Clin Ter 2010; 161 (3):?-?

TACT Glossary

Epistemology

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Abstract

This entry begins by presenting the origin, history and etymology of the term, as well as a short definition of epistemology as the discipline that deals with the nature, origin, validity and limits of knowledge. Then we focus on the classical platonic analysis of knowledge as truth justified belief. Against the backdrop of this platonic notion we present other relevant perspectives. It is essential to follow the history of the relation between origin and justification of knowledge until the contemporary separation of both problems. The study of the origin of knowledge seems to require a naturalized epistemology, while the problem of justification is usually approached from a philosophical point of view, whether coherentist, foundationalist or fallibilist. However, currently some authors are advocating for a full naturalized epistemology, while others are extending the philosophical point of view also to the genesis of knowledge. ***Clin Ter 2010; 161(3):?-?***

Key words: *epistemology, knowledge, justification, truth*

Epistemology

Epistemology, from the Greek, *episteme* y *logos*, concerns the philosophical or scientific study of knowledge. The introduction into English of the term *epistemology* is attributed to the Scottish philosopher James Frederick Ferrier (1808-1864). The semantic field of the term overlaps with others, like *theory of knowledge*, *gnoseology*, *philosophy of science* and *cognitive science*. In short, epistemology is the discipline that deals with the nature, origin, validity and limits of knowledge.

The classical analysis of knowledge is to be found in Plato's dialogue *Theaetetus*. He distinguishes three components of knowledge: belief, truth and justification. This analysis corresponds to our intuitive idea of knowledge. In the first place, nobody *knows* anything without believing it. Secondly, we would not say that there is knowledge in a belief, if the belief is not true. Nobody can *know* that the Earth is flat, because it is not. But even in the case of true belief, we would not say that knowledge exists if there is no justification. *Validity* of knowledge also depends on its justification, for, without it, the truth of a belief becomes mere chance. The Pythagoreans believed that the Earth was spherical, but they had no real justification for this belief, so they did not *know* that Earth was spherical. Aristotle also believed that it was spherical, but he also had the right arguments to justify his belief. Here are the three elements of knowledge. Each one is a necessary condition and the three together are sufficient condition for knowledge to exist[1].

Plato also left us, in his dialogue *The Republic* (Book 7, 514a.520a) the famous *The Myth of the Cave*, in which he expounds different aspects of knowledge. The object of genuine knowledge is Ideas. Regarding its *nature*, it is conceived as the participation of our beliefs in Ideas. As for *types* of knowledge, the most important distinction is between *episteme* (science) and *doxa* (mere opinion, belief without justification) (*Rep.* book 6, 509d–513e). Knowledge consists of a two-way journey, leaving the cave and returning to it, that is, rising from phenomena to Ideas and falling back to the phenomena. On the way up, knowledge is acquired, on the way down, that knowledge is applied to the explanation of phenomena. What is important is that Plato includes the questions of the origin and validity of knowledge in the same phase, the ascent. Origin and validity both depend on the correct method of ascent.

The Platonic analysis has marked the debate on epistemology and against the backdrop of its positions the other theories of epistemology can be identified. If for Plato the *nature* of knowledge is participation, for others it is the correspondence between belief and reality, the formal unification of mind and reality, the representation of reality through simplified models or ever the pure construction of reality. Where Plato recognizes Ideas as the *object* of knowledge, others have set the forms that are present in palpable reality

[1] In 1963, Edmund Gettier published some sophisticated counterexamples of cases which, though having belief, truth and justification, were doubtful regarded as knowledge ("Is Justified True Belief Knowledge?", Analysis, v. 23, available at www.ditext.com/gettier/gettier.html). The so-called "Gettier problem" consists in finding the condition which, together with the other three, would create sufficiency. Such authors as Goldman, Dretske and Nozick have questioned this point.

