suppose the reality of timber and stone, mountains and rivers, and cities, and human bodies. To which I answer that no sort of writings whatever, sacred or profane, which use those and the like words in the vulgar acceptance, or so as to have a meaning in them, are in danger of having their truth called in question by

our doctrine. That all those things do really exist, that there are bodies, even corporeal substances, when taken in the vulgar sense, has been shown to be agreeable to our principles; and the difference between *things* and *ideas*, *realities* and *chimeras*, has been distinctly explained. See §§29, 30, 33, 36, etc. And I do not think that either what philosophers call *matter*, or the existence of objects without the mind, is anywhere mentioned in scripture.

83. Again, whether there can be or be not external things, it is agreed on all hands that the proper use of words is the marking our conceptions, or things only as they are known and perceived by us; whence it plainly follows that in the tenets we have laid down there is nothing inconsistent with the right use and significance of *language*, and that discourse, of what kind soever, so far as it is intelligible, remains undisturbed. But all this seems so manifest, from what has been largely set forth in the premises, that it is needless to insist any farther on it.

84. But, it will be urged that miracles do, at least, lose much of their stress and import by our principles. What must we think of *Moses' rod*? was it not *really* turned into a serpent; or was there only a change of *ideas* in the minds of the spectators? And, can it be supposed that our savior did no more at the marriage-feast in *Cana* than impose on the sight, and smell, and taste of the guests, so as to create in them the appearance or idea only of wine? The same may be said of all other miracles; which, in consequence of the foregoing principles, must be looked upon only as so many cheats, or illusions of fancy. To this I reply, that the rod was changed into a real serpent, and the water into real wine. That this does not in the least contradict what I have elsewhere said will be evident from §§34 and 35. But this business of *real* and *imaginary* has been already so plainly and fully explained, and so often referred to, and the difficulties about it are so easily answered from what has gone before, that it were an affront to the reader's understanding to resume the explication of it in its place. I shall only observe that if at table all who were present should see, and smell, and taste, and drink wine, and find the effects of it, with me there could be no doubt of its reality; so that at bottom the scruple concerning real miracles has no place at all on ours, but only on the received principles, and consequently makes rather *for* than *against* what has been said.

85. Having done with the objections, which I endeavored to propose in the clearest light, and gave them all the force and weight I could, we proceed in the next place to take a view of our tenets in their consequences. Some of these appear at first sight- as that several difficult and obscure questions, on which abundance of speculation has been thrown away, are entirely banished from philosophy. Whether corporeal substance can think, whether matter be infinitely divisible, and how it operates on spirit: These and like inquiries have given

infinite amusement to philosophers in all ages; but depending on the existence of *matter*, they have no longer any place on our principles. Many other advantages there are, as well with regard to *religion* as the *sciences*, which it is easy for any one to deduce from what has been premised; but this will appear more plainly in the sequel.

86. From the principles we have laid down it follows human knowledge may naturally be reduced to two heads - that of *ideas* and that of *spirits*. Of each of these I shall treat in order. And first as to ideas or unthinking things. Our knowledge of these has been very much obscured and confounded, and we have been led into very dangerous errors, by supposing a twofold existence of the objects of sense: the one *intelligible* or in the mind, the other *real* and without the mind, whereby unthinking things are thought to have a natural subsistence of their own distinct from being perceived by spirits. This, which, if I mistake not, has been shown to be a most groundless and absurd notion, is the very root of *skepticism*; for, so long as men thought that real things subsisted without the mind, and that their knowledge was only so far forth *real* as it was conformable to *real things*, it follows they could not be certain they had any real knowledge at all. For how can it be known that the things which are perceived are conformable to those which are not perceived, or exist without the mind?

87. Color, figure, motion, extension, and the like, considered only as so many *sensations* in the mind, are perfectly known, there being nothing in them which is not perceived. But, if they are looked on as notes or images, referred to *things* or *archetypes* existing without the mind, then are we involved all in *skepticism*. We see only the appearances, and not the real qualities of things. What may be the extension, figure, or motion of anything really and absolutely, or in itself, it is impossible for us to know, but only the proportion or relation they bear to our senses. Things remaining the same, our ideas vary, and which of them, or even whether any of them at all, represent the true quality really existing in the thing, it is out of our reach to determine. So that, for aught we know, all we see, hear, and feel may be only phantom and vain chimera, and not at all agree with the real things existing in *rerum natura*. All this skepticism follows from our supposing a difference between *things* and *ideas*, and that the former have a subsistence without the mind or unperceived. It were easy to dilate on this subject, and show how the arguments urged by *skeptics* in all ages depend on the supposition of external objects.

88. So long as we attribute a real existence to unthinking things, distinct from their being perceived, it is not only impossible for us to know with evidence the nature of any real unthinking being, but even that it exists. Hence it is that we see philosophers distrust their senses, and doubt of the existence of heaven and earth, of everything they see or feel, even of their own bodies. And, after all their labor and struggle of thought, they are forced to

own we cannot attain to any self-evident or demonstrative knowledge of the existence of sensible things. But, all this doubtfulness, which so bewilders and confounds the mind and makes *philosophy* ridiculous in the eyes of the world, vanishes if we annex a meaning to our words. and not amuse ourselves with the terms *absolute*, *external*, *exist*, and such-like, signifying we know not what. I can as well doubt of my own being as of the being of those things which I actually perceive by sense; it being a manifest contradiction that any sensible object should be immediately perceived by sight or touch, and at the same time have no existence in nature, since the very existence of an unthinking being consists in *being perceived*.

89. Nothing seems of more importance towards erecting a firm system of sound and real knowledge, which may be proof against the assaults of *skepticism*, than to lay the beginning in a distinct explication of what is meant by *thing*, *reality*, *existence*; for in vain shall we dispute concerning the real existence of things, or pretend to any knowledge thereof, so long as we have not fixed the meaning of those words. *Thing* or *being* is the most general name of all; it comprehends under it two kinds entirely distinct and heterogeneous, and which have nothing common but the name, *viz. spirits* and *ideas*. The former are *active*, *indivisible substances*: the latter are *inert*, *fleeting*, *dependent beings*, which subsist not by themselves, but are supported by, or exist in minds or spiritual substances. We comprehend our own existence by inward feeling or reflection, and that of other spirits by reason. We may be said to have some knowledge or notion of our own minds, of spirits and active beings, whereof in a strict sense we have not ideas. In like manner, we know and have a notion of relations between things or ideas - which relations are distinct from the ideas or things related, inasmuch as the latter may be perceived by us without our perceiving the former. To me it seems that ideas, spirits, and relations are all in their respective kinds the object of human knowledge and subject of discourse; and that the term *idea* would be improperly extended to signify everything we know or have any notion of.

90. Ideas imprinted on the senses are real things, or do really exist; this we do not deny, but we deny they can subsist without the minds which perceive them, or that they are resemblances of any archetypes existing without the mind; since the very being of a sensation or idea consists in being perceived, and an idea can be like nothing but an idea. Again, the things perceived by sense may be termed *external*, with regard to their origin, in that they are not generated from within by the mind itself, but imprinted by a spirit distinct from that which perceives them. Sensible objects may likewise be said to be without the mind in another sense, namely when they exist in some other mind; thus, when I shut my eyes, the things I saw may still exist, but it must be in another mind.

