Metaphysics & Epistemology

Definitions of knowledge

Propositional knowledge or *knowing-that*

There are various kinds of knowledge.

- First of all, we have *propositional knowledge*, or *knowing-that*. This is the kind of knowledge that we ascribe to someone when we say ‘X knows that …’.

For example:

I know that I teach at the university.

I know that Warsaw is the capital of Poland.

etc.

We also ascribe that kind to someone when we say ‘X knows whether …’ or ‘X knows why …’.

E.g. if someone knows whether p, what they know is either that p or that not-p.

Knowing-how and *knowledge by acquaintance*

- Another kind of knowledge is *knowing-how*. This is the kind of knowledge that we ascribe to someone when we say ‘X knows how to …’.

For example:

I know how to swim

I know how to solve simple equations

I know how to come to the university by car.

Knowing-how is an ability.

- A third kind of knowledge is *knowledge by acquaintance*. This is the kind of knowledge that we ascribe to someone when we say that they know a person or a place.

E.g. I know my mother, and I also know Athens.

Other kinds of knowledge

There are other kinds of knowledge, such as *knowledge of a language*, but they seem to consist in combinations of pieces of knowledge of the kinds we discussed.

E.g. in knowing English, I know that ‘bird’ is a word for a certain kind of animals, and I also know how to write in English.

One interesting question is to what extent knowing-how and knowledge by acquaintance involve propositional knowledge.

E.g. if someone knows how to come to the university by car, do they need to know that road so-and-so leads there?

In the following, **we shall deal with propositional knowledge only**.

Classical definition

There is a definition of propositional knowledge that we can call ‘classical’ because it has existed, in several variants, since the time of Plato and has been presupposed by many philosophers. According to that definition, X knows that p iff the following three conditions are satisfied:

- (i) X believes that p,
- (ii) it is true that p, and
- (iii) X’s belief that p is justified.

- The variant of the definition that we find in Plato’s Meno is that true belief («ἀληθὴς δόξα») turns into knowledge when it is secured with an explanation («αἰτίας λογισμῷ»). Condition (ii) is needed because if we believe that p, but it is not true that p, then we have no knowledge, we do not know that p; we just think that p.

Classical definition

- Why is condition (iii) needed?
- Let's say, for example, that yesterday the football team that George supports played a match that it was very difficult to win. George was not able to learn anything about what happened, but just because of his fanatical love for the team, he believes it won. Let's further say that, unexpectedly, the team won. Then George's belief is true but does not amount to knowledge. He does not know if his team won.
- Another example: Let's say that Peter, who writes the weather forecast for television, got drunk and lost the data on which he would base the forecast. So he decides to toss a coin. If it comes tails, he will foretell rain. If it comes heads, he will foretell a fine weather. By tossing the coin many times, he writes a complete forecast. In his drunkenness, he believes it himself. Let's also say that, by coincidence, the forecast will later turn out to be true. Peter's belief does not amount to knowledge. He doesn't know how the weather will be. George's belief, as well as Peter's, is not justified; it is arbitrary.

Classical definition

- When someone has a justified (or warranted) belief, then she possesses some reasons, or more generally some factors, which support the belief and render it justified.
- Those factors sometimes consist in arguments. Yet they frequently have a different form. The justified beliefs we have about our immediate environment usually rely not on arguments, but on our perceptual experiences.
- Our beliefs about what we did in the past are usually justified by our memories. Our beliefs about what we are thinking and how we are feeling result from introspection and are justified by that mental faculty.
- It can happen that two people believe the same proposition, but the belief of one of them is justified while the belief of the other is unjustified.

Classical definition

Someone might want to replace condition (i) in the definition with

- (i') X believes with certainty that p.

But the definition will not be accurate if we make that replacement.

- First, being certain is a subjective state in which one can be, even for arbitrary and irrational beliefs; so it doesn’t seem to be closely related to knowledge.
- Moreover, let’s take e.g. a pupil who is answering multiple-choice questions. His answers are right and are never random; he has studied reliable books, remembers their content well, and answers accordingly. He himself believes the answers he is giving, but, since he has a low self-confidence, he is not certain. Then it seems excessive to deny that he knows the answers.

