# STUDIES IN PHILOSOPHY

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# ON THE SOURCES OF KNOWLEDGE AND OF IGNORANCE

BY KARL R. POPPER

It follows, therefore, that truth manifests itself . . .
BENEDICTUS DE SPINOZA

Every man carries about him a touchstone . . . to distinguish . . . truth from appearances.
JOHN LOCKE

. . . it is impossible for us to *think* of any thing, which we have not antecedently *felt*, either by our external or internal senses.
DAVID HUME

The title of this lecture is likely, I fear, to offend some critical ears. For although 'Sources of Knowledge' is in order, and 'Sources of Error' would have been in order too, the phrase 'Sources of Ignorance' is another matter. 'Ignorance is something negative: it is the absence of knowledge. But how on earth can the absence of anything have sources?'[1] This question was put to me by a friend when I confided to him the title I had chosen for this lecture. I was a little shaken by this for I had been, I confess, quite pleased with the title. Hard

[1] Descartes and Spinoza went even further, and asserted that not only ignorance but also error is 'something negative'—a '*privation*' of knowledge and even of the proper use of our freedom. (See Descartes' *Principles*, part I, 33–42, and the Third and Fourth *Meditations*; also Spinoza's *Ethics*, part II, *propos.* 35 and *schol.*; his 21st letter, para 3 f., *Editio Tertia*, J. van Vloten and J. P. N. Land, 1914 = 34th letter, para 7 f., ed. C. H. Bruder, 1844; and his *Principles of Descartes' Philosophy*, part I, *propos.* 15 and *schol.*) Nevertheless, Spinoza speaks (e.g. *Ethics*, part II, *propos.* 41) also of the 'cause' of falsity (or error). Aristotle, on the other hand, (*Met.* 1052a 1) seems to say that only total ignorance is quite negative (like blindness; cp. *Cat.* 12a 26–13a 35) and that even 'privation' (*sterēsis*; *Met.* 1046a 30–35) may have something like a cause if a thing suffers privation (not by nature but) by violence.

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pressed for a reply I found myself improvising a rationalization, and explaining to my friend that the curious linguistic effect of the title was actually intended. I told him that I hoped to direct attention, through the phrasing of this title, to a number of historically important although unrecorded philosophical doctrines and among them (apart from the important theory that *truth is manifest*) especially to the *conspiracy theory of ignorance* which interprets ignorance not as a mere lack of knowledge but as the work of some mischievous power, the source of impure and evil influences which pervert and poison our minds and instil in us the habit of resistance to knowledge.

I am not quite sure whether this explanation allayed my friend's misgivings, but it did silence him. Your case is different since you are silenced by the rules of the present transactions. So I can only hope that I have allayed your misgivings sufficiently, for the time being, to allow me to begin my story at the other end—with the sources of knowledge rather than with the sources of ignorance. However, I shall presently come back to the sources of ignorance, and also to the conspiracy theory of these sources.

## I

The problem which I wish to examine afresh in this lecture, and which I hope not only to examine but to solve, may perhaps be described as an aspect of the old quarrel between the British and the Continental schools of philosophy—the quarrel between the classical empiricism of Bacon, Locke, Berkeley, Hume, and Mill, and the classical rationalism or intellectualism of Descartes, Spinoza, and Leibniz. In this quarrel the British school insisted that the ultimate source of all knowledge was observation, while the Continental school insisted that it was the intellectual intuition of clear and distinct ideas.

Most of these issues are still very much alive. Not only has empiricism, still the ruling doctrine in England, conquered the United States, but it is now widely accepted even on the European Continent as the true theory of *scientific* knowledge.

Cartesian intellectualism, alas, has been only too often distorted into one or another of the various forms of modern irrationalism.

I shall try to show in this lecture that the differences between classical empiricism and rationalism are much smaller than their similarities, and that both are mistaken. I hold that they are mistaken although I am myself both an empiricist and a rationalist of sorts. But I believe that, though observation and reason have each an important role to play, these roles hardly resemble those which their classical defenders attributed to them. More especially, I shall try to show that neither observation nor reason can be described as a source of knowledge, in the sense in which they have been claimed to be sources of knowledge down to the present day.

## II

Our problem belongs to the theory of knowledge, or to epistemology, reputed to be the most abstract and remote and altogether irrelevant region of pure philosophy. For example Hume, one of the greatest thinkers in the field, predicted that owing to the remoteness and abstractness and practical irrelevance of some of his results none of his readers would believe in them for more than an hour.

