Meditations on Knowledge, Truth, and Ideas
By G. W. Leibniz

Controversies are boiling these days among distinguished men over true and false ideas. This is an issue of great importance for recognizing truth - an issue on which Descartes himself is not altogether satisfactory. So I want to explain briefly what I think can be established about the distinctions and criteria that relate to ideas and knowledge. [Here and in the title, 'knowledge' translates *cognitio*, which means something weaker than 'knowledge strictly so-called, involving certainty and guaranteed truth', for which the Latin word is *scientia*]. ·Here is the skeleton of what I have to say·. Knowledge is either

Ÿdim or vivid;

vivid knowledge is either

Ÿconfused or clear;

clear knowledge is either

Ÿinadequate or adequate;

and adequate knowledge is either

Ÿsymbolic or intuitive.

Knowledge that was at the same time both adequate and intuitive would be absolutely perfect. [Here and throughout, 'vivid' translates *clarus*. (The more usual rendering as 'clear' is no better from a dictionary point of view, and makes much worse sense philosophically because it has Leibniz saying that knowledge can be at once 'clear' and confused.) This use of 'vivid' points to 'dim' as the better translation of the contrasting term *obscurus*, and liberates 'clear' for use in translating *distinctus*.]

A Ÿdim notion is one that isn't sufficient for recognizing the thing that it represents - ·i.e. the thing that it is a notion *of*·. Example: I once saw a certain flower but whenever I remember it I can't bring it to mind well enough to recognize it, distinguishing it from other nearby flowers, when I see it again. Another ·kind of· example: I have dim notions when I think about some term for which there is no settled definition - such as Aristotle's *entelechy*, or his notion of *cause* when offered as something that is common to Ÿmaterial, Ÿformal, Ÿefficient and Ÿfinal causes. [For a coin, these 'causes' would be, respectively, Ÿthe metal of which the coin is composed, Ÿthe coin's shape, weight etc., Ÿthe force of the die against the hot metal, and Ÿthe commercial purpose for which the coin was made. Leibniz implies that these seem not to be four species of a single genus.] And a *proposition* is dim if it contains a dim notion as an ingredient.

Accordingly, knowledge is Ÿvivid if it gives me the means for recognizing the thing that is represented.

Vivid knowledge is either confused or clear.

It is Ÿconfused when I can't *list*, one by one, the marks that enable me to differentiate the represented thing from other things, even though the thing *has* such marks into which its notion can be resolved [= 'analysed, broken down into its simpler constituents']. And so we recognize colours, smells, tastes, and other particular objects of the senses vividly enough to be able to distinguish them from one another, but only through the simple testimony of the senses, not by way of marks that we could list. Thus we can't explain what *red* is to a blind man; and we can't give anyone a vivid notion of things like *red* except Ÿby leading him into the presence of the thing and getting him to see, smell, or taste the same thing we do, or Ÿby reminding him of some past perception of his that is similar. This is so even though the notions of these qualities are certainly composite and can be resolved - after all, they do have causes. [Perhaps Leibniz's thought is that the complexity of the causes must be matched by the complexity of the caused quality, and thus by the complexity of the complete notion of it.] Similarly, we see that painters and other skilled craftsmen can accurately tell well-done work from what is poorly done, though often they can't explain their judgments, and when asked about them all they can say is that the works that displease them lack a certain *je-ne-sais-quoi*.

But a Ÿclear notion is like the one an assayer has of gold - that is, a notion connected with ·listable· marks and tests that are sufficient to distinguish the ·represented· thing from all other similar bodies. Notions common to several senses - like the notions of number, size, and shape - are usually clear. So are many notions of states of mind, such as hope and fear. In brief, we have a clear notion of everything for which we have a *nominal definition* (which is nothing but a list of sufficient marks). Also, we have clear knowledge of any indefinable notion, since such a notion is *basic*, ·something we *start* with·; it can't be resolved into marks ·or simpler constituents·, as it has none; so it has to serve as its own mark, and be understood through itself.

An Ÿinadequate notion is what you have when

the notion is clear, meaning that you understand vividly the individual marks composing it,

but

the grasp of ·some or all of· those marks is (though vivid) confused, because you can't list the marks whereby you recognize those marks.

For example, someone's knowledge of gold may be clear yet inadequate: he knows that heaviness, colour, solubility in *aqua fortis* etc. are the marks of gold, but he can't produce a list of the marks whereby he recognizes heaviness, yellowness, and all the others. When every ingredient of a clear notion is itself clearly known - that is, when the analysis ·of the original notion· has been carried to completion - then ·our· knowledge ·of it· is Ÿadequate. (I don't know whether humans have any perfectly adequate knowledge, though our knowledge of numbers certainly comes close.)

