

supposition, then, I have arrived at my present state by fate or chance or a continuous chain of events, or by some other means; yet since deception and error seem to be imperfections, the less powerful they make my original cause, the more likely it is that I am so imperfect as to be deceived all the time. I have no answer to these arguments, but am finally compelled to admit that there is not one of my former beliefs about which a doubt may not properly be raised; and this is not a flippant or ill-considered conclusion, but is based on powerful and well thought-out reasons. So in future I must withhold my assent from these former beliefs just as carefully as I would from obvious falsehoods, if I want to discover any certainty.

But it is not enough merely to have noticed this; I must make an effort to remember it. My habitual opinions keep coming back, and, despite my wishes, they capture my belief, which is as it were bound over to them as a result of long occupation and the law of custom. I shall never get out of the habit of confidently assenting to these opinions, so long as I suppose them to be what in fact that they are, namely highly probable opinions – opinions which, despite the fact that they are in a sense doubtful, as has just been shown, it is still much more reasonable to believe than to deny. In view of this, I think it will be a good plan to turn my will in completely the opposite direction and deceive myself, by pretending for a time that these former opinions are utterly false and imaginary. I shall do this until the weight of preconceived opinion is counterbalanced and the distorting influence of habit no longer prevents my judgement from perceiving things correctly. In the meantime, I know that no danger or error will result from my plan, and that I cannot possibly go too far in my distrustful attitude. This is because the task now in hand does not involve action but merely the acquisition of knowledge.

I will suppose therefore that not God, who is supremely good and the source of truth, but rather some malicious demon of the utmost power and cunning has employed all his energies in order to deceive me. I shall think that the sky, the air, the earth, colours, shapes, sounds and all external things are merely the delusions of dreams which he has devised to ensnare my judgement. I shall consider myself as not having hands or eyes, or flesh, or blood or senses, but as falsely believing that I have all these things. I shall stubbornly and firmly persist in this meditation; and, even if it is not in my power to know any truth, I shall at least do what is in my power, that is, resolutely guard against assenting to any falsehoods, so that the deceiver, however powerful and cunning he may be, will be unable to impose on me in the slightest degree. But this is an arduous undertaking, and a kind of laziness brings me back to normal life. I am like a prisoner who is enjoying an imaginary freedom while asleep; as he begins to suspect that he is asleep, he dreads being woken up, and goes along with the pleasant illusion as long as he can. In the same way, I happily slide back into my old opinions and dread being shaken out of them, for fear that my peaceful sleep may be followed by hard labour when I wake, and that I shall have to toil not in the light, but amid the inextricable darkness of the problems I have now raised.

[So ends the First Meditation. In the opening of the Second Meditation, which follows, Descartes's meditator struggles to escape from the morass of doubt into which he has fallen.]

So serious are the doubts into which I have been thrown as a result of yesterday's meditation that I can neither put them out of my mind nor see any way of resolving

them. It feels as if I have fallen unexpectedly into a deep whirlpool which tumbles me around so that I can neither stand on the bottom nor swim up to the top. Nevertheless I will make an effort and once more attempt the same path which I started on yesterday. Anything which admits of the slightest doubt I will set aside just as if I had found it to be wholly false; and I will proceed in this way until I recognize something certain, or, if nothing else, until I at least recognize for certain that there is no certainty. Archimedes used to demand just one firm and immovable point in order to shift the entire earth; so I too can hope for great things if I manage to find just one thing, however slight, that is certain and unshakeable.

I will suppose then, that everything I see is spurious. I will believe that my memory tells me lies, and that none of the things that it reports ever happened. I have no senses. Body, shape, extension, movement and place are chimeras. So what remains true? Perhaps just the one fact that nothing is certain.

Yet apart from everything I have just listed, how do I know that there is not something else which does not allow even the slightest occasion for doubt? Is there not a God, or whatever I may call him, who puts into me the thoughts I am now having? But why do I think this, since I myself may perhaps be the author of these thoughts? In that case am not I, at least, something? But I have just said that I have no senses and no body. This is the sticking point: what follows from this? Am I not so bound up with a body and with senses that I cannot exist without them? But I have convinced myself that there is absolutely nothing in the world, no sky, no earth, no minds, no bodies. Does it now follow that I too do not exist?