Kant's attitude was different. He thought that the problem 'What can I know?' was one of the three most important questions a man could ask. Bertrand Russell, in spite of being closer to Hume in philosophic temperament, seems to side in this matter with Kant. And I think Russell is right when he attributes to epistemology practical consequences for science, ethics, and even politics. For he says that epistemological relativism, or the idea that there is no such thing as objective truth, and epistemological pragmatism, or the idea that truth is the same as usefulness, are closely linked with authoritarian and totalitarian ideas.[2]

Russell's views are of course disputed. Some recent philosophers have developed a doctrine of the essential impotence

[2] See Bertrand Russell, *Let the People Think*, 1941, pp. 77 ff.

and practical irrelevance of all genuine philosophy, and thus, one can assume, of epistemology. Philosophy, they say, cannot by its very nature have any significant consequences, and so it can influence neither science nor politics. But I think that ideas are dangerous and powerful things, and that even philosophers have sometimes produced ideas. Indeed, I have no doubt that this new doctrine of the impotence of all philosophy is amply refuted by the facts.

The situation is really very simple. The belief of a liberal—the belief in the possibility of a rule of law, of equal justice, of fundamental rights, and a free society—can easily survive the recognition that judges are not omniscient and may make mistakes about facts and that, in practice, absolute justice is hardly ever realized in any particular legal case. But the belief in the possibility of a rule of law, of justice and of freedom, can hardly survive the acceptance of an epistemology which teaches that there are no objective facts; not merely in this particular case, but also in any other case; and that the judge cannot have made a factual mistake because he can no more be wrong about the facts than he can be right.

## III

The great movement of liberation which started in the Renaissance and led through the many vicissitudes of the reformation and the religious and revolutionary wars to the free societies in which the English-speaking peoples are privileged to live, this movement was inspired throughout by an unparalleled epistemological optimism: by a most optimistic view of man's power to discern truth and to acquire knowledge.

At the heart of this new optimistic view of the possibility of knowledge lies the doctrine that *truth is manifest*. Truth may perhaps be veiled. But it may reveal itself.[3] And if it does not

[3] See my mottoes: Spinoza, *Of God, Man, and Human Happiness*, ch. 15. (Parallel passages are: *Ethics*, II, *scholium* to *propos.* 43: 'Indeed, as light manifests itself and darkness, so with truth: it is its own standard, and that of falsity.' Also: *De intell. emend.*, 35, 36; 76th letter, end of para. 5, *Editio Tertia*, van Vloten and Land, 1914 = 74th letter, para. 7, ed. Bruder, 1844: '*est enim verum index sui et falsi.*') Locke, *The Conduct of the Understanding*, section 3. (Cp. also *Romans*, i. 19.)

reveal itself, it may be revealed by us. Removing the veil may not be easy. But once the naked truth stands revealed before our eyes, we have the power to see it, to distinguish it from falsehood, and to know that it *is* truth.

The birth of modern science and modern technology was inspired by this optimistic epistemology whose main spokesmen were Bacon and Descartes. They taught that there was no need for any man to appeal to authority in matters of truth because each man carried the sources of knowledge in himself; either in his power of sense perception which he may use for the careful observation of nature, or in his power of intellectual intuition which he may use to distinguish truth from falsehood by refusing to accept any idea which is not clearly and distinctly perceived by the intellect.

*Man can know: thus he can be free.* This is the formula which explains the link between epistemological optimism and the ideas of liberalism.

This link is paralleled by the opposite link. Disbelief in the power of human reason, in man's power to discern the truth, is almost invariably linked with distrust of man. Thus epistemological pessimism is linked, historically, with a doctrine of human depravity, and it tends to lead to the demand for the establishment of powerful traditions and the entrenchment of a powerful authority which would save man from his folly and his wickedness. (There is a striking sketch of this theory of authoritarianism, and a picture of the burden carried by those in authority, in the story of *The Grand Inquisitor* in Dostoievsky's *The Brothers Karamazov*.)

The contrast between epistemological pessimism and optimism may be said to be fundamentally the same as that between epistemological traditionalism and rationalism. (I am using the latter term in its wider sense in which it is opposed to irrationalism, and in which it covers not only Cartesian intellectualism but Lockean empiricism also.) For we can interpret traditionalism as the belief that, owing to the absence of an objective and discernible truth, we are faced with the choice between accepting the authority of tradition, and chaos; while

rationalism has, of course, always claimed the right of reason and of empirical science to criticize, and to reject, any tradition, and any authority, as being based on sheer unreason or prejudice or accident.

## IV

It is a disturbing fact that even an abstract study like pure epistemology is not as pure as one might think (and as Aristotle believed) but that its ideas may, to a large extent, be motivated and unconsciously inspired by political hopes and by Utopian dreams. This should be a warning to the epistemologist. What can he do about it? As an epistemologist I have only one interest—to find out the truth about the problems of epistemology, whether or not this truth fits in with my political ideas. But am I not liable to be influenced, unconsciously, by my political hopes and beliefs?

It so happens that I am not only an empiricist and a rationalist of sorts but also a liberal (in the English sense of this term); but just because I am a liberal, I feel that few things are more important for a liberal than to submit the various theories of liberalism to a searching critical examination.

