modifications are explicable by the natures they modify and this power is not so explicable), it would be independent of matter.

Preface to the New Essays (1703–05)[391]

Leibniz became acquainted with the outline of John Locke's Essay Concerning Human Understanding *before it was actually published, through an abstract of the book, written by Locke, translated into French, and published in Le Clerc's* Bibliothèque Universelle *(1688). When the* Essay *was published in 1690, Leibniz read it in English and sent some criticisms of it to Locke through Thomas Burnet (ca. 1635–1715) and Lady Masham (1658–1708). When, in 1700, Pierre Coste's French translation of the* Essay *was published, Leibniz was able to make a thorough study of it; he planned to publish his critique under the title* New Essays on the Understanding. *When Locke died in 1704, Leibniz abandoned his project to publish the work.*

SINCE THE *Essays on the Understanding*, published by an illustrious Englishman, is one of the finest and most esteemed works of our age, I resolved to comment on it, insofar as I had given sufficient thought for some time to the same subject and to most of the matters touched upon there; I thought that this would be a good opportunity to publish something entitled *New Essays on the Understanding* and to procure a more favorable reception for my thoughts by putting them in such good company. I further thought that I might profit from someone else's work, not only to make my task easier (since, in fact, it is easier to follow the thread of a good author than to work out everything anew), but also to add something to what he has given us, which is always easier than starting from the beginning. It is true that I often hold an opinion different from his, but far from denying on that account the merit of this famous writer, I bear witness to it by showing in what and why, I differ from his view, when I deem it necessary to prevent his authority from prevailing against reason on some important points.

In fact, although the author of the *Essay* says a thousand fine things of which I approve, our systems are very different. His bears more relation to Aristotle's and mine to Plato's, although we both differ in many ways from the doctrines of these two ancients. He is more popular while I am forced at times to be a little more esoteric and abstract, which is not an advantage to me, especially when writing in a living language. However, I believe that by making two characters speak, one of whom presents the views of the author of the *Essay*, while the other adds my observations, the parallel will be more to the liking of the reader than some dry remarks, whose reading would have to be interrupted at every moment by the necessity of having to return to the author's book in order to understand mine. Nevertheless, it would be good

391. A VI, 6, 43–68; G V 41–61. French.

to compare our writings from time to time, and to judge his views by his work alone, even though I have usually retained his expressions. It is true that the constraint of having to follow the thread of someone else's discourse in making my remarks has meant that I could not think of capturing the charm of which the dialogue is capable, but I hope that the content will make up for the defect in style.

Our differences are about subjects of some importance. There is the question about whether the soul in itself is completely empty like tablets upon which nothing has been written (*tabula rasa*), as Aristotle and the author of the *Essay* maintain, and whether everything inscribed on it comes solely from the senses and from experience, or whether the soul contains from the beginning the source [*principe*] of several notions and doctrines, which external objects awaken only on certain occasions, as I believe with Plato and even with the Schoolmen, and with all those who find this meaning in the passage of St. Paul (Romans 2:15) where he states that the law of God is written in our hearts. The Stoics call these principles *Prolepses*, that is, fundamental assumptions, or what is taken as agreed in advance. Mathematicians call them *common notions, (koinai ennoiai)*. Modern philosophers give them other fine names, and Julius Scaliger in particular called them the seeds of eternity, and also *zopyra*, meaning living fires, or flashes of light hidden inside us but made to appear through the contact of the senses, like sparks that can be struck from a steel. And it is not unreasonable to believe that these flashes reveal something divine and eternal, something that especially appears in necessary truths. This raises another question, namely, whether all truths depend upon experience, that is, upon induction and instances, or whether some of them have another foundation. For if some occurrences can be foreseen before they have been tested, it is obvious that we contribute something of our own here. Although the senses are necessary for all our actual knowledge, they are not sufficient to give us all of it, since the senses never give us anything but instances, that is, particular or individual truths. Now all the instances confirming a general truth, however numerous they may be, are not sufficient to establish the universal necessity of that same truth, for it does not follow that what has happened before will always happen in the same way. For example, the Greeks, Romans, and all other people of the earth have always observed that before the passage of twenty-four hours, day changes into night and night into day. But they would have been mistaken if they had believed that the same rule is observed everywhere, since the contrary was observed during a visit to Nova Zembla. And anyone who believed that this is a necessary and eternal truth, at least in our climate, would also be mistaken, since we must recognize that the earth and even the sun do not exist necessarily, and that there may be a time when this beautiful star will no longer exist, at least in its present form, and neither will its whole system. As a result it appears that necessary truths, such as we find in pure mathematics and particularly in arithmetic and geometry, must have principles whose proof does not depend on instances nor, consequently, on the testimony of the senses, although without the senses it would never occur to us to think of

