

Objective Knowledge

An Evolutionary Approach

K.Popper

February 22-26 , 2012

The problem of induction as highlighted by Hume is really of two kinds. There is on one hand the objective logical problem of induction, namely why we are logically justified to conclude from a finite number of singular facts a general rule. On the other hand, the psychological problem, of drawing inferences from a limited number of observations to a general rule which will aid us in prediction and expectation. In our daily life we are continually confronted with the necessity to make decisions as to what action to take. We cannot shirk that duty, because not to take action, is just another kind of action. Stand or flee, there is no middle way. While Hume was a sceptic as to the objective problem, he was not when it came to the psychological. Regularities he may in principle question, he could not afford but to believe in real life. Thus if Hume was as a philosopher a hard-nosed skeptic, as a private individual he was as gullible as anyone else, because as we have noted he had no choice. Hume explained our psychological acceptance of induction as due to our disposition to find regularities and by the conservative effect of habit, an idea further developed by Kant, who claimed that to a great extent we impose our structures on the world, in particular the world is Euclidean because this is the way we organize spatial positions.

Hume's distinction between the logical justification of induction and our practical led him to infer that man is irrational, as his practical reason cannot be logically justified. This caused something of a scandal, at least in retrospect. Hume drew the inevitable consequences and retired from philosophy. He was, as Popper claims, an eminently reasonable man. Popper differs from Hume in so far that he does not think that practical reason is based on spurious induction, but that you can reason rationally anyway. Thus he celebrates Hume's rejection of logical induction, he denies any direct connection to practical reason.

Popper makes a clear distinction between subjective and objective knowledge. The former is connected to belief, and strives to achieve complete certitude, because the more firmly we believe in our expectations the more secure we are. Subjective knowledge is ultimate based on the testimony of our senses. The more immediate and clear those impressions are, the more secure our beliefs are founded. According to Popper, conviction is a matter of psychology. Also there is no such thing as an absolute conviction, any conviction held depends on its strength on the situation, on how high the stakes are. If not much is at stake you can afford to take action on a lower kind of conviction than if the stakes are very high. As he puts it, ask me how many fingers I have on my hand in my pocket and I will say five unhesitatingly, but if I told that the life of a friend depends on it, I certainly will take my hand out of the pocket and carefully count them, lest some has miraculously disappeared. Subjective knowledge leads to the common sense theory of knowledge as

expounded by Locke, Berkeley and Hume, and which Popper refers disparagingly as the bucket theory of the mind. The mind is an empty bucket in which knowledge is poured. We may err in knowledge, but then it is our faults, we may simply not have properly digested the pieces of knowledge or made the wrong connections between them. Popper opposes this first by pointing out that those pieces of sense-data are not as simple and immediate as are subjectively felt. They are in fact encodings of a complex reality, which appear easy and natural to us only because we have on one hand been evolved biologically to make those kinds of efficient encodings and on the other hand we have perfected our innate apparatus by constant practice. He takes an example the case of reading, which in the beginning is an arduous process but with time becomes automatic to the point that we are not even aware of the print on the page, ideas are conveyed so swiftly and directly. Furthermore the bucket is not empty we have a lot of innate structure and ideas, among those the disposition to find regularities in nature. Those are dispositions that have served us well in our efforts of survival. However, nothing in evolution is perfect, and also our immediate sense-impressions occasionally lead us astray, as testified by various visual paradoxes with which we are entertained. Also our disposition to find regularities sometimes induce us to see such when there are none, as in various superstitions. Common sense, although appearing so secure and sound, is but a starting point for a critical assessment.

When it comes to objective knowledge there is no certainty, only tentative hypothesis. The fact that a hypothesis seems highly probable and perverse to doubt is no objective statement but a psychological. We all need to interpret scientific hypotheses psychologically as those may serve as a basis to make decisions for actions. Thus we need to endow them with belief. Science may from a biological point of view be seen as a further development of common sense, just as finding scientific fact can be seen as a systematic extension of what we do in real life, but there is a fundamental difference. Science is about truth, and truth is not a matter of pragmatism and what is compatible with survival. Science is indeed a quest to go beyond the world of mere appearances. As such it enables us to go beyond what our evolution has equipped us to do. We may have an instinct about how to act in certain situations, but only if such situations ha been part of our evolutionary history. If not, our instincts may nevertheless be right, as any kind of guess, but there is no reason to assume so.