91. It were a mistake to think that what is here said derogates in the least from the reality of things. It is acknowledged, on the received principles, that extension, motion, and in a word all sensible qualities have need of a support, as not being able to subsist by themselves. But the objects perceived by sense are allowed to be nothing but combinations of those qualities, and consequently cannot subsist by themselves. Thus far it is agreed on all hand. So that in denying the things perceived by sense an existence independent of a substance of support wherein they may exist, we detract nothing from the received opinion of their *reality*, and are guilty of no innovation in that respect. All the difference is that, according to us, the unthinking beings perceived by sense have no existence distinct from being perceived, and cannot therefore exist in any other substance than those unextended indivisible substances or *spirits* which act and think and perceive them; whereas philosophers vulgarly hold that the sensible qualities do exist in an inert, extended, unperceiving substance which they call *matter*, to which they attribute a natural subsistence, exterior to all thinking beings, or distinct from being perceived by any mind whatsoever, even the eternal mind of the Creator, wherein they suppose only ideas of the corporeal substances created by him, if indeed they allow them to be at all created.

92. For, as we have shown the doctrine of matter or corporeal substance to have been the main pillar and support of *skepticism*, so likewise upon the same foundation have been raised all the impious schemes of *atheism* and irreligion. Nay, so great a difficulty has it been thought to conceive matter produced out of nothing, that the most celebrated among the ancient philosophers, even of those who maintained the being of a God, have thought matter to be uncreated and co-eternal with Him. How great a friend material substance has been to *atheists* in all ages were needless to relate. All their monstrous systems have so visible and necessary a dependence on it that, when this corner-stone is once removed, the whole fabric cannot choose but fall to the ground, insomuch that it is no longer worth while to bestow a particular consideration on the absurdities of every wretched sect of *atheists*.

93. That impious and profane persons should readily fall in with those systems which favor their inclinations, by deriding immaterial substance, and supposing the soul to be divisible and subject to corruption as the body; which exclude all freedom, intelligence, and design from the formation of things, and instead thereof make a self-existent, stupid, unthinking substance the root and origin of all beings; that they should hearken to those who deny a providence, or inspection of a superior mind over the affairs of the world, attributing the whole series of events either to blind chance or fatal necessity arising from the impulse of one body on another. All this is very natural. And, on the other hand, when men of better principles observe the enemies of religion lay so great a

stress on *unthinking matter*, and all of them use so much industry and artifice to reduce everything to it, methinks they should rejoice to see them deprived of their grand support, and driven from that only fortress, without which your *Epicureans*, *Hobbists*, and the like, have not even the shadow of a pretence, but become the most cheap and easy triumph in the world.

94. The existence of matter, or bodies unperceived, has not only been the main support of *atheists* and *fatalists*, but on the same principle does *idolatry* likewise in all its various forms depend. Did men but consider that the sun, moon, and stars, and every other object of the senses are only so many sensations in their minds, which have no other existence but barely being perceived, doubtless they would never fall down and worship their own *ideas*, but rather address their homage to that eternal invisible mind which produces and sustains all things.

95. The same absurd principle, by mingling itself with the articles of our faith, has occasioned no small difficulties to Christians. For example, about the *resurrection*, how many scruples and objections have been raised by *Socinians* and others? But do not the most plausible of them depend on the supposition that a body is denominated the *same*, with regard not to the form or that which is perceived by sense, but the material substance, which remains the same under several forms? Take away this *material substance*, about the identity whereof all the dispute is, and mean by *body* what every plain ordinary person means by that word, to wit, that which is immediately seen and felt, which is only a combination of sensible qualities or ideas, and then their most unanswerable objections come to nothing.

96. Matter being once expelled out of nature drags with it so many skeptical and impious notions, such an incredible number of disputes and puzzling questions, which have been thorns in the sides of divines as well as philosophers, and made so much fruitless work for mankind, that if the arguments we have produced against it are not found equal to demonstration (as to me they evidently seem), yet I am sure all friends to knowledge, peace, and religion have reason to wish they were.

97. Beside the external existence of the objects of perception, another great source of errors and difficulties with regard to ideal knowledge is the doctrine of *abstract ideas*, such as it has been set forth in the *Introduction*. The plainest things in the world, those we are most intimately acquainted with and perfectly know, when they are considered in an abstract way, appear strangely difficult and incomprehensible. Time, place, and motion, taken in particular or concrete, are what everybody knows, but, having passed through the hands of a metaphysician, they become too abstract and fine to be apprehended by men of ordinary sense. Bid your servant meet you at such a *time* in such a *place*, and he shall never stay to deliberate on the meaning of those words; in conceiving that particular time and place, or

the motion by which he is to get thither, he finds not the least difficulty. But if *time* be taken exclusive of all those particular actions and ideas that diversify the day, merely for the continuation of existence or duration in abstract, then it will perhaps gravel even a philosopher to comprehend it.

98. For my own part, whenever I attempt to frame a simple idea of *time*, abstracted from the succession of ideas in my mind, which flows uniformly and is participated by all beings, I am lost and embrangled in inextricable difficulties. I have no notion of it at all, only I hear others say it is infinitely divisible, and speak of it in such a manner as leads me to entertain odd thoughts of my existence; since that doctrine lays one under an absolute necessity of thinking, either that he passes away innumerable ages without a thought, or else that he is annihilated every moment of his life, both which seem equally absurd. Time therefore being nothing, abstracted from the succession of ideas in our minds, it follows that the duration of any finite spirit must be estimated by the number of ideas or actions succeeding each other in that same spirit or mind. Hence, it is a plain consequence that the soul always thinks; and in truth whoever shall go about to divide in his thoughts, or abstract the *existence* of a spirit from its *cogitation*, will, I believe, find it no easy task.

99. So likewise when we attempt to abstract extension and motion from all other qualities, and consider them by themselves, we presently lose sight of them, and run into great extravagances. All which depend on a twofold abstraction; first, it is supposed that extension, for example, may be abstracted from all other sensible qualities; and secondly, that the entity of extension may be abstracted from its being perceived. But, whoever shall reflect, and take care to understand what he says, will, if I mistake not, acknowledge that all sensible qualities are alike *sensations* and alike *real*; that where the extension is, there is the color, too, i.e., in his mind, and that their archetypes can exist only in some other *mind*; and that the objects of sense are nothing but those sensations combined, blended, or (if one may so speak) concentered together; none of all which can be supposed to exist unperceived.

100. What it is for a man to be happy, or an object good, every one may think he knows. But to frame an abstract idea of *happiness*, prescinded from all particular pleasure, or of *goodness* from everything that is good, this is what few can pretend to. So likewise a man may be just and virtuous without having precise ideas of *justice* and *virtue*. The opinion that those and the like words stand for general notions, abstracted from all particular persons and actions, seems to have rendered morality very difficult, and the study thereof of small use to mankind. And in effect the doctrine of *abstraction* has not a little contributed towards spoiling the most useful parts of knowledge.

101. The two great provinces of speculative science conversant about ideas received from sense are *natural philosophy* and *mathematics*. With regard to each of these I shall make some observations. And first I shall say somewhat of natural philosophy. On this subject it is that the *skeptics* triumph. All that stock of arguments they produce to depreciate our faculties and make mankind appear ignorant and low, are drawn principally from this head, namely, that we are under an invincible blindness as to the *true* and *real* nature of things. This they exaggerate, and love to enlarge on. We are miserably bantered, say they, by our senses, and amused only with the outside and show of things. The real essence, the internal qualities and constitution of every the meanest object, is hid from our view; something there is in every drop of water, every grain of sand, which it is beyond the power of human understanding to fathom or comprehend. But, it is evident from what has been shown that all this complaint is groundless, and that we are influenced by false principles to that degree as to mistrust our senses, and think we know nothing of those things which we perfectly comprehend.

