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Skepticism and Knowledge: A Defense of Skepticism

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Abstract

This paper suggests modifications to the Justified True Belief definition of knowledge that resolve problems raised by Gettier. The definition offered in this paper also rules out the possibility of human knowledge. These conclusions are supported by arguments using information from the fields of perception, cognitive science, physics, and philosophy. It is also argued that resistance to skepticism is motivated by a fear of relativism and the loss of socially accepted means of legitimation. Reasons are given for why these fears are unwarranted.

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Prelude An Awareness of (W)holes or Lack Thereof

I'm not referring to pits or aggregates, but to metaphorical (w)holes. Holes in wholes. Holes in frameworks and arguments. Gaps in reasoning that are not real gaps. Failures in speaking or writing or thinking that set off subjective alarm bells. Although 'alarm bells' is certainly too loud a phrase. These alarm bells may be no more than subtle neuronal noumena experienced as a slight discomfort. A discomfort that can be dispelled by the simple choice of different words or a 'better' turn of phrase. While at the same time (or soon enough for us to say so) the discomfort is displaced by a feeling of satisfaction and the thought – "The problem is solved." It is then that a proper skepticism is overwhelmed, the temptation surrendered to and the belief, 'I know' entertained, even, perhaps, accompanied with mild excitement.

Skepticism and Knowledge

Within the field of epistemology, otherwise known as the theory of knowledge, two main questions are: (1) What is knowledge? and (2) Is knowledge possible? I point this out because it seems to me that the two questions are often treated as one. The first question has led to definitions of knowledge as well as to differentiating kinds of knowledge. The second question has led to exploring potential sources of knowledge, the processes of attaining knowledge, and obstacles to attaining knowledge. In this paper I will defend a modified version of the justified, true belief definition of knowledge, (JTB) and claim that human abilities are insufficient to attain such knowledge. I further suggest that recognizing our limitations is important and that claims to knowledge can be dangerous.

The question, what is knowledge? is hotly contested among philosophers. Nevertheless, philosophers have differentiated between different kinds of knowledge and most discourse within the field is about a certain kind of human knowledge called propositional knowledge or knowledge that P, where P can be replaced by any sentence that asserts a proposition. Trying to determine what this kind of knowledge is while ignoring the broader question about what

characterizes all kinds of knowledge, e.g., knowledge of how, and even say, cat or dog knowledge may not be a great idea, but that's the way it has been. In any case, I will begin by exploring significant issues surrounding the concept of human propositional knowledge. Other kinds of knowledge will be briefly touched upon. Much of epistemology, especially that part dealing with the first question tends to be primarily philosophical in style, by which I mean that it is based primarily on intuitions discovered by subjective introspection that can and often do differ among philosophers and among the general public and on linguistic analysis rather than on scientific style explorations. My own orientation, as will become obvious, is towards a more scientific epistemology. Thus, it seems appropriate for me to begin by using what Hilary Kornblith has to say in his text, *Scientific Epistemology: an introduction*.¹ My purpose in using this material is to undermine beliefs in knowledge, to lay the ground for an acceptance of a modified JTB definition which I am suggesting should be adopted, and which as I argue, rules out human knowledge.

Kornblith begins his book by comparing a theory of knowledge with a theory of motion. He says that "we need to begin by explaining what a theory of knowledge is and why we need one."² He says, "other disciplines don't face this problem." There is no problem, he claims, "in explaining what a theory of motion is and why we need one." To support this claim, he mentions the laws of motion and various reasons why we might want to know about these, including so that we might be able to predict an earth/meteor collision. He further claims, that this is true of scientific theories generally but that "philosophical theories are different, and there seem to be no such obvious answers to the questions about what a theory of knowledge might be or why we might need one." He suggests that we might look at why philosophers thought they needed one and gives as their main reason "the threat of skepticism", skepticism being "the view that we know nothing at all." Kornblith goes on to say, "We want a theory of knowledge because we want to be able to explain, in the face of skeptical arguments, how knowledge is actually possible. A theory of knowledge would provide us with an account of what knowledge is, and

¹ Kornblith, Hilary. *Scientific Epistemology: An Introduction*. Oxford University Press. Kindle Edition.

² All quotes in this paragraph are Ibid. p. 1-2.

this, in turn, would allow us to respond to the threat of skepticism.” This strikes me as a somewhat curious argument. If we don’t have prior reasons to develop a theory of knowledge, why would we worry about skepticism. It seems clear to me that we care about theories of knowledge independent of skepticism because they attempt to provide a basis for separating the true from the false. To be clear, historically, theories of knowledge are not initially developed as a response to skepticism, skepticism is attacked because it is a threat to our theories of knowledge. Once this dynamic begins, the development of both theories of knowledge and skepticism develop in response to each other.

In any case, it is worth noting that there is a significant difference in the kind of scientific theory of motion mentioned by Kornblith and much of what the theory of knowledge is about. Much of the theory of knowledge attempts to answer the question, “What is knowledge?” On the other hand, the theory of motion as described by Kornblith assumes we know what motion is. According to Wikipedia, “In physics, motion is when an object changes its position with respect to time, motion is described in terms of displacement, distance, velocity, acceleration, speed and frame of reference to an observer, measuring the change in position of the body relative to that frame with a change in time.”³ You won’t find many physicists disagreeing with this definition of motion. In fact, I believe that you will find that most physicists would just express frustration with any discussion about what motion is. They are primarily interested in measuring and predicting it. To the contrary, philosophers are fully engaged with discussions of what knowledge is. The following quotations excerpted from Wikipedia gives a taste of this.

“Definitions of knowledge try to determine the essential characteristics of knowledge.”⁴

“One definition that many philosophers consider to be standard, and that has been discussed since ancient Greek philosophy is justified, true belief (JTB). This implies that knowledge is a mental state and that it is not possible to know something false.”⁵

³ <https://en.wikipedia.org/wiki/Motion>

⁴ https://en.wikipedia.org/wiki/Definitions_of_knowledge

⁵ Ibid.

“The justified-true-belief definition of knowledge came under severe criticism in the second half of the 20th century, mainly due to a series of counterexamples given by Edmund Gettier.”⁶

Gettier gives the JTB (justified, true, belief) definition of knowledge as follows:⁷

- (a) S knows that P IFF (i.e., if and only if)
 - (i) P is true,
 - (ii) S believes that P, and
 - (iii) S is justified in believing that P.

He also adds the following remarks, “I shall begin by noting two points. First, in that sense of “justified” in which S’s being justified in believing P is a necessary condition of S’s knowing that P, it is possible for a person to be justified in believing a proposition that is in fact false.

Secondly, for any proposition P, if S is justified in believing P, and P entails Q, and S deduces Q from P and accepts Q as a result of this deduction, then S is justified in believing Q.”⁸

Gettier’s first example goes as follows:

“Suppose that Smith and Jones have applied for a certain job. And suppose that Smith has strong evidence for the following conjunctive proposition: (d) Jones is the man who will get the job, and Jones has ten coins in his pocket. Smith’s evidence for (d) might be that the president of the company assured him that Jones would in the end be selected, and that he, Smith, had counted the coins in Jones’s pocket ten minutes ago. Proposition (d) entails: (e) The man who will get the job has ten coins in his pocket. 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

⁶ Ibid.

⁷ Gettier, Edmund, *Is Justified True Belief Knowledge*, Analysis. vol. 23 (p. 966).

⁸ Ibid.

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.”⁹

I agree that the JTB definition of knowledge, as stated is problematic, but this is not because it is wrong. Rather, it is because it depends on three contested terms, ‘true’, ‘belief’ and ‘justified’. My defense of the JTB definition will proceed partly by clarifying these terms. The Gettier problem arises (and would not arise otherwise) because of his (and other,s continued acceptance of a particular interpretation of ‘justified’. As he points out himself his counter examples depend on a weak interpretation of this term. What this opens the door to, of course, is that to be justified (according to Gettier) one need not have achieved certainty. It means that to be justified you only need to have some good evidence for your belief. Worse, Gettier, while taking advantage of a poorly stated definition, further muddies the waters by proceeding without himself giving or even suggesting any standard for what might constitute good evidence. His argument depends solely upon his readers’ acceptance of the provided evidence, and it doesn’t really take much effort to find reasons to doubt Smith’s conclusion. For example, we might ask why Smith’s boss is informing him that Jones is getting the job. He might be testing how Smith reacts to the disappointment of hearing that he isn’t getting it, or Jones might not want or accept the Job.

The JTB definition of knowledge goes back at least as far as Plato. In his dialogue, *Meno*, Plato points out that if someone “knows the way ... he will be a good and capable guide”¹⁰ but so will another person who only “has a correct opinion on the points on which the other has

⁹ Ibid.