Classical definition

Again, someone might want to replace condition (iii) in the definition with

- (iii') X's belief that p is justified by factors that leave no room for doubting whether really p.
- The idea here is that, irrespective of whether X herself feels certain, the reasons or other factors on which she bases her belief leave no room for doubt and so give her the right to be certain. (In other words, irrespective of whether she is certain that p, it is certain that p, given the evidence she possesses.)
- But the problem is that, in many cases in which it seems that someone knows something, condition (iii') is not satisfied. E.g. Mary believes, on the basis of her memories, that yesterday she ate meat. Her memory functions properly, and yesterday she ate meat indeed. Then it seems excessive to deny that Mary knows that she ate meat. Yet memory, even when it functions properly, is sometimes wrong and so always leaves some room (at least a little room) for doubt. Indeed, it seems that we possess no cognitive mechanism that leaves no room for doubt (we are not gods).

Scepticism (again)

- One argument against scepticism is that when the sceptic talks about knowledge, he does not use the word ‘know’ in its ordinary sense. For, if a sentence of the form ‘X knows that p’ is to be true as the sceptic means the word ‘knows’, condition (iii') must be met. But if the sceptic does not use words such as ‘know’ and ‘knowledge’ in their usual sense but in a special, philosophical sense, then his claims of the form ‘We do not know …’ are not as interesting as one would think.
- It can be argued that Descartes, although he is not a genuine sceptic, often (though not always) uses words such as ‘know’ and ‘knowledge’ in such a sense that if a sentence of the form ‘X knows that p’ is to be true, condition (iii') must be met.

Gettier

- In 1963, E. Gettier published a short paper in which he showed that the classical definition of knowledge is incorrect. In some cases, conditions (i)–(iii) are satisfied, but there is no knowledge.
- (a) Smith and Jones have both applied for a job in a company. Smith is justified in believing that Jones is the man who will get the job. E.g. he was confidentially told so by the chairman of the company, who is a reliable source and Smith knows that. He is also justified in believing that there are ten coins in Jones's pockets. E.g. he searched Jones's pockets himself. Thus he concludes that *there are ten coins in the pockets of the man who will get the job*. Smith hasn't realized that there are also some coins, ten in fact, in his own pockets. Also, it is he who will get the job in the end.

Gettier

- Let’s put the sentence ‘There are ten coins in the pockets of the man who will get the job’ as p. Then conditions (i)–(iii) are satisfied.
- Yet, if we think about the case, we shall intuitively see that Smith does not know that p. He does not know how many coins there are in the pockets of the man who will get the job. For the sentence ‘There are ten coins in the pockets of the man who will get the job’ is made true by the fact that there are ten coins in Smith’s pockets and the fact that Smith is the man who will get the job. But Smith has no idea of those facts. He forms his belief on the basis of two other beliefs, of which the one (that Jones is the man who will get the job) is justified but false.
- So it is a pure coincidence that he forms a true view about how many coins there are in the pockets of the man who will get the job.

Gettier

- (b) Smith and Jones are colleagues, and Smith is justified in believing that Jones owns a Ford. E.g. lately he has repeatedly seen Jones driving a Ford, and he remembers that Jones always owned a car, and a Ford at that. Of course, Smith knows that Jones is a colleague of his. Thus he concludes that *a colleague owns a Ford*. But, for the time being, Jones does not own any car; he has borrowed the car he drives. Yet it so happens that another colleague, Brown, owns a Ford. He has kept it secret, and so no one suspects that Brown has a car.

Gettier

- Smith believes that a colleague of his, owns a Ford. His belief is justified and true. Yet, intuitively, it does not amount to knowledge. Smith does not know if any colleague of his, owns a Ford. For the proposition that someone does is made true by the fact that Brown owns a Ford and the fact that Brown is a colleague of his. But Smith has no idea about the former fact. He forms his belief on the basis of two other beliefs, of which the one (that Jones owns a Ford) is false.
- So it is a matter of chance that he forms a true opinion about whether any colleague of his owns a Ford.

Gettier

- Many philosophers tried to tackle the Gettier-style examples by adding a fourth condition to the classical definition. Various suggestions were made about what should be the fourth condition.
- (a) Some added the following condition:

(iv) X does not base his belief that p on beliefs of which at least one is false.

