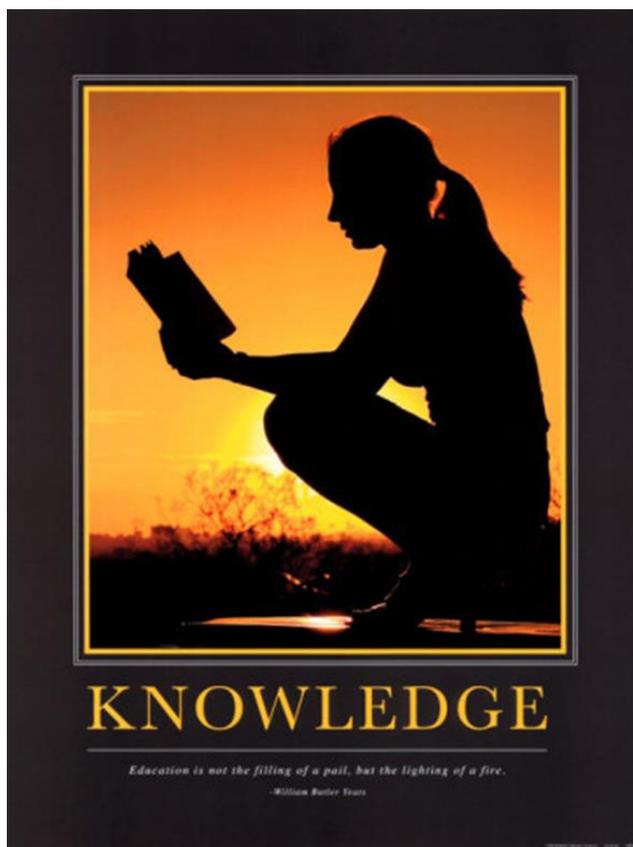


Classic Text 07 – Knowledge

Epistemology from the Greek ἐπιστήμη (epistēmē) meaning "knowledge or understanding" is that branch of philosophy which is concerned with the nature and scope of knowledge. Here we shall be concerned with propositional knowledge, (knowledge that...) as opposed to practical knowledge, (knowledge how.) However that presupposes that we can define "know-ledge." In the caption of the poster at right, for example, William Butler Yeats contradicts the once popular "mug and jug" model of education in which it is the function of teachers, the "jugs" was to pour out know-ledge into the receptive minds of pupils, the "mugs." Such a model has never seriously been entertained by philosophers, however for over two millennia Plato has been mistakenly credited as the originator of the theory of knowledge as "**justified, true, belief.**" (JTB) It is an eminently sensible idea because each of the three terms seemingly has to be simultaneously met for something to qualify as knowledge. Accordingly, for something to qualify as knowledge it must be:



*A Popular Poster of Knowledge: "Education is not the filling of a pail, but the lighting of a fire."
William Butler Yeats*

- **Believed** - Someone (or something) cannot know something that he, she or it does not believe. One cannot, for example, truthfully say: "I know X but I don't believe it."
- **True** - Similarly, one cannot know what is false. We might, for example, falsely believe Y but that does not mean that we have false knowledge of Y. It simply means that we are mistaken.
- **Justified** - Someone (or something) cannot be said to know something for which he, she or it has no justification in believing, even if it happens to be true. We might, for example, truly believe that the next roll of the die will be a six, but we cannot be said to have known that it was going to be a six all along, even if it turned out to be so, because then the confirmation of our belief will have been the product of a random outcome, not of reason or justification. Equally we must be self-conscious of our justifications for them to count towards knowledge so as to preclude unconscious whims or indoctrination as foundations for justification.

And there matters stood until a watershed publication by Edmund Gettier in 1963 pulled out the rug from under centuries of epistemological consensus. That paper serves as the following classic text: Recall that "IFF" stands for the bi-conditional "... if and only if..."

Let us suppose that Smith sees the entailment from (d) to (e), and accepts (e) on the grounds of (d), for which he has strong evidence. In this case, Smith is clearly justified in believing that (e) is true.

