Judgment

No. 6 of *Essays on the Intellectual Powers of Man*

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[Brackets] enclose editorial explanations. Small ·dots· enclose material that has been added, but can be read as though it were part of the original text. Occasional •bullets, and also indenting of passages that are not quotations, are meant as aids to grasping the structure of a sentence or a thought. Every four-point ellipsis. . . . indicates the omission of a brief passage that seems to present more difficulty than it is worth. Longer omissions are reported between brackets in normal-sized type.

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Contents

Chapter 1: Judgment in general

Judging is an operation of the mind that is so familiar to everyone who has understanding, and its name is so common and so well understood, that it doesn't need to be defined.

Just as one can't by a definition give a notion of colour to a man who never saw colours, so you can't by any definition to give a clear notion of judgment to a man who •hasn't judged often and •isn't capable of reflecting attentively on this act of his mind. The best use of a definition is to prompt him to that reflection; and without reflection the best definition will be apt to mislead him.

The definition commonly given of *judgment* by the more ancient writers in logic was that judgment is *an act of the mind by which one thing is affirmed or denied of another*. This is as good a definition of it as can be given, I think. Further on in this Essay you'll see why I prefer it to some later definitions. Without purporting to give any other definition, I shall make two ·critical· remarks on this one, and then offer some general remarks about judgment.

(1) It is true that we *express* our judgments by affirming or denying, but there can be judgments that are not expressed. Judgment is a solitary act of the mind, and the expression of it by affirmation or denial is not at all essential to it. It can be silent and not expressed. Indeed, we all know that men may judge *contrary to* what they affirm or deny; so the definition must be understood to be talking of *mental* affirmation or denial—which is merely another name for judgment.

(2) Affirmation and denial is very often the expression of *testimony*, which is a different act of the mind from *judgment* and ought to be distinguished from it.

A judge asks a witness what he knows about some event to which he was an eye-witness. He answers by affirming or denying something. But his answer doesn't *express his judgment*; it *is his testimony*. On the other hand, I ask a man his opinion on some matter of science or literary criticism. His answer isn't testimony; it's the expression of his judgment.

Testimony is a social act, and it is essential to it to be expressed by words or signs. 'Silent testimony' is a contradiction; but there is no contradiction in 'silent judgment'—a judgment can be complete without being expressed.

In testimony a man swears his truthfulness for what he affirms, so that false testimony is a lie. But a wrong judgment is not a lie; it is only an error.

In all languages, I think, testimony and judgment are expressed by the same form of speech: an affirmative or negative proposition, with a verb in the so-called 'indicative mood'. To distinguish them by the form of speech we would need two indicative moods for verbs—one for testimony and another to express judgment. I don't know of any language where this is found. Why? It can't be that the vulgar cannot distinguish the two, for everyone knows the difference between a lie and an error of judgment. The real reason is that the •content of what someone says and the •context in which he says it make it easy for us to tell whether he intends to give his testimony or merely to express his judgment.

Although men must have *judged* many times before law-courts were established, it is very probable that there were courts before anyone started to *theorize about judgment*; so the word 'judgment' may have been borrowed from the practice of courts. Just as •a judge, after taking the proper evidence, passes sentence in a case—a sentence that we call his 'judgment'—so •the mind, with regard to whatever

is true or false, passes sentence or decides according to the evidence that appears. Some kinds of evidence leave no room for doubt: sentence is passed immediately, without looking for or hearing any contrary evidence, because the thing is certain and widely known. In other cases it is appropriate to weigh evidence on both sides before passing sentence. The analogy between a law-court and this inner court of the mind is too obvious to be overlooked by anyone who ever appeared before a judge. And it is probable that the word 'judgment', as well as many other words we use in speaking of this mental operation, are based on this analogy.

Having offered these preliminaries, so that you will clearly understand what I mean by 'judgment', I proceed to make some general observations concerning judgment. ·There will be four of them, with the fourth occupying about two-thirds of the chapter·.

(1) Judgment is an act of the mind that is of a radically different kind from simple apprehension or the bare conception of a thing. [For 'simple apprehension' see Essay 1, chapter 7.] There would be no need to *say* this if it weren't that some philosophers have been led by their theories to a contrary opinion.

Although there can't be any judgment without a conception of the things about which we judge, ·the converse doesn't hold·—there can be conception without any judgment. Judgment can only be expressed by a proposition, and a proposition is a complete sentence; but simple apprehension can be expressed by a word, or by words, that don't make a complete sentence. There *can* be simple apprehension of a proposition, but everyone knows that it's one thing to •apprehend a proposition—i.e. to conceive what it means—and quite another thing to •judge it to be true or false.

It is self-evident that every judgment must be either true or false; but simple apprehension or conception can't be either be true or false, as I showed in Essay 1, chapter 7.

One judgment can contradict another; and it is impossible for a man to have at the same time two •judgments that he perceives to be contradictory. But contradictory propositions may be •conceived at the same time without any difficulty. *That the sun is bigger than the earth* and *that the sun is not bigger than the earth* are contradictory propositions. Anyone who apprehends the meaning of •either of them apprehends the meaning of •both. But he can't possibly *judge* both to be true at the same time. He knows that if either is true the other must be false. For these reasons I hold it to be certain that judgment and simple apprehension are radically different acts of the mind.

(2) There are •notions or •ideas whose source is the faculty of judgment. If we didn't have that faculty, those notions or ideas couldn't have entered into our minds; and to people who do have that faculty, and are capable of reflecting on its operations, •they are obvious and familiar. They include the notions of

judgment
proposition
subject, predicate, and copula of a proposition
affirmation and negation
true and false
knowledge
belief and disbelief
opinion
assent
evidentness.

We couldn't get these notions from any source other than reflecting on our judgments. ·And the list could be lengthened enormously, because· very many of our notions or ideas

concern *relations* of things, and I shall show later—·near the end of this chapter·—that we can't have an idea of *any* relation without some exercise of judgment.

(3) In people who are old enough to have understanding, judgment necessarily accompanies all •sensation, •sense-perception, •consciousness, and •memory; but not •conception.

I restrict this to people who are old enough to have understanding, because there may be a question as to whether very young infants have any judgment or belief at all. The same question arises regarding brute animals and some mentally retarded people. This question is irrelevant to my present topic, and I say nothing here about it, but merely confine myself to people who do have the use of judgment.

[The word 'determination', which is about to become prominent, connects with settling, deciding, concluding, intellectually *opting*, or the like. No current word could safely be put in its place; you'll have to get the idea from the context.]

It is obvious that someone who •feels pain judges and believes that he is really in pain. The man who •perceives an object believes that it exists and is what he clearly perceives it to be; and it's not in his power to avoid such a judgment. The same holds for •memory and for •consciousness. I shan't argue about whether judgment should be called a *necessary accompaniment* of •these operations or rather a *part or ingredient* of them; but it's certain that all of them are accompanied by a determination that something is true or false, and a consequent belief. If this determination isn't judgment then we have no name for it; it isn't simple apprehension, nor is it reasoning; it

- •is a mental affirmation or negation,
- •may be expressed by an affirmative or negative proposition, and
- •is accompanied by the firmest belief.

These are the characteristics of *judgment*; and I have to call it 'judgment' until I can find another name for it.

The judgments we form are either of necessary things or of contingent things. That three times three is nine, that the whole is greater than a part, are judgments about necessary things. Our assent to such necessary propositions isn't based on any operation of sense, of memory, or of consciousness, and it doesn't require the agreement of any of those. The only other operation that goes along with it is *conception*, which must accompany all judgment; so we can call this judgment of necessary things 'pure judgment'. ·In contrast with this·, our judgment of contingent things must always rest on some *other* operation of the mind, such as sense or memory or consciousness—or belief in testimony, which is itself based on sense—·and is in that way *not pure*·.

That *I now write on a table covered with green cloth* is a contingent proposition which I judge to be most undoubtedly true. My judgment is based on my •perception, and is a necessary accompaniment or ingredient of my perception. That *I dined with Dr Stewart yesterday* I judge to be true because I •remember it, and my judgment necessarily goes along with this remembering or is a part of it.

Ordinary language contains many forms of speech showing that the senses, memory, and consciousness are regarded as *judging* faculties. We say that a man 'judges colours' by his eye, 'judges sounds' by his ear. We speak of 'the evidence of the senses', 'the evidence of memory', 'the evidence of consciousness'. Evidence is the basis for judgment, and when we see evidence it is impossible for us not to judge.

When we speak of seeing or remembering anything, we hardly ever add that we judge it to be true; but the reason for that seems to be that such an addition would be superfluous because everyone knows that what I see or remember I *must*

judge to be true. This is like the reason why, when speaking of something that is self-evident or strictly demonstrated, we don't say that we judge it to be true. This would be superfluous because everyone knows that we *must* judge something to be true if we think it is self-evident or has been demonstrated.

[Reid gives more examples where the addition of '. . . and I judge it to be true' would be true but superfluous. He winds up this discussion thus:] A pregnant woman never says that when she went on a certain journey she carried her child along with her. We know that while the child is in her womb she *must* carry it along with her. Well, some mental operations can be said to carry judgment in their womb, and can no more leave it behind them than the pregnant woman can leave her child. That's why in speaking of such operations we don't explicitly mention judgment.

Perhaps this fact about our speech led some philosophers into the opinion that in sense-perception, memory, and consciousness there is no judgment at all. Because it isn't mentioned in speaking of these faculties, they have inferred that judgment doesn't accompany them—that they are only different kinds of simple apprehension or idea-acquisition, and that judging is no part of their job.

[Reid criticises Locke's view that knowledge is one thing and judgment another, quoting passages from the *Essay* that express this view. All Locke's examples of 'knowledge', he says, also deserve the name 'judgment'. Then:] So as to avoid disputes about the meanings of words, please understand that I give the name 'judgment' to every determination of the mind concerning what is true or what is false. . . .

·Here is a different possible explanation for why philosophers have wrongly restricted the domain of judgment·. Judgments based on the evidence of the senses, of memory, and of consciousness put all men on a level. So far as these are concerned, the philosopher has no privilege above the illiterate person or even above the savage. *Their* reliance on the testimony of these faculties is as firm and as well grounded as his. Where he is superior to them is in judgments of another kind—judgments about things that are abstract and necessary—and he is reluctant to give the name 'judgment' to something in respect of which the most ignorant and primitive of our species are his equals.

But philosophers have never been able to give any definition of 'judgment' that •doesn't apply to the determinations of our senses, our memory, and consciousness; or any definition of 'simple apprehension' that •can include those determinations.

Our judgments of this kind are purely the gift of Nature, and there is nothing we can do to improve them. One man's memory may hold more than another's, but both men rely with equal confidence on what they clearly remember. One man's sight may be more acute, or his feeling more delicate, than another's, but the men are on a par in trusting the clear testimony of their sight and touch.

And just as we have this belief because of how we are built, without any effort of our own, so no effort of ours can overturn it.

The sceptic may persuade himself of the •general thesis that he has no reason to believe his senses or his memory, but in •particular cases that concern him his disbelief vanishes and he finds himself having to believe both his senses and his memory.

These judgments can in the strictest sense be called 'judgments of Nature'. Nature has laid them on us, whether we want them or not. They aren't acquired by any use of our faculties and can't be lost by any misuse of them. It is clearly necessary for our survival that this should be so. For if belief in our senses and in our memory had to be learned

by education, the race of men would die out before they learned this lesson. . . .

