

Of First Principles in General*

Thomas Reid

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One of the most important distinctions of our judgments is, that some of them are intuitive, others grounded on argument.

It is not in our power to judge as we will. The judgment is carried along necessarily by the evidence, real or seeming, which appears to us at the time. But in propositions that are submitted to our judgment, there is this great difference; some are of such a nature that a man of ripe understanding may apprehend them distinctly, and perfectly understand their meaning without finding himself under any necessity of believing them to be true or false, probable or improbable. The judgment remains in suspense, until it is inclined to one side or another by reasons or arguments.

But there are other propositions which are no sooner understood than they are believed. The judgment follows the apprehension of them necessarily, and both are equally the work of nature, and the result of our original 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.

Propositions of the last kind, when they are used in matters of science, have commonly been called *axioms*; and on whatever occasion they are used, are called *first principles, principles of common sense, common notions, self-evident truths*. Cicero calls them *judgments of nature, judgments fixed in the common sense of man*. Lord Shaftesbury expresses them by the words, *natural knowledge, fundamental reason, and common sense*.¹

What has been said, I think, is sufficient to distinguish first principles, or intuitive judgments, from those which may be ascribed to the power of reasoning; nor is it a

*This is Chapter 4 of Essay 6 of Reid's *Essays on the Intellectual Powers of Man* (1785); original text from [Google Books](#); notes and modernized text by [Trevor Pearce](#).

¹Cicero, *De Natura Deorum*, II.5 (originally quoted in Latin); Cicero, *De Oratore*, III.i.195 (originally quoted in Latin); Lord Shaftesbury, *Sensus Communis: An Essay on the Freedom of Wit and Humour* (London: 1709), 117.

just objection against this distinction, that there may be some judgments concerning which we may be dubious to which class they ought to be referred. There is a real distinction between persons within the house, and those that are without; yet it may be dubious to which the man belongs that stands upon the threshold.

The power of reasoning, that is of drawing a conclusion from a chain of premises, may with some propriety be called an art. “All reasoning,” says Mr. Locke, “is search and casting about, and requires pains and application.”² It resembles the power of walking, which is acquired by use and exercise. Nature prompts to it, and has given the power of acquiring it; but must be aided by frequent exercise before we are able to walk. After repeated efforts, much stumbling, and many falls, we learn to walk; and it is in a similar manner that we learn to reason.

But the power of judging in self-evident propositions, which are clearly understood, may be compared to the power of swallowing our food. It is purely natural, and therefore common to the learned, and the unlearned; to the trained, and the untrained: It requires ripeness of understanding, and freedom from prejudice, but nothing else.

I take it for granted, that there are self-evident principles. Nobody, I think, denies it. And if any man were so sceptical as to deny that there is any proposition that is self-evident, I see not how it would be possible to convince him by reasoning.

But yet there seems to be great difference of opinions among philosophers about first principles. What one takes to be self-evident, another labors to prove by arguments, and a third denies altogether.

Thus, before the time of Descartes, it was taken for a first principle, that there is a sun and a moon, an earth and sea, which really exist, whether we think of them or not. Descartes thought that the existence of those things, ought to be proved by argument; and in this he has been followed by Malebranche, Arnauld, and Locke. They have all labored to prove, by very weak reasoning, the existence of external objects of sense; and Berkeley and Hume, sensible of the weakness of their arguments, have been led to deny their existence altogether.

The ancient philosophers granted, that all knowledge must be grounded on first principles, and that there is no reasoning without them. The Peripatetic³ philosophy was redundant rather than deficient in first principles. Perhaps the abuse of them in that ancient system may have brought them into discredit in modern times; for as the best things may be abused, so that abuse is apt to give a disgust to the thing itself; and as one extreme often leads into the opposite, this seems to have been the case in the respect paid to first principles in ancient and in modern times.

²Locke, *An Essay Concerning Human Understanding* (1690), Book 1, Chapter 2, §10.