No: if I convinced myself of something then I certainly existed. But there is a deceiver of supreme power and cunning who is deliberately and constantly deceiving me. In that case I too undoubtedly exist, if he is deceiving me; and let him deceive me as much as he can, he will never bring it about that I am nothing so long as I think that I am something. So after considering everything very thoroughly, I must finally conclude that this proposition, *I am, I exist*, is necessarily true whenever it is put forward by me or conceived in my mind.

5 The Senses as the Basis of Knowledge: John Locke, *Essay concerning Human Understanding**

One of the striking features of Descartes's approach to knowledge was its 'internal' starting-point. 'I resolved one day to pursue my studies within myself', he wrote in the *Discourse*; and in the above extract from the *Meditations* we see him carrying out the strategy of leading the

mind away from the outside world, away from the external senses, and focusing on the meditator's inner awareness of his own existence. This very private beginning may not seem a promising start for the construction of an objective system of knowledge. But what Descartes does

* John Locke, *An Essay concerning Human Understanding* [1690], extracts (with omissions) from Bk I, ch. 2, §§ 1–5 and 12–16; Bk II, ch. 1, §§ 1–5; spelling and punctuation revised. There are many available editions of the *Essay*, of which the most definitive is the critical edition of P. H. Nidditch (Oxford: Clarendon, 1975); cf. pp. 48–58.

in the subsequent Meditations is to rely on the innate ideas with which he claims the mind is furnished. Chief of these is the idea of infinite perfection, which Descartes uses as the basis for a (controversial) proof that an infinite and perfect being, God, must really exist. And having established the existence of God, he then uses the other innate ideas, especially those of mathematics, as the foundations for his new scientific system. As he put in the *Discourse*, 'I noticed certain laws which God has so ordained in nature, and of which he has implanted such notions in our minds, that after adequate reflection we cannot doubt that they are exactly observed in everything that exists or occurs in the world'.

Descartes's appeal to innate ideas had a long ancestry (for its origins in Plato, see extract 1, above). But towards the end of the seventeenth century, in his *Essay concerning Human Understanding* (1690), John Locke launched a massive broadside against the doctrine of innateness, arguing instead that the senses are the primary source of all knowledge. He compares the mind to a *tabula rasa*, a blank sheet or 'white paper devoid of all characters', and then asks 'whence has it all the materials of reason and knowledge?'. To his own question he then supplies the famous reply, 'in one word, from *experience*'. On this *empiricist* conception (as it has come to be known, from the Greek word *empeiria*, 'experience'), observation via the senses, plus the mind's subsequent reflection on the data so acquired, constitutes the basis of all the knowledge we have, or can have.

Locke argues that the reasoning traditionally employed to support the doctrine of innate ideas

is wholly inadequate. Innatists typically appeal to 'universal assent' – that there are certain fundamental truths accepted by everyone; but Locke objects, first, that even if universal assent were established it would not prove innateness; and second that, in any case, these supposedly innate principles are 'so far from having a universal assent that there are a great part of mankind to whom they are not so much as known'. He cites the cases of 'idiots and children'. With regard to the abstract principles of logic and mathematics (often thought to be prime candidates for innately implanted principles), Locke observes that many people go through their entire lives without thinking of them at all: 'a great part of illiterate people and savages pass many years even of their rational age, without even thinking on this and the like general propositions'. Locke then proceeds to set out his own account of how we come to knowledge of general propositions: the senses first 'let in particular ideas', and furnish the 'yet empty cabinet' (the image here is of the mind as a chamber that is entirely empty until the data from the senses enter it); the mind then gets to work on these materials, abstracting from the particular and learning the use of 'general names'. Here and elsewhere Locke does not deny that human beings have innate *capacities*, but he argues that a capacity to come to know *X* is not at all the same as innate knowledge of *X*. If it were, then one would have to say, absurdly, that we have innate knowledge of everything we learn in life.¹ His uncompromising conclusion is that the human mind does not have the 'least glimmering' of any ideas which it does not receive either from sensation or subsequent reflection.

suppose the ideas of colours [to be] innate in a creature to whom God hath given sight, and a power to receive them by the eyes from external objects; and no less unreasonable would it be to attribute several truths to the impressions of nature, and innate characters, when we may observe in ourselves faculties, fit to attain as easy and certain knowledge of them as if they were originally imprinted on the mind...