¹⁰ The Collected Dialogues of Plato, Ed. Edith Hamilton and Huntington Cairns, Bollingen Series LXXI, Princeton University Press, *Meno*, 97 – 98a.

knowledge.”¹¹ He concludes, “Therefore true opinion is as good a guide as knowledge for the purpose of acting rightly.”¹² So, what is the difference between true opinion and knowledge? According to Socrates, “True opinions are a fine thing ... as long as they stay in their place, but they will not stay long. They run away from a man’s mind; so, they are not worth much until you tether them by working out the reason. Once they are tied down, they become knowledge.”¹³

Contrary to the way Gettier interprets it, for most of the history of Western Philosophy the word ‘knowledge’ has been used to distinguish between mere opinion and beliefs that are certain, therefore, to say that you know P was to give a guarantee that what you were asserting was true, which further implies that you have indefeasible evidence. Kant used the term this way as did Descartes. So, how did philosophy (or at least many philosophers) come to the point at which being justified in holding a belief means merely supported by evidence that makes the belief reasonable or probable or, for example, as in the case of the Gettier style, barn problem¹⁴, known on the basis of evidence that under the circumstances, leaves the belief mathematically improbable, even though it is based on what some claim to be a typically reliable source, i.e., visual perception. The answer to this question is, in some ways, advances in the theory of knowledge leading to skeptical arguments that left philosophers convinced that in many, if not most, cases certainty was unattainable. Especially unsettling were arguments that undermined the possibility of knowledge in normative realms such as ethics and esthetics.

Whereas I will be arguing for a strengthening of the JTB criterion of justification and arguing that doing so will rule out the possibility of knowledge, Kornblith accepts a weak sense of justification and proceeds by trying to convince us that the existence of knowledge is obvious. I, on the other hand, will be trying to convince the reader that Kornblith’s obvious knowledge is no such thing. Immediately after saying that “Skepticism is the view that we know nothing at

¹¹ Ibid.

¹² Ibid.

¹³ Ibid.

¹⁴ A person sees what looks like a barn and believes that it is a barn. It happens that the person is looking at a real barn. But since this is the only real barn in a neighborhood rife with fake barns the probability of what he sees being a real barn is extremely low.

all.”¹⁵ he goes on to express his opinion that skepticism is most likely false since, in fact, we seem to know quite a bit contrary to various skeptical arguments that seem to prove otherwise. He points out that these arguments appear to be both sound and valid and that this is a problem. If we do in fact have knowledge “as common sense would have it”¹⁶ then there must be something wrong with the arguments. “And the first thing we will need, it seems, if we are to successfully respond to any such argument is an account of what knowledge is.”¹⁷ However, although you might now expect such an account, it is not forthcoming; what Kornblith turns to is a review of skeptical arguments.

Before looking at this review it should be pointed out that the fact that skeptical arguments fly in the face of common sense should not be seen as a particularly useful argument against skepticism. After all, much of our commonsense view of the world runs contrary to the views that careful analysis yields and that, at least, give better predictions, e.g. folk physics, versus Newtonian mechanics, relativity theory and quantum field theory.

The first argument that he presents us with is the argument from Illusion. He runs through a description of his current situation. He says, “I have no doubt whatsoever that I am in my office, rather than, say, at home. I have no doubt that there are books in front of me, and the various other objects which form the tools of my trade: my desk, my telephone. . . . I know that I am in my office; that there are books, and a desk, and a telephone, and a computer, and a coffee cup all within arm’s reach. Nothing could be plainer than this. I can just see these things. To put the point somewhat pedantically, I am currently having certain sensory experiences on the basis of which I believe a host of things about where I am and what is in front of me. If I didn’t have these sensory experiences, if I didn’t, in particular, have the visual experiences I’m currently having, I wouldn’t have these beliefs about my environment. It is my visual experience which provides my basis for believing what I do about my immediate surroundings. More than this, my visual experience provides me with exceptionally good reason to believe as I do. This is not a

¹⁵ Kornblith, Hilary. *Scientific Epistemology: An Introduction*. Oxford University Press. Kindle Edition. p. 3.

¹⁶ Ibid.

¹⁷ Ibid.

matter of wishful thinking or hasty generalization or some failure to consider relevant evidence. My visual experience provides all the evidence I need for believing as I do. It is on the basis of my visual experience that I may be credited with knowledge of the various features of my office. This isn't anything momentous, but it is knowledge nonetheless."¹⁸

But is it really knowledge? Knowing that P, in this case, means knowing something about the world, i.e., whatever it is about the world that P is referring to. Kornblith is here glossing over everything that is complex in his situation, e.g. the necessarily idiosyncratic nature of the concepts captured in the way he states his beliefs, the relationship of these concepts to his perceptions, and the nature of the relationship between his perceptions and a 'real world' that we hypothesize to explain our perceptual experience. This paper will be addressing the implications of much of this complexity.

What these complex relationships mean (as I hope the rest of this paper makes plausible) is that knowing is impossible. No experience by a human, on which any proposition must be based, is ever going to be 'known' to be an experience of a 'real world' exactly as it is, independent of human interaction with it. Further, I will show that it is at least implausible to think that if there is such a 'real world' that our experience whether verbalized in propositions or not is 'true'. And, as everyone agrees, you can't know something that isn't true.

Kornblith mentions, a very different skeptical argument against what he is claiming to be knowledge than what I have suggested. The problem he chooses (and that he will contest) is that he could be having the very same visual experiences that he is having while being somewhere else in an entirely different situation; he could be on drugs and be having a hallucination without realizing it or he could be dreaming. And there is no way to tell that he is not dreaming. Any evidence could just as well be part of the dream or the hallucination. And if he can't know that he is not dreaming then he can't know that he is currently in his office and if he can't know that, then there is no way he can know anything. But, as I hope to show, the

¹⁸ Ibid

reasons for skepticism are both more systematic and more complex. It is possible that all that Kornblith lays out as “knowledge nonetheless” is faulty and that we fail to recognize this because we are designed to perceive a superficial, false reality as the true reality.

In his attempt to disparage skepticism, Kornblith, goes on to suggest that you might not think that skepticism is such a bad conclusion, that life can go on much as before, that you might have to stop saying “I know.”, but that you have just as much reason to believe what you believe as before. However, he denies this claiming instead, for example, that you would have no better reason not to step off the sidewalk into the path of an approaching bus than to step in front of the bus.

This last point by Kornblith is fatuous (at least I think so). Suppose that I am either dreaming or hallucinating all the time. In that case there still appear to be regularities within my hallucinations and/or dreams and bad things happen to me while in those states due apparently to causes that would still behoove me to avoid. If my life has been nothing but a dream, I have had some really bad dreams, e.g., of cutting off the ends of my fingers in a sawmill accident, of getting the measles and nearly dying, etc., that resulted in lengthy suffering (even if only dream suffering) but that were mitigated by taking apparently appropriate actions like taking medicines and getting hand surgery. Dreaming or not, I’m going to be motivated to take dream actions that seem to mitigate my suffering. If on the other hand, there are actually times when I am awake and not hallucinating and it’s just that I can’t be sure which is which then I’m going to bet on the fact that I’m awake or that I’m not hallucinating and not step in front of that bus.

Kornblith, rather than addressing why the skeptical argument he offers is faulty, next explores how we might convince a skeptic that he/she is wrong. He points out that to do so by argument it would be necessary to begin by finding some premises that the believer in knowledge and the skeptic could agree on. But the skeptic claims he knows nothing so, Kornblith says, there are no premises that the skeptic will agree to. He has no beliefs, from which to begin and further he will accept no inferences as legitimate. This final characterization of the skeptic as having no

beliefs is unwarranted, rather the skeptic has no beliefs he believes to be certain. In any case, Kornblith's conclusion is that there is no way to convince a skeptic and that there is therefore no reason to make the attempt. "That exercise is a losing game. It has been rigged..."¹⁹ But, says Kornblith, this says nothing about the possibility of knowledge. What needs to be done is to show how knowledge is possible. My question is, show whom; who is Kornblith's audience? This seems like just a psychological ploy so that we are led to dismiss the skeptic. Are epistemologists then just to preach to the choir?

Kornblith goes on to say that the key to how knowledge is possible is reflective belief as opposed to those beliefs we have taken on without reflection which are fraught with the possibility of error; to quote, "Reflective belief acquisition is not only required if we are to be responsible about our cognitive lives, reflective, belief acquisition holds the key to explaining how knowledge is possible."²⁰ He points out that one line of skeptical argument involves reference to the way we commonly adopt beliefs. It is obvious that many of our beliefs are absorbed from our parents and other adults when we are children. We may unreflectively adopt religious beliefs of the particular culture we happen to be born into. We may adopt beliefs based on the testimony of authorities of dubious reliability while unaware of their sources of bias. We may have simply adopted naïve beliefs about the way the world works based on lived experience, e.g. beliefs that physical objects are colored or that heavy objects fall faster than light ones. (I taught high school mathematics and physics for many years and, typically, a large percentage of my students had Aristotelian beliefs about how objects fall.)