But imagine, further, that unknown to Smith, he himself, not Jones, will get the job. And, also, unknown to Smith, he himself has ten coins in his pocket. Proposition (e) is then true, though proposition (d), from which Smith inferred (e), is false. In our example, then, all of the following are true: (i) (e) is true, (ii) Smith believes that (e) is true, and (iii) Smith is justified in believing that (e) is true. But it is equally clear that Smith does not *know* that (e) is true; for (e) is true in virtue of the number of coins in Smith's pocket, while Smith does not know how many coins are in Smith's pocket, and bases his belief in (e) on a count of the coins in Jones's pocket, whom he falsely believes to be the man who will get the job.

CASE II

Let us suppose that Smith has strong evidence for the following proposition:

- f. Jones owns a Ford.

Smith's evidence might be that Jones has at all times in the past within Smith's memory owned a car, and always a Ford, and that Jones has just offered Smith a ride while driving a Ford. Let us imagine, now, that Smith has another friend, Brown, of whose whereabouts he is totally ignorant. Smith selects three place names quite at random and constructs the following three propositions:

- g. Either Jones owns a Ford, or Brown is in Boston.
- h. Either Jones owns a Ford, or Brown is in Barcelona.
- i. Either Jones owns a Ford, or Brown is in Brest-Litovsk.

Each of these propositions is entailed by (f). Imagine that Smith realizes the entailment of each of these propositions he has constructed by (f), and proceeds to accept (g), (h), and (i) on the basis of (f). Smith has correctly inferred (g), (h), and (i) from a proposition for which he has strong evidence. Smith is therefore completely justified in believing each of these three propositions, Smith, of course, has no idea where Brown is.

But imagine now that two further conditions hold. First Jones does *not* own a Ford, but is at present driving a rented car. And secondly, by the sheerest coincidence, and entirely unknown to Smith, the place mentioned in proposition (h) happens really to be the place where Brown is. If these two conditions hold, then Smith does *not* know that (h) is true, even though (i) (h) is true, (ii) Smith does believe that (h) is true, and (iii) Smith is justified in believing that (h) is true.

These two examples show that definition (a) does not state a *sufficient* condition for someone's knowing a given proposition. The same cases, with appropriate changes, will suffice to show that neither definition (b) nor definition (c) do so either.

Notes:

1. Plato seems to be considering some such definition at *Theaetetus* 201, and perhaps accepting one at *Meno* 98.
2. Roderick M. Chisholm, *Perceiving: A Philosophical Study* (Ithaca, New York: Cornell University Press, 1957), p. 16.
3. A. J. Ayer, *The Problem of Knowledge* (London: Macmillan, 1956), p. 34.

What Gettier has shown is that not all justified, true beliefs qualify as knowledge. He is not denying that “truth,” “justification” and “belief” are not necessary conditions for knowledge, only that together they are not sufficient; some other feature(s) must be outstanding. In the two examples of Smith and Jones and Smith’s friend Brown, circumstances have been contrived in such a way that Smith lacks a certain fragment of knowledge of what he believes, despite being justified in his belief, which, unbeknown to him, turns out to be true. What appears to be deliberately lacking in each of these examples is an appropriate mechanism by which Smith’s belief is caused to be true.



Edmund L. Gettier III (1927-) Professor Emeritus of Philosophy at the University of Massachusetts Amherst, Author of the Most Cited Paper in Philosophy.

Robert Nozick (1981) argued that the following conditions address the sorts of cases presented by Gettier and others. Accordingly,

- S knows that P IFF
- (i.) P is true
 - (ii.) S believes that P
 - (iii.) if P were false, S would not believe that P
 - (iv.) if P is true, S will believe that P.