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

This argument, drawn from universal consent, has this misfortune in it: that if it were true in matter of fact, that there were certain truths wherein all mankind agreed, it would not prove them innate, if there can be any other way shown how men may come to that universal agreement in the things they do consent in; which I presume may be done.

But, which is worse, this argument of universal consent, which is made use of to prove innate principles, seems to me a demonstration that there are none such: because there are none to which all mankind give a universal assent. I shall begin with the speculative, and instance... *Whatsoever is, is*; and *It is impossible for the same thing to be, and not to be*, which of all others I think have the most allowed title to innate... But yet I take liberty to say that these propositions are so far from having a universal assent that there are a great part of mankind to whom they are not so much as known.

For, first it is evident that all *children*, and *idiots*, have not the least apprehension or thought of them: and the want of that is enough to destroy that universal assent, which must needs be the necessary concomitant of all innate truths: it seeming to me near a contradiction to say that there are truths imprinted on the soul which it perceives or understands not; imprinting, if it signify any thing, being nothing else but the making certain truths to be perceived. For to imprint any thing on the mind without the mind's perceiving it seems to me hardly intelligible. If therefore children and idiots have souls, have minds, with those impressions upon them, they must unavoidably perceive them, and necessarily know and assent to these truths – which since they do not, it is evident that there are no such impressions. For if they are not notions naturally imprinted, how can they be innate? And if they are notions imprinted, how can they be unknown?

To say a notion is imprinted on the mind, and yet at the same time to say that the mind is ignorant of it, and never yet took notice of it, is to make this impression nothing. No proposition can be said to be in the mind which it never yet knew, which it was never yet conscious of. For if any *one* may, then, by the same reason, *all* propositions that are true, and the mind is capable ever of assenting to, may be said to be in the mind, and to be imprinted: since if any one can be said to be in the mind which it never yet knew, it must be only because it is *capable* of knowing it – and so the mind is, of all truths it ever shall know. Nay, thus truths may be imprinted on the mind, which it never did, nor ever shall know: for a man may live long, and die at last in ignorance of many truths, which his mind was capable of knowing, and that with certainty. So that if the *capacity* of knowing be the natural impression contended for,

 It is an established opinion amongst some men, that there are in the understanding certain *innate principles*; some primary notions... characters, as it were stamped upon the mind of man, which the soul receives in its very first being; and brings into the world with it. It would be sufficient to convince unprejudiced readers of the falseness of this supposition, if I should only show... how men, barely by the use of their natural faculties, may attain to all the knowledge they have, without the help of any innate impressions; and may arrive at certainty, without any such original notions or principles. For I imagine any one will easily grant that it would be impertinent to

¹ In later sections of the *Essay*, Locke proceeds to argue equally vigorously that there are no innate moral or practical principles, any more than there are innate logical and mathematical principles, and that observed divergences in religious belief and practice rule out the idea of a universal innate idea of God.

all the truths a man ever comes to know will, by this account, be, every one of them, innate; and this great point will amount to no more, but only to a very improper way of speaking; which whilst it pretends to assert the contrary, says nothing different from those who deny innate principles. For nobody, I think, ever denied that the mind was capable of knowing several truths.

The capacity, they say, is innate, the knowledge acquired. But then to what end such contest for certain innate maxims? If truths can be imprinted on the understanding without being perceived, I can see no difference there can be between any truths the mind is capable of knowing in respect of their original [their origins]. They must all be innate, or all adventitious [coming from outside]: in vain shall a man go about to distinguish them. He therefore that talks of innate notions in the understanding cannot (if he intend thereby any distinct sort of truths) mean such truths to be in the understanding as it never perceived, and is yet wholly ignorant of. For if these words ('to be in the understanding') have any propriety, they signify to be understood. So that 'to be in the understanding' and 'not to be understood'; 'to be in the mind' and 'never to be perceived', is all one, as to say, anything is, and is not, in the mind or understanding. If therefore these two propositions, *Whatsoever is, is*; and *It is impossible for the same thing to be and not to be*, are by nature imprinted, children cannot be ignorant of them: infants, and all that have souls must necessarily have them in their understandings, know the truth of them, and assent to it.