- (iv) excludes the Gettier-style examples, but presents other problems.
- First, one often bases a belief on various arguments. It seems excessive to consider that whenever even one premise in those arguments is false, the belief does not constitute knowledge. E.g. a historian may rely on many remarks to support her judgement that Alexander the Great had great strategic abilities. If one of the many remarks is false, but the judgement would constitute knowledge if it were based only on the others, we can accept that now, too, it constitutes knowledge. Hence, (iv) is not a necessary condition.

Gettier

- Moreover, it has been argued (Morton, p. 118) that, in some cases, terms (i)–(iv) are all met, but we have no knowledge.
- A scientist finds out that a new medicine, M, cures cancer in mice, rats, squirrels, guinea-pigs and other rodents. So she concludes that the medicine is effective in all rodents, hence also in beavers (which she has not examined). Further, let's suppose that the medicine is indeed effective in all rodents, but in the case of beavers it acts with an entirely different mechanism than it does in all other species. Then, if we put the sentence 'M cures cancer in beavers' as p, terms (i)–(iv) are met; this presupposes that when we are justified in believing some propositions, and from them we draw a conclusion through an inductive inference of a usual kind and believe the conclusion, then this belief of ours is also justified (the scientist inductively draws the conclusion that the medicine cures cancer in all rodents). Yet some consider that the scientist does not know whether the medicine cures cancer in beavers; her belief is not knowledge, since it is a coincidence that her reasoning led to truth in the case of beavers. Hence, (i)-(iv) are not sufficient conditions.

Gettier

- (b) Other philosophers (such as Goldman) added the condition:

(iv') the fact that p brings about X's belief that p.

- So we arrive at a causal theory of knowledge. That theory, excludes the Gettier-style examples, but finds it difficult to explain our mathematical knowledge, the knowledge we have about the future, and knowledge of universal truths. E.g. we know that there are infinitely many prime numbers, but there is no causal connection between numbers and us.
- Again, we sometimes know something about the future. If e.g. there are many signs that it is going to rain, and because of those signs we believe it will rain, and in the end it actually rains, we can say that we knew it would rain. But it is difficult to accept that future facts bring about present beliefs. Finally, we know that all people are mortal. But our relevant belief is not due to the fact that all people are mortal. It is due to observations of particular people which were made in the past.

Gettier

- (c) The commonest view about what should be added to the classical definition adds the following condition:

(iv'') it is not a matter of chance or coincidence that X has a true belief about whether it is the case that p.

- Defining propositional knowledge on the basis of conditions (i)–(iii) and (iv'') excludes the Gettier-style examples. A lingering concern is that it might also exclude some cases in which we have knowledge. E.g. in the example with the dictator, which we shall see later on, at least to me it is not intuitively clear that X does not know that the dictator was killed.

Nozick

- Some philosophers tried to tackle the Gettier-style examples not by adding a fourth condition, but by replacing the third. Robert Nozick proposed the following definition of propositional knowledge: X knows that p iff:

- (1) X believes that p,
- (2) it is true that p,
- (3) if it were not the case that p, X would not believe that p, and
- (4) if it were the case that p, but things were not exactly as they are in fact, then X would again believe that p.

- Clauses (3) and (4) are counterfactual conditionals. Nozick condenses clauses (3) and (4) by saying that X's belief that p, tracks the truth that p.

Nozick

- Many philosophers consider that counterfactual conditionals tell us what is going in various possible worlds.
- They consider that a counterfactual conditional, ‘If it were the case that A, it would be the case that B’, says what is going on in possible worlds in which it is the case that A, but does not say that, in every possible world in which it is the case that A, it is also the case that B. It says only that, among the possible worlds in which it is the case that A, those which are most *similar* to the actual world are worlds in which it is the case that B.
- Here is an example by D. Lewis. The conditional ‘If kangaroos had no tail, they would topple over’ is true. But it is not true that kangaroos topple over in every possible world in which they have no tail.

Nozick

- For there are possible worlds (very different from the actual one) in which kangaroos are intelligent beings and have no tail, but go about on crutches and so do not topple over. What is true is that, among the possible worlds in which kangaroos have no tail, those which are most similar to the actual one are worlds in which they topple over.
- Nozick, too, accepts that analysis of counterfactual conditionals.
- Condition (3) is satisfied provided that, among the possible worlds in which it is not the case that p, those most similar to the actual one are worlds in which X does not believe (lacks the belief) that p.
- Condition (4) is satisfied provided that, among the possible worlds in which it is the case that p but things are not exactly as they are in fact, those most similar to the actual one are worlds in which X believes that p.

