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G. W. LEIBNIZ

New Essays on Human Understanding

TRANSLATED AND EDITED BY

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made certain by reason alone, and never by experiments, however many of them one conducts.

PHIL. §14. Once we have established clear and distinct ideas with settled names, the great way to enlarge our knowledge 'is the art of finding out those intermediate ideas, which may show us the agreement, or repugnancy' of the extreme ideas. §15. Maxims, at least, will not furnish them. 'Suppose... a man, not to have [an] exact idea of a right angle... he will in vain' struggle to demonstrate something about a right-angled triangle. And whatever maxims one employs, one will have trouble proving with their help that the squares on the sides which contain the right angle are equal to the square on the hypotenuse. 'A man may... pore long enough on those axioms, without ever seeing [more clearly into] mathematical truths.'

THEO. It is useless to 'pore on' axioms unless you have something to apply them to. Axioms often serve to connect ideas; for instance, the maxim that similar magnitudes of two and three dimensions are in the doubled and tripled ratio of the corresponding magnitudes of one dimension, is extremely useful. For example, the quadrature of the lunule of Hippocrates follows directly from it in the case of circles, on combining the maxim with the application of the one figure to the other, when their given position permits it – for their known comparison [i.e. that of their corresponding linear magnitudes] promises to throw light on the quadrature.

Chapter xiii

'Some farther considerations concerning our knowledge.'

PHILALETHES. §1. It should perhaps be added that 'our knowledge, as in other things, so in this, has a great conformity with... sight, that it is neither wholly necessary, nor wholly voluntary.... A man with his eyes open in the light, cannot but see; yet there be certain objects, which he may... turn his eyes to'. §2. And he may survey them more or less intently. Thus, as long as the faculty is employed, 'our will hath no power to determine... knowledge', any more than a man can prevent himself from seeing what he does see. §3. But one must employ one's faculties in the right way to be informed.

THEOPHILUS. We discussed this point earlier, and established that a man is not responsible for having this or that opinion at the present time, but that he is responsible for taking steps to have it or not have it later on [p. 182]. So that opinions are voluntary only in an indirect way.

Chapter xiv 'Of judgment.'

PHILALETHES. §1. Man would find himself 'in most of the actions of his life, perfectly at a stand, had he nothing to guide him in the absence of... certain knowledge.' §2. He must often content himself with 'only the twilight... of probability'. §3. The faculty by which we avail ourselves of this is *judgment*. Often we rest content with this out of necessity, but often 'out of laziness, unskilfulness, or haste'. It is 'called *assent* or *dissent*'; and §4. it is exercised when something is '*presumed* to be so'; that is, when it is taken to be true before it is proved. And if that occurs in conformity with how 'in reality things are, it is *right judgment*.'

THEOPHILUS. There are people for whom 'judging' is the action which is performed whenever one pronounces in accordance with some knowledge of the case, and some of them may even distinguish judgment from opinion, as not having to be so uncertain. But I do not want to join issue with anyone over the use of words; and it is permissible, sir, for you to take a judgment to be a probable belief. As for 'presumption', which is a jurists' term, good usage in legal circles distinguishes it from 'conjecture'. It is something more than that, and should be accepted provisionally as true until there is proof to the contrary; whereas an indication, a conjecture, often has to be weighed against another conjecture. For instance, someone who admits having borrowed money from someone else is *presumed* to be obliged to repay it unless he shows that he has already done so, or that the debt has been cancelled for some other reason. In this sense, therefore, to *presume* something is not to accept it *before* it has been proved, which is never permissible, but to accept it *provisionally*² but not groundlessly, while waiting for a proof to the contrary.

Chapter xv 'Of probability.'

PHILALETHES. §1. If demonstration exhibits the connection of ideas, probability is nothing but the appearance of such connections, resting on proofs in which no immutable connection is seen. §2. There are several 'degrees of assent from... assurance... quite down to conjecture, doubt, and distrust.' §3. When there is certainty, each part of the reasoning which marks one of its connections contains intuition. But 'that which makes me believe, is something extraneous'. §4. And probability is grounded either in conformity with something we know or in the testimony of those who know it.

¹ 'avant'.

² 'par avance'.

