Knowledge, truth, and the challenge of revisability: a critique of actor-network theory

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A Thesis

entitled

Knowledge, Truth, and the Challenge of Revisability:
A Critique of Actor-Network Theory

by

Evan L. Hale

Submitted to the Graduate Faculty as partial fulfillment of the requirements for the

Master of Arts Degree in Philosophy

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May 2012
Abstract

I am concerned in this thesis with a relatively narrow subject matter which has the potential to be brought to bear on numerous philosophical endeavors, from metaphysics to ethics to political science. Of necessity, I will only deal with a few of the possible applications/derivations.

The subject matter in question is the revisability of knowledge, the fact that we can know $p$ at one time and know $not-p$ at another. In Chapter 1, I will establish the truth of this claim and consider its relevance to the question of truth in general. If knowledge is revisable, does that mean truth is? I ultimately answer yes, after considering various popular alternatives.

In Chapter 2, I extend the analysis to the potential revisability of ontology itself. Whereas the first chapter considers the relation of knowledge to truth with that of truth, the second chapter considers the relation of truth to reality. This discussion will involve a brief historical survey of modern representationalism, the philosophical view that the subject represents the external world internally. Representationalism is ultimately
rejected in favor of William James’ radical empiricism, which can handle a revisable ontology and, when coupled with his pragmatism, the revision of truth.

Chapter 3 will treat what I take to be the most significant application of knowledge/ontology revision today: actor-network theory (ANT). Relying mostly on the work of Bruno Latour, I will show how ANT is a contemporary sociological application of James’ more psychologically-oriented radical empiricism. I will display some of the strengths and weaknesses of ANT, and point toward work, both metaphysical and epistemological, that needs to be done in the future if we are going to understand better the import of revisability in our sciences and our lives.
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Chapter 1

Three Intuitions

1.1 Introduction

Intuitions about knowledge and truth vary widely. Accounts of how knowledge can be obtained and justified, for instance, range from internalist to externalist, foundationalist to coherentist, and so on. The truth of propositions or ideas can be an issue of correspondence to an external reality, coherence with other statements or ideas, or simply pragmatic workability. These intuitions and epistemological positions have implications for the relation between truth and reality and are discussed in Chapters 2 and 3. The focus in this chapter is a set of three quite plausible intuitions that might be even more basic, insofar as they focus on the relation between truth and knowledge. The following intuitions have played a significant, if sometimes tacit, role in many, if not most, philosophers’ theories of knowledge:

A) Knowledge is true, or genuine knowledge is of what is true;

B) Knowledge is subject to revision;

C) The truth is not subject to revision.

There is a tension, if not an outright paradox, in accepting all three intuitions at the same time. Combining B with C, we create the meta-intuition, “Knowledge is subject to revision while truth is not” (which puts a lot of weight on the word “genuine” in A).
Hardly any philosophers would think it natural to argue that genuine truths can be altered. For these reasons, only a handful of epistemologists would reject A or C. There are those who would reject B. These writers adhere to what Hans Rott calls the stability thesis (Rott 2004, 329): “A belief α is a piece of knowledge of the subject iff α is not given up by S [the subject] on the basis of any true information that S may receive.” This position rejects B in favor of keeping C. I will explain shortly why B needs to be taken seriously, and the stability thesis rejected, if we are to take science seriously. Furthermore, I will argue that C needs to be rejected, and the truth rendered mutable, if knowledge is going to bear any meaningful relation to present evidence.

A precisely defined truth might be a factual occurrence assigned to a specific spatio-temporal region. For example, “My dog buried a bone in my backyard on Sunday, November 13, 2011.” And it could naturally be argued that our knowledge of such truths can come and go. For example, I might hear from my friend that he saw my dog burying the bone in the backyard on the date in question. But then he might later recant, as part of a bizarre epistemological experiment or prank, and tell me he was lying, in which case I would no longer believe my dog had buried the bone at the right time and place, and could no longer be said to “know” that the statement above was true. My knowledge would cease to be genuine.¹

Some epistemologists would want to account for this example by arguing that my belief that the dog buried the bone was a justified belief that did not amount to knowledge

¹ Some philosophers would rule this out as an instance of knowledge. Peter Klein is a good example. The fourth tenet of his definition of knowledge is that, if S knows p, “there is no true proposition such that if it became evident to S at t 1 p would no longer be evident to S” (Klein 1971, 475). So if my friend was capable of convincing me of something that was not true, say, that the dog did not bury the bone on the day in question, then I could not be said to know that the dog had buried the bone. In the Section 1.3 below on B I will argue that this kind of definition fails.
(Goldman 1993, 442; Davidson [1989] 2000, 167; Klein 1971, 479-480). It was justified because I, presumably, had good reason to trust my friend’s word. It did not amount to knowledge because it was not actually true that my dog had buried the bone on the day in question. But this appeal to justification simply will not do. For if my beliefs can gain and lose justification repeatedly, without me ever being any the wiser about when my beliefs count as knowledge officially aligned with the truth, then I would never know if I had knowledge. Epistemology would be a fun party game, but it could never be applied to real life.

