

If God had decreed that there should be no real line incommensurable with other real lines (what I call a real line is one that really bounds some body), it would not therefore follow that it would imply a contradiction for any incommensurable line to exist, even if, because of the principle of perfection, God could not have made things differently.

Given these considerations, we can eliminate difficulties concerning the foreknowledge of future contingents. For God, who foresees the future reasons why some things should exist rather than others, foresees them in their causes with certain knowledge. And indeed, he has certain knowledge of them and formulates propositions that are necessary, given that the state of the world has, once and for all, been settled, that is, given the harmony of things. But the propositions are not necessary in an absolute sense, as mathematical propositions are necessary.

Only the proposition that God [exists is necessary in an absolute sense].<sup>46</sup>

If an [exact] pentagon exists, it follows that it is more perfect than other things; but it is not. Therefore an [exact] pentagon does not exist. But it does not follow from this that it is impossible for it to exist. This is the best answer. We must therefore say that it is possible for the imperfect rather than the more perfect to exist. But, you say: it is impossible for something to exist that God does not will to exist. I deny that what is not going to exist is, in its nature, thereby impossible. And so we must say that what God does not will to exist does not exist, but we must therefore deny its necessity.

### Marginal Comments:

- A. Hence, a Scholastic, cited in Bonartes, *The Harmony of Knowledge with Faith*, claimed that God is indifferent not as to acting but as to willing.  
 B. If complete indifference is required for freedom, then there is scarcely

9, there are numbers that satisfy the constraints  $\frac{1}{2}(1 \pm \sqrt{-3})$ . But both roots of the equation are imaginary, and in that sense cannot be represented through line segments as other roots can by the construction outlined in the previous note.

This example is followed by the following two equations, added to the original text:

"xx from x equals  $-b^2$ "

"xx equals  $bx - bb$ "

That is

$$x - \frac{b}{x} = -b^2$$

$$x^2 = bx - b^2$$

It is likely that these are intended to be transformations of the equation under discussion,  $x^2 + 9 = 3x$ , with  $b = 3$ . In that case, the first of the two equations should read:

$bx$  from  $xx$  equals  $-b^2$

or

$$x^2 - bx = -b^2$$

It is not obvious why the equations were added.

46. There is a lacuna in ms here, filled in by the editors. Leibniz's thought seems to be that "God exists" is the only existential proposition that is absolutely necessary.

ever a free act [*actus*], since I think that the case in which everything on both sides is equal scarcely ever comes up. For even if, by chance, the reasons are equal, the passions will not be, and why should we argue about circumstances that do not arise? Nor do I think that one can produce an instance in which it is the will [*voluntas*] that chooses, since there is [always] some reason for choosing one of two things.

The Thomists place freedom in the power [*potentia*] of the will, which stands over and above every finite good in such a way that the will can resist it. And so, in order to have indifference of will, they seek indifference of intellect. They think that necessity is not inconsistent with freedom in God and that the freedom God has for loving himself is such a free necessity. But with respect to creatures he does not decide with necessity. [Vincent] Baron denies that God created those things which are most perfect.

LEIBNIZ

### Meditations on Knowledge, Truth, and Ideas (1684)<sup>47</sup>

The "Meditations on Knowledge, Truth, and Ideas" was Leibniz's first mature philosophical publication; it appeared in the November 1684 issue of the Leipzig journal *Acta Eruditorum*, in which many of Leibniz's most important publications in mathematics and physics are also to be found. The controversies to which Leibniz refers in the opening paragraph were the famous Arnauld-Malebranche debate, occasioned by the publication of Arnauld's *Des vraies et des fausses idees* in 1683, an attack on Malebranche's philosophy, which began a long series of exchanges. Leibniz presents himself as a mediator in this essay, which is often cited and paraphrased in his later writings. In the title and in most of the occurrences in this essay, what we have translated as knowledge is *cognitio*, knowledge in the weak sense, something close to understanding, acquaintance, or even cognition. It is to be distinguished from *scientia*, which is knowledge in the strict sense and which normally entails certainty and truth.