102. One great inducement to our pronouncing ourselves ignorant of the nature of things is the current opinion that everything includes within itself the cause of its properties; or that there is in each object an inward essence which is the source whence its discernible qualities flow, and whereon they depend. Some have pretended to account for appearances by occult qualities, but of late they are mostly resolved into mechanical causes, to wit the figure, motion, weight, and suchlike qualities, of insensible particles. Whereas, in truth, there is no other agent or efficient cause than *spirit*, it being evident that motion, as well as all other *ideas*, is perfectly inert. See §25. Hence, to endeavor to explain the production of colors or sounds, by figure, motion, magnitude, and the like, must needs be labor in vain. And accordingly we see the attempts of that kind are not at all satisfactory. Which may be said in general of those instances wherein one idea or quality is assigned for the cause of another. I need not say how many *hypotheses* and speculations are left out, and how much the study of nature is abridged by this doctrine.

103. The great mechanical principle now in vogue is *attraction*. That a stone falls to the earth, or the sea swells towards the moon, may to some appear sufficiently explained thereby. But how are we enlightened by being told this is done by attraction? Is it that that word signifies the manner of the tendency, and that it is by the mutual drawing of bodies instead of their being impelled or protruded towards each other? But, nothing is determined of the manner or action, and it may as truly (for aught we know) be termed *impulse*, or *protrusion*, as *attraction*. Again, the parts of steel we see cohere firmly together, and this also is accounted for by attraction; but, in this as in the other instances, I do not perceive that anything is signified besides the effect

itself; for as to the manner of the action whereby it is produced, or the cause which produces it, these are not so much as aimed at.

104. Indeed, if we take a view of the several *phenomena*, and compare them together, we may observe some likeness and conformity between them. For example, in the falling of a stone to the ground, in the rising of the sea towards the moon, in cohesion, crystallization, etc, there is something alike, namely, an union or mutual approach of bodies. So that any one of these or the like *phenomena* may not seem strange or surprising to a man who has nicely observed and compared the effects of nature. For that only is thought so which is uncommon, or a thing by itself, and out of the ordinary course of our observation. That bodies should tend towards the centre of the earth is not thought strange, because it is what we perceive every moment of our lives. But, that they should have a like gravitation towards the centre of the moon may seem odd and unaccountable to most men, because it is discerned only in the tides. But a philosopher, whose thoughts take in a larger compass of nature, having observed a certain similitude of appearances, as well in the heavens as the earth, that argue innumerable bodies to have a mutual tendency towards each other, which he denotes by the general name *attraction*, whatever can be reduced to that he thinks justly accounted for. Thus he explains the tides by the attraction of the terraqueous globe towards the moon, which to him does not appear odd or anomalous, but only a particular example of a general rule or law of nature.

105. If therefore we consider the difference there is between natural philosophers and other men, with regard to their knowledge of the *phenomena*, we shall find it consists not in an exacter knowledge of the efficient cause that produces them, for that can be no other than the *will of a spirit*, but only in a greater largeness of comprehension, whereby analogies, harmonies, and agreements are discovered in the works of nature, and the particular effects explained, that is, reduced to general rules; see §62, which rules, grounded on the analogy and uniformness observed in the production of natural effects, are most agreeable and sought after by the mind; for that they extend our prospect beyond what is present and near to us, and enable us to make very probable conjectures touching things that may have happened at very great distances of time and place, as well as to predict things to come; which sort of endeavor towards omniscience is much affected by the mind.

106. But we should proceed warily in such things, for we are apt to lay too great stress on analogies, and, to the prejudice of truth, humour that eagerness of the mind whereby it is carried to extend its knowledge into general theorems. For example, in the business of gravitation or mutual attraction, because it appears in many instances, some are straightway for pronouncing it *universal*; and that to *attract and be attracted by every other body is an essential quality inherent in all bodies whatsoever*.

Whereas it is evident the fixed stars have no such tendency towards each other; and, so far is that gravitation from being *essential* to bodies that in some instances a quite contrary principle seems to shew itself; as in the perpendicular growth of plants, and the elasticity of the air. There is nothing necessary or essential in the case, but it depends entirely on the will of the *Governing Spirit*, who causes certain bodies to cleave together or tend towards each other according to various laws, whilst He keeps others at a fixed distance; and to some He gives a quite contrary tendency to fly asunder just as He sees convenient.

107. After what has been premised, I think we may lay down the following conclusions. First, it is plain philosophers amuse themselves in vain, when they inquire for any natural efficient cause, distinct from a *mind* or *spirit*. Secondly, considering the whole creation is the workmanship of a *wise and good Agent*, it should seem to become philosophers to employ their thoughts (contrary to what some hold) about the final causes of things; and I confess I see no reason why pointing out the various ends to which natural things are adapted, and for which they were originally with unspeakable wisdom contrived, should not be thought one good way of accounting for them, and altogether worthy a philosopher. Thirdly, from what has been premised no reason can be drawn why the history of nature should not still be studied, and observations and experiments made, which, that they are of use to mankind, and enable us to draw any general conclusions, is not the result of any immutable habitudes or relations between things themselves, but only of God's goodness and kindness to men in the administration of the world. See §§30 and 31. Fourthly, by a diligent observation of the *phenomena* within our view, we may discover the general laws of nature, and from them deduce the other *phenomena*; I do not say *demonstrate*, for all deductions of that kind depend on a supposition that the Author of nature always operates uniformly, and in a constant observance of those rules we take for principles, which we cannot evidently know.

108. Those men who frame general rules from the *phenomena* and afterwards derive the *phenomena* from those rules, seem to consider signs rather than causes. A man may well understand natural signs without knowing their analogy, or being able to say by what rule a thing is so or so. And, as it is very possible to write improperly, through too strict an observance of general grammar rules; so, in arguing from general laws of nature, it is not impossible we may extend the analogy too far, and by that means run into mistakes.

109. As in reading other books a wise man will choose to fix his thoughts on the sense and apply it to use, rather than lay them out in grammatical remarks on the language; so, in perusing the volume of nature, it seems beneath the dignity of the mind to affect an exactness in reducing each particular *phenomenon* to general rules, or

showing how it follows from them. We should propose to ourselves nobler views, namely, to recreate and exalt the mind with a prospect of the beauty, order, extent, and variety of natural things: hence, by proper inferences, to enlarge our notions of the grandeur, wisdom, and beneficence of the Creator; and lastly, to make the several parts of the creation, so far as in us lies, subservient to the ends they were designed for, God's glory, and the sustentation and comfort of ourselves and fellow-creatures.

110. The best key for the aforesaid analogy or natural science will be easily acknowledged to be a certain celebrated treatise of *mechanics*.¹ In the entrance of which justly admired treatise, time, space, and motion are distinguished into *absolute* and *relative*, *true* and *apparent*, *mathematical* and *vulgar*; which distinction, as it is at large explained by the author, does suppose these quantities to have an existence without the mind; and that they are ordinarily conceived with relation to sensible things, to which nevertheless in their own nature they bear no relation at all.

111. As for *time*, as it is there taken in an absolute or abstracted sense, for the duration or perseverance of the existence of things, I have nothing more to add concerning it after what has been already said on that subject, §§97 and 98. For the rest, this celebrated author holds there is an *absolute space*, which, being unperceivable to sense, remains in itself similar and immovable; and relative space to be the measure thereof, which, being movable and defined by its situation in respect of sensible bodies, is vulgarly taken for immovable space. *Place* he defines to be that part of space which is occupied by any body; and according as the space is absolute or relative so also is the place. *Absolute motion* is said to be the translation of a body from absolute place to absolute place, as relative motion is from one relative place to another. And, because the parts of absolute space do not fall under our senses, instead of them we are obliged to use their sensible measures, and so define both place and motion with respect to bodies which we regard as immovable. But, it is said in philosophical matters we must abstract from our senses, since it may be that none of those bodies which seem to be quiescent are truly so, and the same thing which is moved relatively may be really at rest; as likewise one and the same body may be in relative rest and motion, or even moved with contrary relative motions at the same time, according as its place is variously defined. All which ambiguity is to be found in the apparent motions, but not at all in the true or absolute, which should therefore be alone regarded in philosophy. And the true as we are told are distinguished from apparent or relative motions by the following properties. First, in true or absolute motion all parts

which preserve the same position with respect of the whole, partake of the motions of the whole. Secondly, the place being moved, that which is placed therein is also moved; so that a body moving in a place which is in motion does participate the motion of its place. Thirdly, true motion is never generated or changed otherwise than by force impressed on the body itself. Fourthly, true motion is always changed by force impressed on the body moved. Fifthly, in circular motion barely relative there is no centrifugal force, which, nevertheless, in that which is true or absolute, is proportional to the quantity of motion.