To treat this issue a bit more rigorously: Let us say my dog did not in fact bury the bone in my backyard yesterday afternoon. A statement to the contrary would not be true. But my friend, uncharacteristically, lies to me, telling me the dog did bury the bone. Because my friend has always been trustworthy before, I am justified in believing his assertion. The epistemologists mentioned above would say my justified (false) belief fails the test of knowledge. My question is, “Outside of a hypothetical example in a paper on epistemology, where all the facts are pre-articulated in an imaginary universe to which the writer and the reader have virtually omniscient access, when could I ever apply this test of knowledge, this comparison of my justified belief with a neutral reality that I have no beliefs about?”

In order to know if I knew the truth about whether the dog buried the bone or not, I would have to already know if the dog had buried the bone or not. Put generally, in order to justifiably attribute knowledge to myself or anyone else, I would have to have and make use of access to the truth about the subject of knowledge in question. If “having and making use of access to the truth about a particular subject matter” does not
count as knowledge, I do not know what does. So, if we accept a distinction between justified belief and knowledge, we have to admit that new knowledge of \( x \) implies previous knowledge of \( x \). We cannot know something unless we already know it. We are brought back to Plato’s problem of learning, as articulated in the *Meno* and the *Phaedo*. Plato’s theory of recollection may work for some, but for me it is the justified-belief/knowledge distinction that we should reject.

We are not out of the water yet, unfortunately. If justified beliefs now qualify as knowledge, another problem emerges: in what sense can the experience of knowing something true (justifiably believing it) ever be distinguished from the experience of believing something false? Put more succinctly, if knowledge is never final, but truth always is, what could they possibly have to do with each other? These reflections seem to suggest that A would be the proposition to reject.

My contention is that many epistemologists have either implicitly rejected the claim that knowledge is of true facts, claim A, or explicitly rejected the revisability of knowledge, claim B. Those rejecting A accomplish this feat by defining justification procedures in such a way that knowledge becomes applicable to true and false statements indiscriminately. Those rejecting B create a definition of knowledge so strong that scientists cannot even attain it. I will argue in this thesis that, instead of adopting these strategies, we should explicitly reject C, the claim that truth is not subject to revision. This move will satisfy the common sense requirement that our truth claims need to be,

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2 I sincerely apologize for the pun and any that might occur later on.
3 The epistemologies of these philosophers might justifiably be called “failed epistemologies.” Rejecting A is one of the common charges that rival epistemologists bring against each other. Any given epistemology paper will point you in the direction of dozens of these failed epistemologies.
and are justifiably, associated with available evidence, a requirement that I believe too many epistemologists have unintentionally, and mistakenly, abandoned.

I will begin this chapter by attending to each of the three intuitions in turn, drawing out the meaning of each, and articulating why they seem so plausible. Then I will argue that the correspondence theory of truth inherent in scientific realism and the social constructivist theory of knowledge both implicitly reject A. Ultimately, I will suggest that B has not received the attention it deserves. Taking A and B seriously will require the rejection of C. The next chapter will delve into the ontological consequences of such a move.

1.2 Knowledge Is True, or Genuine Knowledge Is of What Is True

Your average person on the street knows that water is an exceptional solvent, or knows that the proposition, “Water is a good solvent,” is true. This is not to say that everybody understands the chemical composition of water, but everybody knows that if you submerge an object in water, it becomes significantly easier to remove unwanted chunks of matter clinging to the object. As far as the more theoretical aspects of chemistry, or facts about how much of the human body is water, or how to most intelligently manage water in agriculture, most of us pick up bits and pieces in school and trust that chemists, physiologists, and agriculturists have a good enough handle on the rest of it. I think we can agree that this confidence in scientific authority is well placed.

Very well, then, we are prepared to accept the claim, “I know water is a good solvent,” from anyone we meet, without batting an eye. But imagine if someone made the claim, “I know that the United States of America is the smallest country in North America.” This claim would raise our eyebrows, simply because it is impossible to know
that the U. S. A. is the smallest country in North America. The claim, “The U. S. A. is the smallest country in North America,” is not true (Grenada is actually the smallest country in the North America continent). In common usage, and in most philosophical epistemological theories (at least at the surface level), one cannot know something that is not true. To put it more precisely, people should not attach the phrase, “I know,” to the beginning of a false proposition.