them. This is a distinction that should be noted carefully, and it is one Euclid understood so well that he proves by reason things that are sufficiently evident through experience and sensible images. Logic, together with metaphysics and morals, of which the one shapes natural theology and the other natural jurisprudence, are full of such truths, and consequently, their proof can only arise from internal principles, which are called innate. It is true that we must not imagine that we can read these eternal laws of reason in the soul from an open book, as the edict of the praetor can be read from his tablet without effort and scrutiny. But it is enough that they can be discovered in us by dint of attention; the senses furnish occasions for this, and the success of experiments also serves to confirm reason, a bit like empirical trials help us avoid errors of calculation in arithmetic when the reasoning is long. Also, it is in this respect that human knowledge differs from that of beasts. Beasts are purely empirical and are guided solely by instances, for, as far as we are able to judge, they never manage to form necessary propositions, whereas man is capable of demonstrative knowledge [*sciences demonstratives*]. In this, the faculty beasts have for drawing consequences is inferior to the reason humans have. The consequences beasts draw are just like those of simple empirics, who claim that what has happened will happen again in a case where what strikes them is similar, without being able to determine whether the same reasons are at work. This is what makes it so easy for men to capture beasts, and so easy for simple empirics to make mistakes. Not even people made skillful by age and experience are exempt from this when they rely too much on their past experiences. This has happened to several people in civil and military affairs, since they do not take sufficiently into consideration the fact that the world changes and that men have become more skillful in finding thousands of new tricks, unlike the stags and hares of today, who have not become any more clever than those of yesterday. The consequences beasts draw are only a shadow of reasoning, that is, they are only connections of imagination, transitions from one image to another; for, when a new situation appears similar to the preceding one, they expect to find again what was previously joined to it, as though things were linked in fact, just because their images are linked in the memory. It is, indeed, true that reason ordinarily counsels us to expect that we will find in the future that which conforms to our long experience of the past; but this is not, on that account, a necessary and infallible truth, and it can fail us when we least expect it, when the reasons which have maintained it change. This is why the wisest people do not rely on it to such an extent that they do not try to probe into the reason for what happens (if that is possible), so as to judge when exceptions must be made. For only reason is capable of establishing sure rules and of providing what uncertain rules lack by formulating exceptions to them, and lastly, capable of finding connections that are certain in the compulsion [*force*] of necessary consequences. This often provides a way of foreseeing an occurrence without having to experience the sensible links between images, which the beasts are reduced to doing. Thus what justifies the internal principles of necessary truths also distinguishes humans from beasts.

Perhaps our able author will not entirely disagree with my opinion. For after having devoted his whole first book to rejecting innate illumination, understood in a certain way, he admits, however, at the beginning of the second book and in what follows, that the ideas which do not originate in sensation come from reflection. Now, reflection is nothing other than attention to what is within us, and the senses do not give us what we already bring with us. Given this, can anyone deny that there is a great deal innate in our mind, since we are innate to ourselves, so to speak, and since we have within ourselves being, unity, substance, duration, change, action, perception, pleasure, and a thousand other objects of our intellectual ideas? And since these objects are immediate and always present to our understanding (though they may not always be perceived consciously [*apperçus*] on account of our distractions and our needs), why should it be surprising that we say that these ideas, and everything that depends upon them, are innate in us? I have also used the comparison with a block of veined marble, rather than a completely uniform block of marble, or an empty tablet, that is, what the philosophers call a *tabula rasa*. For if the soul were like these empty tablets, truths would be in us as the shape of Hercules is in a block of marble, when the marble is completely indifferent to receiving this shape or another. But if the stone had veins which marked out the shape of Hercules rather than other shapes, then that block would be more determined with respect to that shape and Hercules would be as though innate in it in some sense, even though some labor would be required for these veins to be exposed and polished into clarity by the removal of everything that prevents them from appearing. This is how ideas and truths are innate in us, as natural inclinations, dispositions, habits, or potentialities [*virtualités*] are, and not as actions are, although these potentialities are always accompanied by some corresponding, though often insensible, actions.

Our able author seems to claim that there is nothing *potential* [*virtuel*] in us, and even nothing that we are not always actually conscious of perceiving [*appercevions*]. But he cannot hold this in all strictness; otherwise his position would be too paradoxical, since, again, acquired habits and the contents of our memory are not always consciously perceived [*apperçues*] and do not even always come to our aid when needed, though often we easily recall them to mind when some trivial occasion reminds us of them, as when we need only the beginning of a song to make us remember the rest. He also limits his thesis in other places, saying that there is nothing in us that we did not at least previously perceive consciously [*apperçu*]. But no one can guarantee by reason alone how far back our past and perhaps forgotten apperceptions can go, especially in view of the Platonists' doctrine of reminiscence, which, fabulous though it is, is not at all incompatible with pure reason. Furthermore, why must it be that everything is acquired by apperceptions of external things and that nothing can be unearthed from within ourselves? Is our soul in itself so empty that, without images borrowed from the outside, it is nothing? This is not, I am convinced, a view our judicious author could approve. Where could one find some tablets which do not have a certain amount of variety in themselves? Will we ever see a perfectly homogeneous and uniform surface?