112. But, notwithstanding what has been said, I must confess it does not appear to me that there can be any motion other than *relative*; so that to conceive motion there must be at least conceived two bodies whereof the distance or position in regard to each other is varied. Hence, if there was one only body in being it could not possibly be moved. This seems evident, in that the idea I have of motion does necessarily include relation.

113. But, though in every motion it be necessary to conceive more bodies than one, yet it may be that one only is moved, namely, that on which the force causing the change in the distance or situation of the bodies, is impressed. For, however some may define relative motion, so as to term that body *moved* which changes its distance from some other body, whether the force or action causing that change were impressed on it or no, yet as relative motion is that which is perceived by sense, and regarded in the ordinary affairs of life, it should seem that every man of common sense knows what it is as well as the best philosopher. Now, I ask anyone whether, in his sense of motion as he walks along the streets, the stones he passes over may be said to *move*, because they change distance with his feet? To me it appears that though motion includes a relation of one thing to another, yet it is not necessary that each term of the relation be denominated from it. As a man may think of somewhat which does not think, so a body may be moved to or from another body which is not therefore itself in motion.

114. As the place happens to be variously defined, the motion which is related to it varies. A man in a ship may be said to be still [quiescent] with relation to the sides of the vessel, and yet move with relation to the land. Or he may move eastward in respect of the one, and westward in respect of the other. In the common affairs of life men never go beyond the earth to define the place of any body; and what is still [quiescent] in respect of that is accounted *absolutely* to be so. But philosophers, who have a greater extent of thought, and juster notions of the system of things, discover even the earth itself to be moved. In order therefore to fix their notions they seem to conceive the corporeal world as finite, and the utmost unmoved walls or shell thereof to be the place whereby they estimate true motions. If we sound our own conceptions, I believe we may find all the absolute

¹ Berkeley is referring to Newton's *Principia*

motion we can frame an idea of to be at bottom no other than relative motion thus defined. For, as has been already observed, absolute motion, exclusive of all external relation, is incomprehensible; and to this kind of relative motion all the above-mentioned properties, causes, and effects ascribed to absolute motion will, if I mistake not, be found to agree. As to what is said of the centrifugal force, that it does not at all belong to circular relative motion, I do not see how this follows from the experiment which is brought to prove it. See *Philosophiae Naturalis Principia Mathematica*, in *Schol. Def. VIII*. For the water in the vessel at that time wherein it is said to have the greatest relative circular motion, has, I think, no motion at all; as is plain from the foregoing section.

115. For, to denominate a body *moved* it is requisite, first, that it change its distance or situation with regard to some other body; and secondly, that the force occasioning that change be applied to it. If either of these be wanting, I do not think that, agreeably to the sense of mankind, or the propriety of language, a body can be said to be in motion. I grant indeed that it is possible for us to think a body which we see change its distance from some other to be moved, though it have no force applied to it (in which sense there may be apparent motion), but then it is because the force causing the change of distance is imagined by us to be applied or impressed on that body thought to move; which indeed shews we are capable of mistaking a thing to be in motion which is not, and that is all.

116. From what has been said it follows that the philosophic consideration of motion does not imply the being of an *absolute space*, distinct from that which is perceived by sense and related bodies; which that it cannot exist without the mind is clear upon the same principles that demonstrate the like of all other objects of sense. And perhaps, if we inquire narrowly, we shall find we cannot even frame an idea of *pure space* exclusive of all body. This I must confess seems impossible, as being a most abstract idea. When I excite a motion in some part of my body, if it be free or without resistance, I say there is *space*; but if I find a resistance, then I say there is *body*; and in proportion as the resistance to motion is lesser or greater, I say the *space* is more or less *pure*. So that when I speak of pure or empty space, it is not to be supposed that the word *space* stands for an idea distinct from or conceivable without body and motion. Though indeed we are apt to think every noun substantive stands for a distinct idea that may be separated from all others; which has occasioned infinite mistakes. When, therefore, supposing all the world to be annihilated besides my own body, I say there still remains *pure space*, thereby nothing else is meant but only that I conceive it possible for the limbs of my body to be moved on all sides without the least resistance, but if that, too, were annihilated then there could be no motion, and consequently no space. Some, perhaps, may think the

sense of seeing does furnish them with the idea of pure space; but it is plain from what we have elsewhere shown, that the ideas of space and distance are not obtained by that sense. See the *Essay Concerning Vision*.

117. What is here laid down seems to put an end to all those disputes and difficulties that have sprung up amongst the learned concerning the nature of *pure space*. But the chief advantage arising from it is that we are freed from that dangerous *dilemma*, to which several who have employed their thoughts on that subject imagine themselves reduced, to wit, of thinking either that real space is God, or else that there is something beside God which is eternal, uncreated, infinite, indivisible, immutable. Both which may justly be thought pernicious and absurd notions. It is certain that not a few divines, as well as philosophers of great note, have, from the difficulty they found in conceiving either limits or annihilation of space, concluded it must be *divine*. And some of late have set themselves particularly to shew the incommunicable attributes of God agree to it. Which doctrine, how unworthy soever it may seem of the divine nature, yet I do not see how we can get clear of it, so long as we adhere to the received opinions.

118. Hitherto of natural philosophy: we come now to make some inquiry concerning that other great branch of speculative knowledge, to wit, *mathematics*. These, how celebrated soever they may be for their clearness and certainty of demonstration, which is hardly anywhere else to be found, cannot nevertheless be supposed altogether free from mistakes, if in their principles there lurks some secret error which is common to the professors of those sciences with the rest of mankind. Mathematicians, though they deduce their theorems from a great height of evidence, yet their first principles are limited by the consideration of quantity: and they do not ascend into any inquiry concerning those transcendental maxims which influence all the particular sciences, each part whereof, mathematics not excepted, does consequently participate of the errors involved in them. That the principles laid down by mathematicians are true, and their way of deduction from those principles clear and incontestible, we do not deny; but, we hold there may be certain erroneous maxims of greater extent than the object of mathematics, and for that reason not expressly mentioned, though tacitly supposed throughout the whole progress of that science; and that the ill effects of those secret unexamined errors are diffused through all the branches thereof. To be plain, we suspect the mathematicians are as well as other men concerned in the errors arising from the doctrine of abstract general ideas, and the existence of objects without the mind.

119. *Arithmetic* has been thought to have for its object abstract ideas of *number*; of which to understand the properties and mutual habitudes, is supposed no mean part of speculative knowledge. The opinion of the pure and intellectual nature of numbers in abstract has made them in esteem with those philosophers who seem to

have affected an uncommon fineness and elevation of thought. It has set a price on the most trifling numerical speculations which in practice are of no use, but serve only for amusement; and has therefore so far infected the minds of some, that they have dreamed of mighty *mysteries* involved in numbers, and attempted the explication of natural things by them. But, if we inquire into our own thoughts, and consider what has been premised, we may perhaps entertain a low opinion of those high flights and abstractions, and look on all inquiries, about numbers only as so many *difficiles nugae*, so far as they are not subservient to practice, and promote the benefit of life.