The first intuition A is not one many will explicitly reject. I plan to argue, further on, that, however much lip service is usually paid to the plausibility of this intuition, many epistemologists have tacitly abandoned it. By setting the standards for knowledge so high, these epistemologists make it so that nothing we consider knowledge outside of hypothetical philosophical contexts can be considered true.

1.3 Knowledge Is Subject to Revision

At various points in the history of philosophy, empirically gained knowledge has been decried as unreliable because it was open to revision. The Cartesian example of dream skepticism jumps immediately to mind, or the perception of a round building in the distance that turns out to be a square building viewed up close. Sense data misleads us frequently. Philosophers in the rationalist tradition place less weight on using the senses to justify knowledge.

A. J. Ayer has pointed out that the only way to know that empirically garnered beliefs are incorrect is through the acceptance of further empirically garnered beliefs (Ayer 1936, 21). In the above example of the building, the only reason Descartes thinks the building is not round is because of his later experience of the building being square. So the justification for the knowledge that sense-error occurs has to be empirical. I think
it is also questionable whether logical or abstract concepts are really closed to revision, but in any case, empiricism seems to have triumphed in the wider culture.

The success of the empirical sciences is undeniably the driving force behind the success of empiricism. New, more comprehensive facts and theories are largely responsible for this success; perhaps the increasing power of modern technology is even more so. The authority of the sciences, at least in academic circles, is rarely questioned. The fact of evolution, in most American universities and in all European ones, is taken for granted. While mathematical research is certainly necessary to establish many contemporary scientific theories and facts, empirical proof is often considered the ultimate arbiter. Empirical evidence varies, which leads to revisability. To paraphrase William James, the motto of our sciences, and our modern, naturalized epistemology, might be, “We must take what justified knowledge we can today, and be ready to call it unjustified tomorrow!” (James [1907] 1977, 438)

I should note, again, that there are many twentieth century epistemologists who have attempted to give an account of knowledge that does away with this kind of empirically grounded fallibilism. Ever since Gettier’s criticisms of the “justified true belief” position, writers like Gilbert Harman and Peter Klein have attempted to add clauses to this definition of knowledge to repair it (see Harman 1973; Klein 1971). The occurrence of the word “true” in this definition shows that these philosophers intend to keep knowledge and truth together; none of them would argue that truth is revisable. Their intentions are admirable, but their arguments come at the expense of making knowledge, from a philosophical perspective, utterly alien to human practice. Klein’s reliance on counterfactual conditions is problematic: “we might tentatively assert that S’s
evidence for his belief that \( p \) is not sufficiently strong to certify his belief as knowledge if there is some fact which, were \( S \) to become aware of it, ought to cause \( S \) to retract his knowledge claim” (Klein 1971, 474). Who among us can say that there are not facts in the world that will eventually make us alter our knowledge claims? More to the point, what is the psychological difference between knowing a fact and “thinking that we know” a fact? Is a second, objective party required to evaluate every knowledge claim that \( S \) makes? What about the knowledge claims the second party makes? What would the need for a second party say about the KK thesis, that in order to know \( p \) we must know that we know \( p \)? Should it be amended to “in order to know \( p \), your friend must know that you know \( p \)”? Any epistemology that would deny friendless drifters the right to knowledge seems needlessly restrictive.

There is another, more sweeping objection I would like to make. Any epistemology (any “knowledge of knowledge”) that does not apply its standards to itself, that is not reflexive, necessarily produces a kind of infinite regress, or at least a suspicious brand of foundationalism (“my epistemological theory is itself the foundation of all human knowledge”). Would any philosopher be willing to claim that her epistemology is absolutely certain, not subject to revision? If not, if his knowledge about knowledge is itself revisable, there is no reason left to deny that knowledge in general is revisable as well.4

4 It might be objected that reflexivity is just a disguise for “circular argument.” After all, if an epistemological theory is used to justify itself, there seems to be no reason to accept the theory unless you have already accepted the theory. I will treat this issue more thoroughly in Section 3.5, but for now I will assert that first principles, be they rational maxims or specific types of experiences, are problematic. This means we should turn to an empirical analysis of the generation of knowledge. This move may appear to be an abandonment of the notion of justification as we know it, but in Section 3.5 I will show how we can replace “justification” with “fortification” and be much better off.
It could be argued that many epistemologists are merely trying to examine our implicit intuitions about knowledge, making them explicit items of knowledge themselves, rather than producing any kind of demarcation criteria. Epistemology would be something like introspective psychology if this were the case. But if “epistemology” is intended in this descriptive sense, there is reason to broaden the horizons of epistemological research, just like psychology broadened its scope through experimentation and statistical analysis. In fact, if epistemology is not to be considered prescriptive, there is no reason why it cannot be naturalized and treated by psychology and sociology. This is not to deny the value of introspection, or philosophical epistemology; but, much like in the case of psychology, empirical research into the psychological and social meanings of knowledge can provide a significant corrective to armchair theorizing.