SINCE CONTROVERSIES rage today among distinguished persons over true and false ideas and since this is an issue of great importance for recognizing truth, an issue on which Descartes himself is not altogether satisfactory, I would like to explain briefly what I think can be established about the distinctions and criteria that relate to ideas and knowledge [*cognitio*]. Thus, knowledge is either obscure or *clear*, and again, clear knowledge is either confused or *distinct*, and distinct knowledge either inadequate or *adequate*, and adequate knowledge either symbolic or *intuitive*: and, indeed, if knowledge were, at the same time, both adequate and intuitive, it would be absolutely perfect.

A notion which is not sufficient for recognizing the thing represented is *obscure*, as, for example, if whenever I remember some flower or animal I

47. G IV 422-26; VE V 1075-81. Latin.

Leibniz, G.W.  
Philosophical Essays  
Indianapolis, Hackett, 1989

once saw, I cannot do so sufficiently well for me to recognize that flower or animal when presented and to distinguish it from other nearby flowers or animals, or, for example, if I were to consider some term insufficiently explained in the schools, like Aristotle's entelechy, or his notion of a cause insofar as it is something common to material, formal, efficient and final causes, or if I were to consider other terms of that sort, for which we have no settled definition. Whence, a proposition which involves such a notion is also obscure. Therefore, knowledge is *clear* when I have the means for recognizing the thing represented. Clear knowledge, again, is either confused or distinct. It is confused when I cannot enumerate one by one marks [*nota*] sufficient for differentiating a thing from others, even though the thing does indeed have such marks and requisites into which its notion can be resolved. And so we recognize colors, smells, tastes, and other particular objects of the senses clearly enough, and we distinguish them from one another, but only through the simple testimony of the senses, not by way of explicit marks. Thus we cannot explain what red is to a blind man, nor can we make such things clear to others except by leading them into the presence of the thing and making them see, smell, or taste the same thing we do, or, at very least, by reminding them of some past perception that is similar. This is so even though it is certain that the notions of these qualities are composite and can be resolved because, of course, they do have causes. Similarly, we see that painters and other artists correctly know [*cognosco*] what is done properly and what is done poorly, though they are often unable to explain their judgments and reply to questioning by saying that the things that displease them lack an unknown something. But a *distinct notion* is like the notion an assayer has of gold, that is, a notion connected with marks and tests sufficient to distinguish a thing from all other similar bodies. Notions common to several senses, like the notions of number, magnitude, shape are usually of such a kind, as are those pertaining to many states of mind, such as hope or fear, in a word, those that pertain to everything for which we have a *nominal definition* (which is nothing but an enumeration of sufficient marks). Also, one has distinct knowledge of an indefinable notion, since it is *primitive*, or its own mark, that is, since it is irresolvable and is understood only through itself and therefore lacks requisites. But in composite notions, since, again, the individual marks composing them are sometimes understood clearly but confusedly, like heaviness, color, solubility in *aqua fortis*, and others, which are among the marks of gold, such knowledge of gold may be distinct, yet *inadequate*. When everything that enters into a distinct notion is, again, distinctly known, or when analysis has been carried to completion, then knowledge is *adequate* (I don't know whether humans can provide a perfect example of this, although the knowledge of numbers certainly approaches it). However, we don't usually grasp the entire nature of a thing all at once, especially in a more lengthy analysis, but in place of the things themselves we make use of signs, whose explicit explanation we usually omit for the sake of brevity, knowing or believing that we have the ability to produce it at will.<sup>48</sup> And so when I think about a chiliagon, that is,

48. Literally: "knowing or believing that we have them in our power."

a polygon with a thousand equal sides, I don't always consider the nature of a side, or of equality, or of thousandfoldedness (that is, of the cube of tenfoldedness), but in my mind I use these words (whose sense appears only obscurely and imperfectly to the mind) in place of the ideas I have of these things, since I remember that I know the meaning of those words, and I decide that explanation is not necessary at this time. I usually call such thinking, which is found both in algebra and in arithmetic and, indeed, almost everywhere, *blind* or *symbolic*. And indeed, when a notion is very complex, we cannot consider all of its component notions at the same time. When we can, or indeed insofar as we can, I call knowledge *intuitive*. There is no knowledge of a distinct primitive notion except intuitive, just as our thinking about composites is for the most part symbolic.