Then why could we not also provide ourselves some object of thought from our own depths, when we are willing to dig there? Thus I am led to believe that, fundamentally, his view on this point is no different from mine, or rather from the common view, insofar as he recognizes two sources of our knowledge, the senses and reflection.

I do not know whether it will be as easy to reconcile him with me and with the Cartesians when he maintains that the mind does not always think, and in particular, that it is without perception during dreamless sleep, and when he objects that since bodies can be without motion, souls can just as well be without thought. But here I reply somewhat differently from what is customary. For I maintain that a substance cannot naturally be without action, and that there is never even any body without motion. Experience already supports me, and to be convinced of this, one need only consult the book of the illustrious Mr. Boyle against absolute rest.[392] But I believe that reason also supports this, and it is one of the proofs I use for refuting atoms. Moreover, there are a thousand indications that allow us to judge that at every moment there is an infinity of perceptions in us, but without apperception and without reflection—that is, changes in the soul itself, which we do not consciously perceive [*appercevons*], because these impressions are either too small or too numerous, or too homogeneous, in the sense that they have nothing sufficiently distinct in themselves; but combined with others, they do have their effect and make themselves felt in the assemblage, at least confusedly. It is in this way that custom makes us ignore the motion of a mill or of a waterfall, after we have lived nearby for some time. It is not that this motion ceases to strike our organs and that there is nothing corresponding to it in the soul, on account of the harmony of the soul and the body, but that the impressions in the soul and in the body, lacking the appeal of novelty, are not sufficiently strong to attract our attention and memory, which are applied only to more demanding objects. All attention requires memory, and when we are not alerted, so to speak, to pay heed to some of our own present perceptions, we let them pass without reflection and without even noticing them. But if someone alerts us to them right away and makes us take note, for example, of some noise we have just heard, we remember it, and we consciously perceive that we just had some sensation of it. Thus there were perceptions that we did not consciously perceive right away, the apperception in this case arising only after an interval, however brief. In order better to recognize [*juger*] these tiny perceptions [*petites perceptions*] that cannot be distinguished in a crowd, I usually make use of the example of the roar or noise of the sea that strikes us when we are at the shore. In order to hear this noise as we do, we must hear the parts that make up this whole, that is, we must hear the noise of each wave, even though each of these small noises is known only in the confused assemblage of all the others, and would not be noticed if the wave making it were the only one. For we must be slightly affected by the motion of this wave, and we must have some perception of each of these noises, however

392. Robert Boyle, *Discourse about the Absolute Rest in Bodies* (1669).

small they may be, otherwise we would not have the noise of a hundred thousand waves, since a hundred thousand nothings cannot make something. Moreover, we never sleep so soundly that we do not have some weak and confused sensation, and we would never be awakened by the greatest noise in the world if we did not have some perception of its beginning, small as it might be, just as we could never break a rope by the greatest effort in the world, unless it were stretched and strained slightly by the least efforts, even though the slight extension they produce is not apparent.

These tiny perceptions are therefore more effectual than one thinks. They make up this I-know-not-what, those flavors, those images of the sensory qualities, clear in the aggregate but confused in their parts; they make up those impressions the surrounding bodies make on us, which involve the infinite, and this connection that each being has with the rest of the universe. It can even be said that as a result of these tiny perceptions, the present is filled with the future and laden with the past, that everything conspires together (*sympnoia panta*, as Hippocrates said), and that eyes as piercing as those of God could read the whole sequence of the universe in the smallest of substances.

The things that are, the things that have been, and the things that will soon be brought in by the future.[393]

These insensible perceptions also indicate and constitute the individual, which is individuated [*caractérise*] by the traces which these perceptions preserve of its previous states, connecting it up with his present state. They can be known by a superior mind, even when the individual himself does not sense them, that is, when he no longer has an explicit memory of them. But these perceptions even provide a way of recovering the memory, as needed, through periodic unfoldings which may occur one day. That is why death might only be a state of sleep, and might not even remain one, insofar as the perceptions merely cease to be sufficiently distinct and, in animals, are reduced to a state of confusion which suspends apperception, but which cannot last forever; I shall not speak here of man, who ought to have great prerogatives in this matter in order to retain his personality.

It is also by means of these insensible perceptions that I explain the marvelous pre-established harmony between the soul and the body, and also between all the monads or simple substances, which takes the place of that untenable influence of the one on the others, and which, in the judgment of the author of the finest of dictionaries,[394] raises the greatness of divine perfections beyond anything ever conceived before. After this I would add little if I said that it is these tiny perceptions which determine us in many situations without our thinking of them, and which deceive the common people by giving the appearance of an *indifference of equilibrium*, as if it made no difference to us, for example, whether we turned right or left. Nor is it necessary for me to

393. Virgil, *Georgics* IV 393.

394. Pierre Bayle. The reference is to Bayle's discussion of Leibniz in notes H and L to the article "Rorarius" in his *Dictionary*. Bayle's point is that Leibniz's pre-established harmony puts implausibly severe demands on God's power.

point out here, as I've done in the book itself,[395] that they cause this uneasiness, which I show to consist in something that differs from pain only as the small differs from the great, and yet which often brings about our desire and even our pleasure by giving it a kind of spice. The insensible parts of our sensible perceptions also bring about a relation between those perceptions of color, heat, and other sensible qualities, and the motions in bodies that correspond to them. But the Cartesians and our author, penetrating though he is, think of the perceptions we have of these qualities as arbitrary, that is, as if God had given them to the soul according to his good pleasure without having regard to any essential relation between perceptions and their objects, a view which surprises me and seems to me unworthy of the wisdom of the author of things, who does nothing without harmony and reason.