If we are willing to accept scientific facts as items of knowledge, we will find many instances of revision. There are two important and widely discussed examples I should note. They are related, both being concerned with the number of planets in our solar system. In 1781, Friedrich Wilhelm Herschel discovered the planet Uranus, bringing the official total number of planets in our solar system to seven. But there was a problem. Newtonian mechanics predicted a specific orbit for the new planet—one which it did not follow. By 1846, John Couch Adams and Urbain Leverrier mobilized this anomaly in the prediction of an eighth planet, which was later found by astronomers and named Neptune (Lakatos 1999, 69 note 6; see Grosser 1962 for a fuller account). This scientific victory changed our conception of the universe, or at least of what it contains.
It is also an example of the ever present threat of scientific revision, which we do well to embrace as a corrective to dogmatism.

The second example pertains to the one-time ninth planet from the sun, discovered in 1930: for almost a century, scientists and others knew that there were nine planets, Pluto being the furthest from the sun. In recent years, however, it was discovered that Pluto’s mass is significantly lower than that of the other planets. Further, there are a collection of other Pluto-like masses in its vicinity. Pluto was reclassified as a dwarf planet. Now it is generally accepted in the scientific community that our solar system has only eight legitimate planets. Revision is still alive and well, creating and destroying planets at will.

To suggest that scientific facts do not constitute true knowledge is either to presume

1) There is some other method, besides the empirical scientific one, that can give us true knowledge; or

2) There is no way to gain true knowledge.

The epistemologists mentioned earlier either wish to dictate to scientists what should be considered knowledge, or think that their theories are in line with scientific practice. It is not always clear, and it is therefore uncertain if they would hold 1 or not. But in either case, scientific revision does in fact happen. Anyone who holds 1 could only reasonably point to mathematical or geometrical knowledge as sufficing where empirical scientific knowledge fails. But arguing we can know nothing about the external world is not a popular move; it would seem to land us with a form of Platonism,

5 Some scientific realists would want to qualify this statement into insignificance, but I examine them in Section 1.5.
where only abstract formal objects are recognized as real objects of knowledge. But again, such a wholesale rejection of empiricism could only be based on empirical grounds. Our only way of knowing that our experience of the sun revolving around the Earth is mistaken is via further astronomical and physical types of experiences. Those who hold 2 would be genuine skeptics. Arguments will be advanced against skepticism later; for the time being I will ignore this nonstandard position.

If we are going to accept the authority of what I take to be the most epistemologically rigorous human disciplines, the empirical sciences, we must accept revisability as a necessary, even a praiseworthy, trait of our knowledge.

1.4 The Truth Is Not Subject to Revision

An intuition shared by many philosophers and non-philosophers is that, if a fact is defined precisely enough, it cannot be revised. If it is true that I dropped a pen and it hit the floor of my kitchen at 9:27 pm on December 5, 2011, in a specific apartment in Toledo, Ohio, then it will be true forever after. (The question of whether it is true in some four-dimensional sense before I even drop the pen is interesting, but will not be treated here.) I may forget that this happened, I may never tell anyone else and be felled by an assassin’s bullet at my thesis defense, but it will always be true, whether anyone knows it or not. It would be true even if I had done it in my sleep and had never been aware of it myself.

On a larger scale, many would agree that the theories of general and special relativity have always been an accurate portrayal of the universe, even before Einstein discovered them. The speed of light has always been an absolute (i.e., the speed of light will be the same for any observer in any given frame of reference); space and time never
really were (i.e., the speed of light will vary depending upon how fast the observer is moving relative to that which is being observed). Newton was simply mistaken on this point. These examples represent the intuition that truth is not subject to revision. A given fact is true whether or not anyone knows it is true, and no one can change the truth of a precisely defined fact.\(^6\)

But what does this mean for knowledge? Based on A above, knowledge should only be \textit{of} the true, of unrevisable facts. But we saw above, in the section on B, that knowledge is itself subject to revision. If my analysis in B is correct, we have every reason to say that Newton \textit{knew} that space and time were two absolute dimensions of our universe, and that the speed of light would vary depending on the velocity of the observer. But if C is correct, Newton’s claims were never true. The argument that Newton’s claims were true within a particular context holds no water; a significant portion of the scientific revision constituted by the jump from Newton to Einstein \textit{is} the revision of our knowledge of what contexts in fact exist. Additionally, for the realist, it is difficult to explain how the statement “Space is absolute” approximates “Space is not absolute” (cf. Worrall 1982). This difficulty lands us in the odd position of arguing that Newton had knowledge of false facts. What should we do about this?