Science becomes possible because a thesis can be linguistically presented and thus critically assessed. Becoming an object it can be repudiated by others. Subjective beliefs on the other hand can by their very nature not be repudiated. You can never persuade somebody who does not want to be persuaded. But an objective act is true regardless whether it is believed or not. Social facts are facts in so far they are believed by an appropriate selection of people, thus in a sense they are halfway between being subjective and objective.

In the realm of epistemology Popper considers that it has so far been too centered on the subjective notion of belief. There can, according to Popper, be knowledge without a knower. To make sense of this he introduces the idea of three worlds. World one, of the outside reality, objective (if existent) by any standards, there there is the world two of the mental state of an individual, and then there is world three of the the products of world two. All those worlds interact, most obviously world two on world three. But the

main point is that world three is not part of world two, although it emanates from it, it is autonomous. Thus once we have established say a theory, we can test it, ask questions about it, and in this way test it and improve it. In short criticize it, because criticism is not only a question of rejection but also a matter of putting up alternatives. In the jargon of Popper a problem P_1 gives rise to a tentative theory (TT) which is modified by error elimination (EE) which in its turn leads to a new, unexpected problem P_2 and the process can start anew. There is knowledge outside us. A book that has not been read and understood (and how many books are really understood) is still to be potentially read and understood, and as such constitute knowledge by just being manifested on paper. (What about virtual books, books in the Borgesian library of Babel, containing all possible books, i.e. combinations of letters, or ultimately the numbers from zero up to some pretty large one. Does that mean that all knowledge exists already?). Theories improve by Darwinian selection, those theories that stand up to most tests and thus prove themselves most fit, at least for the moment (because the future fate of a theory is as uncertain as the future fate of a species). This is not in principle different from the way organisms evolve, with the difference that the world three is in a sense virtual, when a theory is killed, and most ideas are repudiated, does not mean that the one who suggested it is killed as way, unlike the amoeba, but is free to come up with new suggestions. The evolutionary advent of humans meant that the world three was greatly enlarged by the introduction of language, or more precisely that language acquired in addition to the more primitive components such as expression and communication, shared by many animals, also added descriptive power and above all argumentative. Objects of the third world existed before, such as spiders webs and wasps nests, but those one can see as part of the phenotypes of those insects, products not so much of the thoughts of insects (which are generally considered to be deprived of them) ad their general instinctual behavior. The added components of language made world three to become virtual, but nevertheless with a strong influence on world one (just as undeniably exerted by webs and nests). Learning, according to Popper, is not so much a matter of Lamarckian instruction, but a matter of active engagement, as with Darwinian selection. One learns by making mistakes and modifying yourself accordingly. Popper also notes that Darwinism simulates Lamarckianism, and hence the latter can be seen as an approximation of the former, and in fact it makes it also understandable while it was initially proposed, because the natural world seems in fact to be instructed by mistakes in a very direct way.

Popper seems to take his three worlds more ontologically seriously than I had assumed. It is more than just a metaphor or a convenient figure of thought. He credits Plato with the discovery of the third world, but differs from him as to it divine origin and claims that it is too restrictive in its scope. The stoics, he recalls, took over the Platonic realm of forms and added to it, not only objects, such as numbers, but relations between them, such as expressed by theorems. Problems too were to be part of it as well. Hegel on the other hand failed to see the distinction between the second world and the third, and thus conflating them into the 'Spirit' to which he attributed a consciousness. In particular one should make a distinction between thought processes and thoughts, i.e. following Frege, the contents of thoughts. Only a thought that can be formulated, can be shared and criticized. It stands on its own and is independent of its creator. Many of us are struck

when reading things we have written some time ago. What we have written, although emerging from us, seem to be something alien, to be out there. We may even be impressed by what we have written, and this should not be confused with boasting, on the contrary being impressed by it adds to its strangeness, yes may even be a source for it. It is said that Haydn when he listened to one of his works (incidentally the chorus of his Creation) broke into tears and said that 'have not written this'. In particular a thought should not be judged by its thinker, but on its own merit. On the other hand we tend to imbue works of arts with their creators, so any rejection of them automatically become a rejection of the artists. One should be careful.