I admit that our entitlement to count as reasonable beings depends on our making the •'judgments of Nature' that I have been discussing *and building other judgments on the basis of them*. But the •former oughtn't to be despised, for they are the foundation on which the grand superstructure of human knowledge must be constructed. In superstructures the foundation is usually overlooked, and so it has been here. The more lofty achievements of the human mind have attracted the attention of philosophers, while they have barely glanced at the humble foundation on which the whole structure rests.

(4) Judgment has to be exercised in •the formation of all abstract and general conceptions, however simple or complex, in •dividing ·things into classes·, in •defining, and in general in •forming all clear and distinct conceptions of things—the only conceptions that are fit materials for reasoning. These operations are tied to each other, which is why I bring them all into my observation (4). They are more closely tied to our rational nature than those mentioned in (3), which is why I am taking them separately.

Don't misunderstand me. I am *not* denying that abstract notions and other precise notions of things, *once they have been formed*, can be barely conceived without any exercise of judgment about them. I have no doubt that they can. What I am saying is that some judgment must be exercised *in the first formation* of such notions in the mind. ·Here is why·.

To distinguish the different attributes belonging to a single thing, you have to *judge* •that they are really different and distinguishable, and •that they relate to the thing in the way that logicians express by saying that they 'can be predicated' of it. And we can't generalise without *judging* that a given attribute does or can belong to many individuals. I have shown that our simplest general notions are formed by these two operations, distinguishing and generalising. So judgment is exercised in forming the simplest general notions.

Then there are more complex notions, which I have shown to be formed by combining the simpler ones. Such combinations are not made at random, but for a purpose: we form complex general notions to make it easier for us to arrange our thoughts in discourse and reasoning; so we select, out of countless possible combinations, only the ones that are useful and necessary; and *judgment* is needed to make those selections.

It seems clear that judgment must be used in dividing [= 'classifying'] as well as in distinguishing. It is one thing to divide a subject properly, another to cut it in pieces. . . . Reason has discovered rules of division that have been known to logicians for more than two thousand years. For definition, also, there are rules of no less antiquity and authority. ·And the application of rules requires *judgment*·. No doubt a man can divide or define properly without •attending to the rules, even without •knowing them. But this can only be when he can *judge* to be right in a particular case something that the rule says is right in all cases.

So my general thesis is this: without some degree of judgment we can't form precise and clear notions of things, so that one of judgment's tasks is to help us in forming clear and distinct conceptions of things, the only conceptions that are fit for use in reasoning.

To philosophers who have always •regarded the formation of ideas of every kind as falling into the category of simple apprehension, and have •thought that judgment's only role is to put ideas together in affirmative or negative propositions, my view will probably seem paradoxical. So I ought to provide some confirmation for it.

[Reid says that he already *has* provided confirmation, in his points about distinguishing, dividing and defining. Then:]

There can't be any proposition in ·any· language that doesn't involve some general conception. The proposition that *I exist*, which Descartes thought to be the first of all truths and the basis for all knowledge, can't be conceived without the conception of *existence*, which is one of the most abstract general conceptions. A man can't believe in his own existence, or the existence of anything he sees or remembers, until he has enough judgment to distinguish things that really exist from things that are only conceived. He sees a woman six feet tall, and judges that she exists, because he sees her; he conceives a woman sixty feet tall, and doesn't judge that *she* exists, because he only conceives her. Well, then, can he attribute existence to the first woman and not to the second without knowing what existence means? Not possibly! [Reid's example concerned tall men, not women; the change is made in the interests of clarity.]

I can't discover how early the notion of existence enters the mind, but it must certainly be in the mind as soon as we can affirm of anything—understanding what we are saying—that it exists.

In every other proposition, the predicate at least must be a general notion—because a predicable is the same thing as a universal. In addition, every proposition either affirms or denies. And no-one can have a distinct conception of a proposition unless he clearly understands what it is to affirm or deny. But these are very general conceptions and, I repeat, their source and origin is judgment.

·THE INFINITE REGRESS OBJECTION·

I am aware that a strong objection may be made to this reasoning, and that it may seem to lead to an absurdity or a contradiction ·or an infinite regress·. It goes like this:

> Every judgment is a mental affirmation or negation. I have said that some *previous* exercise of judgment must have occurred, if one is to understand what is meant by affirmation or negation. It follows that *every* exercise of judgment must be preceded by an exercise of judgment—which is absurd.

Here is a variant on that:

> Every judgment can be expressed by a proposition, and •a proposition must be conceived before we can judge concerning it. I have said that •we can't conceive the meaning of a proposition without a *previous* exercise of judgment. It follows that •any judgment must be preceded by the conception of a proposition, and that •the conception of any proposition must be preceded by judgment—which is a contradiction.

Please notice that I have limited what I have said to *clear* conception and *some degree of* judgment; and I look to those qualifications to keep me out of this labyrinth of absurdity and contradiction. The faculties of conception and judgment are like us—they start as infants, and grow to maturity. What I have been saying is limited to their mature state. I believe in their infant state they are very weak and unclear, and that very gradually they grow to maturity, helping one another along the way. Which of them *first began* this friendly relationship? I am quite unable to answer that. It's like the question about the bird and the egg.

In the *present* state of things it is true that every bird comes from an egg and every egg from a bird; and each may be said to precede the other. But if we go back to the origin of things, there must have been a bird that didn't come from any egg, or an egg that didn't come from any bird.

Similarly, in the mature state of man the clear conception of a proposition presupposes some earlier use of judgment, and clear judgment presupposes clear conception. Each can truly be said to precede the other, as the bird precedes the

egg and the egg precedes the bird. But if we run this series back to its origin—i.e. to the first proposition that was ever conceived by the ·first· man and the first judgment he ever formed—I have nothing to say about those; I don't know *how* or *in what order* they were produced, any more than I know how bones grow in the womb of a pregnant woman. The first exercise of the faculties of conception and judgment is hidden from us.

Consider the analogous case of an artist—a carpenter, say—who can't work at his art without tools, which must be made by art. So the art must be exercised to make the tools, and the tools are necessary for the exercise of the art. This presents the same *appearance of* contradiction as does my thesis that some degree of judgment is needed in order to form clear and distinct conceptions of things. Such conceptions are the tools we must use in judging and in reasoning, and without them we'll do very bungling work; yet these tools can't be made without some exercise of judgment.

·BACK TO THE MAIN THREAD·

The need for some degree of judgment in forming precise and clear notions of things will show up again if we consider carefully what notions we can form, without any help from judgment, of (a) the objects of the senses, (b) the operations of our own minds, and (c) the relations amongst things.

(a) Everyone agrees that our first notions of sensible objects are acquired through the external senses alone, probably before judgment makes an appearance; but these first notions are not simple, nor are they precise and clear. They are crude and unclear, and like 'a rough unordered mass of things' [Reid quotes this from Ovid, in Latin]. Before we can have any clear notion of this mass we must analyse it; we have to separate in our thought the different kinds of parts it contains; the simple elements that were previously hidden in the common mass have to be sorted out separately and then re-assembled into one whole.

That is how we form clear notions even of the objects of sense; but we are apt to overlook this process of analysis and re-assembly, because it becomes habitual to us, and then we can do it so smoothly and easily that we don't notice it and attribute the clear notion we have formed of the object to the senses alone, ·with no input from judgment·. We are all the more likely to do this because our senses give testimony regarding *each* of an object's sensible qualities—*once we have distinguished them from one another*.

You perceive, for instance, an object that is white, round, and a foot in diameter. I agree that it is *by sense*—·by your eyesight·—that you perceive all these attributes of the object. But if you hadn't been able to distinguish the colour from the shape, and both from the size, your eyesight would have given you only one complex and confused notion of all these attributes jumbled together.

A man who can say with understanding, or can determine in his own mind, that *this object is white* must have distinguished whiteness from other attributes. If he hasn't made this distinction, he doesn't understand what he is saying.

Suppose we show a cube of brass to a one-year-old child and to a man. The regularity of the shape will attract the attention of both. The two have equally good senses of sight and touch, so if the man finds in this cube something that the child can't find in it, that must be due not to the senses but to some other faculty that ·the man has and· the child has not yet attained. The man •can easily distinguish the body from the surface that terminates it, •can perceive that this surface is made up of six planes of the same shape and size, and •can perceive that each of these planes has four equal sides and four equal angles, and that the opposite sides of each plane are parallel, as are also the opposite planes. The child cannot discover any of this.

You'll surely agree that a man of ordinary judgment •can observe all this in a cube that he attends to and thinks about carefully, and •can give the name 'square' to a plane terminated by four equal sides and four equal angles, and the name 'cube' to a solid terminated by six equal squares. All this is nothing but analysing into its simplest elements the shape of the object presented to his senses, and then re-assembling those elements to get the object back.

By this analysis and re-assembly two effects are produced. (i) From the one complex object which the man's senses presented, though it is one of the simplest the senses can present, he extracts many simple and clear notions of

straight lines
angles
plane surface
solid
equality
parallelism

—notions that the child isn't yet able to acquire. (ii) When he considers the cube as made up of these elements put together in a certain order, he has—*then and not before*—a clear and scientific notion of a cube. The child doesn't conceive those elements, let alone conceive in what order they must be assembled in order to make a cube; so he has no precise notion of a cube that would enable him to reason about it.

I think we can infer from this that the notion we have from the senses alone, even of the simplest objects of the senses, is unclear and incapable of being either described or used in reasoning until it is analysed into its simple elements and regarded as built up out of them. . . .

A clear notion of an object, even of an object of the senses, is never acquired in an instant; but the senses do their job in an instant. Time is required not •to see the thing better but •to analyse it—to distinguish its different parts and their relation to one another and to the whole.

[Reid goes on to say that when we are in a state of high emotion our sense-perceptions are worse because our judgment is worse. At these times, 'the eye of sense is open but that of judgment is shut'. Then:]

So there are notions of the objects of sense that are crude and unclear, and there are others that are distinct and scientific. The former can be acquired from the senses alone, but the latter can't be obtained without some degree of judgment. The clear and precise notions that geometry gives us of

point
straight line
angle
square
circle
ratios, direct and inverse,

and others of that kind, can't get into any mind that doesn't have some degree of judgment. They are not strictly ideas of the senses, nor are they acquired by combining ideas of the senses. We get them, rather, by •analysing into their simplest elements the ideas or notions we get through the senses, and •re-combining these elements into various precise and elegant forms that the senses never did and never can exhibit.

If Hume had attended properly to this, it ought to have headed off his very bold attempt—fourteen pages of it!—to prove that geometry is based on •ideas that are not exact and •axioms that are not precisely true (*Treatise* I.ii.4). A mathematician might be tempted to think that someone who seriously argues this doesn't know much about geometry; but I think its cause lies elsewhere—in Hume's zeal for his own system. We see that even men of genius can be drawn into strange paradoxes by their attachment to a favourite

idol of the understanding, when it demands such a costly sacrifice.

We protestants think that Roman catholics pay a very large tribute to their church's authority, when in obedience to its decrees they renounce their five senses. But Hume ·pays an even larger tribute: his· devotion to his system leads him even to trample on mathematical demonstration.

The basic doctrines of his system are that •all the perceptions of the human mind are either impressions or ideas, and that •ideas are only faint copies of impressions. The idea of a straight line, therefore, is only a faint copy of some line that has been seen or felt by touch; and the faint copy can't be more perfect than the original. Now, obviously the axioms of geometry aren't exactly true of lines like *that*, for two lines that are *straight to our sight or touch* can intersect twice. If therefore we can't form any notion of *straight line* more precise than what we have from the senses of sight and touch, geometry has no solid foundation. ·But we can run the argument the other way·. If the geometrical axioms *are* precisely true, the idea of *straight line* is not copied from any impression of sight or touch, and must have a different origin and a more perfect standard.