Kornblith writes, "Just driving to work and walking across campus involves my forming an extraordinary number of beliefs as a result of the operation of my perceptual faculties even, as is typically the case when my attention is focused somewhere else. The vast amount of my belief formation is unreflective. It just occurs within me without requiring my supervision, and I am not unusual in this respect."²¹

¹⁹ Ibid p. 13

²⁰ Ibid p. 17

²¹ Ibid p. 14

He continues, “We do however stop at times to reflect on our beliefs.... I not only reflect on beliefs I already have. I sometimes reflect on beliefs²² in order to figure out what belief I should take on.”²³

The skeptical tradition, Kornblith reiterates, paints a disastrous picture of how we form our beliefs. This is how Descartes proceeds, for example, in his meditations. But if this is the problem Kornblith says “then the solution seems straightforward ... the solution is to take our belief acquisition in hand, to be the masters of our fate, and to form our beliefs reflectively.”²⁴

I have two main criticisms of these points about reflective versus non-reflective belief acquisition. The first concerns his statement about forming beliefs “just driving to work and walking across campus ... as a result of the operation of my perceptual faculties.” I think this is a naive conception of how beliefs are formed. In any case, Kornblith gives no evidence for it. I don’t think it is necessary to form any beliefs (at least as beliefs are normally defined) in order to navigate while driving or walking. Most of the time, similarly to other animals, we just respond appropriately to the environment as we perceive it to be. While doing so we don’t take the time or expend the energy to form beliefs about it.

My more serious criticism is the assumption that reflective belief formation is necessarily any better at producing knowledge than unreflective. This seems based on the assumption that the skeptical problem arises only due to sloppy, irresponsible cognitive processing of information, by an inherently capable system that can be corrected voluntarily. This ignores the possibility that there are more serious, inherent, and systemic perceptual and cognitive problems that characterize our relationship to the world and our ability to acquire knowledge of it.

²² Shouldn’t he be saying potential beliefs?

²³ Kornblith, Hilary. *Scientific Epistemology: An Introduction*. Oxford University Press. Kindle Edition. p. 14

²⁴ Ibid, p. 17

It is obvious that Kornblith doesn't take skepticism seriously. He is saying that the skeptic's arguments cannot be refuted but that they are irrelevant and that we can simply proceed by going around them and showing what knowledge is and how it is possible. He appeals to our skepticism of skepticism as we can see in these quotations which I repeat from above:

"I know that I am in my office; that there are books, and a desk, and a telephone, and a computer, and a coffee cup all within arm's reach. Nothing could be plainer than this. I can just see these things."²⁵

"It is my visual experience which provides my basis for believing what I do about my immediate surroundings. More than this, my visual experience provides me with exceptionally good reason to believe as I do. This is not a matter of wishful thinking or hasty generalization or some failure to consider relevant evidence. My visual experience provides all the evidence I need for believing as I do.... This isn't anything momentous, but it is knowledge nonetheless."

"On its face, the view [skepticism] seems to have little to recommend it. We seem to know a great many things.... The reason for taking skepticism seriously is not, therefore, that it seems to be true; it doesn't seem to be true."

It may be that these kinds of statements appeal to an intuitive sense that the problems pointed out by skeptics seem improbable and can therefore be dismissed. But consider this interesting, contested case of knowledge: the holder of a lottery ticket for which 30,000,000 tickets were sold, only one of which is the winning ticket. Your chance of losing is 99.999996%. Still before the lottery drawing one can't legitimately say that the holder of this ticket knows they are going to lose.

I feel that Kornblith's rather cavalier acceptance of his experience as constituting knowledge calls for some cautionary comments. Are there questions to be raised other than the hypothesis

²⁵ For references for these three quotes see the footnote where they first appeared.

of dreaming or hallucination which may seem to us rather far-fetched? I shall pursue even more questions in this paper but for now, consider, is there really a unified self that is having these experiences? Does the perceiver persist? Can the perceiver multi-task; if so, how well? Can the perceiver compare his/her current experience with his/her judgement of that experience simultaneously? Is experience the same moment to moment? How accurate is the memory function that is involved? Let's say the perceiver is experiencing blue; if someone else were having that experience, would they call it blue? Do we know that our current experience of, for example, blue is the same as the last experience that we called blue? Does the past exist? Whether you answer yes or no, do you know the answer? If the past doesn't exist, then your past self no longer exists. The you of a billionth of a second ago no longer exists. So, memory is crucially important. Are you really convinced you know what is going on? Isn't it possible you are just telling yourself a good story? Are you necessarily clever enough to rule out the possibility of alternatives that you haven't thought of?

Next, Kornblith suggests that skeptics are looking for knowledge in all the wrong places, the places where knowledge is not to be found. Rather he says, "we should begin our study of the nature of knowledge by examining the phenomenon of knowledge ... we need to provide some rough and ready survey of the phenomenon we wish to theorize about."²⁶ But this strategy assumes that knowledge is possible and only seems so obviously plausible because Kornblith has already asserted that of course we do have knowledge. I think Kornblith is missing the point of skepticism and that his next move, a survey of the what we already assume to be knowledge, is misguided.

Kornblith goes on to describe a particular process of theory development that begins with a pretheoretical stage in which we more or less reliably recognize the thing that we are going to develop a theory about. In this stage we may be mistaken about some instances but generally (according to Kornblith) we are correct. He gives an example from outside of philosophy. Before

²⁶ Ibid. p. 19.

there was any theoretical understanding of water, i.e., before it was determined to be H_2O , everyone was very well able to recognize water.

This is the second time Kornblith has used examples from physics. The previous time it was motion. In that case I indicated briefly why I thought motion was a poor choice for comparison. This time I will delve into these kinds of comparisons more deeply. First, I need to define the concept of a model. A model, in the sense that I intend, is a simplified representation of another more complex system that can be instantiated or expressed in a physical form or in normal and/or mathematical language. When Kornblith introduced the case of motion, I pointed out that physicists in general don't engage in questions like, what is motion or even how is motion possible? I didn't mention that Newton's laws of motion are an example of a scientific model. These laws can be stated in normal language or by mathematical equations. They can model the motion of an object by replacing variables with specific numbers, for example, numbers representing time and then solving the equations for other numbers representing position, or velocity or acceleration. Then, if the model works, the numbers solved for will correspond with observed and measured quantities. It can further be said that physicists don't make any claims about the truth of their models. They don't claim knowledge. They are looking to create models that predict, for practical purposes, what we can expect in the future. For example, they recognize that Newton's laws of motion are imprecise (not true) but usable in some circumstances, that they have worked remarkably well in the past within certain parameters, and they are willing to bet lives that they will continue to do so, for example by using them to send men to the moon. Newtonian concepts of space, distance and time are all incorrect. Relativity theory is a modification that extends Newtonian theory and has made better predictions. But no reflective physicist will say that they now have the final word nor that they have the true theory of motion. In fact, we don't know what distance, time and motion are.

To return to the example of water, it is what in philosophy is called a natural kind. It exists in nature (I suppose) independent of human beliefs, desires, or interests. Is knowledge a natural kind? The alternative is what is called a conventional kind. Examples of conventional kinds are

marriage, a university or money. In general, conventional kinds are socially constructed. They exist only because they are agreed to within a social group. This distinction between natural kinds and conventional kinds is not completely without controversy. It's not completely clear that there are any natural kinds. It's not clear that any purported natural kinds have definite boundaries, nor is it clear that the world might not be reasonably divided up in different ways. Nevertheless, there seems to be a reasonable basis for distinguishing stuff like water, copper, rabbits, etc., from things like marriage, money, and governments. Especially if we keep in mind Wittgenstein's concept of family resemblances, we don't need clear boundaries. Still, none of this rules out the possibility of defining certain conventional kinds, for example bachelors, or triangles.²⁷

I think it makes sense to categorize knowledge as a conventional kind. As such, in determining just what knowledge is, we are not constrained by determining its independent, non-human, natural characteristics as Kornblith sets out to do. This is important as it suggests that the problem may not be how to determine what knowledge is but rather to decide how we want to define it in the first place. My claim is that the JTB is the most useful definition. This is why I argue for keeping it with appropriate clarifications for (1) what is meant by justified and (2) how the truth criterion should be used. I maintain this even though it rules out the possibility of human knowledge and leads to a version of radical skepticism, the view that all claims to knowledge are at best suspect.

There are other skeptical views. There are those who are just skeptical of our knowledge of the external world, or of other minds than our own, or of ethical or esthetic truths. Each of these skepticisms has its own arguments and contrary to Kornblith's claims that belief in skeptical arguments is rare, in these areas especially in esthetics and ethics they are common. Of course, radical skepticism would include all of the above but delving into these specific arguments is beyond the scope of this paper.

²⁷ It is explained later why I consider geometric figures to be conventional kinds.

Remember Gettier said that in his sense of justified it is possible for a person to be justified in believing a proposition that is in fact false. Why should we accept this statement? Clearly, if what you believe is false then there must be some flaw in any argument that you might give for that belief. Your statement, “I don’t just believe it; I know it” would be false.

If we accept the JTB definition of knowledge, with a strong definition of justification, i.e., that the knower must be able to guarantee the truth of P, then to say, “I know P” is equivalent to saying, “I don’t just believe it. It’s true and I know it’s true.” This is an important clarification of the truth criterion. Otherwise, one can interpret knowledge as a belief that just happens to be true. This points to an important connection between justification and truth that needs to be considered.

Up to this point, except for these brief but important comments on the role of truth, my focus has been mostly on contesting claims to knowledge that are viable under a weak definition of justification. The vagueness of this concept of justification leaves open the door for anyone to object (as I have) to a purported instance of knowledge by simply claiming that any ‘good evidence’ proffered just isn’t good enough. Without any criteria to determine what constitutes good evidence there just isn’t any way to clearly distinguish between mere belief, probable beliefs, and knowledge. With the strong definition of justification which implies that the knower must be able to prove the belief to be true, this situation is resolved.