As works of art also belong to World Three they should share some aspects of scientific theories. Popper points out the problem. Art can also be seen as a solution to a problem, and in this respect he refers to the studies by his friend Gombrich. The humanists make a clear distinction of the humanities and the natural sciences. They are out to understand not merely to explain. Popper takes exception to this, and thinks that the distinction should be blurred. One may even understand nature on one end, and at the other end it might be very hard to understand your closest friend. He also warns against the mistaken view of the natural sciences held by many people, and he resents being labelled a positivist. He is in sympathy with Collingwood, whose idea of history is to identify problem and in particular to describe problem situations. This is very much in the spirit of natural science, and shows that the study of history could be scientific without being a superficial aping of the same - so called scientism. However, he diverges from Collingwood when it comes to the question of history as reconstructing thought. He believes that the thought that Collingwood wants to identify is too much contaminated by world two. Psychology should not be part of it. Collingwood too, is very disparaging of psychology, so it is not quite clear how far apart their positions really are. However, it is clear, that if a historian should be equal to his task, he must be in possession of a huge experience. In order to understand the thought of a politician you need to be somewhat of a politician yourself, in order to properly understand the history of mathematics, you definitely have to be a mathematician. To Collingwood history reveals its humanism through the sympathetic understanding of the human predicament and the stability of human nature. This sounds beautiful, but what about human nature in particular. In order to really understand the actions of a tyrant, do you need to harbor the same cruel tendencies in yourself? (This can be seen as a variation of the theme, to understand is to forgive; which may be turned on its head, and rephrased that in order to condemn you need to understand.)

One conclusion drawn from Newton's theory, although he did not endorse it himself, was the notion of physical determinism. That the universe is a closed system, and knowing all the particles and their velocities in one time one may compute all the future and past positions. Or more grimly, the universe is a perfect clock, once set in motion it follows a path inexorably, and we are just the inevitable consequences. There is no way to make decisions, only an illusion of this being the case. As such the theory is of course irrefutable, the one mystery is that we have been determined to believe in it, when we could as easily have by the same token led to believe a totally false theory. Now the vision is something of a night-mare, but of course this is also an illusion. The kind of experiments we can envision to show the absurdity are of course impossible. Still remnants of this

convictions reside with us, when taking a materialistic point of view. If we can make a perfect physical model of the brain, have we not also then made a perfect copy of the brain, involving its thoughts? There were considerations such as those that led Nietzsche to his doctrine of eternal recurrence, and Poincare to make an estimate of the time intervals involved. Now with modern quantum theory there is indeterminacy. In fact such ideas were introduced already in the late 19th century by Pierce, who was well acquainted with the problems of precise physical measurement. Hume had considered a weaker version of physical determinism by some talking of like causes have like effects, and that the only alternative to necessity is pure chance, an alternative at least as distasteful. Popper's solution is a modified Darwinism, based on trial and error. He rightly notes that the general formulation of Darwinism is a tautology, but this overlooks the implicit notion of memory. Evolution is not deterministic, nor is it a matter of chance. Selection is by necessity, and the result is an increase in the information (although of course this is not strictly true, there is no inevitable trend towards more and more complex organisms, although, the trend has certainly been so.) As always with Popper when he becomes more specific, he becomes less impressive. Anyway monism, in terms of materialism, is just a hypothesis, and there is nothing that prevents pluralism. In fact by in principle reducing everything to monism, one seals off fruitful areas of inquiry. The idea of man being a machine, that one can simulate intelligent and conscious behavior, is one thing, but he scoffs at the Turing test. By specifying a test, one does in effect specify a program how to simulate. It is like claiming that you can find any specific person, provided his precise whereabouts are given.

Finally Popper makes a big thing about Tarski's definition of truth as corresponding with the facts, thus rehabilitating a common sense notion which has been become somewhat muddled and suspect, through the formal invocation of a metalanguage in which one may talk about correspondence between statements of the object language and facts out there. The whole thing appears so simple that one wonders what is the point. Is it not just the case of saying the same thing twice? In order to appreciate it you need to be familiar with previous failed attempts. In other words you need to understand the problem of which it is the solution. Popper also points out that the Tarski definition does not give a criterion of truth, that one may very well, speak about truth without knowing when something is true or not.

February 23-26 , 2012