Just as the geometrician by reflecting on the •extension and shape of matter forms a set of notions more precise and scientific than any that the senses exhibit, so also the natural philosopher by reflecting on •other attributes of matter forms another set of notions, including

> density
> quantity of matter
> velocity
> momentum
> fluidity
> elasticity
> centres of gravity and of oscillation.

These notions are precise and scientific; but they can't get into a mind that doesn't have some degree of judgment, and we can't make them intelligible to children until they have some maturity of understanding. . . . And the same is true for the terminology of every science and every art about which we can reason. Children have their five senses as perfect as men do for years before they are capable of distinguishing, comparing, and perceiving the relations of things so as to be able to form such notions. They acquire the intellectual powers by a slow and gradual progress, and by means of them they learn to form clear and precise notions of things—notions that the senses could never have imparted.

(b) So much for the notions of the objects of sense that we get from the senses alone, ·unaided by judgments·. Now let us consider what notions of the operations of our minds we can have from consciousness alone, ·unaided by judgments·.

Locke very properly calls consciousness an 'internal sense' (*Essay* II.i.4). It gives the same kind of immediate knowledge of things in the mind—i.e. of our own thoughts and feelings—that the senses give us of external things. There is this difference, however, that an external object may be static, so that the senses can be brought to bear on it for some time. But the objects of consciousness are never still; the stream of thought flows like a river, never stopping for a moment; the whole train of thought passes successively under the eye of consciousness, which is always employed about the *present*. But is it *consciousness* that analyses complex operations, distinguishes their ingredients, and sorts them into distinct lots under general names? Surely not! This work can't be done without reflection, recollecting and judging concerning what we •were conscious of and •now remember. This reflection doesn't appear in children. Of all the powers of the mind it seems to one of the last to show up, while consciousness is among the earliest.

Because consciousness is a kind of internal *sense*, it can't give us clear and precise notions of the operations of our minds, any more than the external senses can give such notions of external objects. •Reflection on the operations of our minds is the same kind of operation as •that by which we form clear notions of external objects. The two differ not in their nature but only in that one engages with external objects and the other with internal ones. Each could quite properly be called 'reflection'.

Locke has restricted the word 'reflection' to the kind of reflection that is concerned with the operations of our minds. I don't think that custom, which is the arbiter of language, entitles him to this usage. Surely I can *reflect* on what I have •seen or •heard as well as on what I have •thought. . . . Locke has also confused •reflection with •consciousness, and seems not to have realized that they are different powers and appear at very different periods of life.

If that eminent philosopher had been aware of these mistakes about the meaning of the word 'reflection', I think he would have seen that just as

> •we can form clear and precise notions of the operations of our minds only by reflection, ·properly so-called·, and not by consciousness without reflection,

so also

> •we can form clear notions of the objects of the senses only by reflection, and not by the senses without reflection.

Reflection on *anything*, whether external or internal, makes it an object of our intellectual powers, by which we survey it on all sides and make such judgments about it as appear to be sound and true.

(c) I proposed in the third place to consider our notions of the relations of things. What I have to say about this is that in my opinion: without judgment, we can't have any notion of relations.

[In the rest of this chapter, and early in the next, Reid will use 'compare' in a sense that was current in his day: to 'compare' two things, in this sense, is just to hold them before your mind at the same time in order to see how they are inter-related, not just to see how (un)alike they are. We still use 'compare' in that broader sense, when we speak of 'getting together to compare notes'.]

There are two ways in which we get the notion of relations. The first is by **comparing the related objects**, after we have first had the conception of each. By this comparison we perceive the relation, perceiving it either immediately or through a process of reasoning. I perceive immediately that my foot is longer than my finger, and that three is half of six. This immediate perception is immediate and intuitive *judgment*. That the angles at the base of an isosceles triangle are equal I perceive by a process of •reasoning, and everyone will agree that there is judgment in •that.

The other way for us to get the notion of relations—a way that seems not to have occurred to Locke—is by **attending to one of the related objects** and perceiving or judging that its nature is such that it must have a certain relation to something else—perhaps something we have never thought of before. In this way, our attention to one of the related objects produces the notion of a related object and of a certain relation between them.

Thus, when I attend to colour, shape, weight, I can't help judging these to be qualities that can't exist except in a subject—i.e. in something that is coloured, shaped, heavy. If I hadn't perceived them to be qualities, I would never have had any notion of the thing that has them or of their relation to it.

By attending to the operations of thinking, memory, and reasoning, we perceive or judge that there must be something that thinks, remembers, and reasons—something that we

call 'the mind'. When we attend to any change that happens in Nature, judgment informs us that this change must have had a cause that had the power to produce it; and thus we get the notions of cause and effect and of the relation between them. When we attend to body, we perceive that it can't exist without space; and so we get the notion of •space (which is not an object of sense *or* of consciousness) and of •the relation that each body has to its *place*, which is a certain portion of unlimited space.

So I think that all our notions of relations can be more properly be ascribed to judgment as their source than to any other power of the mind. '·Can't I conceive of a relation without making any judgment concerning it?' Yes, but·

> before conceiving relations without judging about them, we must first perceive them by our judgment.

That is analogous to this: '·Can't I conceive of a colour without seeing it?' Yes, but·

> before we can conceive colours without seeing them, we must first perceive colours by sight.

When Locke comes to speak of the ideas of relations, I don't think he says that they are ideas of sensation or reflection, but only that they 'terminate in' and 'are concerned about' ideas of sensation or reflection.

The notions of unity and number are so abstract that they couldn't possibly get into a mind that doesn't yet have any degree of judgment. We see how hard it is for children to learn to use and understand the names even of small numbers, how slow they are at this, and how triumphant they are when they succeed. Every number is conceived by its relation to *unity* or to known combinations of units; and for that reason, as well as because of its abstract nature, all clear notions of number require some degree of judgment. . . .

Chapter 2: Common sense

The word 'sense' seems to have a different meaning in common language from its meaning in the writings of philosophers; and those different meanings are apt to be muddled together, giving rise to embarrassment and error.

I shan't go back to ancient philosophy on this matter. Modern philosophers regard •sense as a power that has nothing to do with •judgment. They regard •sense as the power by which we receive certain ideas or impressions from objects, and •judgment as the power by which we compare those ideas and perceive their necessary agreements and disagreements.

The external senses give us the ideas of colour, shape, sound, and other qualities—primary or secondary—of bodies. Locke called consciousness an 'internal sense' because through it we have the ideas of thought, memory, reasoning, and other operations of our own minds. Hutcheson thought that we have simple and original ideas that can't be attributed either to the external senses or to consciousness, so he introduced other internal senses such as the sense of harmony, the sense of beauty, and the moral sense. Ancient philosophers also spoke of 'internal senses', of which memory was thought to be one.

But all these 'senses', whether external or internal, have been represented by philosophers as the providers to our minds of •ideas, without including any kind of •judgment. Hutcheson defines a *sense* as *the mind's determination to receive ideas from the presence of an object independently of our will*. And Priestley writes:

> Philosophers have used the word 'sense' to name the faculties in consequence of which we are liable to feelings *relative to ourselves only*, and from which they haven't claimed to draw any conclusions concerning the nature of things; whereas truth is not •relative but •absolute and real.

Not so! In common language 'sense' always implies *judgment*. A man of sense is a man of judgment. Good sense is good judgment. Nonsense is what is obviously contrary to right judgment. Common sense is *the degree of judgment that is common to men with whom we can converse and transact business*.

Philosophers call seeing and hearing 'senses' because we have ideas by them; the vulgar call them 'senses' because we judge by them. We judge colours by the eye, sounds by the ear, beauty and ugliness by taste, right and wrong in conduct by our moral sense or conscience.

Philosophers who portray sense as having only one role, namely to provide us with ideas, slip without realizing it into the popular opinion that the sense are *judging* faculties. Thus Locke, writing about the thesis that the quality of colour really exists and has a being outside me: 'The best assurance I can have, the best my faculties are capable of, is the testimony of my eyes; they are the proper and sole judges of this thing' (*Essay* IV.xi.2). This popular meaning of the word 'sense' is not peculiar to the English language. The corresponding words in Greek, Latin, and (I believe) all the European languages have the same meaning-spread. The Latin words *sentire*, *sententia*, *sensa*, *sensus*—from the last of which the English word 'sense' is borrowed—stand for judgment or opinion, and are applied equally to objects of external sense, of taste, of morals, and of the understanding.

I can't claim to explain why a word that is not a technicality, and is familiar in common conversation, should have such a different meaning in philosophical writings. I merely remark that the philosophical meaning corresponds perfectly with the account that Locke and other modern philosophers give of judgment. For if the •only role of the external and internal senses is to provide the mind with the ideas about which we judge and reason, it seems to be a natural consequence that •the only role of judgment is to compare those ideas and to perceive their necessary relations.

These two opinions seem to be so connected that one may have been the cause of the other. Anyway, I think that if both are true there is no room left for any knowledge or judgment either about the real existence of contingent things or about their contingent relations.

To return to the popular meaning of the word 'sense': it would be much harder to find good authors who never use the word with that meaning than to find ones who do. [Reid then quotes eight lines by Pope, in which 'good sense' is described as 'the gift of Heaven' and 'a light which in yourself you must perceive'. Then:] This inner light or sense is given by heaven to different persons in different degrees. We must have a certain degree of if we are to be subjects of law and government, capable of managing our own affairs, and responsible for our conduct towards others. This is called 'common sense', because it is common to all men with whom we can transact business or hold accountable for their conduct.

The laws of all civilised nations distinguish •those who have this gift of heaven from •those who don't. The •latter may have rights that ought not to be violated, but because they have no understanding of their own to direct their actions, the laws arrange for them to be guided by the understanding of others. ·Their lack of common sense· is easily detected through its effects on their actions, through what they say, and even through their physical appearance. When there is a question as to whether or not a man has this natural gift of common sense, a judge or a jury can usually give a confident answer after a short conversation with him.

The same degree of understanding that makes a man capable of •acting with common prudence in the conduct of life makes him capable of •discovering what is true and what is false in matters that are self-evident and that he is clear about in his mind.

All knowledge and all science must be built on principles that are self-evident; and every man who has common sense is a competent judge of such principles when he conceives them clearly. That is why disputes very often come down to appeals to common sense.

When the disputants agree on the first principles on which their arguments are based, there is room for reasoning; but when one denies something that the other finds too obvious to need or to be capable of proof, reasoning seems to be at an end; an appeal is made to common sense, and each disputant is left to enjoy his own opinion.

There seems to be no cure for this, and no way to *discuss* such appeals ·to common sense·, unless the decisions of common sense can be encoded in rules that all reasonable men accept. If this were possible it would be very desirable, and would give logic something it needs; and why *shouldn't* it be possible for reasonable men to agree on things that are self-evident?

All I want to do in this chapter is to explain the meaning of 'common sense', so that it won't be treated (as some *have* treated it) as signifying something new or as a phrase without any meaning. I have tried to show that 'sense', in its most common and therefore its most proper meaning, signifies *judgment* (though philosophers often use it with a different meaning). This makes it natural to think that 'common sense' should mean *common judgment*; and so it really does.

It may be hard to settle the precise limits separating common judgment from •what is beyond it, on the one hand, and from •what falls short of it, on the other. Men who agree about the meaning of the phrase 'common sense' may disagree about where those limits lie, or may never have even thought of fixing them. There is nothing puzzling about this, any more than there is about the fact that all Englishmen mean the same thing by 'the county of York' though not one in a hundred can point out its precise boundaries.