We saw that some of the epistemologists mentioned above would probably be comfortable with the idea of “justified false belief.” That is, Newton was justified in believing his mechanical theory was correct, but nevertheless it did not constitute knowledge, since his theory was not true. The reprise of this chapter comes around again: the problem with this move is that it fails to point out any distinguishing marks

\(^6\) It is this particular issue that shows that the influence of logical positivism is still alive and well. See (Neurath [1932/33] 1959) on protocol sentences.
between justified false belief and justified true belief. If we have a justified belief, whatever that means, how can we tell if it is true? That is, how can we determine truth without any reference to any kind of justification?

Should we give up knowledge, then? I would say no. I think admitting that the truth is revisable is a preferable maneuver.\(^7\) This move might seem like merely a semantic difference. But for one, if we have learned anything from feminism, it is that our choice of words matter. Writing “she” more often than “he” in our papers and books contributes, in some small way, to promoting gender equality. But more important than this are the ontological presuppositions that underlie our use of the word “truth.” As I will show in chapter 2, there is a particular metaphysic implied by the unrevisable conception of truth, one that can be replaced if truth is allowed to be revised. There are benefits to this replacement, which I will unpack in the next two chapters.

But first, I think it important to examine a popular conception of scientific knowledge to which many thinkers are committed, namely, the scientific realist conception of scientific knowledge as “approximating” truth. I will begin by treating the least defensible version of this, which I call the messianic theory of truth, best exemplified by C. S. Peirce. I will then show how the weaker, more reasonable version fails to escape from the criticisms applicable to Peirce’s view. I will also discuss certain unintended consequences of these views.

\(^7\) It should be noted in passing that Richard Foley seems to be proposing a solution to the above problems that is diametrically opposed to mine: “It is a mistake for . . . epistemology to insist upon any kind of guarantee whatsoever between rationality and truth or likely-truth” (Foley 1990, 73). More specifically, his solution is to decouple rationality from knowledge and truth. Knowledge stays connected to truth, but rationality is disconnected from both, and we consequently turn into rational agents that never know if we actually have knowledge. As you will predict, I find this kind of move distasteful and unnecessary.
Now I will switch focus to the relation between truth and reality, or scientific knowledge and reality, something I take to be a fundamentally epistemological enterprise. The supposition that science is progressing steadily, producing ever closer approximations of the truth about the universe, is widely held, despite the work of Thomas Kuhns and later sociologists of scientific knowledge (some of whom will be discussed below and in Chapter 3). Scientific realists are the official champions of this view, which is compatible, perhaps even complementary, with the popular correspondence theory of truth, wherein a true statement is true in virtue of its corresponding, in some sense, with a part of external, objective reality. This perspective holds that science has produced, or will produce, the best language and/or conceptual armory to understand reality. Given the provisional character of all scientific findings, it is impossible for a scientific realist to think the present state of our science describes reality with complete accuracy. But these scientific realists do insist that scientific findings approximate reality, and, through scientific progress, move ever closer to the real truth, even if the real truth is never completely attained (see Boyd 1983 for a thorough explication and defense of scientific realism; see Russell [1940] 1956, 123 for a classic argument; see Harker 2010 for a contemporary modification). Structural realism, a popular version of scientific realism, holds that, while particular entities recognized, or at least experimentally employed, by scientists might not be objectively real, the general

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8 I am not going to deal with correspondence theory here. This might seem like an odd choice, but my arguments in the second chapter will be sufficient to make any strict correspondence theory superfluous.
structure of the world exhibited in consecutive scientific theories is progressively closer to the truth over time (see Harker 2010 and Worral 1982).

In the late nineteenth and early twentieth century, this scientific progress view was endorsed, perhaps in its most extreme form, by Charles Sanders Peirce. The explicit nature of his endorsement is most likely due to Peirce’s commitment to his pragmatic theory of meaning: “Consider what effects that might conceivably have practical bearings we conceive the object of our conception to have: then, our conception of those effects is the whole of our conceptions of the object” (Peirce [1903] 1998, 135). To understand what is meant by a word or concept, one simply has to take note of what kind of behavior is entailed by it when someone accepts the word/concept as true or meaningful. For instance, the meaning of God might cash out as a particular lifestyle involving a form of worship, a moral code, a list of doctrines, etc.