While I was engaged in a critical examination of this kind I discovered the part played by certain epistemological theories in the development of liberal ideas; and especially by the various forms of epistemological optimism.[4] And I found that, as an epistemologist, I had to reject these epistemological theories as untenable. This experience of mine may illustrate the point that our dreams and our hopes need not necessarily control our results, and that, in searching for the truth, it may be our best plan to start by criticizing our most cherished beliefs. This may seem to some a perverse plan. But it will not seem so to those who want to find the truth and are not afraid of it.

[4] See chapter 17 of my *Conjectures and Refutations*.

## V

In examining the optimistic epistemology inherent in certain ideas of liberalism, I found a cluster of doctrines which, although often accepted implicitly, have not, to my knowledge, been explicitly discussed or even noticed by philosophers or historians. The most fundamental of them is one which I have already mentioned—the doctrine that truth is manifest. The strangest of them is the conspiracy theory of ignorance, which is a curious outgrowth from the doctrine of manifest truth.

By the doctrine that truth is manifest I mean, you will recall, the optimistic view that truth, if put before us naked, is always recognizable as truth. Thus truth, if it does not reveal itself, has only to be unveiled, or dis-covered. Once this is done, there is no need for further argument. We have been given eyes to see the truth, and the 'natural light' of reason to see it by.

This doctrine is at the heart of the teaching of both Descartes and Bacon. Descartes based his optimistic epistemology on the important theory of the *veracitas dei*. What we clearly and distinctly see to be true must indeed be true; for otherwise God would be deceiving us. Thus the truthfulness of God must make truth manifest.

In Bacon we have a similar doctrine. It might be described as the doctrine of the *veracitas naturae*, the truthfulness of Nature. Nature is an open book. He who reads it with a pure mind cannot misread it. Only if his mind is poisoned by prejudice can he fall into error.

This last remark shows that the doctrine that truth is manifest creates the need to explain falsehood. Knowledge, the possession of truth, need not be explained. But how can we ever fall into error if truth is manifest? The answer is: through our own sinful refusal to see the manifest truth; or because our minds harbour prejudices inculcated by education and tradition, or other evil influences which have perverted our originally pure and innocent minds. Ignorance may be the work of powers conspiring to keep us in ignorance, to poison our minds by filling them with falsehood, and to blind our eyes so

that they cannot see the manifest truth. Such prejudices and such powers, then, are sources of our ignorance.

The conspiracy theory of ignorance is fairly well known in its Marxian form as the conspiracy of a capitalist press that perverts and suppresses truth and fills the workers' minds with false ideologies. Prominent among these, of course, are the doctrines of religion. It is surprising to find how unoriginal this Marxist theory is. The wicked and fraudulent priest who keeps the people in ignorance was a stock figure of the eighteenth century and, I am afraid, one of the inspirations of liberalism. It can be traced back to the protestant belief in the conspiracy of the Roman Church, and also to the beliefs of those dissenters who held similar views about the Established Church. (Elsewhere I have traced the prehistory of this belief back to Plato's uncle Critias; see chapter 8, section ii, of my *Open Society*.)

This curious belief in a conspiracy is the almost inevitable consequence of the optimistic belief that truth, and therefore goodness, must prevail if only truth is given a fair chance. 'Let her and falsehood grapple; who ever knew Truth put to the worse, in a free and open encounter?' (*Areopagitica*. Compare the French proverb: *La vérité triomphe toujours*.) So when Milton's Truth was put to the worse, the necessary inference was that the encounter had not been free and open: if the manifest truth does not prevail, it must have been maliciously suppressed. One can see that an attitude of tolerance which is based upon an optimistic faith in the victory of truth may easily be shaken.[5] For it is liable to turn into a conspiracy theory which would be hard to reconcile with an attitude of tolerance.

I do not assert that there was never a grain of truth in this conspiracy theory. But in the main it was a myth, just as the theory of manifest truth from which it grew was a myth.

For the simple truth is that truth is often hard to come by, and that once found it may easily be lost again. Erroneous beliefs may have an astonishing power to survive, for thousands of years, in defiance of experience, with or without the aid of

[5] Cp. J. W. N. Watkins on Milton in *The Listener*, 22 January 1959.

any conspiracy. The history of science and especially of medicine could furnish us with a number of good examples. One example is, indeed, the general conspiracy theory itself. I mean the erroneous view that whenever something evil happens it must be due to the evil will of an evil power. Various forms of this view have survived down to our own day.

Thus the optimistic epistemology of Bacon and of Descartes cannot be true. Yet perhaps the strangest thing in this story is that this false epistemology was the major inspiration of an intellectual and moral revolution without parallel in history. It encouraged men to think for themselves. It gave them hope that through knowledge they might free themselves and others from servitude and misery. It made modern science possible. It became the basis of the fight against censorship and the suppression of free thought. It became the basis of the non-conformist conscience, of individualism, and of a new sense of man's dignity; of a demand for universal education, and of a new dream of a free society. It made men feel responsible for themselves and for others, and eager to improve not only their own condition but also that of their fellow men. It is a case of a bad idea inspiring many good ones.