Indeed, it seems to me that 'common sense' is as well understood and as free from ambiguity as 'the county of York'. We find the phrase in countless places in good writers; we hear it on countless occasions in conversation; and as far as I can tell it is always used with the same meaning. That is probably why it is so seldom defined or explained. [Reid then quotes Bentley, as quoted in Johnson's dictionary: '. . . power and abilities which we call natural light and reason and common sense'. Then:] It is true that 'common sense' is a popular and not a scholarly phrase; and most philosophers who have written systematically about the powers of the understanding have used it only occasionally, and the same is true of other writers. But I recall two philosophical writers who are exceptions to this remark. One is Buffier, who wrote at length about common sense as a source of knowledge more than fifty years ago.

The other is Berkeley, who I think has laid as much stress on •common sense, in opposition to the •doctrines of philosophers, as any philosopher that has come after him. Look back at the quotations from him in Essay 2, chapter 10; I needn't repeat them here.

Men rarely ask what common sense is, because everyone thinks that *he* has it. . . . Yet I remember two very eminent authors who have asked this question; and we should hear their views on this topic that is so often mentioned and so rarely discussed.

It is well known that Lord Shaftesbury called one of his treatises *Sensus Communis: an Essay on the freedom of wit and humour, in a letter to a friend.* [*Sensus communis* is Latin for 'common sense'.] In this, he reminds his friend of a free-wheeling conversation they once had with some of their friends on the subjects of morality and religion. Amidst the different opinions launched and defended with great vivacity and ingenuity, every now and then someone would make an appeal to common sense. Everyone allowed the appeal; no-one questioned the authority of the court; until someone whose intellect they had never questioned solemnly asked them to tell him what common sense is. He said:

> If by the word 'sense' we were to understand opinion and judgment, and by the word 'common' the whole or any considerable part of mankind, it would be hard to discover where there *is* any common sense; for views agreeing with the 'sense' of one part of mankind would conflict with the 'sense' of another part. And if 'common sense' were to be determined by the *majority*, it would change as often as men changed.

In religion, he said, common sense was as hard to determine as *catholic* or *orthodox*; one sect's absurdity was another's demonstration. He continued:

> In political matters, if plain British or Dutch 'sense' were right, Turkish and French 'sense' must certainly be wrong. Passive obedience—·i.e. unquestioning obedience to a ruler with unlimited powers·—seemed ·to us· to be mere nonsense; but it turned out to be the 'common sense' of •a considerable proportion of our fellow-countrymen, •a larger proportion in Europe, and perhaps •a majority of all the world. As for morals, the difference is still wider; for even the philosophers can never agree on a single system. And even some of our most admired modern philosophers have openly told us that virtue and vice have no law or criterion except mere fashion and vogue.

That is the substance of the gentleman's speech. I think it explains the meaning of 'common sense' perfectly, and contains ·the whole case·—everything that has been said or can be said—against the authority of common sense and the permissibility of appeals to it.

There is no report of any immediate answer to this speech, which might incline us to think that the noble author agrees with the views of the intelligent gentleman whose speech he quotes. But that would be wrong, as is clear from the title *Sensus Communis* given to his work, from his frequent use of the phrase 'common sense', and from the whole tenor of the book. [Reid backs this up with a discussion of what Shaftesbury was up to in this work, and quoting some passages including this:]

> Some moral and philosophical truths are so evident in themselves that it would be easier •to imagine that half mankind had run mad in precisely the same way than •to admit as truth anything that was advanced against such natural knowledge, fundamental reason, and common sense.

[After adding one more quotation from Shaftesbury, again treating 'common sense' as a criterion of truth, Reid presents passages from Fénelon, Cicero, Hume, and Priestley—all using the phrase 'common sense' (or its French or Latin equivalent) to stand for a source of knowledge, and thus as implying that common sense involves *judgment*. Then:]

On the basis of this cloud of testimonies (and I could have given hundreds more), I think that whatever criticism is spread over those who have spoken of common sense as a source of knowledge, or who have appealed to it in matters that are self-evident, will fall lightly on any individual when there are so many to share in it!. . . .

From the account I have given of the meaning of the phrase 'common sense', it is easy to see how to use it properly and how to tell when it is being misused.

It is absurd to think that common sense could be in any way opposed to reason. It is indeed reason's first-born, and just as they are commonly joined together in speech and in writing they are inseparable in their nature.

We ascribe to reason two roles, or two degrees—•to judge concerning self-evident things, and •to draw conclusions that are not self-evident from premises that are. The former is the job of common sense—its only job. So the whole of common sense coincides with reason; indeed 'common sense' is only another name for one branch (or degree) of reason. 'Why give it a name of its own, when you admit that it is only a degree of reason?'. . . . There is an obvious reason why this degree of reason should have its own special name. It's that in the vast majority of mankind no other degree of reason is to be found. It is this degree that entitles them to be called 'reasonable creatures'. It is this degree of reason—and *only* this—that makes a man capable of managing his own affairs and accountable for his conduct towards others. So there is the best reason why it should have its own special name.

These two degrees of reason differ in other respects, which would be sufficient to entitle them to distinct names.

The first is purely the •gift of heaven, and where heaven hasn't given it no education can make up for that. The second is learned by practice and rules when the first is not lacking. A man who has common sense may be taught to reason. But if someone doesn't have that •gift, no teaching will enable him either to judge concerning first principles or to reason from them.

I have only one other point to make, namely that common sense has more work to do in •refutation than in •confirmation. A conclusion drawn by valid reasoning from true principles can't possibly contradict any decision of common sense, because truth will always be consistent with itself. And such a conclusion can't be confirmed by common sense, because it doesn't lie with common sense's jurisdiction.

But someone who sets out from false principles, or who makes a mistake in reasoning, may be led to a conclusion that contradicts the decisions of common sense. In this case the conclusion *is* within the jurisdiction of common sense, even though the reasoning on which it was based is not; and a man of common sense is entitled to reject the conclusion without being able to show the error of the reasoning that led to it. . . .

Chapter 3: The views about judgment of Locke and other philosophers

A difference in what two philosophers mean by a given word ought not to generate disputes between them. But we often need to attend to such differences, so as to prevent verbal disputes. There are indeed no words in ·any· language more liable to ambiguity than the words we use to signify the operations of the mind; and there are sometimes differences of opinion about their precise meaning, even among people who are fair-minded and have good judgment.

I have hinted [page 221] at what I take to be a peculiarity in Locke concerning the meaning of 'judgment', and I mentioned what I think may have led him into it. But I'll let him speak for himself:

> The faculty that God has given to man, to make up for the lack of clear and certain knowledge in cases where that can't be had, is *judgment*. Using this, the mind takes its ideas to agree or disagree—that is, takes a proposition to be true or false—without proofs that it perceives as demonstratively self-evident. (*Essay* IV.xiv.3)
>
> Thus the mind has two faculties having to do with truth and falsehood. •First, knowledge, whereby it certainly perceives and is satisfied beyond doubt of the agreement or disagreement of any ideas. •Secondly, judgment, which is putting together or separating ideas in the mind when their certain agreement or disagreement is not perceived but is presumed to be so. (4)

Knowledge, I think, sometimes signifies •things that are known, sometimes •the act of the mind by which we know them. Similarly, 'opinion' sometimes signifies •things that are believed, sometimes •the act of the mind by which we believe them. But *judgment* is the **faculty** that is exercised in both these acts of the mind. In knowledge we judge without doubting, in opinion we judge with some mixture of doubt. But Locke is the only writer I know of who has called knowledge a **faculty** (and even he doesn't call opinion a faculty!).

Nor do I think that knowledge is confined within the narrow limits that Locke puts around it; because most of what all men call human knowledge concerns things that don't admit of intuitive or of demonstrative proof.

I have all along used the word 'judgment' in a more extended sense than Locke does in the passage quoted above. I use it to stand for the operation of mind by which we determine [= 'decide'], concerning anything that can be expressed by a proposition, whether it is true or false. Every proposition is either true or false; so is every judgment. A proposition may be simply conceived without judging in regard to it. But when there is not only a conception of the proposition but a mental affirmation or negation, an assent or dissent of the understanding, whether weak or strong, that is *judgment*.

I think that since the days of Aristotle •logicians have taken 'judgment' ·and its equivalents in other languages· in that sense, and so have most •other writers. It does have other meanings, but not ones that are in any danger of being mixed up with this.

[Reid cites a passage by Watts, describing and using 'judgment' in the sense that Reid approves of. Then:]

In this meaning, 'judgment' extends to every kind of evidentness, whether probable or certain, and to every degree—·every *strength*·—of assent or dissent. It extends to

all •knowledge as well as to all •opinion, the only difference being that in •knowledge it [i.e. the judgment] is more firm and steady, like a house founded on a rock, whereas in •opinion it stands on a weaker foundation, and is more liable to be shaken and overturned.

I don't go into these differences about the meanings of words in the spirit of 'Truth is on one side and error on the other', but ·for two other reasons·. Most of Locke's terminology is precise and clear, and I wanted to defend my departing from it in this instance. Also, attention to the different meanings that are given to words by different authors is the best way to avoid mistaking verbal differences for real differences of opinion.

The common theory of ideas [see Essay 2, chapter 8 re this phrase] naturally leads to a theory of judgment, which may be a good test of its truth; for as the two are necessarily connected, they must stand or fall together. Here is how Locke describes their connection:

> •Since the mind in all its thoughts and reasonings has no immediate object other than its own ideas, which are all it can contemplate, it is evident that our knowledge has to do only with them.
>
> •Knowledge, then, seems to me to be nothing but the perception of the connection and agreement, or disagreement and incompatibility, of any of our ideas. That is all it is. (*Essay* IV.i.1-2)

The only objection to the validity of this inference is that the proposition from which the inference is made seems to have some ambiguity. For in the first clause of that proposition the mind is said to have 'no *immediate* object other than its own ideas'; in the second clause it is said that the mind has no other object *at all*—that all it can or does contemplate are ideas. If the word 'immediate' in the first clause is a mere filler—·conveying the idea that for Locke the only objects are immediate objects·—and isn't meant to pick out *immediate* objects of thought as a *sub*-class of all objects of thought, then the two clauses of that first proposition—

> •the mind. . . .has no immediate object other than its own ideas,
>
> •all that a mind can contemplate are its own ideas,

will be perfectly consistent, the second being only a repetition or spelling out of the first; and the inference that our knowledge has to do only with ideas will be perfectly logical.

But if the word 'immediate' in the first clause is intended to limit the general proposition, implying that the mind has other *objects* besides its own ideas though no other *immediate objects*, then it won't be true that all it does or can contemplate are ideas, and it won't validly follow that our knowledge has to do only with ideas.

Well, did Locke mean his antecedent proposition without any limitation by the word 'immediate', or did he meant to limit it by that word, thus indicating that some objects—·though not immediate objects·—of the mind are not ideas? The former alternative seems to me the more probable, for four reasons.

(1) When Locke explicitly defines 'idea' in the introduction to the *Essay*, he says it is 'whatever is the object of the understanding when a man thinks, or whatever the mind can be engaged with in thinking'. This leaves no room for objects of the mind that are not ideas. The same definition is often repeated throughout the *Essay*. . . . Now, if it had really been his opinion that some objects of thought are not ideas, this definition, which is the foundation of the whole *Essay*, would have been very improper and apt to mislead his reader.