What is the pragmatic meaning of truth? According to Peirce, “The opinion which is fated to be ultimately agreed to by all who investigate, is what we mean by the truth, and the object represented in this opinion is the real” (Peirce [1878] 1998, 139). Whatever all inquirers into a particular subject matter will agree on in the indefinitely distant future is what is meant by the term/concept “true.”

Is it really at all probable that such community-wide ratification is “ultimately” going to occur? Peirce thinks so:

. . . all the followers of science are fully persuaded that the processes of investigation, if only pushed far enough, will give one certain solution to every question to which they can be applied. . . . [The inquirers] may at first obtain different results, but as each perfects his method and his processes, the results will move steadily together toward a destined centre. . . . Different minds may set out with the most antagonistic views, but the progress of investigation carries them by a force outside of themselves to one and the same conclusion. This activity of thought by which we are carried, not where we wish, but to a foreordained goal, is
like the operation of destiny. No modification of the point of view taken, no selection of other facts for study, no natural bent of mind even, can enable a man to escape the predestinate opinion (Peirce [1878] 1998, 138).

The truth, for Peirce, is that limit to which scientific endeavor continually approaches, and, given an indefinite period of time, may eventually reach. I have chosen to label this theory “the messianic theory” because of its obvious analogy to the beliefs of religious groups such as Christians and Jews, who expect, at some indeterminate date in the future, a messianic king to appear and bring justice and peace to the Earth forevermore. In the Peircean conception, the personal messiah is replaced by a final consensus amongst experts, with regards to how to answer a particular question, that will appear once we have pushed inquiry far enough and then usher in a millennium of communal life in the presence of that particular truth. Afterwards, we can ostensibly halt that line of inquiry and devote our resources to another, unanswered question.

The question I ask the Peircean is this: in the meantime, do we have knowledge? If not, the messianic theory of truth becomes practically indistinguishable from skepticism. It’s unclear how Peirceans can provide an account of how we will know when we get to the truth, so we can track our progress and have something to look forward to. But knowing how we know when we know the truth, being knowledge of the truth, is something we could not obtain until the indefinitely distant future, when we will know the truth. Once again, we cannot come to know anything unless we already know it.

On the other hand, if the messianic theorist does allow that we have knowledge before we have access to the truth of any area under discussion, then Peirceans, and scientific realists who accept a messianic theory of truth, have openly severed the tie
between knowledge and truth, rejecting Intuition A above. Knowledge is not of what is true.

Now, the scientific realist may object that the Peircean version of scientific realism is so extreme as to be a caricature of the standard version of the theory. Most reasonable scientific realists would not accept a theory indicating the eventual obtainment of an absolutely final, perfectly accurate account of the way the world is, but only the more modest claim that scientific theories approximate the truth, getting ever closer, asymptotically, towards the real truth, but never quite reaching it.  

Unfortunately, this more moderate view is even more problematic than Peirce’s extreme view. For the approximationist, truth is never even actually attained. But this progressivist view has a more damning problem. In the field of ethics, particularly virtue ethics, an asymptotic theory might make sense. Perhaps we can imagine what it would be like to be a perfectly moral person, and while we can never attain such perfection, we can slowly improve our behavior, becoming ever more morally upright along the way, though never quite becoming the idealized saint. But this progressivist ethical view is only thinkable because we have an idea of what it would be like to be morally perfect. We know what a moral sage would look like, and therefore we have a goal to work toward, a scale to measure ourselves against. In order for us to have any idea of how close we are to knowing the truth in science (keeping intuition C constant), we would already have to know what the truth is. You cannot figure how many miles you are away

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9 Popular contemporary versions of this kind of realism are “selective realism” and “structural realism.” The former takes only certain parts of scientific theories to be maintained across scientific revolutions, rather than entire theories; the latter presumes the structural content of theories to be approximately true, but not the non-structural (Harker 2010, 194, 197). Neither of these alternatives escape my ensuing criticism.
from your destination if you do not know where you are going. And if we knew what the truth was, we could dispense with scientific approximations entirely. It might well be that scientific realism is the best explanation for explaining the success of science (but see Laudan 1981 for a refutation of this claim, esp. 22-36). But if all we can ever know is that some of our scientific theories are probably kind of close to being true, we do not have much. Even if we could claim the current state of any particular science at the present is mostly accurate, this would tell us nothing about the truth values of any particular claims. If we can call scientific facts knowledge at all, we cannot say that knowledge is of the true. Intuition A is out.