Ÿ·Symbolic notions are ones in which words stand in for thoughts·. We don't usually grasp the entire nature of a thing all at once, especially one whose analysis is long; so in place of ·thoughts about· the things themselves we use ·thoughts about· *signs*. In our thought we usually omit the explicit explanation of what a sign means, knowing or believing that we have the explanation at our command ·and could produce it on demand·. Thus, when I think about a chiliagon [pronounced *kill*-ee-a-gon], that is, a polygon with a thousand equal sides, I don't always

think about the nature of a side, or of equality, or of thousandfoldedness . . . .;

in place of such thoughts,

in my mind I use the *words* 'side', 'equal' and 'thousand'.

The meanings of these words appear only dimly and imperfectly to my mind, but I remember that I know what they mean, so I decide that I needn't explain them ·to myself· at this time. This kind of thinking is found in algebra, in arithmetic, and indeed almost everywhere. I call it *blind* or Ÿsymbolic thinking. When a notion is very complex, we *can't* bear in mind all of its component notions at the same time, ·and this forces us into symbolic thinking·.

When we can ·keep them all in mind at once·, we have knowledge of the kind I call Ÿintuitive. (·Actually, I treat this as a matter of degree; so I should have said·: *insofar as* we can keep all that in mind at once, *to that extent* our knowledge is intuitive.) Whereas our thinking about composites is mostly symbolic, our knowledge of a clear *basic* notion has to be intuitive. ·That is because symbolic knowledge involves letting words stand in for components of a notion, and basic notions don't have components·.

This shows that it's only if we use intuitive thinking that we have *ideas* in our minds, even when we are thinking about something we know clearly. We often *mistakenly* believe that we have ideas of things in our mind, assuming that we have already explained ·to ourselves· some of the terms we are using, when really we haven't explained any of them. Some people hold that we can't Ÿunderstand what we are saying about a thing unless we have an Ÿidea of it; but this is false or at least ambiguous, because we can have understanding of a sort even when our thinking is blind or symbolic and doesn't involve ideas.

When we settle for this blind thinking, and don't pursue the resolution of notions far enough, we may have a thought that harbours a contradiction that we don't see because it is buried in a very complex notion. At one time I was led to consider this point more clearly by an old argument for the existence of God . . . . that Descartes revived. The argument goes like this:

> Whatever follows from the idea or definition of a thing can be predicated of the thing. God is ·by definition· the most perfect being, or the being nothing greater than which can be thought. Now, the ·idea of the· most perfect being includes ·ideas of· all perfections, and amongst these perfections is *existence*. So existence follows from the idea of God. Therefore existence can be predicated of God, ·which is to say that God exists·.

But this argument shows only that *if God is possible* then it follows that he exists. For we can't safely draw conclusions from definitions unless we know first that they are *real* definitions, that is, that they don't include any contradictions. If a definition does harbour a contradiction, we can infer contradictory conclusions from it, which is absurd.

My favourite illustrative example of this is *the fastest motion*, which entails an absurdity. ·I now show that it does·:

> Suppose there is a wheel turning with the fastest motion. Anyone can see that if a spoke of the wheel came to poke out beyond the rim, ·the end of· it would then be moving faster than a nail on the rim of the wheel. So the nail's motion is not the fastest, which is contrary to the hypothesis.

Now, we certainly *understand* the phrase 'the fastest motion', and we may think we have an *idea* corresponding to it; but ·we don't, because· we can't have an idea of something impossible.

Similarly, the fact that we *think about* a most perfect being doesn't entitle us to claim that we have an *idea* of a most perfect being. So in the above demonstration - ·the one revived by Descartes· - in order properly to draw the conclusion we must show or assume the possibility of a most perfect being. It is indeed true - nothing truer! - that we *do* have an idea of God and that a most perfect being *is* possible, indeed, necessary. But *that argument* is not sufficient for drawing the conclusion, and Aquinas rejected it.

So we have a line to draw between *nominal* definitions, which contain only marks that distinguish the thing from other things, and *real* definitions, from which the thing can be shown to be possible. And *that*'s my answer to Hobbes, who claimed that truths are arbitrary because they depend on nominal definitions. What he didn't take into account was that a definition's being *real* is not something we *decide*, and that not just any notions can be joined to one another. Nominal definitions are insufficient for perfect knowledge [*scientia*] except when the possibility of the thing defined is established in some other way.

·Near the start of this paper I listed four classifications of ideas, now at last we come to a fifth - *true* and *false*·. It is obvious what true and false ideas are: an idea is Ÿtrue when it is a possible notion, and Ÿfalse when it includes a contradiction.