(2) Locke has never attempted to show *how* there can be objects of thought that are not immediate objects; and indeed this seems impossible. For whatever the object is, the

man either thinks of it or he doesn't: there is no third way between these! If he thinks of it, it is an immediate object of thought while he thinks of it. If he doesn't think of it, it isn't an object of thought at all. Thus, every object of thought is an immediate object of thought, and the word 'immediate' joined to 'objects of thought' seems to be a mere filler.

(3) Though Malebranche and Berkeley believed that we have no ideas of minds or of the operations of minds, and that we can think and reason about them without ideas, this wasn't Locke's opinion. He thought •that there are ideas of minds and of their operations, as well as of the objects of sense, •that the mind perceives nothing but its own ideas, and •that all words are the signs of ideas.

(4) To suppose that Locke intended the word 'immediate' to *limit* the antecedent proposition is to attribute to him a blunder in reasoning that I don't think he could have committed. It would consist in inferring from the premise

> •ideas are among the objects of thought, but aren't the only objects of thought

the conclusion

> •all our knowledge has to do only with ideas.

You couldn't come up with a more glaring invalidity than that! On the other hand, if he meant that ideas are the only objects of thought, then the inference he draws is perfectly sound and obvious; and he could just as well have said: *Since ideas are the only things that the mind does or can contemplate, it is evident that our knowledge has to do only with them.*

As to the conclusion itself, I have only to remark that although Locke says what he does only about knowledge (as he calls it) and not about judgment (as he calls it), there is the same reason for extending it to both. It is true of •judgment as well as of •knowledge that it must have to do with objects of the mind, or things that the mind can contemplate. Judgment, as well as knowledge, requires the conception of the object about which we judge; and it is obviously impossible to judge concerning objects that never were and never can be objects of the mind, ·because that would involve judging concerning objects of which one had no conception·.

So we can take it for granted that if knowledge has to do only with ideas, because there is no other object of the mind, it must be just as certain—and for the same reason—that judgment has to do only with ideas.

Locke adds, as the result of his reasoning: 'Knowledge, then, seems to me to be nothing but the perception of the connection and agreement, or disagreement and mutual inconsistency, of any of our ideas. That is all it is.'

This is a very important point, not only •in itself but also •because of its necessary connection with his theory of ideas. The (a) thesis about knowledge and the (b) theory of ideas are connected in such a way that they must stand or fall together. If (a) falls, i.e. if there is any part of human knowledge that doesn't consist in the perception of the agreement or disagreement of ideas, it must follow that (b) falls, i.e. that there are objects of thought and of contemplation that aren't ideas.

So (a) the thesis about knowledge ought to be carefully examined. With this view let us first attend to its *meaning*. I don't think it is likely to be misunderstood, but its meaning may need to be explained somewhat.

Every item of knowledge, and every judgment, is expressed by a proposition in which something is affirmed or denied of the subject of the proposition.

By perceiving 'the connection or agreement' of two ideas, I think Locke means perceiving the •truth of an affirmative proposition of which the subject and predicate are ideas. Similarly, by perceiving 'the disagreement and mutual

inconsistency' of two ideas, I think he means perceiving the truth of a •negative proposition of which both subject and predicate are ideas. This seems to be the only meaning the words can bear, and it is confirmed by what Locke says in a passage already quoted a page back, where he equates 'the mind takes its ideas to agree or disagree' with 'the mind takes a proposition to be true or false'. So if the definition of knowledge given by Locke is sound, the subject as well as the predicate of every proposition by which any item of •knowledge is expressed can only be an idea; and the same must hold for every proposition by which •judgment is expressed, as I have shown.

Having become clear about the meaning of this definition of *human knowledge*, we next have to consider how far it is sound.

·BRINGING IN THE ANCIENTS·

First, I would observe that •if 'idea' is taken in the meaning it had at first among the Pythagoreans and Platonists, and •if by 'knowledge' is meant only abstract and general knowledge (which I think Locke chiefly had in mind), I think it is true that such knowledge consists solely in perceiving the truth of propositions whose subject and predicate are ideas.

By 'ideas' here I mean things conceived abstractly without regard to their existence. We commonly call them 'abstract notions', 'abstract conceptions', 'abstract ideas'; the Aristotelians called them 'universals'; and the Platonists called them simply 'ideas', period, because they didn't know of any other sorts of ideas.

Such ideas are both subject and predicate in every proposition which expresses abstract knowledge.

The whole body of pure mathematics is an abstract science; and in every mathematical proposition both subject and predicate are 'ideas' in the sense I am now exploring. [Reid explains this with examples, emphasizing that mathematics implies nothing about what exists. He adds that all so-called 'demonstrative evidentness' is found only in abstract knowledge. Demonstrations do occur in physical sciences, but always from premises that aren't intuitively or demonstratively evident. Then:]

'Ideas', in the sense I am exploring, are creatures of the mind: they are constructed by its rational powers, and we know their nature and their essence because they are nothing more than they are conceived to be. And because they are completely known, we can reason about them with the highest degree of evidentness.

And because they are not things that exist, but things that are conceived, they don't have place or time, and are not liable to change.

When we say that ideas are 'in the mind', *all* this can mean is that they are conceived by the mind, or that they are objects of thought. The act of conceiving them *is*, no doubt, in the mind ·in a more literal sense·; the things that are conceived have no place, because they have no existence. Thus a circle, considered abstractly, is said figuratively to be 'in the mind' of the person who conceives it; but in *that* sense it is also true that the city of London is 'in his mind' when he thinks about it.

Place and time belong to finite •things that exist, but not to things that are merely •conceived. They can be objects of conception to thinking beings in every place and at all times, which led the Pythagoreans and Platonists to think that ideas are eternal and omnipresent. If they had existence, that would have to be right, for they have no relation to *any one* place or time that they don't have to *every* place and to every time.

The natural prejudice of mankind that *what we conceive must have existence* led those ancient philosophers to attribute existence to ideas, and that's what led them into all

the extravagant and mysterious parts of their system. When those parts are cleaned out, I think that what remains is the only intelligible and rational system about ideas.

I agree with them, therefore, that ideas are unchangeably the same in all times and places. For this means merely that a circle is always a circle and a square always a square.

I agree with them that ideas are the patterns or models by which every thing that had a beginning was made. For a thinking maker must conceive his work before making it, and he makes it according to that conception. And the thing that is conceived can only be an idea until it exists.

I agree with them that every *species* of things, considered abstractly, is an idea; and that the idea of the species is in every individual of the species, without being •divided or •multiplied—·i.e. without •being split into parts, one part for each individual, and without •generating a lot of ideas, one idea for each individual·. The point is just that the idea that is the species is an *attribute*, and to say that the idea 'is in' every member of the species is just to say that every member *has* the attribute. . . .

[Reid's next few paragraphs mainly repeat things that he has said in Essay 5, chapter 1, with further emphasis on the restriction to *necessary* truths of the procedure of revealing truth through examining relations amongst ideas. Then:]

·Back to Locke·

Such is the nature of all truth that can be discovered by perceiving the agreements and disagreements of ideas, when we take 'idea' in its historically first sense. Locke in his definition of *knowledge* was mainly thinking about abstract truths, or so it seems from his illustrative examples.

But there is another great class of truths that are not abstract and necessary, and therefore can't be perceived in the agreements and disagreements of ideas. They are the truths we know concerning the real existence of things—of our own existence, of the existence of other things—inanimate, animal, and rational—and of their various attributes and relations.

These may be called 'contingent truths'. The only exceptions to that, so far as I know, are the truths about the existence and attributes of God, these being truths about existence that are nevertheless necessary.

All other things that exist depend for their existence, and for their detailed natures, on the will and power of ·God·, the first cause; so neither their existence nor their nature nor anything that happens to them is necessary; all of that is contingent.

But although the existence of God is necessary, I think that it's only from contingent truths that we can deduce it. The only arguments for the existence of a Deity that I can understand are based on the knowledge of •my own existence and •the existence of other finite beings. And these are contingent truths.

So I believe that perceiving agreements and disagreements of ideas won't lead us to knowledge of any contingent truth whatsoever, of the real existence of anything—not even of our own existence or the existence of a Deity, though that is a necessary truth. Thus, I have tried to show what knowledge can and what can't be attained by perceiving the agreements and disagreements of ideas, when we take 'idea' in its historically first sense.

Now let us consider whether knowledge consists in perceiving the agreement or disagreement of ideas, when 'idea' is taken in any of the senses in which the word is used by Locke and other modern philosophers. ·There are three such senses to be considered·.

(1) Very often 'idea' is used so that •'having the idea of' something is a roundabout way of saying •'conceiving' it. In this sense, an idea is not an *object of thought*—it is *thought*

itself. It is the act of the mind in which we conceive an object. Obviously *this* couldn't be the meaning that Locke had in mind in his definition of *knowledge*.

(2) A second meaning of 'idea' is the one Locke gives early in his *Essay*, when he is apologising for how often he uses it: 'It seems to be the best word to stand for *whatever is the object of the understanding when a man thinks*. . . .or whatever it is that the mind can be employed about in thinking' (*Essay* I.i.8).

By this definition, indeed, everything that can be the object of thought is an idea. The objects of our thoughts can, I think, be put into two classes.

(a) The first class includes all the objects (that we can think of, and) that we believe to have a real existence. Objects such as the creator of all things, and all his creatures that we encounter. I can think of the sun and moon, the earth and sea, and of the various animal, vegetable, and inanimate productions with which God in his generosity has chosen to enrich our globe. I can think of myself, of my friends and acquaintances. I think of the author of the *Essay* with high esteem. These and their like are objects of the understanding that we believe to have real existence.

(b) A second class of objects of the understanding that a man may be employed about in thinking are things that we either •believe never to have existed or •think of without regard to their existence.

Thus I can think of Don Quixote, of the island of Laputa, of Oceana, and of Utopia, which I believe ·to be purely fictional, and· never to have existed. Every attribute, every species, and every genus of things, considered abstractly without any regard to their existence or non-existence, can be an object of the understanding ·in this second class·.

The label 'idea', taken in its historically first sense, very properly applies to this second class of objects of the understanding; and I have already considered what knowledge does and what does not consist in perceiving the agreements and disagreements of ideas of *that* sort.

But if we take 'idea' in such a broad sense that it covers not only (b) the second class but also (a) the first class of objects of the understanding, it will undoubtedly be true that all knowledge consists in perceiving the agreements and disagreements of ideas. For there can't possibly be any knowledge, any judgment, any opinion (true or false) that isn't employed about the objects of the understanding. But whatever is an object of the understanding is an 'idea', according to this second meaning of the word.

Yet I am convinced that Locke in his definition of *knowledge* didn't mean 'idea' to cover *all* the things that we commonly consider as objects of the understanding.

Though Berkeley believed that the sun, moon, and stars, and all material things are ideas and nothing but ideas, Locke nowhere expresses this opinion. He believed that we have ideas of bodies, but not that bodies are ideas. He believed that we have ideas of minds, but not that minds are ideas. When he inquired so carefully into the origin of all our 'ideas', he surely didn't mean •to learn the origin of *everything* that can be the object of the understanding, or •to conclude that the origin of everything that can be an object of that understanding lies in sensation and reflection!

(3) So neither of those two meanings of 'idea'—·the ones here labelled (1) and (2)·—can be what Locke had in mind in his definition of *knowledge*. So the only meaning he could have intended in that definition is the one that I earlier called 'the philosophical meaning of "idea"', referring to the commonly accepted theory about how the mind perceives external objects, and how it remembers and conceives objects that are not present to it [Essay 1, chapter 1]. It is a very ancient opinion, and has been very generally accepted

among philosophers, that we can't perceive or think of such objects •immediately, and have to perceive or think of them •through the medium of certain images or representatives of them that really exist in the mind at the time.