While the scientific realist might cringe at this point, there are those who embrace it openly. They are the social constructivists, embodied particularly in the Strong Programme (SP) and successor movements in the Studies of Scientific Knowledge movement (SSK). The distinguishing mark of the Edinburgh-based Strong Programme is its affirmation that every aspect of human knowledge, all the way up to “pure” mathematics, can be traced to social causes. Given this entirely social history of knowledge claims, it is the SP’s primary goal to discover a complete set of social laws that can in principle explain every type of human behavior, including the social construction of knowledge, just as physicists, for instance, hope to one day have a complete set of physical laws that can describe all motion in the universe (Bloor [1976] 1991, 18-23).

A pioneer in this field is David Bloor, author of the SSK manifesto Knowledge and Social Imagery. Bloor is quick to respond to critics who say he is undermining the authority of science or its claims to truth: “Whether a belief is to be judged true or false
has nothing to do with whether it has a [social] cause” (Bloor [1976] 1991, 18). But this reassuring remark is ultimately cold comfort, as Bloor explicitly rejects Intuition A later on in the book:

The question may be pressed: does the acceptance of a theory by a social group make it true? The only answer that can be given is that it does not. There is nothing in the concept of truth that allows for belief making an idea true. Its relation to the basic materialist picture of an independent world precludes this. *This schema permanently holds open the gap between the knower and the known.* But if the question is rephrased and becomes: does the acceptance of a theory make it the knowledge of a group, or does it make it the basis for their understanding and their adaptation to the world?—the answer can only be positive (Bloor [1976] 1991, 43, italics mine).

Bloor’s conception of knowledge is clearly empirical—“knowledge for the sociologist is whatever people take to be knowledge” (Bloor [1976] 1991, 5). But his conception of truth is traditional, correspondence theoretic even. Taken together with his commitment to the socially constructed character of all human knowledge, truth is a lost cause. If every method we have to create knowledge is utterly incapable of reaching truth, then knowledge and truth are forever divorced.

1.6 Conclusion

I have shown how, for traditional epistemologists, scientific realists, and social constructivists, knowledge and truth are irreconcilable. Intuition A, that knowledge is of what is true, has been, surreptitiously or in broad daylight, rejected.

But does this have to be the case? Is truth really as unacceptable as these philosophers and sociologists make it out to be? Can our knowledge not be brought together again into a happy marriage with truth?

I believe it can be, if we identify the problem more precisely. An historical survey and analysis of how exactly this divorce occurred needs to be sketched. I present
this survey and analysis in the next chapter, where we will find that knowledge has been promiscuous and the truth (f)rigid. The solution, however, is not to browbeat knowledge into settling down and coming home to truth. The epistemologists are wrong about this. The solution is to reject Intuition C above, to conduct an intervention for truth, and to give it the tools it requires to finally meet the considerable needs of knowledge.
Chapter 2

William James’ Rejection of the Representational Subject

2.1 Introduction

In the previous chapter, I showed how the separation of justified belief from knowledge inadvertently created a gap between knowledge and truth that made knowledge of the external world inaccessible. I also argued that, to fix this problem, we need to make truth itself revisable. In this chapter, I will explore the ontological consequences of such a move. For, if the truth is held to be mutable while the nature of reality is immutable, the same problems inherent in the separation of knowledge and truth will rear their ugly heads. If the truth is revisable, but the world is not, then, to modify and negate Intuition A above, “the truth is not of what is real.”

The kind of ontological pluralism I am advocating may sound like a strange position. It is certainly uncommon, but I am going to explain, in fact, how odd and unworkable the monistic, unrevisable conception of reality actually is. Ultimately, I will argue that the key to conceiving a pluralized ontology lies in the writings of William James. Contrary to many accusations from his critics, James’ ontology and theory of truth are not “too subjective.” In fact, if anything, they are too objective. The reasons for this assessment will be clear once I explain how James eliminates our need for the knowing subject.
The radical empiricism of James was never presented in a systematic fashion. This leaves many of his writings on the subject open to a wide variety of interpretations. I am going to argue that it is useful to think of his metaphysical position primarily as a rejection of the object-subject dichotomy. More specifically, it is a rejection of what I want to call the “representational subject.” While James himself directly addresses “the one versus the many” as his primary metaphysical issue (James [1911] 1977, 258), I believe it will become clear in this chapter that this problem is fundamentally bound up with the issues of objects and subjects.

