Knowledge is the Same Thing as Justified True Belief

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1. INTRODUCTION

It's a bit of a cliché that philosophy never makes any progress. All western philosophy is just "a series of footnotes to Plato", as A. N. Whitehead said. But this cliché is, fortunately, false. Consider the ancient question: *What is knowledge?*, for example. Unlike Plato, who was unable to find an answer that satisfied him (see the *Theaetetus*, for example) we now have a pretty good account. That account, in brief, is that knowledge is the same thing as justified true belief.

To give him his due, we should acknowledge that Plato did bring us quite some way toward this account. Plato taught that all knowledge is true belief, and also that knowledge is a bit *more* that mere true belief. After all, people arrive at beliefs in all kinds of ways, some of them very shabby, such as wishful thinking. Suppose Alex's financial situation is desperate, and this causes him to believe he's going to win the lottery. Occasionally, such a person does win the lottery, so that Alex's belief may turn out to be true. But we don't say in such cases that Alex *knew* he was going to win. There is unfortunately no correlation between financial need and lottery winning, so that the truth of his belief was pure luck. Forming true beliefs by wishful thinking is like throwing a dart at a board with one's eyes closed, and happening to hit the bull's-eye. Knowledge requires more control, more sound methodology, than that. You have to form the true belief in the right way, using good cognitive skills, in something like the way that a good darts player uses skill to hit the target.

What then is the difference between knowledge and mere true belief? The short answer is that knowledge is true belief *plus justification*, so that a person knows that *A* just in case they *justifiably* believe that *A*, and *A* is true. (These are called the 'JTB conditions', standing for *J*ustified *T*rue *B*elief.) There is of course a huge difference between naming something and knowing what it is. So there is little value in using the term "justified belief" without offering a clear account of it. This we shall presently do, but first it will be useful to say what is meant by *belief* and *true*.

2. BELIEF

A belief, as philosophers use the term, is something that you take to be the case, i.e. something that, according to you, is true. Thus, if you take it to be the case that water is H_2O then you *believe* that water is H_2O. If Mars has two moons, according to you, then you believe that Mars has two moons. Note that some beliefs are sure,

or certain. If you're absolutely certain that the world is round, then you believe that the world is round.

You may notice that this use of 'believe' is somewhat different from the common usage. A person may say "Do you have evidence for that, or is it just a belief?" which suggests that beliefs are always rather flimsy or poorly founded. Another may say "I have beliefs", meaning that they have *religious* beliefs, or perhaps some other kind of identity-defining metaphysical beliefs. But philosophers use the word much more generally, talking about common-sense beliefs (e.g. most tables have four legs), scientific beliefs (e.g. life on earth began about 3.7 billion years ago), moral beliefs (e.g. it's wrong to tell lies) and religious beliefs (e.g. God is love). Some beliefs are firm and unwavering, others are tentative and easily dropped. Some beliefs are based on solid evidence (i.e. justified) and others are silly and irrational.

The fact that beliefs vary in their degree of firmness or certainty gives rise to the notion of *probability*, or more precisely, *subjective probability*. We say that the degree to which Alice believes that she will get hired is Alice's subjective probability that she will be hired. If she is certain that she'll be hired, then her subjective probability of being hired is 1. If however she's certain that she won't be hired, then her subjective probability for being hired is 0. In between, of course, are varying degrees of certainty. If her probability is 0.95, for example, then she's pretty sure she'll be hired but not totally convinced.

3. TRUE BELIEF

It's a commonplace that some beliefs are true, and others false. It's true, for example, that the world is round, and false that horses lay eggs. It's also uncontroversial that, on the whole at least, true beliefs are good and false beliefs are bad. Beliefs are *supposed* to be true. A false belief is thereby faulty in *some* way, even if it has redeeming qualities, such as making one feel better.

A true belief is one that agrees with reality, or the facts. What's this relation of agreement, or correspondence? What are "facts"? These are matters of dispute. It's easier to understand the idea that your belief may correspond to (or agree with) mine, on some particular question. This will occur if, for example, we both believe that smoking causes cancer. You might say we have the *same* belief on this issue, but that can't literally be true. You have your belief and I have mine. Your belief is a state of your mind, and my belief is a state of my mind. Your belief might wither while mine held firm, so they are clearly not (literally) one and the same belief. But our beliefs are in agreement.

The idea of beliefs corresponding to reality, or with the facts, is rather more problematic since reality is not a belief, or collection of beliefs. Reality is just there, independently of any thoughts about it. We thus seem to have agreement between two

very different kinds of entity, which is puzzling. But we will not pursue this problem here.