Although Nozick’s conditions “track the truth” in such a way that knowledge results from beliefs that are true but that would not be believed if they were false, which is a prerequisite of knowledge, we would not consider situations in which Nozick’s criteria are met by chance or for inappropriate reasons to count as knowledge. Consider the following example:

Elmira Duff is leaning over a low wall, looking out across a field. In the distance she spots what look to her to be two bunnies. In fact, they are two very fat pigeons. Never the less, Elmira tells herself that there are bunnies in the field, however unseen by Elmira are two rabbits asleep in the field under the cool shade of the wall. Clearly Elmira doesn’t *know* that there are bunnies in the field, however she believes that there are and she is justified in her belief because the two fat pigeons look just like rabbits at a distance. What is more, it transpires that there *are* rabbits in the field, just not the ones she thinks she can see. So although Elmira is justified in her true belief, she has no real knowledge of rabbits in the field.

What disqualifies Elmira’s (and indeed Smith’s) justified, true belief as knowledge is that what they believe is true by chance or happenstance. In addition, Elmira’s claim to knowledge falls afoul of Nozick’s third criterion but then she would have believed that there were bunnies in the field irrespective of whether there *were* any because she is so besotted with them. However what normally governs the truth or falsity of a belief is an appropriate causal connection between the object(s) of our belief and the mechanism by which we acquire it. In the case of Elmira (and of Smith,) that connection does not obtain because Gettier examples are purposefully rigged that way, so as to draw our attention to the cracks in the traditional JTB theory of knowledge. If, as suggested

by Richard Kirkham, (1984) we amend Nozick's list of conditions such that the justification of a belief necessitates its truth then:

S knows that P IFF

- (i.) S believes P
- (ii.) P is true
- (iii.) S is justified in believing P
- (iv.) *iii.* necessitates *ii.*

In Elmira's case, the very fat pigeons did not necessitate that her belief P was true; instead her belief was rendered true quite by chance, by the gratuitous presence of the rabbits asleep under the shade of the wall. Had the fat pigeons been rabbits instead, we would have no hesitation in saying that Elmira *knew* that there were bunnies in the field because then *they* would have necessitated her belief.



Felícia (Elmyra Duff) by Liane Gabriela on Flickr

Although Kirkham's fourth condition appears to immunise knowledge claims against accidental or randomly true beliefs it may be a medicine too strong to swallow. Although we have not yet encountered modal logic in our critical reasoning studies, this is a fitting place to formally define "necessity." Using the modal operators " \square " for "it is necessary that..." and " \diamond " for "it is possible that..." then, necessity and possibility are reciprocally defined as:

$$\square p \equiv \sim \diamond \sim p \quad \text{and}$$

$$\diamond p \equiv \sim \square \sim p$$

Which read: "It is necessary that p if and only if it is not possible that not p ," above and "It is possible that p if and only if it is not necessary that not p ," below. So by requiring that our justification in believing P necessitates the truth of P is logically equivalent to requiring that our justification in believing P requires that is not possible that P could be false. Therefore according to Kirkham all knowledge must be infallible. However, then most of the knowledge claims we make in ordinary life would be simply mistaken because there is almost always some possibility, however remote, that our justification for believing something, that we claim to know, might under some condition, turn out to be false. Because we are not gods, there are precious few beliefs for which we are infallibly justified, such as: "I exist" or "Someone is thinking" or "There is not nothing" and the like.

Most of us would probably want to occupy a position somewhat more robust than that of Nozick's but less than infallible, however as the following variant on the Elmira's example suggests, such a position may be untenable:

Suppose the two very fat pigeons are replaced by two rabbits hidden behind a screen, in front of which a hologram of the rabbits is projected. Now Elmira's belief that there are bunnies in the field is both true, justified and necessitated by the very rabbits in the field being filmed behind the screen and projected as a hologram before it.

Even so we would be disinclined to credit Elmira with knowledge of bunnies in the field because even though the real rabbits did cause her to believe that they were in the field, the proximate cause of her belief is was hologram of a pair of rabbits, not the rabbits themselves. So clearly (*iv.*) above must be amended or tweaked in some way so that (*iii.*) must necessitate (*ii.*) in an appropriate and / or proximate manner. So should we disallow all intermediary causal mechanisms? If we threw away the screen and gave Elmira a set of binoculars instead, we would have no hesitation crediting her with knowledge of bunnies in the field, even though she came to that belief via a different sort of intermediary causal mechanism. As to *appropriate* mechanisms, such a qualification only recasts the question as the necessary and sufficient conditions on the causal appropriateness of justification, which precedes the question of knowledge. (See the regression problem of justification below.)