³Aristotelian

Descartes thought one principle, expressed in one word *cogito* [I think], a sufficient foundation for his whole system, and asked no more.⁴

Mr. Locke seems to think first principles of very small use. Knowledge consisting, according to him, in the perception of the agreement or disagreement of our ideas; when we have clear ideas, and are able to compare them together, we may always fabricate first principles as often as we have occasion for them.⁵ Such differences we find among philosophers about first principles.

It is likewise a question of some moment, whether the differences among men about first principles can be brought to any issue? When, in disputes, one man maintains that to be a first principle, which another denies, commonly both parties appeal to common sense, and so the matter rests. Now, is there no way of discussing this appeal? Is there no mark or criterion, whereby first principles that are truly such, may be distinguished from those that assume the character without a just title? I shall humbly offer in the following propositions what appears to me to be agreeable to truth in these matters, always ready to change my opinion upon conviction.

1. *First*, I hold it to be certain, and even demonstrable, That all knowledge got by reasoning must be built upon first principles.

This is as certain as that every house must have a foundation. The power of reasoning, in this respect, resembles the mechanical powers or engines; it must have a fixed point to rest upon, otherwise it spends its force in the air, and produces no effect.

When we examine, in the way of analysis, the evidence of any proposition, either we find it self-evident, or it rests upon one or more propositions that support it. The same thing may be said of the propositions that support it; and of those that support them, as far back as we can go.

But we cannot go back in this track to infinity. Where then must this analysis stop? It is evident that it must stop only when we come to propositions, which support all that are built upon them, but are themselves supported by none, that is, to self-evident propositions.

Let us again consider a synthetical proof of any kind, where we begin with the premises, and pursue a train of consequences, until we come to the last conclusion, or thing to be proved. Here we must begin, either with self-evident propositions, or with such as have been already proved. When the last is the case, the proof of the propositions, thus assumed, is a part of our proof; and the proof is deficient without it. Suppose then the deficiency supplied, and the proof completed, is it not evident that it must set out with self-evident propositions, and that the whole

⁴Descartes, *Principles of Philosophy* (1644), Part 1, §7.

⁵Locke, *An Essay Concerning Human Understanding* (1690), Book 4, Chapter 7, §§2–3.

evidence must rest upon them? So that it appears to be demonstrable that, without first principles, analytical reasoning could have no end, and synthetical reasoning could have no beginning; and that every conclusion got by reasoning must rest with its whole weight upon first principles, as the building does upon its foundation.

2. A *second* proposition is, that some first principles yield conclusions that are certain, others such as are probable, in various degrees, from the highest probability to the lowest.

In just reasoning, the strength or weakness of the conclusion will always correspond to that of the principles on which it is grounded.

In a matter of testimony, it is self-evident, that the testimony of two is better than that of one, supposing them equal in character, and in their means of knowledge; yet the simple testimony may be true, and that which is preferred to it may be false.

When an experiment has succeeded in several trials, and the circumstances have been marked with care, there is a self-evident probability of its succeeding in a new trial; but there is no certainty. The probability, in some cases, is much greater than in others'; because, in some cases, it is much easier to observe all the circumstances that may have influence upon the event than in others. And it is possible, that, after many experiments made with care, our expectation may be frustrated in a succeeding one, by the variation of some circumstance that has not, or perhaps could not be observed.

Sir Isaac Newton has laid it down as a first principle in natural philosophy, that a property which has been found in all bodies upon which we have had access to make experiments, and which has always been found in its quantity to be in exact proportion to the quantity of matter in every body, is to be held as an universal property of matter.⁶

This principle, as far as I know, has never been called in question. The evidence we have, that all matter is divisible, moveable, solid, and inert, is resolvable into this principle; and if it be not true, we cannot have any rational conviction 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.