To avoid this, it is usually answered that all men know and assent to them *when they come to the use of reason*, and this is enough to prove them innate. I answer:

Doubtful expressions, that have scarce any signification, go for clear reasons to those who, being prepossessed, take not the pains to examine even what they themselves say. For to apply this answer with any tolerable sense to our present purpose, it must signify one of these two things: either that as soon as men come to the use of reason, these supposed native inscriptions come to be known and observed by them; or else, that the use and exercise of men's reasons assists them in the discovery of these principles, and certainly makes them known to them.

If they mean that by the *use of reason* men may discover these principles, and that this is sufficient to prove them innate, their way of arguing will stand thus: that whatever truths reason can certainly discover to us, and make us firmly assent to, those are all naturally imprinted on the mind; since that universal assent, which is made the mark of them, amounts to no more but this – that by the use of reason, we are capable to come to a certain knowledge of, and assent to them. And by this means there will be no difference between the maxims of the mathematicians and theorems they deduce from them: all must be equally allowed innate, they being all discoveries made by the use of reason, and truths that a rational creature may certainly come to know, if he apply his thoughts rightly that way...

If by knowing and assenting to them *when they come to the use of reason* be meant that this is the time when they come to be taken notice of by the mind – and that as soon as children come to the use of reason, they come also to know and assent to these maxims – this also is false, and frivolous. *First*, it is false. Because it is evident these maxims are not in the mind so early as the use of reason; and therefore the coming to the use of reason is falsely assigned as the time of their discovery. How many instances of the use of reason may we observe in children, a long time before they have any knowledge of this maxim *that it is impossible for the same thing to be and not to be?*

A great part of illiterate people, and savages, pass many years, even of their rational age, without ever thinking on this, and the like general propositions. I grant men come not to the knowledge of these general and more abstract truths, which are thought innate, till they come to the use of reason; and I add, *nor then neither*. Which is so, because till after they come to the use of reason, those general abstract ideas are not framed in the mind, about which those general maxims are, which are mistaken for innate principles; but [they] are indeed discoveries made... and brought into the mind by the same way, and discovered by the same steps, as several other propositions, which nobody was ever so extravagant as to suppose innate... I allow therefore a necessity that men should come to the use of reason, before they get the knowledge of those general truths: but deny that men's coming to the use of reason is the time of their discovery.

In the mean time, it is observable that this saying, that men know and assent to these maxims *when they come to the use of reason*, amounts in reality of fact to no more but this: that they are never known nor taken notice of before the use of reason, but may possibly be assented to sometime after, during a man's life; but when, is uncertain. And so may all other knowable truths, as well as these, which therefore have no advantage, nor distinction from others, by this note of being known when we come to the use of reason; nor are thereby proved to be innate, but quite the contrary.

But *secondly*, were it true that the precise time of their being known and assented to were *when men come to the use of reason*, neither would that prove them innate... All that can with any truth be meant by this proposition, that men assent to them *when they come to the use of reason*, is no more but this, that the making of general abstract ideas and the understanding of general names, being a concomitant of the rational faculty, and growing up with it, children commonly get not those general ideas nor learn the names that stand for them till (having for a good while exercised their reason about familiar and more particular ideas) they are, by their ordinary discourse and actions with others, acknowledged to be capable of rational conversation. If assenting to these maxims *when men come to the use of reason* can be true in any other sense, I desire it may be shown; or at least, how in this or any other sense it proves them innate.

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

the *use of reason*. For a child knows as certainly, before it can speak, the difference between the ideas of sweet and bitter (i.e. that sweet is not bitter) as it knows afterwards (when it comes to speak) that wormwood and sugar-plums are not the same thing.

A child knows not that three and four are equal to seven, till he comes to be able to count to seven, and has got the name and idea of equality; and then upon the explaining those words, he presently assents to, or rather perceives the truth of, that proposition. But neither does he then readily assent because it is an innate truth, nor was his assent wanting, till then, because he wanted the use of reason; but the truth of it appears to him, as soon as he has settled in his mind the clear and distinct ideas that these names stand for; and then he knows the truth of that proposition upon the same grounds, and by the same means, that he knew before that a rod and cherry are not the same thing...

[At the start of Book II of the *Essay*, Locke gives his own view on the origin of ideas.]

Every man being conscious to himself that he thinks, and that which his mind is employed about while thinking, being the ideas that are there, it is past doubt that men have in their minds several ideas, such as are those expressed by the words, *whiteness, hardness, sweetness, thinking, motion, man, elephant, army, drunkenness* and others. It is in the first place to be inquired: How he comes by them?...