From this it already follows that we don't perceive ideas of even those things we know distinctly, unless we make use of intuitive thinking. And, indeed, it happens that we often mistakenly believe that we have *ideas* of things in mind when we mistakenly suppose that we have already explained some of the terms we use. Furthermore, what some maintain, that we cannot say anything about a thing and understand what we say unless we have an idea of it, is either false or at least ambiguous.<sup>49</sup> For, often, we do understand in one way or another the words in question individually or remember that we understood them previously. But since we are content with this blind thinking and don't pursue the resolution of notions far enough, it happens that a contradiction that might be included in a very complex notion is concealed from us. An argument for the existence of God, celebrated among the Scholastics long ago and revived by Descartes, once led me to consider this point more distinctly. The argument goes: whatever follows from the idea or definition of anything can be predicated of that thing. Since the most perfect being includes all perfections, among which is existence, existence follows from the idea of God (or the idea of the most perfect being, or the idea of that than which nothing greater can be thought).<sup>50</sup> Therefore existence can be predicated of God. But one must realize that from this argument we can conclude only that, if God is possible, then it follows that he exists. For we cannot safely use definitions for drawing conclusions unless we know first that they are real definitions, that is, that they include no contradictions, because we can draw contradictory conclusions from notions that include contradictions, which is absurd. To clarify this I usually use the example of the fastest motion, which entails an absurdity. For let us suppose some wheel turning with the fastest motion. Everyone can see that any spoke of the wheel extended beyond the edge would move faster than a nail on the rim of the wheel. Therefore the nail's motion is not the fastest, contrary to the hypothesis. However, at first glance we might seem to have the idea of a fastest motion, for we certainly understand what we say; but yet we certainly have no idea of impossible things. And so, in the same way, the fact that we think about a most

49. See, for example, Malebranche, *Search after Truth*, book III, pt. 2, chap. 1.

50. The reference here is to the ontological argument as formulated first by St. Anselm of Canterbury in his *Proslogion* and given by Descartes in Meditation V.

perfect being is not sufficient for us to assert that we have an idea of it. And so, in the demonstration given a bit earlier, either we must show or we must assume the possibility of a most perfect being in order properly to draw the conclusion. However, nothing is truer than that we have an idea of God and that a most perfect being is possible, indeed, necessary; yet the argument is not sufficient for drawing the conclusion and was long ago rejected by Aquinas.<sup>51</sup>

And so we also have a distinction between *nominal definitions*, which contain only marks of a thing to be distinguished from other things, and *real definitions*, from which one establishes that a thing is possible. And with this we give our due to Hobbes, who claimed that truths are arbitrary, since they depend on nominal definitions, without considering the fact that the reality of a definition is not a matter of decision and that not just any notions can be joined to one another.<sup>52</sup> Nominal definitions are insufficient for perfect knowledge [*scientia*] except when one establishes in another way that the thing defined is possible. It is also obvious, at last, what *true* and *false ideas* are; namely, an idea is true when its notion is possible and false when it includes a contradiction. Moreover, we can know the *possibility* of a thing either *a priori* or *a posteriori*. The possibility of a thing is known *a priori* when we resolve a notion into its requisites, that is, into other notions known to be possible, and we know that there is nothing incompatible among them. This happens, among other cases, when we understand the way in which a thing can be produced, whence *causal definitions* are more useful than others. The possibility of a thing is known *a posteriori* when we know through experience that a thing actually exists, for what actually exists or existed is at very least possible. And, indeed, whenever we have adequate knowledge, we also have *a priori* knowledge of possibility, for having carried an analysis to completion, if no contradiction appears, then certainly the notion is at least possible. I won't now venture to determine whether people can ever produce a perfect analysis of their notions or whether they can ever reduce their thoughts to *primitive possibilities* or to irresolvable notions or (what comes to the same thing) to the absolute attributes of God, indeed to the first causes and the ultimate reason for things. For the most part we are content to have learned the reality of certain notions through experience, from which we then compose others following the example of nature.