This principle, however, has not that kind of evidence which mathematical axioms have. It is not a necessary truth whose contrary is impossible; nor did Sir Isaac ever conceive it to be such. And if it should ever be found, by just experiments, that there is any part in the composition of some bodies which has not gravity, the fact, if duly ascertained, must be admitted 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

⁶Newton, *Mathematical Principles of Natural Philosophy*, 2nd ed. (1713), Book 3, Rule 3.

being drawn out. From such first principles as these, which are the best we can have in such matters, we may deduce, by demonstrative reasoning, the precise degree of probability of every event in such games.

But the principles of all this accurate and profound reasoning can never yield a certain conclusion, it being impossible to supply a defect in the first principles by any accuracy in the reasoning that is grounded upon them. As water, by its gravity, can rise no higher in its course than the fountain, however artfully it be conducted; so no conclusion of reasoning can have a greater degree of evidence than the first principles from which it is drawn.

From these instances, it is evident, that as there are some first principles that yield conclusions of absolute certainty; so there are others that can only yield probable conclusions; and that the lowest degree of probability must be grounded on first principles as well as absolute certainty.

3. A *third* proposition is, that it would contribute greatly to the stability of human knowledge, and consequently to the improvement of it, if the first principles upon which the various parts of it are grounded were pointed out and ascertained.

We have ground to think so, both from facts, and from the nature of the thing.

There are two branches of human knowledge in which this method has been followed, to wit, mathematics and natural philosophy; in mathematics, as far back as we have books. It is in this science only, that, for more than two thousand years since it began to be cultivated, we find no sects, no contrary systems, and hardly any disputes; or, if there have been disputes, they have ended as soon as the animosity of parties subsided, and have never been again revived. The science, once firmly established upon the foundation of a few axioms and definitions, as upon a rock, has grown from age to age, so as to become the loftiest and the most solid fabric that human reason can boast.

Natural philosophy, till less than two hundred years ago, remained in the same fluctuating state with the other sciences. Every new system pulled up the old by the roots. The system-builders, indeed, were always willing to accept of the aid of first principles, when they were of their side; but finding them insufficient to support the fabric which their imagination had raised, they were only brought in as auxiliaries, and so intermixed with conjectures, and with lame inductions, that their systems were like Nebuchadnezzar's image, whose feet were partly of iron and partly of clay.⁷

Lord Bacon first delineated the only solid foundation on which natural philosophy can be built; and Sir Isaac Newton reduced the principles laid down by Bacon into three or four axioms, which he calls *regulae philosophandi* [rules of philosophizing].⁸

⁷Daniel 2:33.

⁸Newton, *Mathematical Principles of Natural Philosophy*, 2nd ed. (1713), Book 3.

From these, together with the phenomena observed by the senses, which he likewise lays down as first principles, he deduces, by strict reasoning, the propositions contained in the third book of his *Principia* [Principles], and in his *Optics*; and by this means has raised a fabric in those two branches of natural philosophy, which is not liable to be shaken by doubtful disputation, but stands immoveable upon the basis of self-evident principles.

This fabric has been carried on by the accession of new discoveries; but is no more subject to revolutions.

The disputes about *materia prima* [prime matter], substantial forms, Nature's abhorring a vacuum, and bodies having no gravitation in their proper place, are now no more. The builders in this work are not put to the necessity of holding a weapon in one hand while they build with the other; their whole employment is to carry on the work.

Yet it seems to be very probable, that if natural philosophy had not been reared upon this solid foundation of self-evident principles, it would have been to this day a field of battle, wherein every inch of ground would have been disputed, and nothing fixed and determined.

I acknowledge that mathematics and natural philosophy, especially the former, have this advantage of most other sciences, that it is less difficult to form distinct and determinate conceptions of the objects about which they are employed; but as this difficulty is not insuperable, it affords a good reason, indeed, why other sciences should have a longer infancy; but no reason at all why they may not at last arrive at maturity, by the same steps as those of quicker growth.

The facts I have mentioned may therefore 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 grounded upon them, this would make it much more easy to distinguish what is solid and well supported from the vain fictions of human fancy.

But laying aside facts, the nature of the thing leads to the same conclusion.