Let us suppose the mind to be, as we say, white paper, void of all characters, without any ideas. How comes it to be furnished? Whence comes it by that vast store, which the busy and boundless fancy of man has painted on it, with an almost endless variety? When has it all the materials of reason and knowledge? To this I answer, in one word, from *experience*. In that all our knowledge is founded, and from that it ultimately derives itself. Our observation employed either about external sensible objects, or about the internal operations of our minds perceived and reflected on by ourselves, is that which supplies our understandings with all the materials of thinking. These two are the fountains of knowledge, from whence all the ideas we have, or can naturally have, do spring.

First, our *senses*, conversant about particular sensible objects, do convey into the mind several distinct *perceptions* of things, according to the various ways wherein those objects do affect them. And thus we come by those ideas we have of *yellow, white, heat, cold, soft, hard, bitter, sweet*, and all those which we call sensible qualities, which when I say the senses convey into the mind, I mean, they, from external objects, convey into the mind what produces there those *perceptions*. This great source of most of the ideas we have, depending wholly upon our senses, and derived by them to the understanding, I call *sensation*.

Secondly, the other fountain from which experience furnishes the understanding with ideas is the *perception of the operations of our own minds* within us, as it is employed about the ideas it has got. Which operations, when the soul comes to reflect on and consider, do furnish the understanding with another set of ideas, which could not be had from things without [outside]. And such are *perception, thinking, doubting, believing, reasoning, knowing, willing*, and all the different acting of our own minds; which we, being conscious of, and observing in ourselves, do from these receive into our understandings as distinct ideas, as we do from bodies affecting our senses. This

source of ideas every man has wholly in himself; and though it be not sense, as having nothing to do with external objects, yet it is very like it, and might properly enough be called internal sense. But as I call the other *sensation*, so I call this *reflection*, the ideas it affords being such only as the mind gets by reflecting on its own operations within itself. By *reflection* then... I would be understood to mean that notice which the mind takes of its own operations, and the manner of them, by reason whereof there come to be ideas of these operations in the understanding. These two, I say, viz. external material things, as the objects of *sensation*, and the operations of our own minds within, as the objects of *reflection*, are, to me, the only originals from whence all our ideas take their beginnings...

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

6 Innate Knowledge Defended: Gottfried Leibniz, *New Essays* on *Human Understanding**

Locke's attack on the theory of innate knowledge provoked a comprehensive response from the German philosopher Gottfried Leibniz, in his *New Essays on Human Understanding* (*Nouveaux Essais sur l'entendement humain*), written in French and completed in 1704 (but not published until 1765, some fifty years after the author's death). Leibniz agrees with Locke that sensory stimulation is necessary for the acquisition of knowledge. But he argues that it is not, by itself, sufficient. The senses merely elicit or activate what is already in a certain sense present within us – 'living fires or flashes of light hidden inside us but made visible by the stimulation of the senses, as sparks can be struck from a steel'. Leibniz goes on to cite the necessary truths of mathematics as support for his version of the theory of innateness: the truth of such propositions 'does not depend on instances, nor consequently on the testimony of the senses'. Readers may well see a parallel here with the earlier arguments of Plato in the *Meno* (extract 1, above). Although sensory

stimulation (the drawing of a visible diagram in the sand) helped the slave boy to see the result concerning the square on the diagonal, the *truth* of the proposition in question does not in any way depend on such experiments or observations or 'instances'; it can be demonstrated quite independently of experience. Reflection on the universal and necessary nature of truths of this kind leads Leibniz to the conclusion that proof of necessary truths such as those of mathematics 'can only come from inner principles'.

Locke, as is clear from our previous passage (extract 5), had objected that if such truths were indeed imprinted in the mind from birth, one would surely expect young children to be aware of them – which in many cases they patently are not. To this Leibniz replies that although present in the mind, such principles are not like notices conspicuously posted on a 'notice board': it often needs diligent attention for us to achieve the kind of explicit awareness that makes us recognize their truth. Against Locke's image of

* G. W. Leibniz, *New Essays on Human Understanding* [*Nouveaux essais sur l'entendement humain*, c.1704; first pub. 1765]. Trans. and ed. Peter Remnant and Jonathan Bennett (Cambridge: Cambridge University Press, 1981), paras 44–53.