In short, *insensible perceptions* have as much use in philosophy of mind [*Pneumatique*] as corpuscles do in physics; and it is equally unreasonable to reject the one as the other under the pretext that they are beyond the reach of the senses. Nothing takes place all at once, and it is one of the greatest and best verified maxims that *nature never makes leaps*; this is what I called *the law of continuity* when I once spoke about this in the *Nouvelles de la république des lettres*,[396] and this law is of considerable use in physics. It entails that one always passes from the small to the large and back again through what lies between, both in degrees and in parts, and that a motion never arises immediately from rest nor is it reduced to rest except through a lesser motion, just as we never manage to pass through any line or length before having passed through a shorter one. But until now, those who have given the laws of motion have not observed this law, believing that a body can instantaneously receive a motion opposite to the previous motion. All this can allow us to judge that noticeable perceptions arise by degrees from ones too small to be noticed. To judge otherwise is to know little of the immense subtlety of things, which always and everywhere involves an actual infinity.

I have also noticed that because of insensible variations, two individual things cannot be perfectly alike and must always differ in something over and above number. This puts an end to the empty tablets of the soul, a soul without thought, a substance without action, void space, atoms, and even particles in matter not actually divided, complete uniformity in a part of time, place, or matter, the perfect globes of the second element that derive from the perfect original cubes, and a thousand other fictions of philosophers which arise from their incomplete notions. These are things that the nature of things does not allow, things that are allowed to pass because of our ignorance and lack of attention; they cannot be tolerated unless we limit them to being abstractions of the mind, which protests that it does not deny the things it sets aside, but only judges that they need not enter into consideration at present. If we thought in earnest that things we do not consciously perceive

395. In the *New Essays* II.23.

396. The reference is to "A Letter of Mr. Leibniz on a General Principle Useful in explaining the Laws of Nature . . . ," which appeared in the July 1687 issue of the *Nouvelles*, and is translated in L 351–53.

[*s'apperçoit*] are not in the soul or in the body, we would fail in philosophy as in politics, by neglecting the *mikron*, imperceptible changes. But an abstraction is not an error, provided we know that what we are ignoring is really there. This is similar to what mathematicians do when they talk about the perfect lines they propose to us, uniform motions and other regular effects, although *matter* (that is, the mixture of the effects of the surrounding infinity) always provides some exception. We proceed in this way in order to distinguish various considerations and, as far as is possible, to reduce effects to their reasons, and foresee some of their consequences. For the more careful we are not to neglect any consideration we can subject to rules [*reguler*], the more closely practice corresponds to theory. But only the supreme reason, which nothing escapes, can distinctly understand the whole infinite, all the reasons, and all the consequences. With respect to infinities, we can only know them confusedly, but at least we can distinctly know that they exist, otherwise we would be very poor judges of the beauty and greatness of the universe, just as we would also be unable to develop a good physics which explains the nature of things in general, and still less a good philosophy of mind [*Pneumatique*], which includes the knowledge of God, of souls, and of simple substances in general.

This knowledge of insensible perceptions also serves to explain why and how two souls of the same species, whether human or otherwise, never leave the hands of the creator perfectly alike, and why and how each of them always has its original relation to the point of view it will have in the universe. But this already follows from what I pointed out previously about two individuals, namely that the *difference* between them is always *more than numerical*. There is another significant point on which I must differ, not only from the opinion of our author, but also from those of most of the moderns. I hold with most of the ancients that all spiritual beings [*génies*], all souls, all simple created substances, are always joined to a body, and that souls are never completely separated from bodies. I have *a priori* reasons for this, but this doctrine will be found to have the further advantage that it resolves all the philosophical difficulties about the state of souls, their perpetual conservation, their immortality, and their operation. Since the difference between one of their states and another is never, nor has it ever been anything but the difference between the more and the less sensible, between the more and the less perfect (or the other way around), the past or future state of souls is just as explicable as their present one. The slightest reflection is sufficient to show that this is reasonable, and that a leap from one state to an infinitely different one cannot be natural. I am surprised that the schools, by needlessly abandoning nature, have been willing to readily plunge into enormous difficulties, and thus to give free thinkers [*esprits forts*] an opportunity for their apparent triumphs. The arguments of the free thinkers collapse all at once with this explanation of things, in which it is no more difficult to conceive the preservation of souls (or rather, on my view, of the animal), than it is to conceive the change from caterpillar to butterfly and the preservation of thought in sleep, to which Jesus