For when any system is grounded upon first principles, and deduced regularly from them, we have a thread to lead us through the labyrinth. The judgment has a distinct and determinate object. The heterogeneous parts being separated, can be examined each by itself.

The whole system is reduced to axioms, definitions, and deductions. These are materials of very different nature, and to be measured by a very different standard; and it is much more easy to judge of each, taken by itself, than to judge of a mass wherein they are kneaded together without distinction. Let us consider how we judge of each of them.

First, as to definitions, the matter is very easy. They relate only to words, and differences about them may produce different ways of speaking, but can never produce different ways of thinking, while every man keeps to his own definitions.

But as there is not a more plentiful source of fallacies in reasoning than mens using the same word sometimes in one sense and at other times in another, the best means of preventing such fallacies, or of detecting them when they are committed, is definitions of words as accurate as can be given.

Secondly, as to deductions drawn from principles granted on both sides, I do not see how they can long be a matter of dispute among men who are not blinded by prejudice or partiality: For the rules of reasoning by which inferences may be drawn from premises have been for two thousand years fixed with great unanimity. No man pretends to dispute the rules of reasoning laid down by Aristotle; and repeated by every writer in dialectics.⁹

And we may observe by the way, that the reason why logicians have been so unanimous in determining the rules of reasoning, from Aristotle down to this day, seems to be, that they were by that great genius raised, in a scientific manner, from a few definitions and axioms. It may farther be observed, that when men differ about a deduction, whether it follows from certain premises, this I think is always owing to their differing about some first principle. I shall explain this by an example.

Suppose that, from a thing having begun to exist, one man infers that it must have had a cause; another man does not admit the inference. Here it is evident, that the first takes it for a self-evident principle, that every thing which begins to exist must have a cause. The other does not allow this to be self-evident. Let them settle this point, and the dispute will be at an end.

Thus I think it appears, that in matters of science, if the terms be properly explained, the first principles upon which the reasoning is grounded be laid down and exposed to examination, and the conclusions regularly deduced from them, it might be expected, that men of candor and capacity, who love truth, and have patience to examine things coolly, might come to unanimity with regard to the force of the deductions, and that their differences might be reduced to those they may have about first principles.

4. A *fourth* proposition is, that Nature hath not left us destitute of means whereby the candid and honest part of mankind may be brought to unanimity when they happen to differ about first principles.

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 determination, another man's a contrary

⁹For Aristotle's account of deductive inference, see Smith, "[Aristotle's Logic](#)," §5.

determination, there seems to be no remedy but to leave every man to enjoy his own opinion. This is a common observation, and I believe a just one, if it be rightly understood.

It is in vain to reason with a man who denies the first principles on which the reasoning is grounded. Thus, it would be in vain to attempt the proof of a proposition in Euclid to a man who denies the axioms. Indeed, we ought never to reason with men who deny first principles from obstinacy and unwillingness to yield to reason.

But is it not 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 cannot, without great want of charity, be denied to be possible.

When this happens, every man who believes that there is a real distinction between truth and error, and that the faculties which God has given us are not in their nature fallacious, must be convinced that there is a defect, or a perversion of judgment on the one side or the other.

A man of candor and humility will, in such a case, very naturally suspect his own judgment, so far as to be desirous to enter into a serious examination, even of what he has long held as a first principle. He will think it not impossible, that although his heart be upright, his judgment may have been perverted, by education, by authority, by party zeal, or by some other of the common causes of error, from the influence of which neither parts nor integrity exempt the human understanding.

In such a state of mind, so amiable, and so becoming every good man, has Nature left him destitute of any rational means by which he may be enabled, either to correct his judgment if it be wrong, or to confirm it if it be right?

I hope it is not so. I hope that, by the means which Nature has furnished, controversies about first principles may be brought to an issue, and that the real lovers of truth may come to unanimity with regard to them.