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(Aristotelism), and even individual entities (nominalism). Aristotle, for example, investigated the practical knowledge of contingency and change through his notion of *phronesis* (prudence). Although such knowledge is not actually *episteme*, it does merit serious consideration (*Ethics to Nicomacus*, Book VI), for it is not mere unjustified opinion, as it has some truth and validity. Where Plato states that genuine knowledge has a theoretical character – nowadays we should say propositional (*know that*) – other authors also accept *know-how* as knowledge worthy of epistemological study, and, in general, practical aspects of knowledge (pragmatism). If for Plato the *subject* of knowledge is the human being, for other thinkers, animals can also know. Aristotle even attributes a certain very elementary kind of *phronesis* to some animals and Popper attributes a non-conscious knowledge to plants. In recent years, computers and robots have been considered as subjects of knowledge (artificial intelligence).

But it is around the question of *truth* and *justification* that the most defining epistemological debates have arisen. We find a strong concept of truth as a correspondence, as a formal unit between the mind and reality. According to Aristotle's classical definition, taken up again in the 20th century by Tarski, truth is "to say of what is, that it is, or to say of what is not, that it is not" (*Meta*, 7, 1011 b 26-28). And opposed to this we find a great variety of weak notions of truth. Nietzsche's text *On Truth and Lying in a Non-Moral Sense* presents the repertory of weak versions of truth: coherentist, instrumentalist, conventionalist, relativist (truth relative to each individual, people, species or language), constructivist, idealist, truth as convenience or as a biological expedient for survival. In the extreme, scepticism denies our knowledge the capacity to attain truth, either because our knowledge is weak or owing to the non-existence of an independent and intelligible reality.

As for *justification*, the variety of epistemological standpoints is also great. For centuries, epistemology sought a reliable *method* of production and validation of knowledge, but at the beginning of the 20th century the two problems were clearly separated: the genesis of knowledge resides in the ascendant phase, while justification must be looked for in the descendant one. To understand this process and its consequences, we need to look briefly at history.

Plato's and Aristotle's ideas on knowledge, the latter having drawn up a theory of deductive and inductive methods (*Analytical*), formed the basis of medieval epistemology. Thomas Aquinas built a very elaborate realist theory of knowledge, on mainly Aristotelian lines. In the closing centuries of the Middle Ages, developments were more critical than constructive. In philosophers like Ockham, nominalist and probabilist tendencies arose. Modern philosophy has returned to constructive epistemological work. It seeks to find a method that produces knowledge and at the same time justifies it. Two main branches of early modern philosophy, Carthesian rationalism and Baconian empiricism, agree on this, although they propose different methods. For the empiricists, the origin of knowledge is in experience, which also provides justification. For rationalists, both origin and justification must be sought in innate or a priori ideas, in rational evidence. With Hume and Kant, criticism came to the fore again. The *limits* of knowledge came to the forefront of epistemological studies. According to Hume, the origin of all knowledge is experience, and the only method that allows us to go beyond experience, to the general law and prediction, is induction. But at the same time, he slams the inductive method as one of justification. The dilemma therefore arises of accepting either that our knowledge does not attain truth (scepticism) or that it can be true, but without rational justification (irrationalism).

Kant, in his *Critique of Pure Reason*, tackles Hume's dilemma. His aim is critical, to find the limits, but also constructive, to ensure knowledge *within* those limits. Euclid's geometry and Newton's physics would come within the sure limits of knowledge, but metaphysics would not. In fact, the validity of knowledge within the sure limits is decided by the activity of the subject. The subject establishes certain a priori structures, i.e., structures independent of experience that are a necessary precondition for it. Space and time are necessary conditions for perception, the object of which is a result of those structures. Space is investigated by geometry, time by arithmetic, so what these sciences really know are the subjects' a priori structures – not those of a given empirical subject but those of any possible cognitive subject. The same is true for the relations of causation on which physics is based. The *Critique of Pure Reason* set the bases and the agenda for all subsequent epistemology, almost to the present. It is understood that insistence on the subject's contribution would bring about idealist, subjectivist and even solipsist tendencies. Idealism maintains that the object of knowledge, rather than in a reality outside the subject, is in Ideas themselves. The reactions of empiricism to Kantian standpoints are also to be understood. This tradition immediately thought of isolating the subject's action in order to preserve objectivity. Post-Kantian empiricists like Herschel and Whewell proposed separating the two problems that had thus far been dealt with together: origin and justification. Thus, all of the subjective would be on the side of the production of knowledge (ascendant phase), while objectivity would be obtained from the empirical consequences of knowledge (descendant phase). Logical empiricists like Reichenbach and Carnap set it out in these terms: a distinction must be made between the context of discovery and the context of justification. No method is valid for both. Husserl expresses himself in a very similar way.