## VI

This false epistemology, however, has also led to disastrous consequences. The theory that truth is manifest—that it is there for everyone to see, if only he wants to see it—this theory is the basis of almost every kind of fanaticism. For only the most depraved wickedness can refuse to see the manifest truth: only those who have every reason to fear truth can deny it, and conspire to suppress it.

Yet the theory that truth is manifest not only breeds fanatics —men possessed by the conviction that all those who do not see the manifest truth must be possessed by the devil—but it may also lead, though perhaps less directly than does a pessimistic epistemology, to authoritarianism. This is so, simply, because truth is not manifest, as a rule. The allegedly manifest truth is therefore in constant need, not only of interpretation

and affirmation, but also of re-interpretation and re-affirmation. An authority is required to pronounce upon, and lay down, almost from day to day, what is to be the manifest truth, and it may learn to do so arbitrarily and cynically. And many disappointed epistemologists will turn away from their own former optimism and erect a resplendent authoritarian theory on the basis of a pessimistic epistemology. It seems to me that the greatest epistemologist of all, Plato, exemplifies this tragic development.

## VII

Plato plays a decisive part in the pre-history of Descartes' doctrine of the *veracitas dei*—the doctrine that our intellectual intuition does not deceive us because God is truthful and will not deceive us; or in other words, the doctrine that our intellect is a source of knowledge because God is a source of knowledge. This doctrine has a long history which can easily be traced back at least to Homer and Hesiod.

To us, the habit of referring to one's sources would seem natural in a scholar or an historian, and it is perhaps a little surprising to find that this habit stems from the poets; but it does. The Greek poets refer to the sources of their knowledge. These sources are divine. They are the Muses. '. . . the Greek bards', Gilbert Murray observes, 'always owe, not only what we should call their inspiration, but their actual knowledge of facts to the Muses. The Muses "are present and know all things" . . . Hesiod . . . always explains that he is dependent on the Muses for his knowledge. Other sources of knowledge are indeed recognized. . . . But most often he consults the Muses. . . . So does Homer for such subjects as the Catalogue of the Greek army.' [6]

As this quotation shows, the poets were in the habit of claiming not only divine sources of inspiration, but also divine sources of knowledge—divine guarantors of the truth of their stories.

Precisely the same two claims were raised by the philosophers Heraclitus and Parmenides. Heraclitus, it seems, sees himself

[6] See Gilbert Murray, *The Rise of the Greek Epic*, 3rd edn., 1924, p. 96.

as a prophet who 'talks with raving mouth, . . . possessed by the god'—by Zeus, the source of all wisdom.[7] And Parmenides, one could almost say, forms the missing link between Homer or Hesiod on the one side and Descartes on the other. His guiding star and inspiration is the goddess Dikē, described by Heraclitus[8] as the guardian of truth. Parmenides describes her as the guardian and keeper of the keys of truth, and as the source of all his knowledge.[9] But Parmenides and Descartes

[7] See DK (DK = Diels-Kranz, *Fragmente der Vorsokratiker*, 10th edn., 1960) Heraclitus B 92 and 32; cp. also 93, 41, 64, and 50.

[8] DK, Heraclitus B 28 (see also B 94 and cp. DK Orpheus B 14 and Plato's *Laws* 716A).

[9] The '*goddess*' of Parmenides (DK, B 1, line 22) was identified by Sextus, *Adv. math.* vii, 113, with the goddess Dikē (of lines 14 to 17), in an otherwise admittedly dubious interpretation. It seems to me that the text strongly suggests this identification. The widely accepted view (cp. W. K. C. Guthrie, *A History of Greek Philosophy*, ii, 1965, p. 10; L. Tarán, *Parmenides*, 1965, p. 31) that Parmenides leaves his goddess 'unnamed' seems to me without foundation, though it has been supported by subtle arguments. Yet most of these arguments (especially Tarán's) make it incomprehensible why Dikē (and perhaps even Ananke in B 8, 30) was not left 'nameless' also. My own positive arguments for identifying the 'goddess' with Dikē are two: (1) The whole balance of B 1, down to line 23, and especially 11 to 22, suggests the identification, as the following details show: Dikē (though on the other view she would be no more than a turnkey) is introduced elaborately, in keeping with the whole passage; she is the main person acting from line 14 down to line 20 (*arērote*); also, the sentence does not seem to stop here—not indeed until the end of line 21, just before the 'goddess' comes in. Moreover, between line 20 and the end of line 21 no more is said than: 'Straight on the road through the gates did the maidens steady the horses.' This in no way implies that Parmenides' journey (elaborately described up to this point) continues any further; rather I find here a strong suggestion that, upon passing through the gates (where he must encounter Dikē), his journey ends. And how can we believe that the highest authority and main speaker of the poem enters not only unnamed, but without any introduction or any further ado—even without one epithet? And why should the maidens have to introduce Parmenides to Dikē (and 'appease' her) who, on the view here combatted, is the inferior person, but not to the superior one? (2) If we believe (as I do) with Guthrie, op. cit., ii, p. 32 (see also pp. 23 f., and Tarán, op. cit., pp. 5 and 61 f.) that there is ('cumulative') 'evidence that Parmenides, in his criticism of earlier thought, had Heraclitus especially in mind', then the role played by Dikē in the *logos* of Heraclitus (see the preceding note) would make it understandable why Parmenides in his *antilogia* cites her now as his authority for his own *logos*. (Incidentally, there seems to me no difficulty in assuming that in the important passage B 8, line 14, Dikē is speaking about herself, but great difficulty in assuming that the 'goddess' speaks in these terms about her own turnkey or gate keeper.)