The ancients called those images 'species' and 'phantasms'. Modern philosophers have named them 'ideas'. Locke writes:

> Obviously the mind knows things not immediately but only through the intervention of its ideas of them. (*Essay* IV.iv.3)

And in the same section he puts this question:

> How shall the mind, which perceives nothing but its own ideas, know that they agree with things themselves?

I have already considered this theory when discussing •perception, •memory, and •conception. You will find there the reasons why I think

- •that this theory has no solid foundation in reason or in attentive reflection on •those operations of our minds,
- •that it contradicts the immediate dictates of our natural faculties, which have more authority than any theory;
- •that it has arisen from the same prejudices that led all the ancient philosophers to think that God couldn't make this world without some eternal matter to work on, and led the Pythagoreans and Platonists to think that God couldn't conceive the plan of the world he was to make without eternal ideas really existing as patterns to work by; and
- •that this theory, when its consequences are competently thought through, leads to absolute scepticism, though those consequences weren't seen by most of the philosophers who have adopted the theory.

I shan't repeat what I have already said on those points. All I shall do, taking 'ideas' in this sense, is to make some observations on Locke's definition of *knowledge*. ·On this I have two main things to say·.

(1) If all knowledge consists in perceiving the agreements and disagreements of ideas, i.e. of representative mental images [= 'likenesses'] of things, it obviously follows that if there are no such ideas there can't be any knowledge. So that if we found good reason for giving up this philosophical hypothesis, all knowledge would have to go along with it.

I hope, however, that it is not so, and that even when this hypothesis ·about ideas· staggers and falls to the ground—as many other hypotheses have done—*knowledge* will continue to stand firm on a more permanent basis.

The cycles and epicycles of the ancient astronomers were, for a thousand years, thought to be absolutely necessary to explain the motions of the heavenly bodies. [The underlying assumption was that heavenly bodies must move in circles. To square this with increasingly precise observations, it was supposed that sometimes a planet moves in a circle with epicycles, i.e. circles within the big circle; and sometimes epicycles within the epicycles.] But now, when all men believe them to have been mere fictions, astronomy has not fallen with them but stands on a more rational foundation than before. Ideas, or mental images of things existing in the mind, have for an even longer time been thought necessary for explaining the operations of the understanding. If they should also at last be found to be fictions, human knowledge and judgment would suffer nothing from being detached from this unwieldy hypothesis. Locke surely didn't look on the existence of ideas as a philosophical *hypothesis*: he thought that we are conscious of their existence, otherwise he wouldn't have made the existence of all our knowledge depend on the existence of ideas.

(2) If this hypothesis is true, I agree with Locke that it is an obvious and necessary consequence that our knowledge can have to do only with ideas, and must consist in perceiving their attributes and relations. (Everything we can know about any object must be either some attribute that it has or some relation it bears to some other object or objects. ·Locke would accept this; by the 'agreements and disagreements' of objects, I think he meant both their attributes and their relations·.) For nothing can be more obvious than this: all knowledge and all judgment and opinion must be about things that are or could be immediate objects of our thought. What can't be the object of thought, or the object of the mind in thinking, can't be the object of knowledge or of opinion.

So if •ideas are the only objects of thought, it inevitably follows that •they are the only objects of knowledge, and all knowledge consists in perceiving their agreements and disagreements, i.e. their attributes and relations. The use I want to make of this inference is to show that the hypothesis which is its premise must be false: •we *do* have knowledge of things that are not ideas, so it inevitably follows that •ideas are *not* the only objects of our thoughts.

Locke in *Essay* IV has pointed out the extent and limits of human knowledge with more precision and judgment than any philosopher had done before him; but he doesn't there confine knowledge to the agreements and disagreements of ideas. And I can't help thinking that a great part of the *Essay* is a knock-down refutation of the principles laid down at the beginning of it.

[Reid remarks that Locke thought he had 'some certain knowledge' about all sorts of things that he didn't think to be ideas—himself, his friends, God, the earth and the sea, etc. His knowledge about those can't consist in perceptions of the agreements and disagreements of *ideas*. He ought to have thought that, since ideas are the only objects of thought, there can't be any knowledge of the existence of ourselves or of external objects or of God. Berkeley accepted that inference as it applies to external objects; he preferred •accepting that there can be no knowledge of them to •dropping the theory of ideas from which that follows. But he didn't accept the inference as it applies to minds and God; he held that we can think of *them* without ideas. Then:]

Hume saw very clearly •the consequences of this theory ·of ideas·, and adopted •them in his theorizing moments; but he openly admits that in everyday life he found himself compelled to believe with the vulgar. [This alludes to Berkeley's remark that on some of these matters we should 'think with the learned and speak with the vulgar'.] His *Treatise of Human Nature* is the only system to which the theory of ideas leads; and in my view every part of it necessarily follows from of that theory.

But Locke didn't see all the consequences of the theory; he adopted it without doubt or examination, swept along by the stream of philosophers that went before him; and his judgment and good sense have led him to say many things, and to believe many things, that can't be reconciled with it.

He not only believed in his own existence, the existence of external things, and the existence of a God, but he has shown very soundly how we come by the knowledge of these existences. You might expect him to point out the agreements and disagreements of ideas from which these existences are deduced, but that is impossible, and he doesn't even try.

Our own existence, he says, we know intuitively; but this intuition is not a perception of the agreement or disagreement of ideas, because the subject of the proposition *I exist* is not an •idea but a •person.

The knowledge of external objects of sense, Locke says, can be had only through 'sensation'. He later spells out 'sensation' into 'the testimony of our senses, which are the proper and sole judges of this thing', their testimony

being 'the greatest assurance we can possibly have, and the greatest our faculties are capable of'. This fits perfectly well with the common sense of mankind, and is perfectly understood by those who never heard of the theory of ideas. Our senses testify immediately to the existence, and many of the attributes and relations, of external material things; and we are so built that we confidently rely on their testimony, without seeking a reason for doing so. This assurance, Locke accepts, deserves to be called 'knowledge'. But those external things are not ideas, and their attributes and relations are the agreements and disagreements not of •ideas but of •things that are not ideas.

To reconcile this to the theory of ideas, Locke says that 'it is the actual receiving of ideas from outside us that gives us notice of the existence of those external things'. If we take 'receiving ideas from outside us' literally, this takes us back to Aristotle's doctrine that our ideas or 'species' come from the external objects, and are the likenesses or forms of those objects. But I don't think that Locke meant it literally; I believe he meant merely that our ideas of sense must have a cause, and that we are not the cause of them ourselves.

Berkeley acknowledges all this, and shows very clearly that •it doesn't present the least shadow of a reason for believing in any material object—indeed, that •there can't be anything external that in any way *resembles* our ideas except the ideas of other minds.

It is evident therefore that the agreements and disagreements of ideas can give us no knowledge of the existence of any material thing. . . .

As to the existence of a god, though Locke was aware that Descartes and many after him had tried to prove it merely from the agreements and disagreements of ideas, he thought that 'if you want to establish this truth and silence atheists, you are going about it in a poor way if you lay the whole stress of so important a point as this on that one foundation' (*Essay* IV.x.7). So instead he argues for the existence of a god, with great strength and solidity, from our own existence and the existence of the perceptible parts of the universe.

By memory, Locke says, we have knowledge of the *past* existence of many things. But all conception of past existence, as well as of external existence, conflicts with the theory of ideas by requiring that there be immediate objects of thought that are not ideas existing right now in the mind.

I conclude, therefore, that if we have any •knowledge of the existence of ourselves, of what we see around us, or of a god, or if we have any •knowledge of past things through memory, that •knowledge can't consist in perceiving the agreements and disagreements of ideas.

[Reid remarks that this is self-evident, and gives reasons for saying so—reasons that repeat things he has said in the past few pages. Then:]

There can't be any •knowledge, •judgment, or •opinion about things that aren't immediate objects of thought. I regard this as self-evident. So if ideas are the only immediate objects of thought, they must be the only things in Nature of which we can have any knowledge and about which we can have any judgment or opinion.

Hume saw this inevitable consequence of the common doctrine of ideas, and he made it evident in his *Treatise of Human Nature*; but what he *used* it for was not to •overturn the theory from which it necessarily follows, but rather to •overturn all knowledge, leaving no basis for believing anything whatsoever. If *Locke* had seen this consequence, there is reason to think that he would have used it differently!

It does seem strange that a man of Locke's judgment and penetration didn't see such an obvious consequence. The only way I can explain it is this: the ambiguity of 'idea' has misled him, here as in several other places. Having at first

defined 'ideas' to be

> •'whatever is the object of the understanding when we think',

he very often takes it in that unlimited sense—so that everything that can be an object of thought is ·automatically· an idea. At other times he uses 'idea' to signify

> •certain representative images of things in the mind, which philosophers have supposed to be immediate objects of thought.

At other times 'ideas' are

> •things conceived abstractly, without regard to their existence.

Philosophy is much indebted to Locke for his discussion of the misuse of words. It is pity he didn't apply the discussion to the word 'idea', the ambiguity and misuse of which has very much hurt his excellent *Essay*.

I don't think I need to say much about certain other opinions of philosophers concerning judgment.

Hume sometimes adopts Locke's opinion that judgment is the perception of the agreement or disagreement of our ideas; sometimes he maintains that judgment and reasoning resolve themselves into •conception, and are nothing but particular ways of conceiving objects; and ·in this spirit· he says that an opinion or belief can most accurately be defined as 'a lively idea related to or associated with a present impression' (*Treatise* I.iii.7). I tried to show in chapter 1 of this Essay that judgment is a mental operation of mind of a quite different kind from the bare conception of an object [page 219]. I also considered Hume's notion of belief when discussing theories about memory ·in Essay 3, chapter 7·.

[Reid then •quotes a passage from Hartley which he says expresses the same position as Hume's, •quotes a passage from Priestley which he says expresses the same position as Locke's, and •says that many detailed points about judgment might be made, but they 'are to be found in every system of logic from Aristotle down to the present age'.]

Chapter 4: First principles in general

One of the most important distinctions within our judgments is that between •intuitive judgments and •judgments based on argument.

It is not in our power to judge as we will. The ·faculty of· judgment is carried along irresistibly by the evidentness—real or illusory—that appears to us at the time. But propositions that are submitted to our judgment fall into one or other of two great classes. (1) Some are of such a nature that a man of mature understanding can grasp them firmly and perfectly understand their meaning, without finding himself compelled to believe them to be true or false, probable or improbable. In these cases, the ·faculty of· judgment remains in suspense until it is inclined to one side or another by reasons or arguments. (2) Other propositions are no sooner understood than they are believed. Our •taking them in leads unstoppably to our •judgment on them, and these two

·mental operations· are equally the work of Nature and the result of our basic powers. There is no searching for evidence, no weighing of arguments; the proposition is not deduced or inferred from another; it has the light of truth in itself, and has no occasion to borrow it from another proposition.

Propositions of kind (2), when they are used in matters of science, have commonly been called 'axioms'; and in all sorts of contexts of their use they are called

first principles
principles of common sense
common notions
self-evident truths.

[Reid quotes Cicero and Shaftesbury for some other labels for them. Then:]

What I have said is sufficient, I think, to distinguish (1) first principles or intuitive judgments from (2) judgments that can be ascribed to the power of reasoning. And this distinction isn't harmed if there are some judgments concerning which we may be unsure whether they belong in (1) or in (2). There is a real distinction between *people inside the house* and *people outside the house*, yet we may be unsure on which side of the distinction we should put the man who stands on the door-step!