Contemporary epistemology thus distinguishes origin from justification. This has given rise to two ways of understanding epistemology: a scientific or naturalist one and a philosophical one. Scientific, or naturalist, epistemology deals with the genesis of knowledge. Naturalized epistemology, that is, epistemology developed according to the method of natural sciences, admits a great diversity of approaches. In recent decades, an evolutionist epistemology has developed, which explains the origin of knowledge thanks to the concepts of Darwin's theory of evolution. Studies have also appeared on the biological bases of knowledge, based on neurophysiological research. There are also epistemological studies made from psychology. Cognitive science, which brings in the contribution of linguistics, computer science, neurophysiology and philosophy, among other disciplines, has also undergone a major development. We could even consider the sociology of knowledge as naturalized epistemology.

Alongside these studies of a scientific character, there still exists a philosophical epistemology, which deals above

all with the truth, validity and justification of knowledge. Unlike scientific epistemology, it has a normative, evaluative or critical nature. The positions in this field are also very diverse. *Foundationalism* seeks justification for the whole edifice of knowledge through supposedly unquestionable basic principles, while *coherentism* understands that knowledge functions more like a network maintained by the support of nodes, or mutual tension between them. Recently there have been attempts to mediate between the two standpoints (Susan Haack's *foundherentism*). *Internalists* understand that the justification of knowledge has to be sought in the mental states of the subject, while *externalists* seek it in the way in which reality causes beliefs or in the *reliability* of the mechanisms whereby they are produced. Specifically in the field of the epistemology of science, there are those who defend the idea that the justification for theories takes place through their empirical verification (positivism), while for others only attempts at falsification offer any justification (Popper's falsificationism).

The coexistence of the two forms of epistemology does not occur without tension. Some thinkers advocate a radical naturalization of epistemology and, in their view, knowledge must be studied by science, like any other natural phenomenon. Philosophy would not contribute anything of importance. Opposed to this, some philosophers think that naturalized epistemology is irrelevant to normative questions. There is obviously a moderate point where both approaches can come together, a standpoint according to which philosophical epistemology is essential, for without it we lose sight of axiological, normative, evaluative and critical aspects. Indeed, even if scientific epistemology went as far as studying the procedures of justification, it would do so descriptively. Without a philosophical approach, the strong notions of truth and justification are lost and we drift into relativism. In return, we must recognize that epistemology cannot be treated as in Plato's time, without bearing in mind the valuable recent contributions of the different sciences. Examples of this moderate version of the naturalization of epistemology are to be found in such philosophers as Karl Popper, who used the advances in the theory of evolution and of neurophysiology in the elaboration of his epistemology. Furthermore, recent philosophical epistemology has extended its research also into the field of the production of knowledge. The American philosopher C. S. Peirce showed that this part of the cognitive process also has its own logic, which is neither algorithmic nor infallible but is rational. That logic follows the patterns of the so-called ampliative inferences, specifically of abduction. Both Peirce and Popper state that knowledge is always fallible. This position, which is sceptical regarding certainty but not regarding truth, is called *fallibilism*. It has historical precedents, like the socratic attitude of humility ("I only know that I know nothing") and the "docta ignorantia" of Nicholas of Kues. But it has recently undergone its greatest development, a profound change in the axiology of knowledge: the greatest epistemic value is not subjective certainty but objective truth.

Lastly, let us note that contemporary epistemology has also trodden the path of specialization of other disciplines regarding topics and approach. Today, then, we can find research concentrating on the epistemology of science, of mathematics, of computing, of morals, of religion, of art or even epistemologies with a social or feminist approach.

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