

Skepticism about knowledge is the philosophical position which holds that our claims to knowledge (at least, in the strict philosophical sense of necessary truths about the nature of reality) are ultimately misconceived. In particular, since the structure of our experience and state of our knowledge is largely a reflection of our particular, biologically-given cognitive structures, there is no guarantee that “mind-independent reality” will ever conform to the structure of our intelligence. Thus, like all other organisms, we are trapped within our epistemic boundaries. As a result, all our claims to knowledge ultimately break down to belief statements (reflecting the nature of our minds). As such, sceptics seriously doubt our ability to literally know the world’s “true” character. As such, they reject all our claims to knowledge, at least, in the strict philosophical sense (i.e. true justified beliefs). In fact, some sceptics go as far as doubting even the very existence of an external world.

Skepticism about knowledge (i.e. with the stringent demand for necessary truths about the nature of reality and impossibility of error) seems to be irrefutable (in my opinion). In fact, I am not aware of any convincing arguments that can refute even the skeptic’s more radical thesis that doubts the very existence of an external world. Although various sceptical arguments have been proposed to show how our world might be quite different from the way we believe it to be (i.e. that we are “brains in a vat”, we are “victims of an Evil Deceiver”, etc.), there also exists strong support for the skeptic’s arguments, in the cognitive sciences. To begin with, there is the “poverty of stimulus” argument (i.e. “torrential output” from “meagre” input), which claims, on empirical grounds, that:

Proximal stimulation typically contains ‘less information’ than the perceptual beliefs that it engenders (sensation underdetermines perception, to put this in an older vocabulary). (J. Fodor in *Why Should the Mind be Modular*, p. 3)

The implication here (a sound one, in my opinion), is that our biologically-determined properties of the mind/brain play a crucial role in determining what and how we perceive the “external” world, since the perceptual knowledge we attain vastly transcends any environmental input. Thus, like physical growth and development (i.e. humans are designed to grow arms and legs, not wings-to use one of N. Chomsky’s well-known examples), human development (including our systems of belief and knowledge) largely reflects our particular, biological endowment (i.e. a consequence of the organizing activity of the mind) and not the properties of our physical environment; consequently, there is no guarantee that any of our “knowledge” (including our mathematical and scientific knowledge) will conform to the “real” properties of the world. In fact, many biologists and cognitive psychologists go further in suggesting that,

There is no known process, either in biology or in cognition that literally amounts to learning in the traditional ‘instructive’ sense, that is, to a transfer of structure from the environment to the organism. (M. Piatetelli-Palmarini in *Cognition*, 31, 1989, p. 2)

Thus, environmental input may act only as a trigger to set off a rich and highly articulated system of beliefs that, to a large extent, is intrinsically determined, following a predetermined course (in the same way that oxygen and nutrition are required for cellular growth to take place). Thus, our various systems of knowledge and belief do not resemble the “real” properties of the world, in any sense of the word, any more than our physical organs reflect our environment. It then follows that,

Our knowledge...even in science and mathematics is not derived by induction, by applying reliable procedures, and so on; it is not grounded or based on ‘good reasons’ in any sense of these notions. Rather, it grows in the mind, on the basis of our biological nature, triggered by appropriate experience,

and in a limited way shaped by experience that settles options left open by the innate structure of mind (N. Chomsky in *Language and Problems of Knowledge*, p. 526).

So that,

If I had been differently constituted, with a different structure of mind-brain...I would come to know and follow different rules (or none) on the basis of the same experience, or I might have constructed different experience from the same physical events in my environment (N. Chomsky in *Knowledge of Language*, p.225).

In fact, one can point to many examples in the history of science, where it is clear, that selection of theories was largely undetermined by the experimental evidence; internal aesthetic criteria (i.e. beauty, simplicity, symmetry, etc.) often prevailed over empirical criteria in directing theory formulation:

Time after time, people have been able to construct remarkable explanatory theories on the basis of very limited evidence, often rejecting much of the available evidence on obscure intuitive grounds...we are led to inquire into the innate structures of mind that make this achievement possible (N. Chomsky in *Language and Unconscious knowledge*, p. 250)

Even evolutionary arguments that try to show that our innate cognitive structures would have to have a considerable degree of correspondence to external reality, (either because they are a product of natural law or for reasons of 'natural selection'), are not very compelling. For as N. Chomsky points out, there is no difficulty "in designing a device (say, programming a computer) that is a product of natural law, but that, given data, will arrive at any arbitrary absurd theory to 'explain' these data (N. Chomsky in *Language and Mind*, p.97).

Perhaps, some of the most compelling evidence for the sceptical argument comes from modern physics. In particular, modern quantum theory raises serious doubts as to whether, even our everyday notions of space-time and causality correspond to the structural elements of "independent" reality. In particular, many physicists have begun to question whether in fact, "external" reality can be mapped in any simple or direct fashion into the properties of our "mental universe". Thus, (as Kant, may have argued), we may be innately forced by our biologically-given mental structure to describe "empirical" reality (the subject-matter of physics proper) as it evolves in a space-time manifold, when in actual fact, "independent" reality may not evolve in a space-time manifold.

In the final analysis, even though the skeptic's claims cannot be refuted, I still believe that we can have a type of knowledge (or at least, a system beliefs-not knowledge about the real nature of things) that is useful for the organization of our experience and for the conduct of our lives:

This kind of knowledge is not that which previous dogmatic philosophers had sought, knowledge of the real nature of things. Rather it consists of information about appearances, and hypotheses and predictions about the connections of events and the future course of experience (RH Popkin in *The History of Skepticism from Erasmus to Descartes*, p. 133).

Basically, this approach is the one taken by the natural sciences.