The Role of Perception

We can now look at how the truth criterion, reinforces the radical skeptical position. We will approach this topic by considering human sensory capabilities and how these make it impossible to know the truth of any proposition.

Perception is important to any theory of knowledge. This is true regardless of whatever beliefs one has about a priori knowledge since in any case much of what we call knowledge, especially

about the world, comes to us through our senses. Here is a relevant and useful definition of perception:

Perception (from perceptio 'gathering, receiving') is the organization, identification, and interpretation of sensory information in order to represent and understand the presented information or environment.²⁸

There is a process involved in perception. Audi writes that there are four elements engaged in this process “the perceiver, the object perceived, the sensory experience in which the object appears to the perceiver, and the causal relation between the object and the perceiver, the relation wherein the object produces that experience.”²⁹

Many philosophical issues pertinent to the theory of knowledge arise within the context of this perceptual process. There is controversy concerning the significance of the nature and role of the perceiver in determining what is perceived, concerning the object that is perceived, concerning the nature and ontology of the experience, and concerning the relationship between the object perceived and the eventual perceptual experience.

I contend that many of the problems in resolving the philosophical controversies in theory of knowledge stem from the fact that the discussions are carried on in the context of mentalism (a term I discuss below). In fact, I am astonished, given that perception is such a physiological process, at how little is said about the physics, chemistry, physiology, and anatomy of perception, especially how little is said about the brain. (This may be changing contemporaneously as new methods and technologies for studying the brain are being developed in the field of cognitive science.)

²⁸ (Schacter, Daniel (2011). *Psychology*, Worth Publishers.) (From Wikipedia – Perception))

²⁹ Audi, Robert, *Epistemology: A Contemporary Introduction to the Theory of Knowledge*, Routledge, Third Edition, Taylor and Francis, 2011. Page 39.

The problem with mentalism is that it is ultimately subjective in a way that does not allow for any criteria by which controversies can be resolved, and it allows for the invention of entities and relations between them which cannot be demonstrated to exist. (Many of these entities are introduced, either implicitly or explicitly by arguments to the best explanation. When I say they cannot be demonstrated to exist what I mean is they cannot be shown to have any necessary explanatory role.) In what follows I will try to clarify what I mean by mentalism with the following quotations and comments.

- 1) "Once we think seriously about illusion and hallucination, we may begin to question not only naive realism but also any kind of direct realism in the theory of perception, any perceptual realism which, like the theory of appearing, says that we see (or otherwise perceive) external objects directly, rather than through seeing (or at least visually experiencing) something else. After all, not only do light rays come between us and what we see, there are also brain events crucial for seeing. Perhaps these events or other intermediaries in perception produce or indicate an interior object, presumably a mental object that plays an intermediary role in perception."³⁰

The beginning of this paragraph fits nicely with my explanatory system (see below) but goes astray from my point of view when it proposes that "these events or other intermediaries produce or indicate an interior object, presumably a mental object that plays an intermediate role in perception." These events do not "produce or indicate an interior object, presumably a mental object." What they produce is a pattern in the brain. We don't perceive a mental object. We have an experience whose details are determined by this pattern in the brain.

- 2) "One may prefer (as some philosophers do) to say that we do not in any sense see such things [sense data] but are only visually acquainted with them."³¹

³⁰ Ibid, p 41.

³¹ Ibid p. 42

What does it mean to see? Does it mean having a visual experience? Does ‘I see the chair.’, mean the same as ‘I perceive the chair visually.’? Who can say? However, if one sees with the eye, then we don’t see sense data (assuming for the moment that there are sense data) since sense data are produced by the brain, and if we see sense data then we don’t see objects, and we aren’t visually acquainted with them either. In fact, this relationship “visually acquainted with” is an example of what I was referring to when I mentioned invented relationships that cannot be demonstrated to exist.

- 3) “A sense-datum theory is perfectly consistent with a causal theory of perception: the field produces the colors and shapes in my visual consciousness in a way that fully accords with the view that perception is a causal relation between something external and the perceiver.”³²

This may seem like a petty comment, but perception is not a simple chain of causal relationships. Perception is a complex process that involves a network of causal relationships, and a perception, as defined above, is a very complex result. To simply call perception a causal relationship is to obscure the complexity involved. Also, “the field” does not, as stated above produce colors and shapes in my visual consciousness. The field is (if I interpret this remark correctly.) reflected light which reaches my eyes in a pattern causing another pattern of chemical changes as photo pigments in my eye absorb photons and these chemical changes in turn cause electrical patterns transmitted by nerves to different parts of the visual areas of the brain. No one has a clue as to how this process is accompanied by visual experiences. Thus, we have no basis for claiming these are caused except for our intuition that there is no effect without a cause.

- 4) “This processing seems to be both parallel and hierarchical. Visual information is split into its different component parts such as colour, motion, orientation, texture, shape, and depth, and these are analyzed in parallel in separate areas, each specialized for this

³² Ibid p. 43

particular visual feature. The processed information is then reassembled into a single coherent perception of our visual world in subsequent, higher visual areas. Recent advances have allowed us to identify which areas are performing these functions and how they interact with one another.”³³

- 5) “... they take perceived physical objects to cause sensory experience, say of colors and shapes, by causing the occurrence of sense-data, with which we are directly (and presumably non-causally) acquainted in perceptual experience.”³⁴

Here we see the unnecessary invention of entities and relationships. Who is the abstract we that is acquainted with something; does ‘we’ refer to a mental entity? Are the sense data mentioned here the same or different from the colors and shapes that are experienced? From my point of view through a long, complex causal chain, a brain state is consciously experienced as colors and shapes. To be clear, there is no reason to posit a separate mental ‘we’ that experiences.

The invention of an entity called the mind is what allows the following kinds of statements:

- 6) “Sense-data are quite different from ordinary (presumably physical) objects of perception. Sense-data are either mental or at least depend for their existence on the mind of the subject. Yet they are unlike some mental phenomena in that no plausible case can be made for their being really brain phenomena, since they have properties, for instance being green and perfectly rectangular, not normally found in the brain.”³⁵

Sense data don’t have properties. They don’t exist. Brain states have properties, and it is brain states that are experienced by the brain. It is just that what we experience is not a representation of the brain state, but a modelling of the sources of the complex causal chain

³³Tovée, Martin J., *An Introduction to the Visual System*, Second Edition, Cambridge University Press, 2008.

³⁴ Ibid p. 44

³⁵ Ibid p. 50

leading to the brain state, a modeling that serves the practical function of allowing us to navigate the world but that need not be a realistic representation of that world.

- 7) “Moreover, there are difficulties in fully understanding sense-data in any terms. Is there, for instance, even a reasonable way of counting them? Suppose my image of the green field gradually gets greener. Is this a sense-datum changing or a new one replacing an old one? There seems to be no way to tell.”³⁶

This statement is “right on”. An experience of a green field gets greener if a brain state changes.

- 8) “It seems that knowledge of the aroma of ammonia – what it actually smells like – is not the kind of information you can get from reading books. But then, are there facts about human experience that can’t be captured by science and what it can report in its textbooks? Is there more to us than is scientifically describable? If so, it implies that humans aren’t purely physical systems – a remarkable exception to what the natural sciences otherwise tell us about the world.”³⁷

The fact of qualia does not imply that humans aren’t purely physical systems. Qualia are not objects. They are the way the human system and other animal systems experience brain states.

Ultimately there is no such thing as the mind. The belief in the existence of a mind is a mistake. The mistake is in taking the conscious experience of brain states to indicate the existence of an object that contains these experiences. Thus, talking about the mind, mental states and mental objects just confuses topics that can just as well be considered on a physical level.

This raises the question of why philosophers are still using the ‘term’ mind. What does ‘mind’ refer to? To reify any experience, seems to be built into unreflective human thinking. And then

³⁶ Ibid p. 50

³⁷ Chris Daly, <https://aeon.co/essays/why-doesnt-philosophy-progress-from-debate-to-consensus>

of course there are external reasons. The existence of the mind is a primary support for those who wish to believe in some kind of human existence after the death of the body. In any case, I take it to refer, most commonly, to a hypothetical (but unnecessary) entity that exists independently of (or at least in addition to) the body and that explains conscious experience. Of course, there are philosophers who have challenged this conception of the mind. But each of these challenges are considered controversial and thus any one or more can be ignored if a philosopher chooses to.