The power of reasoning—i.e. of drawing a conclusion from a chain of premises—may properly enough be called an 'art'. 'In all reasoning', says Locke, 'we search and flail around, having to take pains and stick to the problem' (*Essay* I.ii.10). The power to reason resembles the power of walking, which is acquired by use and exercise. Nature prompts us to it, and has given us the power of acquiring it; but we can't actually walk until we have worked at it. After repeated efforts, much stumbling, and many falls, we •learn to walk; and that is like how we •learn to reason.

But with clearly understood self-evident propositions, the •power of judging can be compared to •the power of swallowing our food. It is purely natural, and therefore common to the learned and the uneducated, to the trained and the untrained. It requires maturity of understanding and freedom from prejudice, but nothing else.

I take it for granted that there *are* self-evident principles. Nobody, I think, denies this. If anyone *was* so sceptical as to deny that any proposition is self-evident, I don't see how we could convince him by reasoning.

But there seem to be great differences of opinion among philosophers about first principles. One philosopher •takes to be self-evident a proposition that a second •labours to prove by arguments and a third •denies altogether. Consider for example the proposition that

> *There is a sun, moon, earth, and sea which really exist, whether or not we think of them.*

Before Descartes's time, that was taken to be a first principle. Descartes thought that it ought to be proved by argument; and in this he was been followed by Malebranche, Arnauld, and Locke. They all laboured to prove, by very weak reasoning, the existence of external objects of sense; and Berkeley and Hume, aware of the weakness of those arguments, were led to deny the existence of the sun etc. altogether.

The ancient philosophers granted that all knowledge must be based on first principles, and that there is no reasoning without them. Rather than having too few 'first principles', the Aristotelian philosophy had too many. Perhaps the misuse of them in that ancient system is what brought them into discredit in modern times;. . . .and as one extreme often leads to the opposite extreme, this seems to have been the case with the ancient and the modern attitudes to first principles.

Descartes thought that one principle, expressed in one word *cogito*—'·I think·'—was a sufficient foundation for his whole system, and he asked for no more.

Locke seems to think that first principles are very little use. Holding that knowledge consists in the perception of the agreement or disagreement of our ideas, he thought that when we have clear ideas and can compare them with one another, we can always fabricate first principles as often as we need them. Such differences we find among philosophers about first principles.

A question of some importance is this: When men disagree about first principles, can the disagreements be resolved? What actually happens in most such disputes is that one man maintains something as a first principle which another man denies, both parties •appeal to 'common sense', and there the matter rests. Isn't there some way of discussing this •appeal? Isn't there some mark or criterion by which to distinguish genuine first principles from purported first principles that really are not so? I shall humbly offer, in the following ·four· propositions, what appears to me to square with the truth in these matters, though I am always open to being convinced that I should change my opinion. [They are numbered in large type, to prevent confusion with numbering of points *within* items (3) and (4).]

(1) All knowledge acquired by reasoning must be built on first principles. I hold this to be certain, and even demonstrable.

It is as certain as that every house must have a foundation. The •power of reasoning in this respect resembles •mechanical powers or engines: ·like them·, it must have a fixed point to rest on, because otherwise it spends its force in the air and produces no effect.

[In most of this work, Reid has taken 'analysis' to stand for a process of intellectually taking something apart, but we are about the meet 'analytic' in a different sense that is now obsolete. In this sense, an 'analytic' procedure is one that works from effects back to causes, from what is given to what explains it, from conclusions back to premises; and a 'synthetic' procedure, in the related sense, is one that goes in the reverse direction.]

When we examine in an analytic way the evidentness of any proposition, either we find it to be self-evident or ·we find that· it rests on one or more propositions that support it. The same holds for those supporting propositions, and of the supports of their supports,. . . as far back as we can go. But we can't go back along this track to infinity. So where is this analysis of ours to stop? Obviously, it can't stop until we come to propositions that •support all the others that are built on them but are themselves •not supported by any—i.e. until we come to self-evident propositions.

Now consider a synthetic proof of some kind, where we start with the premises and pursue a series of consequences until we eventually come to the last conclusion, the thing to be proved. In this procedure we must begin either with •self-evident propositions or with •ones that have been already proved. In the latter case, the proof of those propositions is a silent part of our proof, which is deficient without it. Well, suppose that that deficiency is remedied and our proof is completed: isn't it obvious that it must set out with self-evident propositions, and that the evidentness of the conclusion must rest on them? So it seems to be demonstrable that •without first principles analytic reasoning could have no end, and synthetic reasoning could have no beginning; and that •every conclusion reached through reasoning must rest its whole weight on first principles, as a building does on its foundation.

(2) Some first principles yield conclusions that are certain, others such as are probable in various degrees from the highest probability to the lowest.

In valid reasoning, the strength or weakness of the conclusion will always correspond to the strength or weakness of the principles on which it is based.

Where it's a matter of testimony, it is self-evident that testimony from two people is better than testimony from one, provided that the two are on a par in their characters and their access to knowledge; but the testimony of one person may be true, and testimony that is preferred to it—·e.g. the contrary testimony of two others·—may be false.

When an experiment has succeeded in several trials, and the circumstances have been noted with care, there is a self-evident •probability that it will succeed in a new trial; but there is no •certainty. The level of probability varies in different cases, because cases vary in how easy it is to observe all the circumstances that may influence the outcome. And even when many experiments have been made with care, our expectation *may* be frustrated in the very next trial, because of some difference in the circumstances that hasn't been—perhaps couldn't have been—observed.

Newton laid this down as a first principle in natural philosophy:

> A property that has been found in all bodies that we have been able to test, and that has always been found in its quantity to be in exact proportion to the quantity of matter in the body in question, is to be regarded as a universal property of matter.

This principle has never been questioned, as far as I know. The evidence we have that all matter is divisible, movable, solid, and inert all relies on this principle. If the principle isn't true, we can't reasonably believe that all matter has those properties. From the same principle that great man has shown that we have reason to conclude that all bodies gravitate towards each other.

But this principle doesn't have the kind of evidentness that mathematical axioms have. It isn't—and Newton never thought it to be—a necessary truth whose contrary is impossible. And if it were ever discovered through sound experiments that some parts of some bodies don't have gravity, that fact would have to be accepted as an exception to the general law of gravitation.

In games of chance, it is a first principle that •every side of a die has an equal chance to be turned up; and that in a lottery •every ticket has an equal chance of winning. From such first principles as these, which are the best we can have in such matters, we can infer by demonstrative reasoning the precise degree of probability of every possible outcome in such games.

But the principles on which all this precise and deep reasoning is based can never yield a certain conclusion, for you can't make up for a defect in the first principles by any excellence in the reasoning based on them. Just as water, however skillfully channelled, can't rise higher than its source, so also no conclusion of reasoning can be more evident than the first principles from which it is inferred.

(3) It would contribute greatly to the stability of human knowledge, and consequently to increasing it, if the first principles on which the various parts of it are based were pointed out and ascertained.

We have reasons to accept this, both from facts and from the nature of the thing [by which, as we shall see in a moment, Reid means 'both from empirical reasons and from ones based on abstract theoretical points'].

·'FROM THE FACTS'·

Mathematics and natural philosophy are two branches of human knowledge in which this method has been followed, ·i.e. whose basic principles have been pointed out and ascertained·. This has been done in mathematics as far back

as we have books. This science is the only intellectual area which, in more than two thousand years, has generated no sects, no conflicting systems, and hardly any disputes—and any disputes there *have* been have ended, for good, as soon as the animosity of parties subsided. The science once firmly established on the basis of a few axioms and definitions, as though on a rock, has grown through the centuries so as to become the highest and firmest structure that human reason can boast.

Until less than two hundred years ago, natural philosophy remained in the same fluctuating state as the other sciences. Every new system pulled up the old ones by the roots. The system-builders were indeed always willing to get help from first principles when they were on their side; but, finding them insufficient to support the structure that their imagination had raised, they brought them in only as *helps*, mixing with conjectures and with lame inductions, so that the resultant systems were like the statue of Nebuchadnezzar with its feet made partly of iron and partly of clay.

Bacon first set out the only solid foundation on which natural philosophy can be built; and Newton boiled Bacon's principles down into three or four axioms that he calls 'rules of philosophising'. From these, together with the phenomena observed by the senses (which he also lays down as first principles), Newton infers by strict reasoning the propositions contained in the third book of his *Principia* and in his *Optics*; and in this way he has built in those two branches of natural philosophy a structure that is not open to being shaken by doubtful disputation, and stands immovable on the basis of self-evident principles.

This structure has been further developed by the arrival of new discoveries, but it is no longer subject to revolutions.

We are now *done with* the disputes about prime matter, substantial forms, Nature's abhorring a vacuum, and bodies' having no gravitation when they are in their proper place. The builders in this work don't have to build with only one hand because they are holding a ·defensive· weapon in the other! All they have to do is to carry on the work.

Yet it seems very probable that if natural philosophy hadn't been raised on this solid foundation of self-evident principles, it would have remained *to this day* a battle-field on which every inch of ground was disputed and nothing was permanently settled.

Admittedly, natural philosophy and (especially) mathematics have an advantage over most other sciences, namely that in them it is easier to form clear and definite conceptions of the objects that they are dealing with. But the difficulty that other sciences have about this can be overcome. It could explain why they have had a longer infancy, but it gives no reason why they can't eventually reach maturity by the same steps as were taken by the two sciences that grew up faster.

These facts may lead us to conclude that if in other branches of philosophy the first principles were laid down as has been done in mathematics and natural philosophy, and the subsequent conclusions were based on them, this would make it much easier to distinguish what is solid and well supported from the vain fictions of human fancy.

·'From the nature of the thing'·

But quite apart from ·empirical· facts, the nature of the thing leads to the same conclusion.

For when any system is based on first principles, and is deduced from them in a way that conforms to the ·logical· rules, we have a thread to lead us through the labyrinth. Our judgment has a clear and definite object. The ·three· different parts ·of the system· can be separated, so that each can be examined in isolation.

The whole system comes down to •axioms, •definitions, and •deductions. These are very different materials, which

have to be evaluated by very different standards; and judging each in isolation is much easier than judging a mass in which they all mixed together without distinction. Let us consider how we judge each of them.

(1) As to •definitions, it is very easy. They relate only to words; and if people mean different things by some word, and each sticks to his own meaning, that will produce different ways of speaking but it can't ever produce different ways of thinking.

Still, when in the course of reasoning men use the same word sometimes in one sense and sometimes in another, this produces fallacies—nothing produces *more* fallacies than it does! And the best way of preventing such fallacies, or of detecting them when they occur, is to have definitions of words that are as precise as possible.

(2) As to •deductions from principles that are accepted by both sides ·in a scientific dispute·, I don't see how *they*—·i.e. the deductions·—can be a subject of dispute for long, among men who aren't blinded by prejudice or bias. For the rules of reasoning by which conclusions can be inferred from premises have been fixed with great unanimity for two thousand years. No-one man disputes the rules of reasoning laid down by Aristotle and repeated by every writer on practical logic.

I would point out, by the way, that the reason why logicians from •Aristotle down to this day have been so unanimous in settling on the rules of reasoning seems to be that •that great genius derived them in a scientific manner from a few definitions and axioms. I add that when men differ about whether a certain conclusion follows from certain premises, I think it is always because they differ about some first principle. I shall explain this by an example.

Suppose that from a thing's having begun to exist one man infers that it must have had a cause, while another man doesn't accept that inference. It is obvious in this case that one man does, while the other doesn't, take it to be a self-evident principle that everything that begins to exist must have a cause. If they settle *this* point, their dispute will be at an end.