have more in common than the doctrine of divine veracity. For example, Parmenides is told by his divine guarantor of truth that in order to distinguish between truth and falsehood, he must rely upon the intellect alone, to the exclusion of the senses of sight, hearing, and taste.[10] And even the principle of his physical theory which he, like Descartes, founds upon his intellectualist theory of knowledge, is the same as that adopted by Descartes: it is the impossibility of a void, the necessary fullness of the world.

In Plato's *Ion* a sharp distinction is made between divine inspiration—the divine frenzy of the poet—and the divine sources or origins of true knowledge. (The topic is further developed in the *Phaedrus*, especially from 259E on; and in 275B–C Plato even insists, as Harold Cherniss pointed out to me, on the distinction between questions of origin and of truth.) Plato grants that the poets are inspired, but he denies to them any divine authority for their alleged knowledge of facts. Nevertheless, the doctrine of the divine source of our knowledge plays a decisive part in Plato's famous theory of *anamnēsis* which in some measure grants to each man the possession of divine sources of knowledge. (The knowledge considered in this theory is knowledge of the *essence or nature* of a thing rather than of a particular historical fact.) According to Plato's *Meno* (81B–D) there is nothing which our immortal soul does not know, prior to our birth. For as all natures are kindred and akin, our soul must be akin to all natures. Accordingly it knows them all: it knows all things.[11] In being born we forget; but we may recover our memory and our knowledge, though only partially: only if we see the truth again shall we recognize it. All knowledge is therefore re-cognition—recalling or remembering the essence or true nature that we once knew.[12]

[10] See note 33 and text, below. Compare also DK, Heraclitus B 54, 123; 88 and 126 contain hints that *unobservable* changes may yield observable opposites.

[11] For the relation between *kinship* and *knowledge* (cp. Russell's 'knowledge by acquaintance') see also *Phaedo*, 79D; *Republic*, 611D; and *Laws*, 899D.

[12] Cp. *Phaedo* 72E ff.; 75E; 76A–B. Like all great epistomological theories, the theory of *anamnēsis* (or of 'innate ideas') has influenced religion and literature. Bryan Magee has drawn my attention to Wordsworth's 'Ode: Intimations of Immortality from Recollections of Early Childhood'.

This theory implies that our soul is in a divine state of omniscience as long as it dwells, and participates, in a divine world of ideas or essences or natures, prior to being born. The birth of a man is his fall from grace; it is his fall from a natural or divine state of knowledge; and it is thus the origin and cause of his ignorance. (Here may be the seed of the idea that ignorance is sin or at least related to sin.)

It is clear that there is a close link between this theory of *anamnēsis* and the doctrine of the divine origin or source of our knowledge. At the same time, there is also a close link between the theory of *anamnēsis* and the doctrine of manifest truth: if, even in our depraved state of forgetfulness, we see the truth, we cannot but recognize it as the truth. So, as the result of *anamnēsis*, truth is restored to the status of that which is not forgotten and thus not concealed (*alēthēs*): it is that which is manifest.

Socrates demonstrates this in a beautiful passage of the *Meno* by helping an uneducated young slave to 'recall' the proof of a special case of the theorem of Pythagoras. Here indeed is an optimistic epistemology, and the root of Cartesianism. It seems that, in the *Meno*, Plato was conscious of the highly optimistic character of his theory; for he describes it as a doctrine which makes men eager to learn, to search, and to discover.

Yet disappointment must have come to Plato; for in the *Republic* (and also in the *Phaedrus*) we find the beginnings of a pessimistic epistemology. In the famous story of the prisoners in the cave (514 ff.) he shows that the world of our experience is only a shadow, a reflection, of the real world. And he shows that even if one of the prisoners should escape from the cave and face the real world, he would have nearly insuperable difficulties in seeing and understanding it—to say nothing of his difficulties in trying to make those understand who stayed behind. The difficulties in the way of an understanding of the real world are all but superhuman, and only the very few, if anybody at all, can attain to the divine state of understanding the real world—the divine state of true knowledge, of *epistēmē*.