120. Unity in abstract we have before considered in §13, from which and what has been said in the *Introduction*, it plainly follows there is not any such idea. But, number being defined a *collection of units*, we may conclude that, if there be no such thing as unity or unit in abstract, there are no ideas of number in abstract denoted by the numeral names and figures. The theories therefore in arithmetic, if they are abstracted from the names and figures, as likewise from all use and practice, as well as from the particular things numbered, can be supposed to have nothing at all for their object. Hence we may see how entirely the science of numbers is subordinate to practice, and how jejune and trifling it becomes when considered as a matter of mere speculation.

121. However, since there may be some who, deluded by the specious show of discovering abstracted verities, waste their time in arithmetical theorems and problems which have not any use, it will not be amiss if we more fully consider and expose the vanity of that pretence; and this will plainly appear by taking a view of arithmetic in its infancy, and observing what it was that originally put men on the study of that science, and to what scope they directed it. It is natural to think that at first, men, for ease of memory and help of computation, made use of counters, or in writing of single strokes, points, or the like, each whereof was made to signify an unit, i.e., some one thing of whatever kind they had occasion to reckon. Afterwards they found out the more compendious ways of making one character stand in place of several strokes or points. And, lastly, the notation of the *Arabians* or *Indians* came into use, wherein, by the repetition of a few characters or figures, and varying the signification of each figure according to the place it obtains, all numbers may be most aptly expressed; which seems to have been done in imitation of language, so that an exact analogy is observed between the notation by figures and names, the nine simple figures answering the nine first numeral names and places in the former, corresponding to denominations in the latter. And agreeably to those conditions of the simple and local value of figures, were contrived methods of finding, from the given figures or marks of the parts, what figures and how placed are proper to denote the whole, or *vice versa*. And having found the sought figures, the same rule or analogy being

observed throughout, it is easy to read them into words; and so the number becomes perfectly known. For then the number of any particular things is said to be known, when we know the name of figures (with their due arrangement) that according to the standing analogy belong to them. For, these signs being known, we can by the operations of arithmetic know the signs of any part of the particular sums signified by them; and, thus computing in signs (because of the connexion established between them and the distinct multitudes of things whereof one is taken for an unit), we may be able rightly to sum up, divide, and proportion the things themselves that we intend to number.

122. In *arithmetic*, therefore, we regard not the *things*, but the *signs*, which nevertheless are not regarded for their own sake, but because they direct us how to act with relation to things, and dispose rightly of them. Now, agreeably to what we have before observed of words in general (*Introduction* §19) it happens here likewise that abstract ideas are thought to be signified by numeral names or characters, while they do not suggest ideas of particular things to our minds. I shall not at present enter into a more particular dissertation on this subject, but only observe that it is evident from what has been said, those things which pass for abstract truths and theorems concerning numbers, are in reality conversant about no object distinct from particular numeral things, except only names and characters, which originally came to be considered on no other account but their being *signs*, or capable to represent aptly whatever particular things men had need to compute. Whence it follows that to study them for their own sake would be just as wise, and to as good purpose as if a man, neglecting the true use or original intention and subserviency of language, should spend his time in impertinent criticisms upon words, or reasonings and controversies purely verbal.

123. From numbers we proceed to speak of *extension*, which, considered as relative, is the object of geometry. The *infinite* divisibility of *finite* extension, though it is not expressly laid down either as an axiom or theorem in the elements of that science, yet is throughout the same everywhere supposed and thought to have so inseparable and essential a connexion with the principles and demonstrations in geometry, that mathematicians never admit it into doubt, or make the least question of it. And, as this notion is the source from whence do spring all those amusing geometrical paradoxes which have such a direct repugnancy to the plain common sense of mankind, and are admitted with so much reluctance into a mind not yet debauched by learning; so it is the principal occasion of all that nice and extreme subtilty which renders the study of *mathematics* so difficult and tedious. Hence, if we can make it appear that no finite extension contains innumerable parts, or is infinitely divisible, it follows that we shall at once clear the science of geometry from a great number of difficulties and contradictions which have ever been esteemed a

reproach to human reason, and withal make the attainment thereof a business of much less time and pains than it hitherto has been.

124. Every particular finite extension which may possibly be the object of our thought is an *idea* existing only in the mind, and consequently each part thereof must be perceived. If, therefore, I cannot perceive innumerable parts in any finite extension that I consider, it is certain they are not contained in it; but, it is evident that I cannot distinguish innumerable parts in any particular line, surface, or solid, which I either perceive by sense, or figure to myself in my mind: wherefore I conclude they are not contained in it. Nothing can be plainer to me than that the extensions I have in view are no other than my own ideas; and it is no less plain that I cannot resolve any one of my ideas into an infinite number of other ideas, that is, that they are not infinitely divisible. If by *finite extension* be meant something distinct from a finite idea, I declare I do not know what that is, and so cannot affirm or deny anything of it. But if the terms *extension*, *parts*, etc., are taken in any sense conceivable, that is, for ideas, then to say a finite quantity or extension consists of parts infinite in number is so manifest a contradiction, that every one at first sight acknowledges it to be so; and it is impossible it should ever gain the assent of any reasonable creature who is not brought to it by gentle and slow degrees, as a converted gentile to the belief of *transubstantiation*. Ancient and rooted prejudices do often pass into principles; and those propositions which once obtain the force and credit of a *principle*, are not only themselves, but likewise whatever is deducible from them, thought privileged from all examination. And there is no absurdity so gross, which, by this means, the mind of man may not be prepared to swallow.

125. He whose understanding is possessed with the doctrine of abstract general ideas may be persuaded that (whatever be thought of the ideas of sense) extension in *abstract* is infinitely divisible. And one who thinks the objects of sense exist without the mind will perhaps in virtue thereof be brought to admit that a line but an inch long may contain innumerable parts- really existing, though too small to be discerned. These errors are grafted as well in the minds of *geometricians* as of other men, and have a like influence on their reasonings; and it were no difficult thing to shew how the arguments from geometry made use of to support the infinite divisibility of extension are bottomed on them. At present we shall only observe in general whence it is the mathematicians are all so fond and tenacious of that doctrine.

126. It has been observed in another place that the theorems and demonstrations in geometry are conversant about universal ideas (*Introduction* §15); where it is explained in what sense this ought to be understood, to wit, the particular lines and figures included in the diagram are supposed to stand for innumerable others of different sizes; or, in other words, the geometer considers

them abstracting from their magnitude- which does not imply that he forms an abstract idea, but only that he cares not what the particular magnitude is, whether great or small, but looks on that as a thing different to the demonstration. Hence it follows that a line in the scheme but an inch long must be spoken of as though it contained ten thousand parts, since it is regarded not in itself, but as it is universal; and it is universal only in its signification, whereby it represents innumerable lines greater than itself, in which may be distinguished ten thousand parts or more, though there may not be above an inch in it. After this manner, the properties of the lines signified are (by a very usual figure) transferred to the sign, and thence, through mistake, thought to appertain to it considered in its own nature.

127. Because there is no number of parts so great but it is possible there may be a line containing more, the inch-line is said to contain parts more than any assignable number; which is true, not of the inch taken absolutely, but only for the things signified by it. But men, not retaining that distinction in their thoughts, slide into a belief that the small particular line described on paper contains in itself parts innumerable. There is no such thing as the ten-thousandth part of an *inch*; but there is of a *mile* or *diameter of the earth*, which may be signified by that inch. When therefore I delineate a triangle on paper, and take one side not above an inch, for example, in length to be the *radius*, this I consider as divided into 10,000 or 100,000 parts or more; for, though the ten-thousandth part of that line considered in itself is nothing at all, and consequently may be neglected without an error or inconveniency, yet these described lines, being only marks standing for greater quantities, whereof it may be the ten-thousandth part is very considerable, it follows that, to prevent notable errors in practice, the *radius* must be taken of 10,000 parts or more.