Thus I think it appears that in matters of science if •the terms are properly explained, •the first principles on which the reasoning is based are laid down and exposed to examination, and •the conclusions are deduced from them in a way that conforms to the ·logical· rules, it might be expected that fair-minded and able men who love truth and have patience to examine things coolly would reach unanimity about the validity of the inferences, so that their only differences would be ones concerning first principles.

(4) When fair-minded and honest people happen to differ about first principles, Nature has equipped us with means by which to bring them to unanimity.

When men differ about things that are taken to be first principles or self-evident truths, reasoning seems to be at an end. Each party appeals to common sense. When one man's common sense gives one answer and another man's gives a conflicting answer, there seems to be no way out except to leave everyone to enjoy his own opinion. This is often said, and I think it is true if rightly understood.

It is useless to reason with someone who denies the first principles on which the reasoning is based. Thus it would be useless to try to prove a proposition in Euclid to someone who denies Euclid's axioms. Indeed we ought never to reason with men who deny first principles because they are obstinate and unwilling to yield to reason.

But isn't it possible that men who really love truth and are open to conviction may differ about first principles?

I think it is possible, and that it would show a great lack of charity if one said that it isn't. (·Saying that it isn't

possible is tantamount to saying 'If someone disagrees with me about first principles, he doesn't really love truth and is obstinately determined not to yield to reason'—which shows a lack of charity·.)

When this kind of disagreement occurs, everyone who believes that there is a real distinction between truth and error, and that the faculties God gave us aren't inherently deceptive, must be convinced that there is a defect or a perversion of judgment on one side or the other.

A fair-minded and humble man who is party to such a disagreement will naturally have enough doubt about his own judgment to want to conduct a serious examination of propositions that he has been regarding—perhaps for many years—as first principles. He will think it possible that although his heart is upright his judgment may have been twisted by education, by authority, by party zeal, or by some other of the common causes of error—causes that can influence even the able intellects of honest people.

When someone is in that frame of mind, so unaggressive and so suitable to every good man, has Nature left him with no rational means either to correct his judgment if it is wrong or to confirm it if it is right? I hope not. . . .

In other kinds of controversy, the procedure by which the truth of a proposition is discovered (or its falsehood detected) is to show that it is necessarily connected with (or inconsistent with) first principles; but when the controversy is about whether a proposition *is* a first principle, this procedure can't be followed. In controversies of this kind, therefore, truth has a special disadvantage. But it has ·three· advantages of another kind to make up for this.

(4.1) In controversies about first principles, everyone is a competent judge; and that makes it hard for anyone to deceive mankind.

To form a judgment about first principles, all you need is a sound mind free from prejudice, and a clear conception of the question. The learned and the uneducated, the philosopher and the day-labourer, are on a level ·in this respect·, and they'll pass the same judgment unless they are misled by some bias or taught to renounce their own understandings from some mistaken religious principle.

In matters that are beyond the reach of common understanding, the many are led by the few, and willingly yield to their authority. But in matters of common sense, the few must yield to the many when local and temporary prejudices are removed. No man is *now* moved by the subtle arguments of Zeno against ·the possibility of· motion, even if he doesn't know how to answer them.

The ancient form of scepticism furnishes a remarkable instance of this truth. That system, said to have been invented by Pyrrho, was carried down through a succession of ages by very able and acute philosophers who •taught men to believe nothing at all and •regarded it as the highest achievement of human wisdom to withhold assent from absolutely every proposition. It was supported with great subtlety and learning. . . . The assault of the sceptics against all science seems to have been managed with more skill and nimbleness than the defence of ·science by· the dogmatists.

But because this scepticism was an insult to the common sense of mankind it died without having to be killed, and it would be useless to try to revive it. Modern scepticism is very different from the ancient version, otherwise it wouldn't have been given a hearing; and when it has lost the charm of novelty it will die too even if it isn't ever refuted.

Modern scepticism—I mean the scepticism of Hume—is built on principles that were very generally maintained by philosophers who didn't see that they led to scepticism. Hume, by tracing with great acuteness and ingenuity the

consequences of generally accepted principles, has shown that those principles overturn all knowledge, and eventually overturn themselves, leaving the mind in perfect suspense.

(4.2) Opinions that contradict first principles are distinguished from other errors by being not merely false but absurd. And Nature has given us a particular device for showing up and embarrassing absurdity, namely the emotion of *ridicule*, which seems intended for this very purpose of putting to shame anything that is absurd either in opinion or practice.

This weapon, when properly wielded, cuts with as sharp an edge as argument does. Nature has provided us with •ridicule to expose •absurdity, and with •argument to refute •error. Both are well fitted for their different jobs, and are equally friendly to truth when properly used.

Both may be misused in the service of error. But the degree of judgment that serves to detect the misuse of argument in false reasoning is also adequate to detect the misuse of ridicule when it is wrongly directed.

[Reid then discusses some factors that may disguise absurdity, thus shielding it from ridicule: intense religious feelings, the 'gravity and solemnity' with which the absurdity is presented, the stature of the author of the absurdity, the charm of novelty, the fact that the absurdity is something we have accepted since we were children. Then:] But an absurdity can be taken seriously by sensible people only while it wears a mask. As soon as someone has the skill or the boldness to pull off the mask, it can no longer bear the light; it slinks into dark corners for a while, and is never heard of again except as something to laugh at.

(4.3) Just because first principles are *first* principles, they can't be directly or demonstratively proved; but there are certain ways of reasoning about them which confirm the ones that are sound and solid and detect the ones that are false. I shall describe ·five of· these ways of reasoning.

(4.3.1) If it is shown that a first principle that a man rejects stands on the same footing with others that he accepts, this is a good argument *ad hominem*. [Latin = 'against the man'; an argument *ad hominem* against proposition P as held by person x purports to show not that •P is false but that •x is not in a position to accept P.] For when this is the case, he is guilty of an inconsistency in holding one and rejecting the other.

Here is an example. The faculties of •consciousness, •memory, •external senses, and •reason are all equally gifts of Nature. Any good reason that can be given for accepting the testimony of one of them is an equally good reason for accepting the testimony of all the others. The greatest sceptics accept the testimony of •consciousness, and allow that what it testifies is to be held as a first principle. So if they reject the immediate testimony of •the senses or of •memory, they are guilty of an inconsistency.

(4.3.2) A first principle may admit of a proof *ad absurdum*.

In this kind of proof, which is very common in mathematics, we prove the proposition P by supposing not-P and tracing the consequences of *that* in a course of reasoning; if we find any of not-P's inevitable consequences to be obviously absurd, we conclude that not-P is false and therefore that P is true.

Very few propositions—and *extremely* few propositions that are candidates for the role of first principles—stand alone and unconnected. A proposition draws many others along with it, in a chain that can't be broken. Someone who takes up a proposition must bear the burden of all its consequences; and if that burden is too heavy for him to carry, he must set down—·i.e. no longer accept·—that proposition.

(4.3.3) The consent of ages and nations, of the learned and the uneducated, should have great authority regarding

first principles, where everyone is a competent judge.

First principles are a basis not only for •our theorizing in philosophy but also for •our ordinary conduct in life; and every motive to action presupposes some belief. When we find that men generally agree about principles that concern human life, this must have great authority with every sober mind that loves truth.

Berkeley tried to show that his theory asserting the non-existence of a material world didn't contradict the views of the vulgar, but only those of the philosophers. With good reason, he was more afraid of opposing the **authority** of vulgar opinion in a matter of this kind than of opposing all the schools of philosophers. But when we watch his doomed attempt to reconcile his system with vulgar opinion, we can only be amused.

You may say: 'What has **authority** to do with matters of opinion? Is truth to be determined by votes? Is authority to be raised out of its grave so that it can again tyrannise over mankind?' I'm aware that these days an advocate for authority has an unpopular case to make, but I don't want to give to authority any more than its due.

Quite rightly we honour the names of the benefactors of mankind who have helped to break the yoke of the authority that deprives men of their natural and unalienable right to judge for themselves; but while we are rightly hostile to *that* kind of authority and to everyone who wants to subject us to its tyranny, let us remember how common the folly is of going from one fault to the opposite extreme—·in this case, escaping from one kind of authority and rushing to the opposite extreme of rejecting *all* kinds of authority·.

Authority, though a very tyrannical •master of private judgment, may yet sometimes be a useful •servant; that is all it is entitled to and all that I claim for it. To see that I am right about this, let us consider a possible case in mathematics, the science where everyone agrees that authority has *less* weight than in any other.

Suppose a mathematician makes a discovery that he thinks is important, puts his demonstration of it in the proper order, and after examining it carefully finds no flaw in it. Won't he still hold back a little, having some fear that the thrill of discovery may have made him overlook some false step? This must be granted.

He submits his demonstration to the examination of a mathematical friend whom he thinks to be a competent judge, and impatiently waits to hear his judgment. Won't the favourable (or unfavourable) verdict of his friend greatly increase (or lessen) his confidence in his own judgment? Most certainly it will, and so it should.

If •his friend's judgment agrees with his own—and especially if it is confirmed by two or three ·other· able judges—he becomes sure about his discovery, without further examination; but if •it is unfavourable, he is has to suspend judgment again, until the suspect part of the demonstration is examined again more rigorously. . . . Here we see a man's judgment, even about a mathematical demonstration,

- •conscious of some feebleness in itself,
- •seeking the aid of authority to support it,
- •greatly strengthened by that authority, and
- •hardly able to stand up to it without some new aid.

When people who are regarded as fair and competent judges agree in their judgment on some matter, that creates a kind of •*judgment society*, which has effects very similar to those of •*civil society*: it gives strength and courage to every individual, and removes the anxiety that accompanies •solitary judgment as naturally as it accompanies a •solitary man in the state of Nature. So we should judge for ourselves while also being willing to get help from the authority of other competent judges. . . . Regarding a matter of common sense,

everyone is as competent a judge as a mathematician is regarding a mathematical demonstration; and there must be a great presumption that the judgment of *mankind* in such a matter is the natural output of the faculties that God has given us. Such a judgment can be wrong only when there is some cause of the error that is as general as the error is. When this can be shown to be the case, I accept that it ought to have its due weight. But it is highly unreasonable to suppose that mankind in general, in accepting something self-evident, have deviated from the truth although no cause for the deviation can be given.

You may think: 'It is impossible to collect the opinion of *men in general* on any point whatsoever. So the "authority" of their general opinion can't give us any help in examining first principles.' I reply that in many cases this is not impossible, and not even difficult.

Who can *wonder whether* men have universally believed

- in the existence of a material world?
- that every change that happens in Nature must have a cause?
- that there is a right and a wrong in human conduct; some things that merit blame and others that are entitled to approval?

The universality of these opinions, and of many others like them that I could name, is sufficiently evident from the whole tenor of human conduct as we have experienced it and learned about it from history.

There are other opinions that appear to be universal from what is common in the structure of all languages. [Reid develops this point, repeating things he has said more than once before, starting with Essay 1, chapter 1.]

(4.3.4) Opinions that appear so early in the minds of men that they can't be the effect of education or of false reasoning have a good claim to be considered as first principles. Consider, for example, our belief that *the people around us are living and thinking beings*. Perhaps when we become able to reason we can give some reason for this; but we believed it before we could reason, and before we could learn it by being taught it. It seems, therefore, to be an immediate effect of our constitution.

(4.3.5) When an opinion is so necessary in the conduct of life that without it a man will be led into a thousand absurdities in his behaviour, such an opinion can safely be regarded as a first principle, even if we can give no other reason for it. . . .