Something's possibility can be known either *a priori* or *a posteriori*. The possibility of a thing is known Ÿ*a priori* when we resolve a notion into its requisites, i.e. into other notions that are known to be possible and to be compatible with one another, ·and that are required if the notion is to apply·. [These *requisita* could be *components* of the notion: *closed* is a component of *circular*, and could be called a Ÿlogical 'requisite' for something's being circular. In the very next sentence, however, Leibniz also brings in Ÿcausal requisites.] This happens, for instance, when we understand how a thing can be produced, which is why *causal definitions* are more useful than others. A thing's possibility is known Ÿ*a posteriori* when we know through experience that it actually exists, for what did or does actually exist is certainly possible!

And, indeed, whenever we have adequate knowledge we also have *a priori* knowledge of possibility: if an analysis is brought to completion with no contradiction turning up, then certainly the ·analysed· notion is possible. For men to produce a perfect analysis of their notions would be for them to reduce their thoughts to *basic possibilities* and unanalysable notions, which amounts to reducing them to the absolute attributes of God - and thus to the first causes and the ultimate reason for things. *Can* they do this? I shan't venture to settle the answer to that now. For the most part we are content to have learned through experience that certain notions are real [here = 'possible'], from which we then assemble others following the lead of nature.

All this, I think, finally lets us understand that one should be cautious in claiming to have this or that *idea*. Many people who use this glittering title 'idea' to prop up certain creatures of their imagination are using it wrongly, for we don't always have an idea corresponding to everything we consciously think of (as I showed with the example of *greatest speed*).

People in our own times have laid down the principle:

Whatever I vividly and clearly perceive about a thing is true, i.e. can be said of the thing;
but I can't see that they have used this principle well. [Leibniz is referring to a principle of Descartes's that is almost always translated in English as 'Whatever I clearly and distinctly perceive . . .'.] For people who are careless in judgment often take to be vivid and clear what is really dim and confused in their minds. So this axiom is useless unless (1) explicitly stated criteria for vividness and clarity are introduced, and (2) we have established the truth of the ideas that are involved - ·in my sense, in which an idea is true if and only if it is possible, i.e. could have instances·.

Furthermore, the rules of *common logic* - which geometers use too - are not to be despised as criteria for the truth of assertions: for example, the rule that nothing is to be accepted as certain unless it is shown by careful testing or sound demonstration - a sound demonstration being one that follows the form prescribed by logic. Not that we always need arguments to be in syllogistic order as in the Aristotelian philosophy departments . . . .; but the argument must somehow reach

its conclusion on the strength of its form. Any *correct calculation* provides an example of an argument conceived in proper ·logical· form. Such an argument should not omit any necessary premise, and all premises should have been previously demonstrated - or else have been assumed as hypotheses, in which case the conclusion is also hypothetical. Someone who carefully observes these rules will easily protect himself against deceptive ideas.

The highly talented Pascal largely agrees with this in his excellent essay 'On the Geometrical Mind' . . . . The geometer, he says, must define all terms that are *slightly* obscure and prove all truths that are *slightly* dubious. But I wish he had made precise the line beyond which a notion or statement is no longer even slightly obscure or dubious. Most of what matters regarding this can be gathered from careful attention to what I have said above; ·and I shan't go further into it now·, because I am trying to be brief.

·Before finishing, I offer three further remarks, only loosely connected with one another, but all having to do with ideas·.

(1) There has been controversy over whether 'we see everything in God' - ·that is, perceive the world by sharing ￼God's ideas with him· - or whether we have ￼our own ideas. The view that we see everything in God, ·though recently made famous through Malebranche's defence of it·, is an old opinion, and properly understood it shouldn't be rejected completely. But the point I want to make here is that even if we *did* see everything in God, we would still also have to have ￼our own ideas - not little sort-of copies ·of ￼God's ideas·, but *states of our mind* corresponding to the thing we perceived in God. For when go from having one thought to having another, there has to be some *change in our mind* - ·some alteration of our mind's *state*·.

(2) ·Don't think that in these changes of state the previous ideas are entirely wiped out·. In fact, the ideas of things that we are not now actually thinking about are in our mind now, as the figure of Hercules is in a lump of marble. In God, on the other hand, ·all ideas are always actually engaged in his thought·: he must have not only an actually occurrent ￼idea of absolute and infinite extension but also an ￼idea of each shape - a shape being merely a modification of absolute extension [meaning that a thing's having a certain shape is just its being extended in a certain way].

(3) A final point: when we perceive colours or smells, all that we really perceive - *all*! - are shapes and of motions; but they are so numerous and so tiny that our mind in its present state can't clearly attend to each one separately, so that it doesn't notice that its perception is composed purely of perceptions of minute shapes and motions. This is like what happens when we perceive the colour ￼green in a mixture of ￼yellow powder and ￼blue powder. All we are sensing is yellow and blue, finely mixed, but we don't notice this, and invent something new - ·the colour green· - for ourselves.