128. From what has been said the reason is plain why, to the end any theorem become universal in its use, it is necessary we speak of the lines described on paper as though they contained parts which really they do not. In doing of which, if we examine the matter thoroughly, we shall perhaps discover that we cannot conceive an inch itself as consisting of, or being divisible into, a thousand parts, but only some other line which is far greater than an inch, and represented by it; and that when we say a line is *infinitely divisible*, we must mean a line which is *infinitely great*. What we have here observed seems to be the chief cause why, to suppose the infinite divisibility of finite extension has been thought necessary in geometry.

129. The several absurdities and contradictions which flowed from this false principle might, one would think, have been esteemed so many demonstrations against it. But, by I know not what *logic*, it is held that proofs *a posteriori* are not to be admitted against propositions relating to infinity, as though it were not impossible even for an infinite mind to reconcile contradictions; or as if

anything absurd and repugnant could have a necessary connexion with truth or flow from it. But, whoever considers the weakness of this pretence will think it was contrived on purpose to humour the laziness of the mind which had rather acquiesce in an indolent skepticism than be at the pains to go through with a severe examination of those principles it has ever embraced for true.

130. Of late the speculations about infinites have run so high, and grown to such strange notions, as have occasioned no small scruples and disputes among the geometers of the present age. Some there are of great note who, not content with holding that finite lines may be divided into an infinite number of parts, do yet farther maintain that each of those infinitesimals is itself subdivisible into an infinity of other parts or infinitesimals of a second order, and so on *ad infinitum*. These, I say, assert there are infinitesimals of infinitesimals of infinitesimals, etc., without ever coming to an end; so that according to them an inch does not barely contain an infinite number of parts, but an infinity of an infinity of an infinity *ad infinitum* of parts. Others there be who hold all orders of infinitesimals below the first to be nothing at all; thinking it with good reason absurd to imagine there is any positive quantity or part of extension which, though multiplied infinitely, can never equal the smallest given extension. And yet on the other hand it seems no less absurd to think the square, cube or other power of a positive real root, should itself be nothing at all; which they who hold infinitesimals of the first order, denying all of the subsequent orders, are obliged to maintain.

131. Have we not therefore reason to conclude they are *both* in the wrong, and that there is in effect no such thing as parts infinitely small, or an infinite number of parts contained in any finite quantity? But you will say that if this doctrine obtains it will follow the very foundations of geometry are destroyed, and those great men who have raised that science to so astonishing a height, have been all the while building a castle in the air. To this it may be replied that whatever is useful in geometry, and promotes the benefit of human life, does still remain firm and unshaken on our principles; that science considered as practical will rather receive advantage than any prejudice from what has been said. But to set this in a due light may be the proper business of another place. For the rest, though it should follow that some of the more intricate and subtle parts of *speculative mathematics* may be pared off without any prejudice to truth, yet I do not see what damage will be thence derived to mankind. On the contrary, I think it were highly to be wished that men of great abilities and obstinate application would draw off their thoughts from those amusements, and employ them in the study of such things as lie nearer the concerns of life, or have a more direct influence on the manners.

132. It is be said that several theorems undoubtedly true are discovered by methods in which infinitesimals are

made use of, which could never have been if their existence included a contradiction in it; I answer that upon a thorough examination it will not be found that in any instance it is necessary to make use of or conceive infinitesimal parts of finite lines, or even quantities less than the *minimum sensible*; nay, it will be evident this is never done, it being impossible.

133. By what we have premised, it is plain that very numerous and important errors have taken their rise from those false Principles which were impugned in the foregoing parts of this treatise; and the opposites of those erroneous tenets at the same time appear to be most fruitful principles, from whence do flow innumerable consequences highly advantageous to true philosophy. as well as to religion. Particularly *matter*, or *the absolute existence of corporeal objects*, has been shown to be that wherein the most avowed and pernicious enemies of all knowledge, whether human or divine, have ever placed their chief strength and confidence. And surely, if by distinguishing the real existence of unthinking things from their being perceived, and allowing them a subsistence of their own out of the minds of spirits, no one thing is explained in nature, but on the contrary a great many inexplicable difficulties arise; if the supposition of matter is barely precarious, as not being grounded on so much as one single reason; if its consequences cannot endure the light of examination and free inquiry, but screen themselves under the dark and general pretence of *infinites being incomprehensible*; if withal the removal of this *matter* be not attended with the least evil consequence; if it be not even missed in the world, but everything as well, nay much easier conceived without it; if, lastly, both *skeptics* and *atheists* are for ever silenced upon supposing only spirits and ideas, and this scheme of things is perfectly agreeable both to *reason* and *religion*: methinks we may expect it should be admitted and firmly embraced, though it were proposed only as an *hypothesis*, and the existence of matter had been allowed possible, which yet I think we have evidently demonstrated that it is not.

134. True it is that, in consequence of the foregoing principles, several disputes and speculations which are esteemed no mean parts of learning, are rejected as useless. But, how great a prejudice soever against our notions this may give to those who have already been deeply engaged, and make large advances in studies of that nature, yet by others we hope it will not be thought any just ground of dislike to the principles and tenets herein laid down, that they abridge the labor of study, and make human sciences far more clear, compendious and attainable than they were before.

135. Having dispatched what we intended to say concerning the knowledge of *ideas*, the method we proposed leads us in the next place to treat of *spirits*: with regard to which, perhaps, human knowledge is not so deficient as is vulgarly imagined. The great reason that is assigned for our being thought ignorant of the

nature of spirits is our not having an idea of it. But, surely it ought not to be looked on as a defect in a human understanding that it does not perceive the idea of *spirit*, if it is manifestly impossible there should be any such *idea*. And this if I mistake not has been demonstrated in §27; to which I shall here add that a spirit has been shown to be the only substance or support wherein unthinking beings or ideas can exist; but that this *substance* which supports or perceives ideas should itself be an *idea* or like an *idea* is evidently absurd.

136. It will perhaps be said that we want a sense (as some have imagined) proper to know substances without, which, if we had, we might know our own soul as we do a triangle. To this I answer, that, in case we had a new sense bestowed upon us, we could only receive thereby some new sensations or ideas of sense. But I believe nobody will say that what he means by the terms *soul* and *substance* is only some particular sort of idea or sensation. We may therefore infer that, all things duly considered, it is not more reasonable to think our faculties defective, in that they do not furnish us with an idea of spirit or active thinking substance, than it would be if we should blame them for not being able to comprehend a *round square*.

137. From the opinion that spirits are to be known after the manner of an idea or sensation have risen many absurd and heterodox tenets, and much skepticism about the nature of the soul. It is even probable that this opinion may have produced a doubt in some whether they had any soul at all distinct from their body since upon inquiry they could not find they had an idea of it. That an *idea* which is inactive, and the existence whereof consists in being perceived, should be the image or likeness of an agent subsisting by itself, seems to need no other refutation than barely attending to what is meant by those words. But, perhaps you will say that though an *idea* cannot resemble a *spirit* in its thinking, acting, or subsisting by itself, yet it may in some other respects; and it is not necessary that an idea or image be in all respects like the original.

138. I answer, if it does not in those mentioned, it is impossible it should represent it in any other thing. Do but leave out the power of willing, thinking, and perceiving ideas, and there remains nothing else wherein the idea can be like a spirit. For, by the word *spirit* we mean only that which thinks, wills, and perceives; this, and this alone, constitutes the signification of the term. If therefore it is impossible that any degree of those powers should be represented in an idea, it is evident there can be no idea of a spirit.