For more examples of the way that a belief in minds leads to confused ideas and arguments, consider the following. Direct realists hold that not only do objects such as pianos, people, books, tables, chairs, cars, houses, etc., exist but that it is these objects themselves that we experience. According to *The Internet Encyclopedia of Philosophy* there are two forms of direct realism, naïve direct realism, and scientific direct realism. Naïve direct realists believe that objects have all the properties that humans experience them as having whether the objects are being observed or not, whereas scientific direct realists distinguish between primary and secondary properties, primary properties such as shape, size, position, and solidity being retained by objects and secondary properties such as color, taste, heard sound, felt texture, and felt hardness being dependent on the observer. Some direct realists go on to say that for an object to be, for example, a certain color is just for it to have some property that causes the visual experience of yellow.³⁸

Indirect realists also hold that objects exist independently of observers, but they claim that all perception is mediated. “When looking at an everyday object it is not that object that we directly see, but rather, a perceptual intermediary. This intermediary has been given various names, depending on the particular version of indirect realism in question, including ‘sense datum,’ ‘sensus,’ ‘idea,’ ‘sensibilium,’ ‘percept’ and ‘appearance.’ I shall use the term ‘sense datum’ and the plural ‘sense data.’ Sense data are taken to be mental objects that possess the

³⁸ Daniel O’Brien, Internet Encyclopedia of Philosophy, Email: dan_obi@hotmail.com, The University of Birmingham, U. S. A.

properties that we take the objects in the world to have. They are usually considered to have two rather than three dimensions. For the indirect realist, then, the coffee cup on my desk causes in my mind the presence of a two-dimensional yellow sense datum, and it is this object that I directly perceive. Consequently, I only indirectly perceive the coffee cup, that is, I can be said to perceive it in virtue of the awareness I have of the sense data that it has caused in my mind. These latter entities, then, must be perceived with some kind of inner analog of vision.”³⁹

I find it hard to imagine how a purported mental object, presumably non-physical, could have any number of dimensions, let alone be an actual 2-D object, and if this purported object has the property yellow what is the nature of the underlying object which has this property? Finally, what is meant by “some kind of inner analog of vision.” Does this inner analog require its own inner analog which then has its own inner analog, ad infinitum? Also, the concept ‘directly perceive’ seems problematic. There is still a perceiver and something perceived, there is no explanation of how a perceiver that is separated from the perceived could ‘directly perceive’.

Arguments based on ontological errors such as the belief in the existence of minds leads to the kind of confusion I have been documenting, but in the following can be seen a subtler kind of error caused by thinking that we see the thing itself. For example, supporting a version of indirect realism O’Brien gives the following: “I can look out of my window and see the stars in the night sky. However, it is a fact ... that the star at which I am currently looking may have ceased to exist. The pinpoint of light that I see has taken years to reach me, and in that time the star may have turned supernova. How can I, then, be directly attending to that star when it is no longer there? What must be happening is that the light rays that originated from that star have caused in me the presence of a perceptual intermediary, an intermediary that is still present in my mind, and thus, an intermediary to which I can still attend.”⁴⁰

³⁹ Ibid.

⁴⁰ Ibid.

Let's analyze this piece by piece. 1. "I can look out my window and see the stars ..." Of course, you can't see the stars themselves (as O'Brien eventually implies). 2. "However, the star at which I am currently looking may have ceased to exist" These initial questions are common sense confusions since the stimulus for your visual system is the present light. It is irrelevant whether the star still exists or not. 3. "The pinpoint of light that I see" Yes, you never saw any star it's only light that stimulates your eyes and activates your visual system. 4. "What must be happening is that the light rays that originated from that star have caused in me the presence of ... an intermediary that is still present in my mind." No, there is no need to postulate an intermediary in the mind nor a mind at all. The visual experience is just the way humans experience a certain brain state that results at the end of a long complex network of interacting causes and that was initiated by the presence of light.

O'Brien goes on to say, "The fact that perception is a complex causal process motivates some to offer another weak argument for the indirect realist position. There are many neurophysiological features and physiological entities such as retinal images that are involved in perception. Some conclude that I do not directly see the cup; I see it via such entities, and the indirect realist should take these to be his perceptual intermediaries. The correct response here is to agree (as one must) that such physiological items are indeed intermediaries in the process of perception. They are, however, intermediaries in a different sense. The indirect realist claims that we perceive his intermediaries — we attend to them — just as we do to our image in the mirror. His intermediaries are perceptually accessible. This, however, is plainly not true of the physiological components of the perceptual process. They are not, therefore, perceptual intermediaries in the correct sense. They are simply part of the causal mechanism that enables us to perceptually engage with objects, both those around us, and those in the far distance. So far, then, we do not have any reason to give up direct realism."⁴¹

Since ultimately O'Brien is intent on defending his version of indirect realism, we may suspect this to be a strawman argument. Nevertheless, this argument demonstrates some of the types

⁴¹ Ibid.

of confusion I am concerned with. While I agree that we do not perceive “physiological entities such as retinal images that are involved in perception” and that “They are simply part of the causal mechanism that enables us to perceptually engage with objects....” It does not follow that, “so far, then, we do not have any reason to give up direct realism” In my model what is experienced is sensitive to physical differences. The experience of different colors is the way that humans experience the brain states that result from the causal process beginning with light of different frequencies interacting with the rods and cones in the eye. On the other hand, all the evidence that I’m aware of (and all the evidence referenced in this paper) would indicate that our experience is not identical with the objects in the ‘real world’ that we use to explain our experiences. Direct realists don’t seem to offer any way of connecting our distinct experiences (distinct from their causes) with those objects. At least, the kind of direct realism that O’Brien is talking about seems like nothing short of magical thinking.

What is emerging I hope, is a picture of the human as an entity with an information processor (the brain) and a complex sensory system composed of a previously unrecognized subsystem that responds to brain states and the other generally recognized subsystems, visual, aural, taste, touch, kinesthetic, etc., that receive information from both the body and the rest of the surrounding environment. It is clear that these sensory systems have limits, for example, the range of light frequencies that we are sensitive to and the limitations of resolution such as the size of the entities that we can see and the time durations that we can discriminate.

Our sensory systems are not significantly different than other sensory systems that we (humans) have created in order to extend the abilities of our own such as microscopes, telescopes, bubble chambers, particle accelerators and their detectors, spectroscopes, etc. When we use our technological extensions to observe the world what do we see? What, on first sight, may seem to us as a smooth, black rock is not a solid unitary object with a smooth (except at our human level of resolution) surface. That rock is a conglomeration of many elements. At a microscopic level it is individual molecules which themselves are made up of atoms which are made of electrons and protons and neutrons. The latter two of these are in turn made of triplets of

quarks. What we are looking at is not a rock but a swarm of buzzing-about particles. Our human perception of the 'rock' is obviously limited. But quarks are not the end of the story. At one time physicists thought that electrons and quarks were elementary particles. Now they are not so sure.

"When most people, including experts, think of subatomic reality, they imagine particles that behave like little billiard balls rebounding off one another. But this notion of particles is a holdover of a worldview that dates to the ancient Greek atomists and reached its pinnacle in the theories of Isaac Newton. Several overlapping lines of thought make it clear that the core units of quantum field theory do not behave like billiard balls at all."⁴²

"First, the classical concept of a particle implies something that exists in a certain location. But the "particles" of quantum field theory do not have well-defined locations: a particle inside your body is not strictly inside your body. An observer attempting to measure its position has a small but nonzero probability of detecting it in the most remote places of the universe."⁴³

"Second, let us suppose you had a particle localized in your kitchen. Your friend, looking at your house from a passing car, might see the particle (if he/she had the right equipment) spread out over the entire universe. What is localized for you is delocalized for your friend. Not only does the location of the particle depend on your point of view, so does the fact that the particle *has* a location. In this case, it does not make sense to assume localized particles as the basic entities."⁴⁴

"What do "particle detectors" detect if not particles? The answer is that particles are always an inference. All a detector registers are a large number of separate excitations of the sensor

⁴² Scientific American, August 1, 2013, Physicists Debate Whether the World is Made of Particles or Fields – or Something Else Entirely.

⁴³ Ibid.

⁴⁴ Ibid.

material. We run into trouble when we connect the dots and infer the existence of particles having trajectories that can be traced in time.”⁴⁵

What is then going on when we perceive the ‘world’? The human information processing system, our sensors plus brain, model both ourselves and our environment. Most of the vast range of electro-magnetic radiation sensed by our technology is ignored and some small part of the range we do sense is modeled by colors. What electro-magnetic radiation is we have no clue. Sometimes physicists model it by particles, sometimes by waves, sometimes by ‘disturbances in the field.’ Immaterial fields by the way. Sounds are our way of modeling pressure waves in the air or some other wave like motions in other mediums, e.g., water. The range we hear is limited, in adults, to about 20 Hz to 15 kHz or 17 kHz. Human visual resolution is also limited. We can’t see large things unless they are too far away to notice details (think of the surface of the moon) and we also can’t see details if things get too small; if they get small enough we can’t see them at all. A glass of what looks like pure H₂O may instead be full of toxic material and probably is a glass of swarming micro-organisms. Our sense of time is also limited. The world’s fastest computer can now perform a quintillion operations per second; that is 1 000 000 000 000 000 000 ops/s. No human can experience this small duration that an operation takes. We also believe that things persist, but everything changes constantly. At a micro level nothing is solid, nothing has distinct boundaries.