This is a pessimistic theory with regard to almost all men, though not with regard to all. (For it teaches that truth may be attained by a few—the elect. With regard to these it is, one might say, more wildly optimistic than even the doctrine that truth is manifest.) The authoritarian and traditionalist consequences of this pessimistic theory are fully elaborated in the *Laws*.

Thus we find in Plato the first transition from an optimistic to a pessimistic epistemology. Each of these forms the basis of one of two diametrically opposed philosophies of the state and of society: on the one hand an anti-traditionalist, anti-authoritarian, revolutionary and Utopian rationalism of the Cartesian kind, and on the other hand an authoritarian traditionalism.

This development may well be connected with the fact that the idea of an epistemological fall of man can be interpreted not only in the sense of the optimistic doctrine of *anamnēsis*, but also in a pessimistic sense.

In this latter interpretation, the fall of man condemns all mortals—or almost all—to ignorance. I think one can discern in the story of the cave (and perhaps also in the story of the fall of the city, when the Muses and their divine teaching are neglected[13]) an echo of an interesting older form of this idea. I have in mind Parmenides' doctrine that the opinions of mortals are delusions, and the result of a misguided choice—a misguided convention. (This may stem from Xenophanes' doctrine that all human knowledge is guesswork, and that his own theories are, at best, merely *similar to the truth*.[14]) The misguided convention is a linguistic one: it consists in giving *names* to what is non-existing. The idea of an epistemological fall of man can perhaps be found, as Karl Reinhardt suggested,

[13] See *Republic* 546D.

[14] Xenophanes' fragment here alluded to is DK, B 35:

These things are, we conjecture, like the truth.

For the idea of *truthlikeness*—of a doctrine that partly corresponds to the facts (and so may '*seem like the real*' or '*pass for the real*', as Parmenides has it here)—see my *Conjectures and Refutations*, especially pp. 236 f., where *verisimilitude* is contrasted with *probability*, and *Addendum* 6.

in those words of the goddess that mark the transition from the way of truth to the way of delusive opinion.[15]

> But you also shall learn how it was that delusive opinion,
> Destined to pass for the truth, was forcing its way through all things. . . .
> Now of this world thus arranged to seem wholly like truth I shall tell you;
> Then you will be nevermore overawed by the notions of mortals.

Thus though the fall affects all men, the truth may be revealed to the elect by an act of grace—even the truth about the unreal world of the delusions and opinions, the conventional notions and decisions, of mortal men: the unreal world of appearance that was destined to be accepted, and to be approved of, as real.[16]

The revelation received by Parmenides, and his conviction that a few may reach certainty about both the unchanging world of eternal reality and the unreal and changing world of verisimilitude and deception, were two of the main inspirations of Plato's philosophy. It was a theme to which he was for ever returning, oscillating between hope, despair, and resignation.

## VIII

Yet what interests us here is Plato's optimistic epistemology, the theory of *anamnēsis* in the *Meno*. It contains, I believe, not only the germs of Descartes' intellectualism, but also the germs of Aristotle's and especially of Bacon's theories of induction.

[15] For the *naming* of what is non-existing (non-existing opposites) cp. DK, Parmenides B 9, with B 8 : 53: 'for they decided to give names . . .'. Concerning the transition to the way of delusive opinion (*doxa*), see Karl Reinhardt, *Parmenides*, 2nd ed., p. 26; see also pp. 5–11 for the text of Parmenides, DK, B 1 : 31–32, which are the first two lines here quoted. My third line is Parmenides, DK, B 8 : 60, cp. Xenophanes, B 35. My fourth line is Parmenides, DK, B 8 : 61.

[16] It is interesting to contrast this pessimistic view of the necessity of error (or of *almost* necessary error) with the optimism of Descartes, or of Spinoza who, in his 76th letter (paragraph 5), scorns those 'who dream of an impure spirit inspiring us with false ideas which are similar to true ones (*veris similes*)'; see also ch. 10, section xiv, and *Addendum* 6, of my *Conjectures and Refutations*.

For Meno's slave is helped by Socrates' judicious questions to remember or recapture the forgotten knowledge which his soul possessed in its pre-natal state of omniscience. It is, I believe, this famous Socratic method, called in the *Theaetetus* the art of midwifery or *maieutic*, to which Aristotle alluded when he said that Socrates was the inventor of the method of induction.[17]

Aristotle, and also Bacon, I wish to suggest, meant by 'induction' not so much the inferring of universal laws from particular observed instances as a method by which we are guided to the point whence we can intuit, or perceive, the essence or the true nature of a thing.[18] But this, as we have seen, is precisely the aim of Socrates' *maieutic*: its aim is to help or lead us to *anamnēsis*; and *anamnēsis* is the power of seeing the true nature or essence of a thing, the nature or essence with which we were acquainted before birth, before our fall from grace. Thus the aims of the two, *maieutic* and induction, are the same. (Incidentally, Aristotle taught that the result of an induction—the intuition of the essence—was to be expressed by a definition of that essence.)