To believe *A* is the same as to believe that *A* is true. This seems trivial, perhaps, but indicates that the truth has a kind of *authority*. We might say that truth, when known, has the authority to compel belief. If one believes that *A* is true, then one must also believe that *A*. We might even describe this as an *ultimate* authority, since it cannot be defeated by other considerations. If, for example, one believes that *A* is true, but also that leading scientists deny *A*, then one must still believe that *A*. The authority of the scientists, however eminent, is trumped by the authority of truth. The truth thus acts like a kind of ultimate *expert*, with infallible opinions. The truth also seems to have an opinion about every possible topic, as is evidenced by the accepted fact that every belief is either true or false.

4. JUSTIFIED BELIEF

The notion of justification is tricky, and (it must be admitted) not yet fully clear. To gain an understanding of it, let us begin by considering some of the clearest cases of justified belief.

Consider a math teacher who poses this simple problem to the class.

> A certain man has a stingy boss, and is earning a very poor wage. He demands a raise, and does receive an increase of $1 per hour, but isn't satisfied with this for long. He soon finds a new job which pays double even the increased wage at his old job. He's happy that he's now earning $7 per hour more than at first. What was his original wage?

The teacher is aware that some of the students, being unable to solve the problem, will simply guess the answer. And some of those will guess rightly! So the teacher insists that students must *show their working*. The correct answer, $5, will not be accepted without an argument showing it to be correct.

One student may write "Let the original wage be *x* dollars. Then the increased wage is *x*+1, and the new job's wage is $2(x+1)$, i.e. $2x + 2$. We are told that this equals *x*+7. Hence $2x + 2 = x + 7$, so that $2x = x + 5$, and thus $x = 5$. The original wage was $5." The teacher accepts this reasoning, taking it as good evidence that the student *knows* the answer, and hasn't merely guessed it. The student's belief seems to be well founded, having been formed by a sound cognitive process. We say that the student's belief is justified.

The student's reasoning actually does more than justify the answer in this case, since it also leads the student *to* the answer. This is a nice feature, but isn't actually needed for justification. For consider a second student whose reasoning is as follows. "The original wage must be $5. For then his increased wage will be $6, and the new job pays double this, i.e. $12. This is $7 more than the original $5, as required." The teacher may not be happy with this, since there is no indication how the answer $5 was

discovered. (Perhaps a lucky guess, or through trying different values until one worked.) But there's no doubt that the second student is every bit as *justified* as the first. The second student is right to be perfectly certain that her answer is correct, and you can't be more justified than that. Justification is matter of being rightfully sure that the belief is true. The means of justification might have nothing to do with where the thought first came from. The important matter is how that thought became a belief.

In the case where the second student first *guessed* the answer $5, before verifying it with the reasoning above, one might be tempted to say that the belief was formed by guesswork, which would make it unjustified. This view would be mistaken, however, since at the time when the student has guessed $5, and is checking it, the student doesn't *believe* that the answer is $5. That belief doesn't form until after the solution is verified. Prior to verification, the proposition: "the original wage was $5" is merely conjectured, or imagined, or something like that.

In a nutshell, we can say that a justified belief is one that the thinker has a right to hold. The thinker has been duly diligent in forming the belief, conformed to the epistemic norms they know of, or "done their epistemic duty".

5. ASSURANCE OF JUSTIFICATION

The teacher will likely judge that both these students know that the answer is $5. Their beliefs are justified, as well as true. But this is based only on what they have written, since the teacher cannot read their minds. It's possible, then, that the first student wrote her words without being sure if they were right. She might have said to herself, "I *think* this is right, but I've made mistakes before so I could be wrong again". If this is what happened then we might hesitate to say that her belief was justified. Things are not quite as rosy and wholesome as they could be, *vis-à-vis* justification. In ideal cases of justification, at least, there should be what we might call "assurance" of justification, such as a feeling of solidity, that convince the subject that they have it right. Good reasoning feels smooth, clean, safe ("clear and distinct" as Descartes put it) whereas bad reasoning feels woolly, messy, or insecure. If the student lacks this assurance, or hasn't yet learned to read them reliably, then their justification isn't as good as it could be. Part of becoming a good reasoner is learning what good reasoning feels like.

6. OTHER COGNITIVE PROCESSES

In the math example above, the belief is formed by a process of reasoning. No sense organ is particularly involved, as a blind or deaf person could obtain the answer as easily as anyone else. Good reasoning is one type of cognitive process that may assist in the formation of a justified belief, but isn't the only one of course. Common sense tells us that we won't gain much knowledge of the world just by thinking. We have to use our eyes, eyes, noses, etc.

to find out what is actually happening. (While philosophers are famous for conducting their investigations in an armchair, rather than a laboratory, we do recognise the need for sensory input.) In other words, processes of *perception* are also crucial in the formation of most justified beliefs. A third kind of cognitive process is *memory*. Typically, a justified belief is formed by these processes (perception, reasoning and memory) working together.