I assume other animals have experiences. This assumption derives from much scientific theory regarding evolution and our similarities, although I have heard (perhaps falsely) that according to Catholic Church doctrine they are automatons. However, their sensory systems are very different. Again, according to scientific theory, their experience of the world should be significantly different than ours. But even individual persons have different experiences. My wife and I often disagree on what color certain things in the blue, grey, green, brown, and black ranges are. That’s because they aren’t colored, and our sensory systems are somewhat

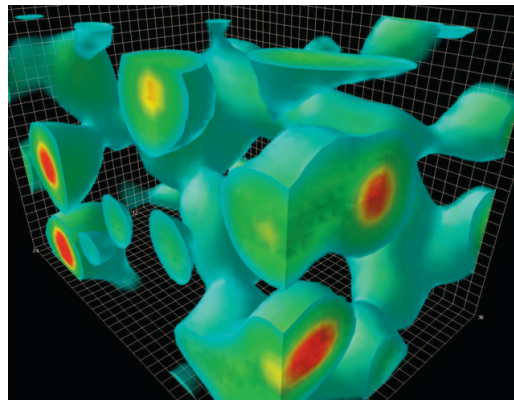
⁴⁵ Ibid.

different. All of these last few paragraphs are relevant to why I have claimed (and will go on to discuss further) that we humans are constituted to perceive a superficial and false ‘reality’.

We can pursue this on a deeper level. I have mentioned our limited sense of time, but what is time? Einstein said it’s a persistent illusion. Lee Smolin disagrees. What is space? In a paper by Frank Wilczek of MIT he says: “Our eyes were not evolved to resolve the tiny times— 10^{-24} seconds—and distances— 10^{-14} centimeters—where the action occurs. But we can ‘look’ inside computer calculations, to see what gluon fields are up to. (The calculations have many consequences we can check, so this fantasy is tightly controlled!) To nimbler eyes, space would appear as a self-powered ultrastroboscopicmicronano lava lamp, of which Figure 1 [below] is a much-magnified snapshot. Creatures with such eyes wouldn’t share the human illusion that space is empty.”⁴⁶

My point with regard to the examples from science is not that they are the truth that should replace what we perceive with unaided eyes, but that they represent a different model with different uses. Wilczek says in the same paper, “What is space: An empty stage, where the physical world of matter acts out its drama; an equal participant, that both provides background and has a life of its own; or the primary reality, of

Fig 1



⁴⁶ https://physics.mit.edu/wp-content/uploads/2021/01/physicsatmit_09_whatisspace_wilczek.pdf

which matter is a secondary manifestation? Views on this question have evolved, and several times changed radically, over the history of science. Today, the third view is triumphant. Where our eyes see nothing our brains, pondering the revelations of sharply tuned experiments, discover the Grid that powers physical reality. Many loose ends remain in today's best world-models, and some big mysteries. Clearly the last word has not been spoken. But we know a lot, too—enough, I think, to draw some surprising conclusions that go beyond piecemeal facts. They address, and offer some answers to, questions that have traditionally been regarded as belonging to philosophy, or even theology.”⁴⁷

Notice that he speaks of “loose ends,” “big mysteries,” “best world models” based on “pondering the revelations of sharply tuned experiments.” Regardless of his saying, “we know a lot too”, he is admitting that he is offering a partial description of a model and an interpretation of data. It remains the case that models are not reality.

I have another example. I was sitting outside a café and two women walked by. I had recently taken a class on the Buddhist philosopher Nagarjuna. He has an argument somewhat like Zeno's paradoxes. He claims that walking is impossible. He points out that you perceive someone walking in the present, but that walking is a process that appears to have duration. He asks when could it be happening? It can't be happening for you in the past which no longer exists at the time when you seem to perceive the walking and it can't be happening in the present which is momentary and has no duration and it certainly can't be happening in the future which has not yet come to be. Thus, walking must be an illusion. Now, you don't have to believe what Nagarjuna says but it certainly should raise doubts. So, do I know that two women walked by? Can we completely discount Nagarjuna's argument. Do we really know the nature of time? Do we know if its continuous or discrete. Do we want to claim that regardless of how I think about time and apparent processes that take place in time that I knew that two women walked by? Doesn't this at least raise significant questions about to what extent the many concepts that are

⁴⁷ Ibid.

involved in any proposition contribute to the truth or falsity of that proposition and to our warrant for saying we know? Perhaps we don't even know what it is we are claiming, since often we have not thought very thoroughly about the meaning for us of the concepts we employ in any proposition.

Analytic Knowledge

So far, I have concentrated on debunking the idea that we have 'empirical knowledge', the debunking based on my support of the JTB definition and the idea that both our scientific descriptions of the world and our everyday beliefs about the world are nothing more than inaccurate models of that world. I would now like to address the question of so-called analytic knowledge. Consider the standard example. It is claimed that if I know that John is a bachelor then I also know that John is a man. The antecedent here is subject to all the problems that I have raised previously, and, as for the consequent, I side with those who claim it does not represent any new knowledge because it has already been stated that John is a man by saying that he is a bachelor.

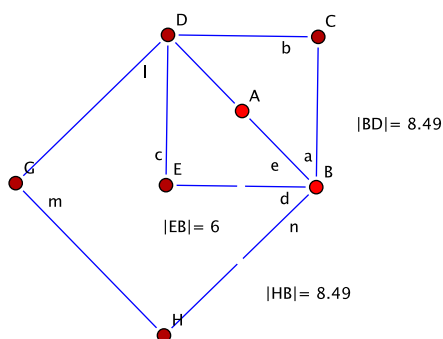
What about mathematics? Do we know that $7 + 5 = 12$ as claimed by Kant?⁴⁸ If this is a statement within pure mathematics then the answer is similar to that of the bachelor. The truth depends inferentially on the axioms which are simply stipulated. Moreover, they are about conventional kinds such as numbers and mathematical sets and not about the physical world. There are many assumptions involved that one may not know of or pay attention to when feeling intuitively that $7 + 5 = 12$ is certain. First of all, the mathematical operation of addition doesn't actually do anything to anything. It's the mental operation of considering a set of 7 individual and distinct entities and another set of 5 individual and distinct entities as a single set. The two sets could be on opposite ends of the universe. Further it is assumed that no

⁴⁸ Quoted in W. T. Jones, *Kant and the Nineteenth Century*, Harcourt Brace Jovanovich College Publishing, Second Ed. 1975

changes happen to any of the entities in the sets. In this case 12 and 7+5 can just be considered as two names for the same quantity as is sometimes said by mathematicians.

If on the other hand if $7 + 5 = 12$ is about the real world then it is not necessarily true. If adding is for example 'putting together' as in putting 5 drops of water together with 7 drops of water in a glass, then clearly seven drops plus 5 drops is not 12 drops. For another example, if addition means increasing one's velocity, then 7 m/s plus 5 m/s is not 12 m/s. There is a small difference due to special relativity. Another example: if 5 separate line-segments are placed end to end sequentially with another seven line-segments forming a polygon the result is one dodecagon. There are no longer 12 line-segments.

Finally, here is an example from geometry which may seem intuitively to be a case of knowledge:



With a bit of effort, it is not too difficult to reason to the conclusion that the larger square BGDH seen in this diagram has twice the area of the smaller square BCDE. A person can do this as follows (or by some equivalent argument):

- 1) Given that figure BCDE and figure BDGH are indeed squares, then it is clear that square BCDE has twice the area of triangle BDE and that the square BDGH has 4 times the area of triangle BDE.
- 2) From (1) it follows that the area of the square BDGH (the larger square) is twice the area of square BCDE (the smaller square).

It may seem reasonable or even intuitively certain that a person, having done this reasoning now 'knows' that the larger square has twice the area of the smaller square. But do they? As was the case with $7 + 5$ the two 'squares' have the desired relationship only in the abstract and under stipulated conditions impossible to instantiate. Even if we did construct two purported squares in space, they would not have exactly the desired relationship due to gravity.

To summarize what has been said up to this point, since knowledge is a conventional kind, we can define it as we see fit. There is nothing to stop us from adopting the JTB definition along with the clarifying stipulation that justification means having conclusive reasons. Further, we have tried to show that knowledge is in fact beyond the capability of the human perceptual and cognitive system thus warranting this definition.

One could then ask why bother defining an empty category. I suggest three reasons: (1) the definition does not rule out the possibility of knowledge per se, only the possibility of knowledge for humans and other creatures similar to us. Thus, it can make sense to see it as a limiting case that we can seek to approach with our models. (2) Recognizing our limitations may be beneficial. (3) It is clarifying for a widely used concept that our intuition is confused about.

Sociological and Psychological Issues

I want to discuss possible reasons why there is such resistance to the JTB definition as I have presented it and to the skeptical position that I have staked out and to defend skepticism in the face of its detractors. I will also point out the dangers that can be found associated with many that stake a claim to knowledge. I hope to show that the resistance is largely due to the fear of relativism and to the fear of delegitimation of personal and social norms due to the perception that skepticism undermines what is seen as an important (and by some people as the) means of legitimation. In doing this I will use the sociology of Peter L. Berger and quotations from the book *Truth: A Guide* by Simon Blackburn.⁴⁹

⁴⁹ Simon Blackburn, *Truth: A Guide*; Oxford University Press 2005.

The sociologist Peter L. Berger points out that humans don't have an instinctually given relationship to the world. He writes, "Every human society is an exercise in world building."⁵⁰ This human created world is our culture which is humanity's way of replicating for itself the given worlds of most animals, and because it is human created it must be continually maintained and it is by no means easy to keep it from falling apart. Note that the difficulty of the maintenance task is an important part of my argument.