It is true, that, in other controversies, the process by which the truth of a proposition is discovered, or its falsehood detected, is, by shewing its necessary connection with first principles, or its repugnancy to them. It is true, likewise, that when the controversy is, whether a proposition be itself a first principle, this process cannot be applied. The truth, therefore, in controversies of this kind, labors under a peculiar disadvantage. But it has advantages of another kind to compensate this.

1. For, in the *first* place, in such controversies, every man is a competent judge; and therefore it is difficult to impose upon mankind.

To judge of first principles, requires no more than a found mind free from prejudice, and a distinct conception of the question. The learned and the unlearned, the Philosopher and the day-laborer, are upon a level, and will pass the same judgment,

when they are not misled by some bias, or taught to renounce their understanding from some mistaken religious principle.

In matters 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 motion, though perhaps he knows not how to answer them.

The ancient sceptical system furnishes a remarkable instance of this truth. That system, of which Pyrrho was reputed the father, was carried down, through a succession of ages, by very able and acute philosophers, who taught men to believe nothing at all, and esteemed it the highest pitch of human wisdom to withhold assent from every proposition whatsoever. It was supported with very great subtlety and learning, as we see from the writings of Sextus Empiricus, the only author of that sect whose writings have come down to our age. The assault of the sceptics against all science seems to have been managed with more art and address than the defense of the dogmatists.

Yet, as this system was an insult upon the common sense of mankind, it died away of itself; and it would be in vain to attempt to revive it. The modern scepticism is very different from the ancient, otherwise it would not have been allowed a hearing; and, when it has lost the grace of novelty, it will die away also, though it should never be refuted.

The modern scepticism, I mean that of Mr. Hume, is built upon principles which were very generally maintained by philosophers, though they did not see that they led to scepticism. Mr. Hume, by tracing, with great acuteness and ingenuity, the consequences of principles commonly received, has shown that they overturn all knowledge, and at last overturn themselves, and leave the mind in perfect suspense.

2. *Secondly*, We may observe, that opinions which contradict first principles are distinguished from other errors by this; that they are not only false, but absurd: And, to discountenance absurdity, Nature hath given us a particular emotion, to wit, that of ridicule, which seems intended for this very purpose of putting out of countenance what is absurd, either in opinion or practice.

This weapon, when properly applied, cuts with as keen an edge as argument. Nature hath furnished us with the first to expose absurdity; as with the last to refute error. Both are well fitted for their several offices, and are equally friendly to truth when properly used.

Both may be abused to serve the cause of error: But the same degree of judgment, which serves to detect the abuse of argument in false reasoning, serves to detect the abuse of ridicule when it is wrong directed.

Some have from nature a happier talent for ridicule than others; and the same thing holds with regard to the talent of reasoning. Indeed, I conceive there is hardly any absurdity, which, when touched with the pencil of a Lucian, a Swift, or a Voltaire, would not be put out of countenance, when there is not some religious panic, or very powerful prejudice, to blind the understanding.

But it must be acknowledged, that the emotion of ridicule, even when most natural, may be stifled by an emotion of a contrary nature, and cannot operate till that is removed.

Thus, if the notion of sanctity is annexed to an object, it is no longer a laughable matter; and this visor must be pulled off before it appears ridiculous. Hence we see, that notions which appear most ridiculous to all who consider them coolly and indifferently, have no such appearance to those who never thought of them, but under the impression of religious awe and dread.

Even where religion is not concerned, the novelty of an opinion to those who are too fond of novelties; the gravity and solemnity with which it is introduced; the opinion we have entertained of the author; its apparent connection with principles already embraced, or subserviency to interests which we have at heart; and, above all, its being fixed in our minds at that time of life when receive implicitly what we are taught; may cover its absurdity, and fascinate the understanding for a time.

But if ever we are able to view it naked, and stripped of those adventitious circumstances from which it borrowed its importance and authority, the natural emotion of ridicule will exert its force. An absurdity can be entertained by men of sense no longer than it wears a mask. When any man is found who 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 then is no more heard of, but as an object of ridicule.