Christ has divinely compared death.[397] Also, I have already said that no sleep can last forever; but it will have less duration or almost no duration at all in the case of rational souls, which are always destined to remain the persons [*personnage*] they were in the city of God, and consequently, to retain their memory, so that they can be better able to receive rewards and punishments. I further add that, in general, no disordering of its visible organs is capable of bringing things in the animal to the point of complete confusion, or to destroy all its organs, and to deprive the soul of the whole of its organic body and of the ineradicable remains of all its preceding traces. But the ease with which people have abandoned the ancient doctrine that angels have subtle bodies (a doctrine which has been confused with the corporality of angels), the introduction of the allegedly separated intelligences among created things (to which the intelligences that rotated Aristotle's heavens have contributed much), and finally the poorly understood opinion some have held that we cannot retain the souls of beasts without falling into metempsychosis, all these in my opinion have resulted in the neglect of the natural way of explaining the preservation of the soul. This has done great harm to natural religion, and has led many to believe that our immortality is nothing but a miraculous grace of God. Our celebrated author speaks with some doubt about this, as I will soon point out. But I wish that all who are of this opinion discussed it as wisely and as sincerely as he does. For it is to be feared that several who speak of immortality through grace merely do so in order to preserve appearances, and are at bottom not very far from those Averroists and certain pernicious Quietists who imagine an absorption and reunion of the soul with the ocean of divinity, a notion whose impossibility is clearly shown by my system alone, perhaps.

It seems, moreover, that we also disagree about matter, insofar as the author judges that the void is necessary for motion, since he believes that the small parts of matter are rigid. I admit that if matter were composed of such parts, motion in a plenum would be impossible; it would be as if a room were filled with a quantity of little pebbles without containing the least empty place. But I cannot grant this assumption, for which there seems to be no reason, even though this able author goes so far as to believe that the rigidity or the cohesion of the small parts constitutes the essence of bodies. Rather, we should conceive of space as filled with matter that was originally fluid, matter capable of any division, and indeed, actually subjected to division and subdivision to infinity, but with this difference, however, that it is unequally divisible and unequally divided in different places because of the motions there, motions which are already more or less harmonious. This brings it about that it has rigidity as well as fluidity everywhere, and that no body is hard or fluid to the ultimate degree, that is, that no atom has insuperable hardness, nor is any mass entirely indifferent to division. The order of nature, and particularly the law of continuity, also destroys both alternatives equally well.

I have also shown that *cohesion*, which is not itself an effect of impulsion or

397. John 11:11.

motion, would cause *traction*, properly speaking. For if there were an originally rigid body, an Epicurean atom, for example, which had a part projecting in the form of a hook (since we can imagine atoms in all sorts of shapes), this hook when pushed would pull with it the rest of the atom, that is to say, the part not pushed and not falling within the line of the impulse. However, our able author is himself opposed to those philosophic tractions, like the ones formerly attributed to the fear of the void, and he reduces them to impulses, maintaining with the moderns that one part of matter operates on another only by pushing against it from close by. I think that they are right about this, because otherwise the operation would not be intelligible at all.

I must not, however, conceal the fact that I have noticed a kind of retraction on this point on the part of our excellent author, and I cannot refrain from praising his modest sincerity about it, just as I have admired his penetrating insight on other occasions. His retraction occurs on page 408 of the reply to the second letter of the late Bishop of Worcester, printed in 1699. There, in order to justify the view he maintained against this learned prelate, namely that matter is capable of thought, he says among other things: *It is true, I say "that bodies operate by impulse and nothing else"* (*Essay*, II, chap. 8, sec. 11). *And so I thought when I writ it, and can yet conceive no other way of their operation. But I am since convinced by the judicious Mr. Newton's incomparable book, that it is too bold a presumption to limit God's power, [in this point], by our narrow conceptions. The gravitation of matter towards matter, by ways inconceivable to me, is not only a demonstration that God can, if he pleases, put into bodies powers and ways of operation, above what can be derived from our idea of body or can be explained by what we know of matter, but also an unquestionable [and everywhere visible] instance, that he has actually done so. And therefore, in the next edition of my book I shall take care to have that passage rectified.*[398] I find in the French version of this book, which was no doubt taken from the latest editions, that sec. 11 reads thus: *It is manifest, at least insofar as we can conceive it, that it is by impulse and nothing else that bodies operate one upon another, it being impossible to conceive that body should operate on what it does not touch, which is all one to imagine that it can operate where it is not.*[399]

I can only praise the modest piety of our famous author, who recognizes that God can do what goes beyond our understanding, and thus, that there may be inconceivable mysteries in the articles of faith. But I would not want us to be obliged to appeal to miracles in the ordinary course of nature, and to admit absolutely inexplicable powers and operations there. Otherwise, on the strength of what God can do, we would grant too much license to bad philosophers, allowing them those *centripetal virtues* or those *immediate attrac-*

398. *Works* III, 467–68. The two passages in the brackets were omitted in Leibniz's French translation of Locke's text. In addition, Locke talks of "my narrow conceptions" rather than "our narrow conceptions."