THEOPHILUS. I would rather maintain that it is always grounded in likelihood or in conformity to truth; the testimony of others is something else that the truth customarily has on its side when it concerns facts which are within reach. So we can say that the resemblance between the probable and the true comes either from the thing itself or from 'something extraneous'. Rhetoricians distinguish two kinds of arguments: *'artful' ones which are developed from things by means of reasoning, and 'artless' ones which simply rest on the explicit testimony either of some man or even, perhaps, of the thing itself. But there are also 'mixed' ones, since testimony can itself provide a fact which serves in the construction of an 'artful' argument.

PHIL. §5. We do not readily believe what is remote from everything we know, because of its lack of resemblance to the true. Thus when an ambassador told the King of Siam that in our country the water turned so hard in winter that an elephant could walk on it without breaking through, the King said to him: Hitherto I have believed you to be a man of honour, but now I see that you lie. §6. But if the *testimony* of others can make a fact probable, the *opinion* of others should not count by itself as a true ground of probability, since there is more error than knowledge amongst men. And if the 'persuasions of others, whom we know and think well of, be a [legitimate] ground of assent, men have reason to be Heathens in Japan, Mahomedans in Turkey, Papists in Spain, [Calvinists in Holland], and Lutherans in Sweden.'

THEO. Men's testimony doubtless carries more weight than their opinions do, and we give it greater consideration in the courts. However, we know that judges sometimes require an oath of 'credulity', as it is called, to be taken; during an examination witnesses are often asked not only what they saw, but what they judge and at the same time the reasons for their judgment; and what they say receives appropriate consideration. Furthermore, judges show great deference to the views and opinions of expert people in every field; private individuals are no less obliged to do the same, in so far as the matter is not one for them to investigate for themselves. So a child, or an inexperienced adult, whose position in this respect is hardly better than a child's, is obliged – even if he is quite highly placed – to follow the religion of his country so long as he sees nothing wrong with it and is not in a position to inquire into whether there is a better one. A supervisor of page-boys, whatever his own sect, will make each of his charges attend the church which is frequented by the lad's co-religionists. I refer you to the debates between M. *Nicole and others over 'the argument from *large numbers' in matters of faith; some people have had too much respect for it, and others have not given it enough weight. There are other

presumptions¹ like this, by which men would be very glad to escape from controversy. These are what Tertullian, in a treatise devoted to the subject, calls *'prescriptions'. This is a term by which the ancient jurists, with whose language he was familiar, denoted all sorts of defences or extraneous prior objections to a claim; nowadays, however, it is almost always used in the sense of a temporal prescription, in which someone purports to rebut someone else's claim on the ground that it was not made within the period set by law. This is why it was possible to publish 'legitimate presumptions' on both the Roman Catholic and the Protestant sides. Ways have been found, for example, of bringing a charge of *innovation* against certain aspects of each of them: when the Protestants mostly abandoned the old form of ordination of clergy, for instance, and when the Roman Catholics altered the old canon of the books of the Old Testament. (I have established the latter point clearly enough in the debate which I intermittently carried on in writing with the Bishop of Meaux [*Bossuet], news of whose recent death came just a few days ago.) Thus, since these accusations flow in both directions, innovation is not a clear proof of error in these matters, even though it arouses suspicion of it.

Chapter xvi

'Of the degrees of assent.'

PHILALETHES. §1. Concerning the degrees of assent, it should be noticed that our grounds of probability operate no further in this matter than the degree of *likelihood that we find in them. Or *did* find when we looked into them: for it must be admitted that assent cannot be 'always from an actual view of the reasons that [have prevailed on the mind; and it would be] very hard, even for those who have very admirable memories, [always] to retain all the proofs, which . . . made them embrace that side of the question' – 'which sometimes [are] enough to fill a . . . volume upon one single question'.² It suffices, that they have once with care and fairness, sifted the matter [and] cast up the account', so to speak. §2. 'Without this, . . . men must be either very sceptics, or change [their opinions] every moment, and yield themselves up to whoever, having lately studied the question, offers them arguments; which for want of memory [or of leisure study],³ they are not able presently to answer' in their entirety. §3. It must be admitted that this often makes men obstinate in error. 'But the fault is not that they rely on their memories, . . . but because they judged [badly] before'. For often, noting that 'they never thought otherwise' serves men as a substitute for investigation and reason. But usually those who have least examined their opinions are the firmest in holding to them. It is

¹ 'préjugés', not 'présomption(s)' as on p. 457.

² Clause transferred from Locke's §2.

³ Added by Leibniz.