Nozick

- Nozick uses condition (3) to tackle Gettier-style cases.
- E.g., in the example with the Ford, (3) is not satisfied. For if no colleague of Smith's owned any Ford, Smith would still believe, on the basis of the same reasons as now make him believe so, that a colleague of his owned a Ford. Among the possible worlds in which no colleague of Smith's has any Ford of their own, those most similar to the actual one are worlds in which Jones has borrowed a Ford and Smith ends up with the same conclusion as he ends up with in reality.
- Condition (3) is also not satisfied in the cases that initially led us to introduce condition (iii), namely, in cases such as George's and Peter's.

Nozick

- Why does Nozick include (4) in the definition?
- Let's imagine that, in a country, the dictator gets killed. In their first edition the newspapers mention the fact, but right afterwards they contradict it. The inhabitants of the country, except for X, either believe the contradiction or do not know what to believe. X reads the first edition, but because of a series of coincidences does not hear the contradiction. Thus he believes that the dictator was killed. But he could very easily have heard the contradiction and believed it. (The particular example is due to G. Harman.)
- Conditions (1)–(3) are met. Nozick, as well as several other philosophers, has the intuition that X's belief does not constitute knowledge. Their more general intuition is that a belief does not constitute knowledge if the subject could very easily have a false belief instead of it.

Nozick

- The idea is that, in order to constitute knowledge, a belief must be somewhat secure; its existence should not depend on coincidences.
- Now, condition (4) is not met. The conditional ‘If the dictator had been killed, but things were not exactly as they are in fact, X would believe that the dictator was killed’ is not true. For X might have heard the contradiction and so not have believed that the dictator was killed. In other words (to use the analysis of counterfactual conditionals which Nozick accepts), among the possible worlds in which the dictator was killed but things are not exactly as they are in fact, those most similar to the actual world (that is, the world we imagine as actual) include worlds in which X hears the contradiction and so does not believe that the dictator was killed.

How Nozick tackles some sceptical arguments

- Let’s take the argument of brains in a vat. According to Nozick, the sceptic is partly right. You do not actually know that you are not brains in a vat. For condition (3) is not satisfied. Putting the sentence ‘You are not brains in a vat’ as p, (3) becomes: if you were such brains, you would not believe that you are not brains in a vat’. This is why it is not satisfied: If you were such brains, you might very well be controlled by scientists implanting in you just the same experiences as you have in fact, and so you might very well believe that you were not brains in a vat. Among the possible worlds in which you are brains in a vat, those most similar to the actual one are, or at least include, worlds in which you believe that you are not brains in a vat.

How Nozick tackles some sceptical arguments

- On the other hand, according to Nozick, you know that you are sitting (as well as that you are wearing clothes, that you have arms, etc.).
- For conditions (1)–(4) are all satisfied. In particular, if you were not sitting, you would not believe that you are sitting. Among the possible worlds in which you are not sitting, those most similar to the actual one do not include worlds in which you are brains in a vat; they are worlds in which you are standing (because e.g. the chairs are dirty), but your cognitive mechanisms function properly and so you realize whether you are sitting or not. Likewise, if you were sitting, but things were not exactly as they are in the actual world, you would believe that you are sitting.
- Nozick treats the argument of hallucinations and illusions, as well as the argument of dreaming, accordingly. So he rejects the principle [Kap & Ka(p → q)] → Kaq.

How Nozick tackles some sceptical arguments

- When Nozick's views were published, a discussion began about the extent to which they can be considered to be a satisfactory answer to scepticism.
- In order not to misinterpret Nozick, we should recognize that he is not trying to convince the sceptic. At various points, his reasoning presupposes views about the actual world which the sceptic would find doubtful.
- E.g. he presupposes that, in the actual world, you are not brains in a vat. His aim is different. He assumes that we largely know what we think we know. And he wants, in the context of that assumption, to show where the sceptical reasoning goes wrong.
- In his view, it goes wrong in presupposing the principle [Kap & Ka(p → q)] → Kaq.