399. Leibniz is referring here to Pierre Coste's translation, *Essai Philosophique Concernant l'Entendement Humain*. Published in 1700, the same year as the important 4th edition of the *Essay*, it represents an intermediate stage between the 3rd and 4th editions. See *Essay*, ed. Nidditch, pp. xxxiv–xxxvi.

tions at a distance, without it being possible to make them intelligible; I do not see what would prevent our Scholastics from saying that everything happens simply through faculties and from maintaining their intentional species, which go from objects to us and find a way of entering our souls. If this is acceptable,

What I said could not be will now happen.[400]

So it seems to me that our author, judicious as he is, is here going rather too much from one extreme to the other. He raises difficulties about the operations of *souls*, when it is merely a matter of admitting what is not *sensible*, while here he grants *bodies* what is not even *intelligible*, allowing them powers and actions beyond everything which, in my opinion, a created mind could do or understand; for he grants them attraction, even at great distances, without limitation to any sphere of activity, and he does so in order to maintain a view which is no less inexplicable, namely the possibility of matter thinking in the natural order of things.[401]

The question he is discussing with the noted prelate who had attacked him is whether *matter can think*. Since this is an important point, and an important point for the present work as well, I cannot avoid going into it a bit, and taking account of their debate. I shall represent the substance of their dispute and take the liberty of saying what I think of it. The late Bishop of Worcester, fearing (but without great cause, in my opinion) that the author's doctrine of ideas was subject to some abuses prejudicial to the Christian faith, undertook to examine some aspects of it in his *Vindication of the Doctrine of the Trinity*. He first gives this excellent writer his due, by recognizing that the writer judges that the existence of the mind is as certain as that of the body, even though as regards these substances, the one is as little known as the other. He then asks (pages 241 seqq.) how reflection could assure us of the existence of the mind if God can give matter the faculty of thinking, as our author believes (Book IV, chap. 3, [sec. 6]) since, as a consequence, the way of ideas, which should serve to discriminate what can belong to the soul or to the body, would become useless. However, it was said in Book II of the *Essay on the Understanding* (chap. 23, sec. 15, 27, 28), that the operations of the soul provide us with the idea of the mind, and that the understanding, together with the will, makes this idea as intelligible to us as the nature of body is made intelligible by solidity and impulse. Here is how our author replies to this in his *First Letter* (pp. 65 seqq.): [[*I think that I have proved that there is a spiritual substance in us.* For]] *we experiment in ourselves thinking. The idea of this action, or mode of thinking, is inconsistent with the idea of self-subsistence, and therefore has a necessary connection with a support or subject of inhesion: the idea of that support is what we call substance. . . . The general idea of substance*

400. Ovid, *Tristia*, I.7.7.

401. In his notes for the preface, Leibniz wrote: "The philosophy of the author destroys what appears to me to be the most important thing, that the soul is imperishable, whereas on his view there must be a miracle for it to endure. This is directly opposed to the Platonic philosophy joined to that of Democritus and Aristotle, such as mine is." (A VI, 6, 48)

being the same everywhere, the modification of thinking, or the power of thinking, joined to it, makes it a spirit, without considering what other modification it has, as whether it has the modification of solidity or not. As, on the other side, substance, that has the modification of solidity, is matter, whether it has the modification of thinking or no. And therefore, if your lordship means by a spiritual, an immaterial substance, I grant I have not proved, nor upon my principles, can it be proved [. . .] *that there is an immaterial substance in us* [. . . .] *Though I presume, what I have said about the supposition of a system of matter* [. . .] (Book IV, chap 10, sec. 16) *(which there demonstrates that God is immaterial) will prove it in the highest degree probable, that the thinking substance in us is immaterial. . . .*[[*Yet I have shown* (adds the author, p. 68)]] *that all the great ends of religion and morality are secured . . . by the immortality of the soul, without a necessary supposition that the soul is immaterial.*[402]

In his *Reply* to this letter, to show that our author was of another opinion when he wrote Book II of the *Essay*, the learned Bishop quotes (p. 51) the following passage (Book II, chap. 23, sec. 15), where it is said that *by the simple ideas we have taken from those operations of our own minds* [. . .] *we are able to frame the complex idea of spirit. And thus, by putting together the ideas of thinking, perceiving, liberty, and power of moving our bodies, we have as clear a* [. . .] *notion of immaterial substances as we have of material.*[403] He further cites other passages to show that the author opposed mind to body. He says (p. 54) that the end of religion and morality is better secured by proving that the soul is immortal by its very nature, that is, immaterial. He further cites this passage (p. 70), that *all the ideas we have of particular, distinct sorts of substances are nothing but several combinations of simple ideas,*[404] and that, consequently, the author believed that the idea of thinking and willing results in a substance different from that given by the idea of solidity and impulse. And he says that in sec. 17 the author remarks that the latter ideas constitute the body as opposed to the mind.