Thus I conceive, that first principles, which are really the dictates of common sense, and directly opposed to absurdities in opinion, will always, from the constitution of human nature, support themselves, and gain rather than lose ground among mankind.

3. *Thirdly*, It may be observed, that although it is contrary to the nature of first principles to admit of direct or *apodictical* proof; yet there are certain ways of reasoning even about them, by which those that are just and solid may be confirmed, and those that are false may be detected. It may here be proper to mention some of the topics from which we may reason in matters of this kind.

First, It is a good argument *ad hominem* [to the person], if it can be shown, that a first principle which a man rejects, stands upon the same footing with others which he admits: For, when this is the case, he must be guilty of an inconsistency who holds the one and rejects the other.

Thus the faculties of consciousness, of memory, of external sense, and of reason, are all equally the gifts of Nature. No good reason can be assigned for receiving the testimony of one of them, which is not of equal force with regard to the others. The greatest sceptics admit the testimony of consciousness, and allow, that what it testifies is to be held as a first principle. If therefore they reject the immediate testimony of sense, or of memory, they are guilty of an inconsistency.

Secondly, A first principle may admit of a proof *ad absurdum* [to the absurd].

In this kind of proof, which is very common in mathematics, we suppose the contradictory proposition to be true. We trace the consequences of that supposition in a train of reasoning; and if we find any of its necessary consequences to be manifestly absurd, we conclude the supposition from which it followed to be false; and therefore its contradictory to be true.

There is hardly any proposition, especially of those that may claim the character of first principles, that stands alone and unconnected. It draws many others along with it in a chain that cannot be broken.

He that takes it up must bear the burden of all its consequences; and if that is too heavy for him to bear, he must not pretend to take it up.

Thirdly, I conceive, that the consent of ages and nations, of the learned and unlearned, ought to have great authority with regard to first principles, where every man is a competent judge.

Our ordinary conduct in life is built upon first principles, as well as our speculations in philosophy; and every motive to action supposes some belief. When we find a general agreement among men, in principles that concern human life, this must have great authority with every sober mind that loves truth.

It is pleasant to observe the fruitless pains which Bishop Berkeley takes to show, that his system of the non-existence of a material world did not contradict the sentiments of the vulgar, but those only of the philosophers.

With good reason he dreaded more to oppose the authority of vulgar opinion in a matter of this kind, than all the schools of philosophers.

Here perhaps it will be said, What has authority to do in matters of opinion? Is truth to be determined by most votes? Or is authority to be again raised out of its grave to tyrannize over mankind?

I am aware that, in this age, an advocate for authority has a very unfavorable plea; but I wish to give no more to authority than is its due.

Most justly do we honor the names of those benefactors to mankind who have contributed more or less to break the yoke of that authority which deprives men of the natural, the unalienable right of judging for themselves; but while we indulge a just animosity against this authority, and against all who would subject us to its

tyranny, let us remember how common the folly is, of going from one faulty extreme into the opposite.

Authority, though a very tyrannical mistress to private judgment, may yet, on some occasions, be a useful handmaid; this is all she is entitled to, and this is all I plead in her behalf.

The justice of this plea will appear by putting a case in a science, in which, of all sciences, authority is acknowledged to have least weight.

Suppose a mathematician has made a discovery in that science which he thinks important; that he has put his demonstration in just order; and, after examining it with an attentive eye, has found no flaw in it; I would ask, Will there not be still in his breast some diffidence, some jealousy lest the ardor of invention may have made him overlook some false step? This must be granted.

He commits his demonstration to the examination of a mathematical friend, whom he esteems a competent judge, and waits with impatience the issue of his judgment. Here I would ask again, whether the verdict of his friend, according as it is favorable or will not greatly increase or diminish his confidence in his own judgment? Most certainly it will, and it ought.

If the judgment of his friend agree with his own, especially if it be confirmed by two or three able judges, he rests secure of his discovery without farther examination; but if it be unfavorable, he is brought back into a kind of suspense, until the part that is suspected undergoes a new and a more rigorous examination.