7. JUSTIFICATION AND TRUTH

In a math problem such as the one above, it is possible to be fully and properly convinced that one's answer is correct. In such cases one is justified to the highest possible degree, so that one's belief *must* be true. In short, a fully justified belief is always a true belief. (Note that the converse doesn't hold, as a true belief may not be justified at all, much less fully justified.) It's a sad reality that, outside of mathematics, such fully-justified beliefs are rather rare however.

In empirical science, by contrast, one comes up with stories that seem to be pretty good explanations of the observed data. Sometimes one can't even conceive of an alternative explanation that would be anywhere near as good. A good example of this is the theory that the earth is an (approximate) sphere. This belief perfectly explains a host of data that seem to have no other conceivable explanation. So we're pretty sure it's true, and rightly

so. Even in such an extreme case, however, it's possible that there is a superior alternative explanation that we simply are unable to conceive of. (Remember that I said this was *possible*, not *likely*.) Consider, for example, the way Newtonian mechanics eventually gave way to the bizarre and unexpected relativity theory and quantum mechanics. So perhaps we aren't *fully* justified in believing that the world is round. In general scientific beliefs, while highly justified in many cases, are not fully justified. We ought to admit at least the possibility that they are false.

In other words, while full justification entails truth, *less than full justification does not entail truth*. Some beliefs that are highly justified at one time later prove to be false. Suppose for example that I, as a probability theorist, buy a BC Lotto 6/49 ticket (just for the heck of it). I am very sure that I will not win, as the odds of winning are about 1 in 14 million. My belief that I won't win is thus highly justified, but not quite *fully* justified. After all, I might actually win, in which case my highly justified belief will be false.

"Hey, you never know!" So says the B.C. Lottery Corporation. But are they right? In the more likely case where I don't win the lottery, and hence have a true belief, can't I be said to *know* that I won't win? What do you think?

If you agree with the Lottery, then it seems that you have *infallibilist* intuitions. An infallibilist is someone who thinks that

for a belief to be knowledge it must be fully justified, and hence infallibly true. One can rule out all possibility of falsehood.

On the whole, however, epistemology has turned its back on infallibilism. It's an important historical position, espoused by Descartes and others, but we're all fallibilists now. In other words, we now think that you can know something, even if you're not certain that it's true. All that's required are the JTB conditions, that the (strong) belief be (highly) justified and true.

This turn toward fallibilism may be surprising, and perhaps seem mistaken, so let me explain it. The reason, in short, is that if knowledge must be infallible then we have very little of it. Very much less, in fact, than we usually take ourselves to have. Think of Bill Unruh, for example, in the UBC Physics Department. I'd say he knows a heck of a lot about cosmology. Yet if knowledge must be infallible, then it turns out that Unruh knows nothing about cosmology! Not even a single belief of his about cosmology will count as knowledge, under that definition. This suggests that the infallibilists are using the word 'knowledge' rather too strictly. What, are we gods? Their sense seems inappropriate applied to *human* knowledge.

8. JUSTIFICATION AND AUTHORITY

It was noted above that the truth has a kind of authority. It is even, we said, the highest authority where belief is concerned. Justified

belief also has authority, though its authority is rather lower than that of truth.

Suppose you know that your doctor believes you have a stomach ulcer. She told you so. She believes this fairly strongly, and with pretty high justification, though she can't be certain. Does knowing this oblige you also to believe (to a similar degree) that you have a stomach ulcer? In most cases it will, I think. You will say to yourself, "She knows a lot more about this stuff than I do, and she's trained to draw justified conclusions on these matters. So the information that persuades her ought to persuade me too, if I knew it". So you believe, on her authority, that you have a stomach ulcer.

The authority of justified belief is rather fragile, however. Suppose you have concealed some of your symptoms from the doctor, so that you have relevant data that she lacks. Also, you've done some internet research on stomach ulcers, and your symptoms don't quite seem to fit. You might then not accept the doctor's opinion, on her authority. Nevertheless, despite this fragility, a vast amount of our knowledge is justified on the basis of authority. Almost all of our scientific knowledge is of this kind, even if we are ourselves leading scientists. (These days there's so much science being done that no single person can check the validity of it all. One must instead trust one's colleagues.) Also we rely on journalists and other writers, who themselves rely on eye witnesses of events.

The authority of justification is trumped by the authority of truth. If you know that Unruh justifiably believes that the universe has a beginning, but also know, somehow, that it is false that the universe has a beginning, then you must believe that the universe has no beginning.

9. CONCLUSION

While the exact character of justified belief hasn't been made fully clear, we philosophers have established that knowledge is justified, true belief. Moreover, the degree of justification need not be maximal, although it must be rather high. There is such a thing as uncertain knowledge; indeed, almost all of our knowledge is of this kind.

Justified belief is proper, correct belief. One's belief is justified if one's degree of belief is the right one to have under the circumstances. One then believes, in other words, in proportion to the strength of the evidence.