Alvin Goldman, in the 1960's, suggested that we should allow that beliefs are justified when they are caused by some highly reliable process; one that that yields a sufficiently high ratio of true to false beliefs. Such a position has come to be known as **reliabilism**. Unfortunately reliabilism itself is susceptible to Gettier type counter examples, such as the following by Carl Ginet, which first appeared in Goldman, 1976:

Henry is driving through the countryside when he sees a number of buildings that resemble barns. Based on his perception, he concludes that the structures he has just seen are barns. Although Henry has seen one barn and based his perception of the other structures resembling barns on his reliable vision, all the other structures are, in fact, barn façades. Strictly speaking Henry doesn't *know* that he has seen a barn, despite the fact that that *has* seen one and that his belief that he has is based upon a reliable process, since he only acquired his true belief by chance, when he could just as well have seen only barn façades.

The difference between Gettier's examples and that of Ginet is that Smith's justified true beliefs are based on faulty inference, while Henry's are based on a reliable inference. However we should not be so hasty to reject reliabilism based solely on the strength of one contrived Gettier type counter-example. In everyday life we do have some degree of control over the reliability of the means by which we acquire beliefs, whereas in Gettier type examples they rigged to emerge by chance. In the experimental situation, at the other extreme, we are ideally in control of all potentially relevant variables so that just one or two experimental variables can be isolated. Moreover we are free to calibrate our instruments to be as reliable as we deem fit or at least to be as reliable as they can be.

Although we recognise today that we require more than just reliable processes to generate knowledge, we would be rightly sceptical of claims to knowledge that are based on processes that are demonstrably unreliable or that are all but impossible to replicate, except by chance. In that sense, reliabilism is not wrong, so much as just one piece of a larger epistemic puzzle.

The regress problem of justification

To justify a belief we must appeal to a further justified belief, which in turn must be supported by yet another justified belief and so on to infinity. Unless there are some fundamental beliefs that require no further justification, all beliefs are justified by an infinite regress of potential justification terminating nowhere, in which case we are never *ultimately* justified in believing anything. So either we must be resigned to Socrates' pronouncement that, "The only true wisdom is knowing that you know nothing," or we must seek out some sure foundation on which to ground our knowledge.

Unlike other infinite regress, the infinitesimal calculus relies on infinite series to calculate tangents to a curve, areas under graphs, maxima minima, and other geometric and analytic problems. Although today we replace infinitesimals by limits, using the ordinary real number system, we are still using a potentially infinite series of calculations that converge on one or more solutions, where a limit exists. In at least one area of knowledge then, we have tamed infinity. However the following theories of justification attempt to escape rather than embrace the regress problem.

Foundationalism is the theory that there are certain "foundations" or "basic beliefs" which require no justification either because they are self-evident, infallible or because they are true by definition. However what may have been self-evident in the past, such as the belief that the Sun circles the Earth or that maggots are produced by a process of spontaneous generation, have proven manifestly false since. Similarly, while the evidence of our senses may be indubitable to ourselves, they may be disputed by others. The risk then, is that our "foundations" or "basic beliefs" may prove arbitrary and hence unjustified.

Foundationalism hadn't been invented in Descartes' time but in many ways he might be regarded as a model foundationalist. His acknowledgement of the fallibility of our senses, together with his method of systematic doubting took us to the very bedrock of what anyone can indubitably claim to know: "I think, I am." Unfortunately without recourse to a benevolent and omniscient God, Descartes could not rebuild the edifice of knowledge that his systematic doubting had undermined.

Coherentism is the theory that individual beliefs are justified to the degree that they cohere (or fit together) with an existing system of beliefs. Although such a system avoids the problem of infinite regress, coherence alone cannot differentiate between a belief system that is coherent but false from one that corresponds to reality. Moreover coherent beliefs reinforce those by which they are justified in the first place, leading to a circular chain of justification, devoid of any corrective mechanism. In the same way, circular arguments are inherently invalid, yielding no new information.