There are five important concepts that Berger describes that relate to this process of world building: externalization, objectivation, internalization, socialization, and legitimation. Externalization consists in both the physical and the non-physical productions of humankind: physical buildings, roads, cities and towns, all sorts of technological artifacts and non-physical institutions such as language, the laws, modes of governance, tribal or national myths, religions, etc. Objectivation is the process whereby the productions (both physical and non-physical) of humankind come to be seen by a people as equivalently real and external to themselves as the productions of nature. Internalization is the process whereby individuals incorporate into themselves the structures of this reality in such a way that the structure of their subjective consciousness is, as much as possible, in agreement with all that is now seen as the structure of external reality.⁵¹ Unlike other animals (although perhaps given what we have learned since Berger's time we should say most other animals) the human instinctual structure "is under-specified and undirected toward a species-specific environment."⁵²

The processes by which the individual internalizes the objectivated world is called socialization. The individual is socialized to take on a particular identity and to live within a specific world. Berger says, "It is possible to sum up the dialectic formation of identity by saying that the individual becomes that which s/he is addressed as by others ... and both identity and world

⁵⁰ Peter L. Berger, *The Sacred Canopy*, Double Day, Anchor Books Edition 1969

⁵¹ I suggest that these two processes are a major part of the explanation for the past and still ongoing but always failing attempts in ethics to establish 'good' and 'bad' as natural properties similar to other properties such as color or shape.

⁵² Ibid.

remain real ... only so long as s/he can continue the conversation. Socialization is a life-long process, and it is these ongoing conversations that individuals have with parents, friends, acquaintances, colleagues, teachers, spouses, and significant others that work to maintain the feeling that the internalized world is real.”⁵³

The socially constructed world is thus an ordering of experience in which a meaningful order is internalized by individuals. This meaningful ordering Berger calls a *nomos*. Socialization is successful in so far as this *nomos* comes to be taken for granted. Berger says, “It is not enough that the individual looks upon the key meanings of the social order as useful, desirable, or right. It is much better (better that is in terms of social stability) if [the individual] looks upon them as inevitable, as part and parcel of the ‘universal nature’ of things.”⁵⁴ When this is achieved the *nomos* appears to transcend the historical efforts of human beings.

We are faced with the changing flux of experience. Language, on the other hand, names things and imposes a structure. It fixes what is female, male, singular, plural, legal, illegal, good, bad “that an item is this and not that.”⁵⁵ Language, he says, is the foundation of the edifice that passes for knowledge, and it is this ‘knowledge’ that becomes the basis for the common interpretation of experience that is called ‘objective’.

According to Berger the objectivated *nomos* is internalized by the individual and becomes his/her subjective ordering. But just as a person’s internal *nomos* is constructed in conversation with significant others, he/she can be thrust into anomy by significant disruptions in the conversation. A person can in extreme cases lose his/her sense of reality and identity and it is for this reason that disruption and the undermining of a cultural *nomos* can be so threatening to individuals. Berger describes the possibilities quite powerfully. “The circumstances of such nomic disruption may, of course, vary. They might involve large collective forces, such as the loss of status of the entire social group to which the individual belongs. They might be more

⁵³ Ibid, p. 16

⁵⁴ Ibid, p.19

⁵⁵ Ibid, p. 20

narrowly biographical, such as the loss of significant others by death, divorce, or physical separation. . . . In both cases, the fundamental order in terms of which the individual can 'make sense' of his life and recognize his own identity will be in process of disintegration. Not only will the individual begin to lose his moral bearings, with disastrous psychological consequences, but he will become uncertain about his cognitive bearings as well. The world begins to shake in the very instant that its sustaining conversation begins to falter."⁵⁶

"The socially established nomos may thus be understood, perhaps in its most important aspect as a shield against terror ... every nomos is an edifice constructed in the face of the potent and alien forces of chaos. This chaos must be kept at bay at all costs."⁵⁷

When he writes here that "chaos must be kept at bay at all costs" Berger is not speaking for himself. He is expressing the motivation that can arise and spread throughout a society caused by anxiety rooted in threats to a nomos. It may seem paradoxical, since philosophers are supposedly seekers of 'truth' even if it flies in the face of common sense, that I am suggesting they, in forcefully resisting skepticism, are similarly motivated. Nevertheless, the seeming paradox may be resolved by recognizing the strong commitment they may have to the possibility of achieving the goal of truth. Nor are segments of the philosophical community necessarily immune to anxiety in the face of perceived challenges to the means that can be used to support the norms of their society.

As a human construction, built by naturally evolved creatures with often conflicting goals and yet necessarily social creatures, within an ever-changing environment that is often hostile and destructive of our projects, our social and cultural worlds like every constructed thing are constantly threatened with disruption, disintegration and decay requiring constant maintenance. This goes for both our physical constructions and our non-physical belief

⁵⁶ Ibid

⁵⁷ Ibid.

structures. This brings us to the function of the fifth process involved in human world building, legitimation.

Historically, religion has been the most important legitimizer. As Charles Taylor says, "...the political organization of all pre-modern societies was in some way connected to, based on, guaranteed by some faith in or adherence to God, or some notion of ultimate reality."⁵⁸

However, western societies since the Enlightenment period, beginning (more or less) with the publication of Newton's *Principia Mathematica*, have undergone a process of secularization which can be defined as the exclusion from religious domination of sectors of society and culture. This can and has manifested externally by, for example, the separation of church and state, the secularization of the legal system and the replacement of church authority by the state, etc. But it also manifested subjectively by an increasing reliance on reason and confidence in the power of human rationality to comprehend the world and improve the human condition.

This transition in attitudes toward religion and the elevation of reason in its place can be seen in the writings of philosophers such as Kant and Condorcet. Kant writes, "Enlightenment is mankind's exit from its self-incurred immaturity. Immaturity is the inability to make use of one's own understanding without the guidance of another. Self-incurred is this inability if its cause lies not in the lack of understanding but rather in the lack of the resolution and the courage to use it without the guidance of another Have the courage to use your own understanding! is thus the motto of enlightenment. Laziness and cowardice are the reasons why such a great part of mankind, long after nature has set them free from the guidance of others ..., still gladly remain immature for life and why it is so easy for others to set themselves up as guardians.

"If it is asked 'Do we now live in an enlightened age?' the answer is 'No, but we do live in an age of enlightenment.' As matters now stand, much is still lacking for men to be completely able – or even to be placed in a situation where they would be able — to use their own reason confidently and properly in religious matters without the guidance of another. Yet we have clear

⁵⁸ Charles Taylor, *A Secular Age*; The Belknap Press of Harvard University Press, 2007.

indications that the field is now being opened for them to work freely toward this, and the obstacles to general enlightenment or to the exit out of their self-incurred immaturity become ever fewer. In this respect, this age is the age of enlightenment”⁵⁹

Condorcet writes, “So the time will come when the sun shines only on men who are free and acknowledge no master except their reason; when tyrants and slaves, priests and their stupid or hypocritical instruments, will exist only in history books and on the stage; when we’ll give no thought to them except for pitying their past victims and dupes, and keeping watch for any new sprouting of the seeds of superstition and tyranny, so that if they dare to re-appear we can recognize them and stamp them down by the weight of reason.”⁶⁰

Although things haven’t necessarily turned out that way, nevertheless, the religious foundation of knowledge has lost most, if not all, of any authority it once had at least outside of fundamentalist, religious communities. As Berger says, “One of the most obvious ways secularization has affected the man in the street is as a ‘crisis of credibility’ in religion. Put differently, secularization has resulted in a widespread collapse of the plausibility of traditional definitions of reality.”⁶¹ This crisis of credibility is, of course, abetted by the development of scientific theories in cosmology (Galileo’s discovery of moons orbiting Jupiter, the discovery of other galaxies), geology (the great age of the earth), paleontology (the fossil history), biology (the theory of evolution), etc. And what replaces, religion as the great legitimator? In its place we find reason, science, the scientific method, logic. Thus, epistemology becomes a central, new core of all that which currently works for legitimation. And threatening this new, secular basis will naturally lead to forceful attempts to defend it. Skepticism has always been a threat, but in the absence of religious legitimation the threat level is increased.

⁵⁹ Immanuel Kant, *An Answer to the Question: What is Enlightenment*; Translated by James Schmidt.

⁶⁰ Marie-Jean-Antoine-Nicolas Caritat, Marquis de Condorcet, *Sketch for an Historical Picture of the Advances of the Human Mind*; Copyright © Jonathan Bennett 2017;
https://www.earlymoderntexts.com/assets/pdfs/condorcet1795_3.pdf

⁶¹ Peter L. Berger, *The Sacred Canopy*, Double Day, Anchor Books Edition 1969.

In our time the threat level is especially high. We are confronted with post-modernism.

“Modern theory – ranging from the philosophical project of Descartes through the enlightenment ... is criticized for its search for a foundation for knowledge, for its universalizing and totalizing claims, for its hubris to supply apodictic truth, and for its allegedly fallacious rationalism. Defenders of modern theory, by contrast, attack postmodern relativism, rationalism, and nihilism.”⁶² These bring fear. Skepticism is seen as either the precursor or equivalent to relativism.