Now let us look more closely at the two procedures. The *maieutic* art of Socrates consists, essentially, in asking questions designed to destroy prejudices; false beliefs which are often traditional or fashionable beliefs; false answers, given in the spirit of ignorant cocksureness. Socrates himself does not

[17] *Metaphysics*, 1078b 17–33; see also 987b 1.

[18] Aristotle meant by 'induction' (*epagōgē*) at least two different things which he sometimes links together. One is a method by which we are 'led to intuit the general principle' (*An. Pr.*, 67a 22 f., on *anamnēsis* in the *Meno*; *An. Post.*, 71a 7, 81a 38 ff., 100b 4 f.). The other (*Topics*, 105a 13, 156a 4, 157a 34; *An. Post.*, 78a 35, 81b 5 ff.) is a method of *adducing* (particular) *evidence—positive* evidence rather than *critical* evidence or counter examples. The first method seems to me the older one, and the one which can be better connected with Socrates and his *maieutic* method of criticism and counter examples. The second method seems to originate in the attempt to systematize induction logically or, as Aristotle (*An. Pr.*, 68b 15 ff.) puts it, to construct a valid 'syllogism which springs out of induction'; this, to be valid, must of course be a syllogism of perfect or complete induction (complete enumeration of instances); and ordinary induction in the sense of the second method here mentioned is just a weakened (and invalid) form of this valid syllogism. (See also my *Open Society*, note 33 to ch. 11.)

pretend to know. His attitude is described by Aristotle in the words, 'Socrates raised questions but gave no answers; for he confessed that he did not know.'[19] Thus Socrates' *maieutic* is not an art that aims at teaching any belief, but one that aims at purging or cleansing[20] the soul of its false beliefs, its seeming knowledge, its prejudices. It achieves this by teaching us to doubt our own convictions.

Fundamentally the same procedure is part of Bacon's induction.

## IX

The framework of Bacon's theory of induction is this. He distinguishes in the *Novum Organum* between a true method and a false method. His name for the true method, '*interpretatio naturae*', is ordinarily translated by the phrase 'interpretation of nature', and his name for the false method, '*anticipatio mentis*', by 'anticipation of the mind'. Obvious as these translations may seem, they are misleading. What Bacon means by '*interpretatio naturae*' is, I suggest, the reading of, or better still, *the spelling out of, the book of Nature*.[21]

The term 'interpretation' has in modern English a decidedly subjectivistic or relativistic tinge. When we speak of Rudolf Serkin's interpretation of the *Emperor Concerto*, we imply that there are different interpretations, but that this one is Serkin's. We do not of course wish to imply that Serkin's is not the best, the truest, the nearest to Beethoven's intentions. But although we may be unable to imagine that there is a better one, by using the term 'interpretation' we imply that there are other interpretations or readings, leaving the question open whether some of these other readings may, or may not, be equally true.

[19] See Aristotle, *Sophist. El.*, 183b 7; cp. Plato's *Theaetetus*, 150C–D, 157C, 161B.

[20] Cp. the allusion to the rite called *amphidromia*—a purification ceremony after the birth of a child (which sometimes ended in the purge or exposure of the child) alluded to in *Theaetetus* 160E.

[21] Galileo, in a famous passage of his *Il saggiatore*, section 6, of which Mario Bunge has kindly reminded me, speaks of 'that great book which lies before our eyes—I mean the universe'; cp. also Descartes' *Discourse*, section 1.

I have here used the word 'reading' as a synonym for 'interpretation', not only because the two meanings are so similar but also because 'reading' and 'to read' have suffered a modification analogous to that of 'interpretation' and 'to interpret'; except that in the case of 'reading' both meanings are still in full use. In the phrase 'I have read John's letter', we have the ordinary, non-subjectivist meaning. But 'I read this passage of John's letter quite differently' or perhaps 'My reading of this passage is very different' may illustrate a later, a subjectivistic or relativistic, meaning of the word 'reading'.

I assert that the meaning of 'interpret' (though not in the sense of 'translate') has changed in exactly the same way, except that the original meaning—perhaps 'reading aloud for those who cannot read themselves'—has been virtually lost. Today even the phrase 'the judge must interpret the law' means that he has a certain latitude in interpreting it; while in Bacon's time it would have meant that the judge had the duty to read the law as it stood, and to expound it and to apply it in the one and only right way. *Interpretatio juris* (or *legis*) means either this or else the expounding of the law to the layman.[22] It leaves the legal interpreter no latitude; at any rate no more than would be allowed to a sworn interpreter translating a legal document.