The Bishop of Worcester could have added that from the fact that the *general idea* of substance is in body and in mind, it does not follow that their differences are *modifications* of a single thing, as our author just said in the passage I cited from his *First Letter*. We must distinguish between modifications and attributes. The faculties of having perception and of acting, as well as extension, and solidity, are attributes, or perpetual and principal predicates; but thought, impetuosity, shapes, and motions are modifications of these attributes. Moreover, we must distinguish between the physical (or real) genus and logical (or ideal) genus. The things of the same physical genus, or those which are *homogeneous*, are of the same matter, so to speak, and can often be changed from one into another by changing their modifications, like circles and squares. But two heterogeneous things can have a common logical genus, and then their *differences* are neither simple accidental modifications

402. *Works* III 33–34. Passages in double brackets are transitional phrases added by Leibniz.
403. In Locke, it was "themselves" rather than "our bodies." In later editions Leibniz added "immaterial" to spirit.
404. *Essay*, II.23.6.

of a single subject, nor of a single metaphysical or physical matter. Thus time and space are quite heterogeneous things, and we would be wrong to imagine some common real subject I-know-not-what which had only continuous quantity in general and whose modifications resulted in time or space. Yet their common logical genus is continuous quantity. Someone might perhaps make fun of these philosophical distinctions between two genera, the one only logical and the other real, and between two matters, the one physical—that of bodies—and the other only metaphysical or general, as if someone were to say that two parts of space are of the same matter or that two hours are also of the same matter as one another. Yet these distinctions concern not only terms, but also things themselves, and seem to be particularly relevant here, where their confusion has given rise to a false conclusion. These two genera have a common notion, and the notion of real genus is common to both sets of matters, so that their genealogy would be as follows:

GENUS
- the merely *logical*, distinguished by simple *differences*
- the *real*, that is, MATTER, where differences are *modifications*
  - the merely *metaphysical*, in which there is homogeneity
  - the *physical*, in which there is a solid, homogeneous mass

I have not seen the author's *Second Letter* to the bishop; the *Reply* that the prelate makes to it hardly touches the point about the thinking of matter. But our author's *Reply* to this *Second Reply* returns to it. *God* (he says, nearly in these words, page 397) *adds the qualities and perfections that please him to the essence of matter; to some parts [he adds] simple motion, to plants vegetation, and to animals sensation. Those who agree with me so far exclaim against me as soon as I go a step further and say that God may give to matter thought, reason, and volition—as if this would destroy the essence of matter. But to prove this assertion they advance that thought or reason is not included in the essence of matter; this proves nothing since motion and life are not included in it either. They also advance that we cannot conceive that matter can think; but our conception is not the measure of God's power.*[405] After this he quotes the example of the attraction of matter (p. 99, but especially p. 408), in which he speaks of the gravitation of matter toward matter, attributed to Mr. Newton, in the words I quoted above, admitting that we can never conceive how this happens. This is, in fact, a return to occult qualities or, what is more, to inexplicable qualities. He adds (p. 401) that nothing is more apt to favor the skeptics than denying what we

405. This is a paraphrase of *Works* III 460–61.

don't understand, and (p. 402) that we do not even conceive how the soul thinks. He holds (p. 403) that since the two substances, material and immaterial, can be conceived in their bare essence without any activity, it is up to God to give the power of thinking to the one or to the other. And he wants to take advantage of his adversary's view, which grants sensation to beasts, but does not grant them any immaterial substance. He claims that freedom, self-consciousness (p. 408), and the power of making abstractions can be given to matter, not as matter, but as enriched by divine power. Finally he reports (p. 434) the observation of a traveller as eminent and judicious as Mr. de la Loubere that the pagans of the East know of the immortality of the soul without being able to understand its immateriality.

With regard to all this I will note, before coming to the explanation of my opinion, that it is certain that matter is as little capable of producing sensation mechanically as it is of producing reason, as our author agrees. Furthermore, I note, indeed, that I recognize that we are not allowed to deny what we do not understand, though I add that we have the right to deny (at least in the order of nature) what is absolutely unintelligible and inexplicable. I also maintain that substances (material or immaterial) cannot be conceived in their bare essence without activity, and that activity is of the essence of substance in general. And finally, I maintain that the conception of creatures is not the measure of God's power, but that their conceptivity, or ability [*force*] to conceive, is the measure of nature's power; everything in conformity with the natural order can be conceived or understood by some creature.