In his book *Truth*, Simon Blackburn discusses the conflict between what he calls absolutists and relativists. I present a few quotes characterizing the fear of skepticism and relativism. As you read these, note terms such as ‘power’, ‘war’, ‘fight’, ‘must’ and ‘hell’. Skepticism is placed in the same category as nihilism, cynicism, and ideology.

“Today the stakes in this war are enormous.... Today’s relativists, persuading themselves that all opinions enjoy the same standing in the light of reason, take it as a green light to believe what they like with as much conviction and force as they like.”⁶³

“There are real standards. We must fight soggy nihilism, scepticism (sic) and cynicism. We must not believe that anything goes. We must not believe that all opinion is ideology, that reason is only power, that there is no truth to prevail. Without defenses against postmodern irony and cynicism, multiculturalism, and relativism we will all go to hell in a handbasket.”⁶⁴

In defense of skepticism, I suggest that it need not be seen as a threat to the social and/or moral order nor to scientific advancements. Conversely, we shouldn’t forget the superstition, tyranny, and intellectual hegemony that both modernists and post modernists are fighting against. We shouldn’t forget atrocities like the Spanish Inquisition, slavery, witch trials, the oppression of women, and the suppression of freedom of expression in many countries of the world including

⁶² Steven Best and Douglas Kellner, *Postmodern Theory*; the Guilford Press, 1991.

⁶³ Simon Blackburn, *Truth: A Guide*; Oxford University Press 2005, p. xiv.

⁶⁴ *Ibid*, p. xiii

current attempts by right wing forces in the liberal democracies of Europe and North America. Those who think they 'know' have been, over the course of human history, just as dangerous if not more so than any relativist.

Skepticism need not be the basis of relativism. The kind of skepticism that I have laid out leaves open another path. The path of science. While this does not provide us with knowledge it does provide us with a model of the world and how it works that is at least sufficient for the average human to survive for an average of around 75 years. Science by the careful use of experiment and technology extends our non-scientific, everyday model of the world.

Conclusion

With the concept of models having been introduced and some of the sociological and psychological forces at work having been discussed I return now to Kornblith hoping to have 'softened up' my audience to the possibility that what otherwise might intuitively seem like picayune criticisms are indeed worth giving some weight to. In the second chapter of his book Kornblith presents a plethora of everyday things and actions which he claims are either obvious cases of knowledge or imply knowledge. He says, "... we often know full well that people know various things. If you wonder whether I know what time it is, and then you see me looking straight at my watch, then it is completely clear that I do, in fact, know what time it is. If Mary wonders whether Jack knows where her office is, and then Jack walks in the door of her office, Mary will recognize that, clearly enough, Jack does know where her office is. Genuine cases of knowledge abound. I know where I parked my car this morning. You know what your name is. Most schoolchildren know that the earth is, to a first approximation, round, and that two and two make four."⁶⁵

⁶⁵ Kornblith, Hilary. *Scientific Epistemology: An Introduction* (p. 25). Oxford University Press. Kindle Edition.

Quite apart from the arguments I have already presented as to why this isn't knowledge, in fact, he clearly doesn't know what time it is from just looking at his watch. Whose time does he know? If I'm walking past him, (due to relativity) my time is different than his time. Whose watch ever has the exact time? There is a saying, the person with one watch knows what time it is; the man with two watches is not so sure. The occasion of Jack walking in the door of Mary's office in no way means that he knows where it is nor even where he is. Saying that most children know that the earth is, to a first approximation, round is saying that they don't know what shape the earth is, nor is round well defined. As for knowing where his car is, I can't count the times I have left somewhere assuming that I know where my car is only to discover that I need to use my clicker to find it.

So, these aren't obvious cases of knowledge they are either parts of our everyday modeling of the world or actions based on that model. As I have pointed out previously this can't be knowledge because no human representation either in thought, verbalized or otherwise instantiated can be true. Further, we have no independent basis for comparing our modeling with that which we are modeling. For example, colors are nothing like what science tells us they are modeling. Rather than knowledge accumulation, what is going on is information passing between us and the world allowing us to build models based on the process of reasoning to the best explanation. If I am to be really careful about what I am saying, I should note that even all that I'm proposing is itself just a model. What both our everyday models and our scientific models allows is for us to function, that is, to survive, within a world that itself remains inaccessible.

Thus, it is not true as Kornblith says that "Knowledge is what explains the possibility of regularly successful behavior...." Consider paper or computer-generated maps of the world. Such maps are not true representations of the world. They are, in a sense, useful misrepresentations. Further, our models (what Kornblith would call knowledge) unlike maps cannot be compared with 'reality'. We have no way to know what that reality is 'really' like nor what the true relationship is between the regularities in our models and hypothetical regularities that may

exist in reality. For example, consider that there might be a vent in the earth out of which floats poisonous gases. This might be modeled on a map by a message, “Dangerous Terrain. Stay Out.” This map, if we behaved accordingly, would allow us to navigate the region successfully while bearing almost no relationship to the physical reality.

There can always be other explanations for the regularities we model. Consider that some scientists have recently claimed that it is possible that our world is a simulation. For example, David Kipping writing online for *Scientific American* cites Nick Bostrom.⁶⁶ “He [Bostrom] proposed a conceptual framework in which to address this question and his simulation argument contains three propositions, one of which he reasoned must be true. Either:

1. human societies invariably go extinct before reaching a stage where they are able to simulate new realities;
2. even if they do reach this stage, they are unlikely to be interested in simulating a reality much simpler than their own;
3. the probability that we are living in a simulation is close to one.

Since the final outcome of Bostrom’s first two propositions is that simulations do not exist, they can be collapsed into a single proposition [1]. The *trilemma* thus becomes a *dilemma* in which there are now two possibilities:

1. a natural non-simulated universe (ours);
2. an ‘original’ natural universe that spawns one or more simulations that may themselves spawn further simulations, one of which would contain our universe.

In the absence of any other information, both scenarios should be considered on an equal footing according to a basic tenet in statistics – Laplace’s ‘Principle of Indifference’, which states that in the absence of evidence, all hypotheses should be considered equally likely. But, the fact that the simulated hypothesis necessarily contains one natural universe amongst the many simulated universes means that there would be a slightly less than 50% chance that we live in a

⁶⁶ If you google Bostrom you will find that Wikipedia has this to say about him: “Nick Bostrom is a Swedish philosopher at the University of Oxford known for his work on existential risk, the anthropic principle, human enhancement ethics, whole brain emulation, superintelligence risks, and the reversal test. He is the founding director of the Future of Humanity Institute at Oxford University.”

computer simulation.”⁶⁷ On the basis of probability, this consideration (we are living in a simulation) seems somewhat more reasonable to entertain than the possibility we are dreaming, hallucinating or being misled by a demon. In any case it shows again that the models we create need not bear the kind of similarities to the ‘reality’ that we usually suppose.

Throughout history humans have been creating these models and claiming on their basis to know. And these knowers have often been dangerous to others. Not only have they been dangerous, but they have hindered human progress in developing ever more useful models. This is an important reason why we should avoid the hubris of claiming human knowledge. The concept of knowledge implies at least two separate entities and transmission of information from one to the other. The transmission is a physical process. The vehicle that carries the transmitted information is different than both the receiver and the sending entity. In the process there is the inevitability of noise and loss. It is apparent that what is transmitted can have results on the receiver. But equally, as I have shown, there is no way to know exactly what the relationship is between the result and the transmitter. The implication for epistemology is that it should minimize the metaphysics and concentrate on a truly scientific approach. It does seem to be the case that humans can create useful models. There is no reason to think that we cannot continue to create better models in the sense of having increased explanatory and predictive success. We can explain some experiences based on other experiences and usefully predict future experience. What needs to be done is research in cognitive science, physiology, psychology, and information science so as to better understand the entire process by which humans construct models, so that we can understand the flaws and obstacles to our constructing such better models of both our physical and social worlds. This might allow a more realistic conception of humankind, and its place in the bigger scheme of life on earth. But it doesn’t mean that we may not always encounter the situation in which we need a paradigm change.

⁶⁷ <https://www.polytechnique-insights.com/en/columns/science/can-we-know-if-our-universe-is-a-simulation/#:~:text=So%2C%20while%20there%20is%20a,simulation%20odds%20better%20than%2050%25>.

I'll end with a brief riff on an old physics joke. It's not turtles all the way down it's models all the way down. At least as far as it goes!⁶⁸

⁶⁸ I can't remember where I read it, but I'm referring to a story of a physicist who was giving a lecture on cosmology. At the end of the lecture a person asked him what was holding the earth up. When the physicist replied, "Nothing" the person said, "Sir, you are wrong; everyone knows it is held up by a giant turtle." The physicist then asked, what holds the turtle up and the person replied, "That's easy, it's turtles all the way down." This 'joke' of course is about the problem of infinite regress. I don't actually think that human model formation leads, in practice, to an infinite regress. The process stops due to a combination of a number of factors. For example, it could just be that the model builder is satisfied (see the prelude) even though there will always be gaps that themselves could be modeled or it could just be because the model builder has limited capacity.

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