Foundherentism, first expounded by Sue Haack (1993) is a theory of justification that combines elements of foundationalism and coherentism in a manner that seeks to address the potential arbitrariness of the former as well as the circularity of the latter, while avoiding the problem of infinite regress. According to Haack, it is possible to include the relevance of experience for the justification of empirical beliefs, while allowing for pervasive mutual dependence among beliefs.

Haack's central analogy is that of a crossword puzzle with multiple intersecting columns and rows supporting one another. On this analogy the clues are analogous to a person's experiential evidence, with the already completed, intersecting entries analogous to his or her reasons for a belief. Thus, instead of reasons assuming the form of single, potentially infinite, line of reasoning, on the

crossword analogy they consist of multiple lines mutually supporting one another. While this is an excellent analogy for a crossword that is partially complete, the first few crucial entries would require something like foundational or basic beliefs for a completed crossword to be more than just self-consistent. So is foundherentism then just another variety of foundationalism? Well, unless we are alone and engaged in systematic doubting, the process of generating knowledge does not take place in an epistemic vacuum.

Karin Knorr-Cetina (1999 p. 1) has argued that **epistemic cultures** consist of an “amalgam of arrangements and mechanisms - bonded through affinity, necessity and

historical coincidence - which in a given field, make up how we know what we know." Thus although there are different ways of conducting research or generating knowledge that work within their own conceptual framework, these diverse

epistemic cultures become linked in a social knowledge network that is consistent with foundherentism. What epistemic cultures however are not is relativistic!



*Susan Haack (1945 -) in 2005
Philosopher of Logic and Science and
Professor of Philosophy and Law at the
University of Miami*

Relativism is the doctrine that there are no absolute truths; that truth is always relative to some particular frame of reference, such as a language or a culture. And because truth is *the* one indisputable determinant on knowledge, a relativistic conception of truth cannot result in knowledge worthy of that name. If the Themba and Gerda both claim to know that there is a different species of bird nesting in the trunk of an old tree, they cannot, out of political correctness or racial or cultural sensitivity both be right. Themba cannot truthfully say to Gerda, “I know that there is a bird of species S over there but I respect that you know that it is a bird of a different species according to your culture.” The fact of the matter is that either Temba *knows* which bird species is in the trunk or Gerda does or they are both mistaken.

Unfortunately when relativism asserts itself in the name of political correctness knowledge suffers. So although there is an ethical duty on philosophers to be sensitive and considerate, they have an equal duty not allow truth or knowledge to be sacrificed.

Perspectivism by contrast, first developed by Friedrich Nietzsche, recognises that one person’s knowledge is inevitably partial and limited by the perspective from which it is viewed. People always adopt perspectives defined by their circumstances, whether they are aware of them or not; these may be cultural, linguistic, political, educational and so on. Thus any subject must be view and analysed from multiple perspectives from which a judgment of truth or value can be made. This does not however imply that all such perspectives are of equal value or that they are relative. Nietzsche, for example, was at great pains to dispel the creeping nihilism of his day; a perspective on which truth and value are by definition void. Perspectivism then, if it is to be properly applied leads to a broader understanding of a subject, whereas relativism simply gives up on objectivity.

What Plato actually thought about knowledge

We began this study unit with the JTB theory of knowledge that has been misattributed to Plato. In the *Theaetetus*, written in 360 B.C or thereabouts, one of his middle to later dialogues, Plato via his mouthpiece Socrates, converses with Theaetetus, a youth and Theodorus, his mathematics teacher. They cover wide variety of issues including the Socratic Dialectic, Heraclitean Flux, Protagorean Relativism, rhetorical versus philosophical life, and false judgment. What is of interest to us is his single most sustained discussion on the concept of knowledge. The dialogue examines in turn, four contemporary theories of knowledge: knowledge as arts and sciences, knowledge as perception, knowledge as true judgment and knowledge as true judgment with *logos* (an account,) finding with each something wanting. Unlike most of the Socratic dialogues, the *Theaetetus* ends inconclusively, suggesting that Plato had not (by then) resolved the question of knowledge to his satisfaction. However the lesson, according to Socrates, has been to rid Theaetetus (and presumably we the audience) of several false beliefs so that “if ever in the future [he] should attempt to conceive or should succeed in conceiving other theories, they will be better ones as the result of this enquiry.” (Plato’s *Theaetetus* - *The Internet Encyclopaedia of Philosophy*) The entire text of the *Theaetetus*, in English translation, is available for download for free from our website at: http://philosophy.org.za/uploads_other/Theaetetus.pdf