Those who understand my system will judge that I will not be in complete agreement with either of these two excellent authors, whose dispute, however, is very instructive. But to explain myself distinctly, one must above all take into account that the modifications which can come naturally or without miracle to a single subject must come to it from the limitations or variations of a real genus or of an original nature, constant and absolute. For this is how in philosophy we distinguish the modes of an absolute being from the being itself; for example, we know that magnitude, shape, and motion are obviously limitations and variations of corporeal nature. For it is clear how a limitation of extension produces shapes, and that the change which takes place there is nothing but motion. And every time we find some quality in a subject, we ought to think that, if we understood the nature of this subject and of this quality, we would understand how this quality could result from that nature. Thus in the order of nature (setting miracles aside) God does not arbitrarily give these or those qualities indifferently to substances; he never gives them any but those which are natural to them, that is to say, those that can be derived from their nature as explicable modifications. Thus we can judge that matter does not naturally have the attraction mentioned above, and does not of itself move on a curved path, because it is not possible to conceive how this takes place, that is to say, it is not possible to explain it mechanically, whereas that which is natural should be capable of becoming distinctly conceivable, if we were admitted into the secrets of things. This distinction between what is natural and explicable and what is inexplicable and miraculous removes all

the difficulties: if we were to reject it, we would uphold something worse than occult qualities, and in doing so we would renounce philosophy and reason, and throw open refuges for ignorance and idleness through a hollow system, a system which admits not only that there are qualities we do not understand (of which there are only too many) but also that there are some qualities that the greatest mind could not understand, even if God provided him with every possible advantage, that is, qualities that would be either miraculous or without rhyme or reason. And it would indeed be without rhyme or reason that God should ordinarily perform miracles, so that this do-nothing hypothesis would equally destroy philosophy, which searches for reasons, and the divine wisdom, which provides them.

As for the question of thinking, it is certain—and our author recognizes in more than one place—that thinking cannot be an intelligible modification of matter, that is, that a sensing or thinking being is not a mechanical thing like a watch or a windmill, in the sense that we could conceive of magnitudes, shapes and motions whose mechanical conjunction could produce something thinking, and even sensing, in a mass in which there was nothing of the kind, that would likewise cease to be if the mechanism got out of order. Thus it is not natural for matter to sense and to think, and there are only two ways in which it could do so. One of these would be for God to join to it a substance to which thought is natural, and the other would be for God to endow it with thought miraculously. In this, then, I agree entirely with the Cartesians, except that I extend the view to beasts as well, and believe that they have sensation and souls which are, properly speaking, immaterial and as imperishable as the atoms of Democritus or Gassendi. But the Cartesians, who are confused about the souls of beasts, and do not know what to do with them if they are preserved (since it did not occur to them that the animal might be preserved in a reduced form), have been forced to deny them even sensation, contrary to all appearances, and contrary to the judgment of mankind. But if someone said that God, at very least, can add this faculty of thinking to a mechanism properly prepared, I would answer that if this occurred, and if God added this faculty to matter without at the same time endowing it with a substance that was the subject in which this same faculty inhered (as I conceive it), that is, without adding an immaterial soul there, then matter would have to be raised miraculously so as to be capable of receiving a power of which it is not capable naturally, just as some Scholastics claim that God raises fire to the point of giving it the power directly to burn minds separated from matter, which would be a miracle, pure and simple. It is enough that we can maintain that matter thinks only if we attribute to it either an imperishable soul, or else a miracle, and thus, that the immortality of our souls follows from what is natural, since we could then hold that they are destroyed only by miracle, whether by exalting matter or by annihilating the soul. For we know, of course, that the power of God could make our souls mortal, even though they may be immaterial (or immortal by nature alone), since he is capable of annihilating them.

Now the truth of the immateriality of the soul is undoubtedly important.

For it is infinitely more useful to religion and morality, especially in our days (when many people have scant respect for revelation by itself or for miracles), to show that souls are naturally immortal, and that it would be a miracle if they were not, than it would be to maintain that our souls must naturally die, and that it is due to a miraculous grace, based solely on God's promise, that they do not die. Moreover, we have known for a long time that those who wished to destroy natural religion, and reduce everything to revelation, as if reason taught us nothing about it, have been held suspect, and not always without reason. But our author is not of their number. He maintains a demonstration of God's existence and he attributes to the immateriality of the soul *a probability of the highest degree*, which may consequently pass for a *moral certainty*, so that I imagine that, having as much sincerity as penetration, he might quite well come to agree with the doctrine I have just expounded, a doctrine fundamental in every reasonable philosophy. For otherwise, I do not see how we can prevent ourselves from falling back into a fanatical philosophy, such as the *Mosaic philosophy* of Fludd, which saves all phenomena by attributing them immediately and miraculously to God, or into a barbaric philosophy, like that of certain philosophers and physicians of former days, who still savored of the barbarism of their own age, and who today are justly despised. They saved the appearances by explicitly fabricating suitable occult qualities or faculties, which were thought to be like little demons or spirits able to do what was required of them without any fuss, just as if pocket watches told time by some faculty of clockness without the need of wheels, or mills crushed grain by a fractive faculty without the need of anything like millstones. As for the difficulty many people have had in conceiving an immaterial substance, it soon ceases (at least in large part) when one no longer requires substances separated from matter; I hold, in fact, that such substances have never existed naturally among created things.

Berkeley

From a Letter to Des Bosses (5 March 1715)[406]

THE ONE in Ireland who attacks the reality of bodies does not seem to bring forward suitable reasons, nor does he explain himself sufficiently. I suspect that he is one of that sort of men who wants to be known for his paradoxes.

406. G II 492; W 636. Latin.