139. But it will be objected that, if there is no idea signified by the terms *soul*, *spirit*, and *substance*, they are wholly insignificant, or have no meaning in them. I answer, those words do mean or signify a real thing, which is neither an idea nor like an idea, but that which perceives ideas, and wills, and reasons about them. What

I am myself, that which I denote by the term I, is the same with what is meant by *soul* or *spiritual substance*. If it be said that this is only quarreling at a word, and that, since the immediate significations of other names are by common consent called *ideas*, no reason can be assigned why that which is signified by the name *spirit* or *soul* may not partake in the same appellation. I answer, all the unthinking objects of the mind agree in that they are entirely passive, and their existence consists only in being perceived; whereas a soul or spirit is an active being, whose existence consists, not in being perceived, but in perceiving ideas and thinking. It is therefore necessary, in order to prevent equivocation and confounding natures perfectly disagreeing and unlike, that we distinguish between *spirit* and *idea*; see §27.

140. In a large sense, indeed, we may be said to have an idea or rather a notion of *spirit*; that is, we understand the meaning of the word, otherwise we could not affirm or deny anything of it. Moreover, as we conceive the ideas that are in the minds of other spirits by means of our own, which we suppose to be resemblances of them; so we know other spirits by means of our own soul, which in that sense is the image or idea of them; it having a like respect to other spirits that blueness or heat by me perceived has to those ideas perceived by another.

141. It must not be supposed that they who assert the natural immortality of the soul are of opinion that it is absolutely incapable of annihilation even by the infinite power of the Creator who first gave it being, but only that it is not liable to be broken or dissolved by the ordinary laws of nature or motion. They indeed who hold the soul of man to be only a thin vital flame, or system of animal spirits, make it perishing and corruptible as the body; since there is nothing more easily dissipated than such a being, which it is naturally impossible should survive the ruin of the tabernacle wherein it is enclosed. And this notion has been greedily embraced and cherished by the worst part of mankind, as the most effectual antidote against all impressions of virtue and religion. But it has been made evident that bodies, of what frame or texture soever, are barely passive ideas in the mind, which is more distant and heterogeneous from them than light is from darkness. We have shown that the soul is indivisible, incorporeal, unextended, and it is consequently incorruptible. Nothing can be plainer than that the motions, changes, decays, and dissolutions which we hourly see befall natural bodies (and which is what we mean by the *course of nature*) cannot possibly affect an active, simple, uncompounded substance; such a being therefore is indissoluble by the force of nature; that is to say, *the soul of man is naturally immortal*.

142. After what has been said, it is, I suppose, plain that our souls are not to be known in the same manner as senseless, inactive objects, or by way of *idea*. *Spirits* and *ideas* are things so wholly different, that when we say *they exist*, *they are known*, or the like, these words must not be thought to signify anything common to both

natures. There is nothing alike or common in them: and to expect that by any multiplication or enlargement of our faculties we may be enabled to know a spirit as we do a triangle, seems as absurd as if we should hope to *see a sound*. This is inculcated because I imagine it may be of moment towards clearing several important questions, and preventing some very dangerous errors concerning the nature of the soul. We may not, I think, strictly be said to have an idea of an active being, or of an action, although we may be said to have a notion of them. I have some knowledge or notion of my mind, and its acts about ideas, inasmuch as I know or understand what is meant by these words. What I know, that I have some notion of. I will not say that the terms *idea* and *notion* may not be used convertibly, if the world will have it so; but yet it conduces to clearness and propriety that we distinguish things very different by different names. It is also to be remarked that, all relations including an act of the mind, we cannot so properly be said to have an idea, but rather a notion of the relations and habitudes between things. But if, in the modern way, the word *idea* is extended to spirits, and relations, and acts, this is, after all, an affair of verbal concern.

143. It will not be amiss to add, that the doctrine of *abstract ideas* has had no small share in rendering those sciences intricate and obscure which are particularly conversant about spiritual things. Men have imagined they could frame abstract notions of the powers and acts of the mind, and consider them prescinded as well from the mind or spirit itself, as from their respective objects and effects. Hence a great number of dark and ambiguous terms, presumed to stand for abstract notions, have been introduced into metaphysics and morality, and from these have grown infinite distractions and disputes amongst the learned.

144. But, nothing seems more to have contributed towards engaging men in controversies and mistakes with regard to the nature and operations of the mind, than the being used to speak of those things in terms borrowed from sensible ideas. For example, the will is termed the *motion of the soul*; this infuses a belief that the mind of man is as a ball in motion, impelled and determined by the objects of sense, as necessarily as that is by the stroke of a racket. Hence arise endless scruples and errors of dangerous consequence in morality. All which, I doubt not, may be cleared, and truth appear plain, uniform, and consistent, could but philosophers be prevailed on to retire into themselves, and attentively consider their own meaning.

145. From what has been said, it is plain that we cannot know the existence of other spirits otherwise than by their operations, or the ideas by them excited in us. I perceive several motions, changes, and combinations of ideas, that inform me there are certain particular agents, like myself, which accompany them and concur in their production. Hence, the knowledge I have of other spirits is not immediate, as is the knowledge of my ideas; but

depending on the intervention of ideas, by me referred to agents or spirits distinct from myself, as effects or concomitant signs.

146. But, though there be some things which convince us human agents are concerned in producing them; yet it is evident to every one that those things which are called the Works of nature, that is, the far greater part of the ideas or sensations perceived by us, are not produced by, or dependent on, the wills of men. There is therefore some other spirit that causes them; since it is repugnant that they should subsist by themselves. See §29. But, if we attentively consider the constant regularity, order, and concatenation of natural things, the surprising magnificence, beauty, and perfection of the larger, and the exquisite contrivance of the smaller parts of creation, together with the exact harmony and correspondence of the whole, but above all the never-enough-admired laws of pain and pleasure, and the instincts or natural inclinations, appetites, and passions of animals; I say if we consider all these things, and at the same time attend to the meaning and import of the attributes One, Eternal, Infinitely Wise, Good, and Perfect, we shall clearly perceive that they belong to the aforesaid spirit, *who works all in all, and by whom all things consist*.

147. Hence, it is evident that God is known as certainly and immediately as any other mind or spirit whatsoever distinct from ourselves. We may even assert that the existence of God is far more evidently perceived than the existence of men; because the effects of nature are infinitely more numerous and considerable than those ascribed to human agents. There is not any one mark that denotes a man, or effect produced by him, which does not more strongly evince the being of that spirit who is the *Author of Nature*. For, it is evident that in affecting other persons the will of man has no other object than barely the motion of the limbs of his body; but that such a motion should be attended by, or excite any idea in the mind of another, depends wholly on the will of the Creator. He alone it is who, *upholding all things by the word of His power*, maintains that intercourse between spirits whereby they are able to perceive the existence of each other. And yet this pure and clear light which enlightens every one is itself invisible.

148. It seems to be a general pretence of the unthinking herd that they cannot see God. Could we but see Him, say they, as we see a man, we should believe that He is, and believing obey His commands. But alas, we need only open our eyes to see the Sovereign Lord of all things, with a more full and clear view than we do any one of our fellow creatures. Not that I imagine we see God (as some will have it) by a direct and immediate view; or see corporeal things, not by themselves, but by seeing that which represents them in the essence of God, which doctrine is, I must confess, to me incomprehensible. But I shall explain my meaning. A human spirit or person is not perceived by sense, as not being an idea; when therefore we see the color, size,

figure, and motions of a man, we perceive only certain sensations or ideas excited in our own minds; and these being exhibited to our view in sundry distinct collections, serve to mark out unto us the existence of finite and created spirits like ourselves. Hence it is plain we do not see a man- if by *man* is meant that which lives, moves, perceives, and thinks as we do- but only such a certain collection of ideas as directs us to think there is a distinct principle of thought and motion, like to ourselves, accompanying and represented by it. And after the same manner we see God; all the difference is that, whereas some one finite and narrow assemblage of ideas denotes a particular human mind, whithersoever we direct our view, we do at all times and in all places perceive manifest tokens of the divinity: everything we see, hear, feel, or anywise perceive by sense, being a sign or effect of the power of God; as is our perception of those very motions which are produced by men.