From this I think that we can finally understand that one cannot always appeal safely to an idea and that many use this splendid honorific improperly to prop up certain creatures of their imagination, for we don't always have an idea corresponding to every thing we consciously think of, as I showed a while ago with the example of the greatest speed. Nor do I see that the people of our day have abused any less the principle that they have laid down, that *whatever I clearly and distinctly perceive about a thing is true or is assertable of the thing in question*. For, often, what is obscure and confused seems clear and distinct to people careless in judgment. Therefore, this axiom is useless unless we use criteria for the clear and distinct, criteria which we have made explicit,

51. See St. Thomas, *Summa Theologiae* I, q. 2 art. 1 ad 2.

52. See Hobbes's *De Corpore*, pt. I, chap. 3, sec. 7-9, in *Body, Man, and Citizen*, pp. 48-50.

and unless we have established the truth of the ideas. Furthermore, the rules of *common logic*, which even the geometers use, are not to be despised as criteria for the truth of assertions, as, for example, the rule that nothing is to be admitted as certain, unless it is shown by careful testing or sound demonstration. Moreover, a sound demonstration is one that follows the form prescribed by logic. Not that we always need syllogisms ordered in the manner of the schools (in the way that Christian Herlinus and Conrad Dasypodius presented the first six books of Euclid); but at very least the argument must reach its conclusion by virtue of its form. Any correct calculation can also be considered an example of such an argument conceived in proper form. And so, one should not omit any necessary premise, and all premises should have been either previously demonstrated or at least assumed as hypotheses, in which case the conclusion is also hypothetical. Those who carefully observe these rules will easily protect themselves against deceptive ideas. Pascal, a most talented man, largely agrees with this in his excellent essay "On the Geometrical Mind" (a fragment of which appears in the admirable book of the distinguished Antoine Arnauld on the art of thinking well). The geometer, he says, must define all terms which are even a bit obscure and prove all truths which are even a bit dubious. But I wish that he had defined the limits beyond which a notion or statement is no longer even a bit obscure or dubious. Nevertheless, what belongs here can be gathered from an attentive consideration of what we have said above, for we are now trying to be brief.<sup>53</sup>

As to the controversy over whether we see everything in God (which is certainly an old opinion and should not be rejected completely, if it is understood properly) or whether we have our own ideas, one must understand that, even if we were to see everything in God,<sup>54</sup> it would nevertheless be necessary that we also have our own ideas, that is, not little copies of God's, as it were, but affections or modifications of our mind corresponding to that very thing we perceived in God. For certainly there must be some change in our mind when we have some thoughts and then others, and, in fact, the ideas of things that we are not actually thinking about are in our mind as the shape of Hercules is in rough marble. Moreover, it is necessary not only that there actually be in God an idea of absolute and infinite extension but also that there be an idea of each shape, which is nothing but a modification of absolute extension. Furthermore, when we perceive colors or smells, we certainly have no perception other than that of shapes and of motions, though so very numerous and so very small that our mind cannot distinctly consider each individual one in this, its present state, and thus does not notice that its perception is composed of perceptions of minute shapes and motions alone, just as when we perceive the color green in a mixture of yellow and blue powder, we sense only yellow and blue finely mixed, even though we do not notice this, but rather fashion some new thing for ourselves.

53. See Pascal, *Oeuvres complètes*, p. 350, and Arnauld, *The Art of Thinking*, p. 13. See also Leibniz's further remarks on this view of Pascal's in a fragment dated 1674, C 181-82.

54. The view Leibniz discusses here is one of Malebranche's most controversial. See his *Search after Truth*, book III, pt. 2, chap. 6.