Thus the translation 'the interpretation of nature' is misleading; it should be replaced by something like 'the (true) reading of nature'; analogous to 'the (true) reading of the law'. And I suggest that 'reading the book of Nature as it is' or better still 'spelling out the book of Nature' is what Bacon meant. The point is that the phrase should suggest the avoidance of all interpreting in the modern sense, and that it should *not* contain, more especially, any suggestion of an attempt to interpret what is manifest in nature in the light of non-manifest causes, or of hypotheses; for all this would be an *anticipatio mentis*, in Bacon's sense. (It is a mistake, I think, to ascribe to Bacon the teaching that hypotheses—or conjectures—may result from his method of induction; for Baconian induction

[22] Cp. T. Manley, *The Interpreter*: . . . *Obscure Words and Terms used in the Lawes of this Realm*, 1672.

results in *certain or established* knowledge rather than in conjecture.)

As to the meaning of '*anticipatio mentis*' we have only to quote Locke: 'men give themselves up to the first anticipations of their minds'.[23] This is, practically, a translation from Bacon; and it makes it amply clear that '*anticipatio*' means 'prejudice' or even 'superstition'. We can also refer to the phrase '*anticipatio deorum*' which means harbouring naïve or primitive or superstitious views about the gods. But to make matters still more obvious: 'prejudice'[24] derives from a legal term, and according to the *Oxford English Dictionary* it was Bacon who introduced the verb 'to prejudge' into the English language, in the sense of 'to judge adversely in advance'—that is, in violation of the judge's duty.

Thus Bacon's two methods are (1) 'the spelling out of the open book of Nature', leading to knowledge or *epistēmē*, and (2) 'the prejudice of the mind that wrongly prejudges, and perhaps misjudges, Nature', leading to *doxa*, or mere guesswork, and to the misreading of the book of Nature. This latter method, rejected by Bacon, is in fact a method of interpretation, in the modern sense of the word. It is the *method of conjecture or hypothesis* (a method of which, incidentally, I happen to be a convinced advocate).

How can we prepare ourselves to read the book of Nature properly or truly? Bacon's answer is: by purging our minds of all anticipations or conjectures or guesses or prejudices.[25] There are various things to be done in order so to purge our minds. We have to get rid of all sorts of 'idols', or generally held false beliefs; for these distort our observations.[26] But we have also, like Socrates, to look out for all sorts of counter instances by which to destroy our prejudices concerning the kind of thing whose true essence or nature we wish to ascertain. Like Socrates, we must, by purifying our intellects, prepare our

[23] John Locke, *The Conduct of the Understanding*, section 26.
[24] Cp. also Descartes, *Principles*, I, 50.
[25] Cp. Bacon's *Novum Organum*, I, 68, and the end of 69.
[26] Op. cit., I, 97.

souls to face the eternal light of essences or natures:[27] our impure prejudices must be exorcised by the invocation of counter instances.[28]

Only after our souls have been cleansed in this way may we begin the work of spelling out diligently the open book of Nature, the manifest truth.

In view of all this I suggest that the Baconian (as well as the Aristotelian) *method of induction* is the same, fundamentally, as Socratic *maieutic*; that is to say, the preparation of the mind by cleansing it of prejudices, in order to enable it to recognize the manifest truth, or to read the open book of Nature.

Descartes' *method of systematic doubt* is also fundamentally the same: it is a method of destroying all false prejudices of the mind, in order to arrive at the unshakable basis of self-evident truth.

We can now see more clearly how, in this optimistic epistemology, the state of knowledge is the natural or the pure state of man, the state of the innocent eye which can see the truth, while the state of ignorance has its source in the injury suffered by the innocent eye in man's fall from grace; an injury which can be partially healed by a course of purification. And we can see more clearly why this epistemology, not only in Descartes' but also in Bacon's form, remains essentially a religious doctrine in which the source of all knowledge is divine authority.

One might say that, encouraged by the divine 'essences' or divine 'natures' of Plato, and by the traditional Greek opposition between the truthfulness of nature and the deceitfulness of man-made convention, Bacon substitutes, in his epistemology, 'Nature' for 'God'.[29] This may be the reason why we have to purify ourselves before we may approach the goddess *Natura*: when we have purified our minds, even our sometimes unreliable senses (held by Plato to be hopelessly impure) will be

[27] Cp. St. Augustine, *De Civitate Dei*, VIII, 3.

[28] Cp. *Novum Organum*, II, 16 ff.

[29] Hegel and Marx went one step further and substituted the goddess History (or Historical Necessity) for Nature. Cp. my *Conjectures and Refutations*, section xii of chapter 16.

pure. The sources of knowledge must be kept pure, because any impurity may become a source of ignorance.