149. It is therefore plain that nothing can be more evident to any one that is capable of the least reflection than the existence of God, or a spirit who is intimately present to our minds, producing in them all that variety of ideas or sensations which continually affect us, on whom we have an absolute and entire dependence, in short *in whom we live, and move, and have our being*. That the discovery of this great truth, which lies so near and obvious to the mind, should be attained to by the reason of so very few, is a sad instance of the stupidity and inattention of men, who, though they are surrounded with such clear manifestations of the Deity, are yet so little affected by them that they seem, as it were, blinded with excess of light.

150. But you will say, has nature no share in the production of natural things, and must they be all ascribed to the immediate and sole operation of God? I answer, if by *nature* is meant only the visible *series* of effects or sensations imprinted on our minds, according to certain fixed and general laws, then it is plain that nature, taken in this sense, cannot produce anything at all. But, if by *nature* is meant some being distinct from God, as well as from the laws of nature, and things perceived by sense, I must confess that word is to me an empty sound without any intelligible meaning annexed to it. Nature, in this acceptation, is a vain chimera, introduced by those heathens who had not just notions of the omnipresence and infinite perfection of God. But, it is more unaccountable that it should be received among *Christians*, professing belief in the holy scriptures, which constantly ascribe those effects to the immediate hand of God that heathen philosophers are wont to impute to *nature*. “The Lord He causeth the vapours to ascend; He maketh lightnings with rain; He bringeth forth the wind out of his treasures.” *Jerem. 10. 13*. “He turneth the shadow of death into the morning, and maketh the day dark with night.” *Amos, 5. 8*. “He visiteth the earth, and maketh it soft with showers: He blesseth the springing thereof, and crowneth the year with His goodness; so that

the pastures are clothed with flocks, and the valleys are covered over with corn. See *Psalms 65*. But, notwithstanding that this is the constant language of scripture, yet we have I know not what aversion from believing that God concerns Himself so nearly in our affairs. Fain would we suppose Him at a great distance off, and substitute some blind unthinking deputy in His stead, though (if we may believe Saint *Paul*) “He be not far from every one of us.”

151. It will, I doubt not, be objected that the slow and gradual methods observed in the production of natural things do not seem to have for their cause the immediate hand of an *almighty agent*. Besides, monsters, untimely births, fruits blasted in the blossom, rains falling in desert places, miseries incident to human life, and the like, are so many arguments that the whole frame of nature is not immediately actuated and superintended by a spirit of infinite wisdom and goodness. But the answer to this objection is in a good measure plain from §62; it being visible that the aforesaid methods of nature are absolutely necessary, in order to working by the most simple and general rules, and after a steady and consistent manner; which argues both the *wisdom* and *goodness* of God. Such is the artificial contrivance of this mighty machine of nature that, whilst its motions and various phenomena strike on our senses, the hand which actuates the whole is itself unperceivable to men of flesh and blood. “Verily,” said the prophet, “thou art a God that hidest thyself.” *Isaiah, 45. 15*. But, though the Lord conceal Himself from the eyes of the *sensual* and *lazy*, who will not be at the least expense of thought, yet to an unbiased and attentive mind nothing can be more plainly legible than the intimate presence of an *All-wise spirit*, who fashions, regulates and sustains the whole system of beings. It is clear, from what we have elsewhere observed, that the operating according to general and stated laws is so necessary for our guidance in the affairs of life, and letting us into the secret of nature, that without it all reach and compass of thought, all human sagacity and design, could serve to no manner of purpose; it were even impossible there should be any such faculties or powers in the mind. See §31. Which one consideration abundantly outbalances whatever particular inconveniences may thence arise.

152. We should further consider that the very blemishes and defects of nature are not without their use, in that they make an agreeable sort of variety, and augment the beauty of the rest of the creation, as shades in a picture serve to set off the brighter and more enlightened parts. We would likewise do well to examine whether our taxing the waste of seeds and embryos, and accidental destruction of plants and animals, before they come to full maturity, as an imprudence in the Author of nature, be not the effect of prejudice contracted by our familiarity with impotent and saving mortals. In *man* indeed a thrifty management of those things which he cannot procure without much pains and industry may be

esteemed *wisdom*. But, we must not imagine that the inexplicably fine machine of an animal or vegetable costs the great Creator any more pains or trouble in its production than a pebble does; nothing being more evident than that an Omnipotent spirit can indifferently produce everything by a mere *fiat* or act of His will. Hence, it is plain that the splendid profusion of natural things should not be interpreted weakness or prodigality in the agent who produces them, but rather be looked on as an argument of the riches of His power.

153. As for the mixture of pain or uneasiness which is in the world, pursuant to the general laws of nature, and the actions of finite, imperfect spirits, this, in the state we are in at present, is indispensably necessary to our well-being. But our prospects are too narrow. We take, for instance, the idea of some one particular pain into our thoughts, and account it *evil*; whereas, if we enlarge our view, so as to comprehend the various ends, connexions, and dependencies of things, on what occasions and in what proportions we are affected with pain and pleasure, the nature of human freedom, and the design with which we are put into the world; we shall be forced to acknowledge that those particular things which, considered in themselves, appear to be *evil*, have the nature of *good*, when considered as linked with the whole system of beings.

154. From what has been said, it will be manifest to any considering person, that it is merely for want of attention and comprehensiveness of mind that there are any favorers of *atheism* or the *Manichean heresy* to be found. Little and unreflecting souls may indeed burlesque the works of providence, the beauty and order whereof they have not capacity, or will not be at the pains, to comprehend; but those who are masters of any justness and extent of thought, and are withal used to reflect, can never sufficiently admire the divine traces of wisdom and goodness that shine throughout the economy of nature. But what truth is there which shineth so strongly on the mind that by an aversion of thought, a wilful shutting of the eyes, we may not escape seeing it? Is it therefore to be wondered at, if the generality of men, who are ever intent on business or pleasure, and little used to fix or open the eye of their mind, should not have all that conviction and evidence of the being of God which might be expected in reasonable creatures?

155. We should rather wonder that men can be found so stupid as to neglect, than that neglecting they should be unconvinced of such an evident and momentous truth. And yet it is to be feared that too many of parts and leisure, who live in Christian countries, are, merely through a supine and dreadful negligence, sunk into *atheism*. Since it is downright impossible that a soul pierced and enlightened with a thorough sense of the omnipresence, holiness, and justice of that *Almighty Spirit* should persist in a remorseless violation of His laws. We ought, therefore, earnestly to meditate and dwell on those important points; that so we may attain

conviction without all scruple “that the eyes of the Lord are in every place beholding the evil and the good; that He is with us and keepeth us in all places whither we go, and giveth us bread to eat and raiment to put on.” That He is present and conscious to our innermost thoughts; and that we have a most absolute and immediate dependence on Him. A clear view of which great truths cannot choose but fill our hearts with an awful circumspection and holy fear, which is the strongest incentive to *virtue*, and the best guard against *vice*.

156. For, after all, what deserves the first place in our studies is the consideration of *God* and our *duty*; which to promote, as it was the main drift and design of my labors, so shall I esteem them altogether useless and ineffectual if, by what I have said, I cannot inspire my readers with a pious sense of the Presence of God; and, having shown the falseness or vanity of those barren speculations which make the chief employment of learned men, the better dispose them to reverence and embrace the salutary truths of the Gospel, which to know and to practice is the highest perfection of human nature.