I hope what is supposed in this case is agreeable to nature, and to the experience of candid and modest men on such occasions; yet here we see a man's judgment, even in a mathematical demonstration, conscious of some febleness in itself, seeking the aid of authority to support it, greatly strengthened by that authority, and hardly able to stand erect against it, without some new aid.

Society in judgment, of those who are esteemed fair and competent judges, has effects very similar to those of civil society; it gives strength and courage to every individual; it removes that timidity which is as naturally the companion of solitary judgment, as of a solitary man in the state of nature.

Let us judge for ourselves therefore, but let us not disdain to take that aid from the authority of other competent judges, which a mathematician thinks it necessary to take in that science, which of all sciences has least to do with authority.

In a matter of common sense, every man is no less a competent judge than a mathematician is in a mathematical demonstration; and there must be a great presumption that the judgment of mankind, in such a matter, is the natural issue of those faculties which God hath given them. Such a judgment can be erroneous only when there is some cause of the error, as general as the error is: When this can be

shown to be the case, I acknowledge it ought to have its due weight. But to suppose a general deviation from truth among mankind in things self-evident, of which no cause can be assigned, is highly unreasonable.

Perhaps it may be thought impossible to collect the general opinion of men upon any point whatsoever; and therefore, that this authority can serve us in no stead in examining first principles. But I apprehend, that in many cases, this is neither impossible nor difficult.

Who can doubt whether men have universally believed the existence of a material world? Who can doubt whether men have universally believed, that every change that happens in nature must have a cause? Who can doubt whether men have universally believed, that there is a right and a wrong in human conduct; some things that merit blame, and others that are entitled to approbation?

The universality of these opinions, and of many such that might be named, is sufficiently evident, from the whole tenor of human conduct, as far as our acquaintance reaches, and from the history of all ages and nations of which we have any records.

There are other opinions that appear to be universal, from what is common in the structure of all languages.

Language is the express image and picture of human thoughts; and from the picture we may draw some certain conclusions concerning the original.

We find in all languages the same parts of speech; we find nouns, substantive and adjective; verbs, active and passive, in their various tenses, numbers, and moods. Some rules of syntax are the same in all languages.

Now what is common in the structure of languages, indicates a uniformity of opinion in those things upon which that structure is grounded. The distinction between substances, and the qualities belonging to them; between thought, and the being that thinks; between thought, and the objects of thought; is to be found in the structure of all languages: And therefore, systems of philosophy, which abolish those distinctions, wage war with the common sense of mankind.

We are apt to imagine, that those who formed languages were no metaphysicians; but the first principles of all sciences are the dictates of common sense, and lie open to all men; and every man who has considered the structure of language in a philosophical light, will find infallible proofs that those who have framed it, and those who use it with understanding, have the power of making accurate distinctions, and of forming general conceptions, as well as philosophers. Nature has given those powers to all men, and they can use them when their occasions require it; but they leave it to the philosophers to give names to them, and to descant upon their nature. In like manner, Nature has given eyes to all men, and they can make good use of them; but the structure of the eye, and the theory of vision, is the business of

philosophers.

Fourthly, opinions that appear so early in the minds of men, that they cannot be the effect of education, or of false reasoning, have a good claim to be considered as first principles. Thus the belief we have, that the persons about us are living and intelligent beings, is a belief for which perhaps we can give some reason, when we are able to reason; but we had this belief before we could reason, and before we could learn it by instruction. It seems therefore to be an immediate effect of our constitution.

The last topic I shall mention is, when an opinion is so necessary in the conduct of life, that without the belief of it, a man must be led into a thousand absurdities in practice, such an opinion, when we can give no other reason for it, may safely be taken for a first principle.

Thus I have endeavored to show, that although first principles are not capable of direct proof, yet differences, that may happen with regard to them among men of candor, are not without remedy; that Nature has not left us destitute of means by which we may discover errors of this kind; and that there are ways of reasoning, with regard to first principles, by which those that are truly such may be distinguished from vulgar errors or prejudices.