Theaetetus (c. 415 - 369 B.C.)
renowned Athenian geometer, credited
with the theory of irrational lines as
well as for the constructions of regular
solids such as those in Euclid’s
Elements

Whether Plato thought that a satisfactory theory of knowledge was just around the corner, we shall never know, however he would surely be astonished to learn that almost two thousand four hundred years later, we feel we are only just closing in on one.

Task

If you have been working through these study units systematically you would by now have completed the equivalent of approximately one semester of introduction to Philosophy, at which point you would normally be examined. A Philosophy exam at undergraduate level usually last three hours, during which you will have to answer three essay questions from among five (or more) choices. That is roughly one hour per essay. Unlike most of the essays you will have been required to write before, trawling through a checklist of facts, however well organised, will not earn you marks in a Philosophy exam. Instead, you will be credited for your ability to examine a topic fairly from all sides, through a sustained and logical process of argumentation in such a way that premises lead to conclusions, which then serve as the basis of subsequent arguments. Remember to be aware of any assumptions that you might make and to ask yourself if they are warranted. If necessary, spell them out. Failing to write clearly, waffling or introducing irrelevant material will cost you marks, while failing to engage with the question, intellectual dishonesty and being dogmatic will result in a failing grade.

Fortunately, most students of Philosophy have elected to pursue their course of study and so are well motivated to do well. So if you are ready, here is a typical first year level exam question which you may want to answer for practice.

Discuss and evaluate the theory of knowledge as justified, true, belief by way of examples.

Do not type up your answer as this will only slow you down. Give yourself one hour but remember to allocate time for planning. A poorly structured essay is likely to reflect poorly organized reasoning.

Feedback

It is well-nigh impossible to objectively assess the quality of one's own work. Ideally you should ask someone with some experience in marking analytic Philosophy manuscripts to take a look at your essay. Any university department of Philosophy should be able to put you in touch with one of their tutors, who, if they are not overwhelmed with their own workload, will be happy to oblige.

Alternatively, if you and a friend or colleague have been working through the same study units, you can simply mark each other's essay. Remember that you are marking an introductory level essay not a Master's dissertation, so hold your friend or colleague to the same standard of excellence that would deem appropriate for yourself.

Begin by reading the essay before you in its entirety, noting in the margin where a relevant argument has been set out coherently and followed through logically. Also highlight any incoherent or confused reasoning along the way as well as any relevant factual errors. Next assign the essay you are marking to one of three broad bands: The middle band (50 - 65%) is for essays that display an average level of understanding of the material examined. The upper band (66 - 99%) is for essays that display an above average to exemplary and penetrating insight into the material examined. The lower band (0 - 49%) is reserved for those that reveal that the author has understood less than half of the material examined or who has ignored instructions, such as failing to provide examples in this case. 50% is the pass mark at all South African universities.

Now use your judgement to place the essay either higher or lower within one of these bands. Better structured, coherent and more rigorously argued essays should occupy a higher position while those that ramble or deal with the material indirectly or only partially should be moved down. Often students feel that the marking process may be subjective or biased, however experienced markers of Philosophy essays easily come to within 5% of each other when grading the same text blind (*i.e.* when they do not know what mark their colleagues have assigned.) Moreover, in a real examination an external examiner (from another university) is usually appointed to moderate the marking process.

Finally assign a mark and equally important, justify, in writing, why you assigned the mark that you did by way of feedback. If however, you feel that grading a friend or colleague's work is presumptuous at this stage then just point out where you thought they were clear, consistent and logical and where they were less so.

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