The doctrine of the representational subject offers to us the vision of a world separated from our perceptions of it by the gulf separating subject and object. Our perceptions are, in some manner or another, representations of this absolutely external environment. In the space provided, I am going to trace a little bit of the early modern history of this concept of the subject, primarily through Descartes, Locke, Berkeley, and Kant. This will necessarily involve putting James on hold for a number of pages, in order to show how the representational subject has been a consistent standby in modern metaphysical/epistemological conversations. Afterwards, I will unpack the meaning of James’ rejection of the representational subject, and try to come to an understanding of what terms like “imagination” and “error” must mean in a plural, radically empirical universe.

2.2 Descartes: An (Ir)Rational Reconstruction

To begin, I need to sketch a brief history of the representational subject that William James will eventually reject. There is no precise point in philosophical history where we can identify the absolute beginning of the kind of subject-object thinking that I
am targeting here, but I can confidently assert that Rene Descartes had quite an important role in the modern evolution of such thinking.

Descartes’ method in his *Meditations* is to push the limits of hypothetical skeptical doubt. The justification for his use of this method is the reality of error. We often misperceive events or the nature of objects in our environment, or make judgments that turn out to be wrong. Suppose, for instance, I am driving on a two-lane highway at night, and I see a sign informing me that the left lane merges into the right, fusing into one lane. I am in the left lane, so I merge right. A truck pulls up beside me on the left, so I try to accelerate a bit to give the other driver room to merge behind me. Then, suddenly, I realize that my lane is the one coming to an end, and I have to put on my brakes before I am funneled right into the side of the truck in the other lane. The driver honks angrily as she passes me. I turn around in order to go take a look at the sign I saw before, and, sure enough, it actually indicates that the right lane merges left. I made an error.

This example is common enough to be familiar, but it also emphasizes the significance of error in our lives. This is not a pointless philosophical pursuit. When we get things wrong, we may create serious problems for ourselves and others. In the example, someone could have gotten hurt or even died. If we want to be able to navigate our world effectively, we need to sort out the marks of truth and falsity, and find the best way to hold on to true ideas. Any theory of error is designed to help us distinguish the true from the false more reliably than we could without it. A successful theory of error should help us make fewer errors.
So, what is the best way to hold on to true ideas? The skeptics that Descartes mimics don’t think it can be accomplished. All empirical beliefs, beliefs derived from sensation, and perhaps even all purely internally derived beliefs, are open to revision, and that means nothing is quite stable enough for us to hang our hats on. According to the true skeptic, we are better off not judging anything officially “true,” and accepting the fact that most, if not all, of our ideas and beliefs will be falsified at one time or another.

Descartes accepts the skeptic’s criterion of knowledge, but thinks knowledge is still attainable. Knowledge, absolutely certain knowledge, is the sort of thing that arrests the process of revision; genuine knowledge is made of beliefs that cannot be changed. Consider this passage from his Second Replies:

. . . as soon as we think that we correctly perceive something [, i.e., have a clear and distinct perception of something], we are spontaneously convinced that it is true. Now if this conviction is so firm that it is impossible for us ever to have any reason for doubting what we are convinced of, then there are no further questions for us to ask: we have everything that we could reasonably want. . . . For the supposition which we are making here is of a conviction so firm that it is quite incapable of being destroyed; and such a conviction is clearly the same as the most perfect certainty (Descartes [1642] 2004, 104, paragraph 145).

A revisable belief cannot be termed knowledge, for Descartes, and cannot justifiably be called true. His method is designed to beat the skeptic at her own game, and to produce the kind of certainty that can simultaneously arrest the endless train of potential revisions and cultivate a fruitful soil out of which science can grow.

Descartes’ success or failure in this epistemological endeavor is only of secondary interest for this essay. What I am more concerned with articulating in this section is the particular ontology that undergirds Descartes’ epistemology. What must the world be like for the kind of error and knowledge that Descartes treats to exist?
The skeptical impulse itself is born from an implicit commitment to a kind of monism. In this context, “monism” is going to signify a commitment to the existence of one and only one ahistorical cosmos. “Ahistorical” does not mean that things do not happen in this cosmos, but rather that there is some fundamental, unchanging object or process that characterizes the universe. This could be God, the Forms, or even the presently popular eternal, four-dimensional space-time block that contains everything that exists. In the merging example above, both skeptics and many of their opponents would argue that the reason I can be said to have been in error is that the road sign position at spatial coordinate $x$ and temporal coordinate $y$ had message $z$ printed on it, but I somehow experienced message $z$ as message $a$. This theory of error presumes the universe to be, if only at the temporal level, unchangeable. If the sign actually read MERGE LEFT at time $y$, it could never be true that the sign read MERGE RIGHT at time $y$. The objective world is not the sort of thing that falls into error. Only the subject can achieve erroneous belief successfully.

To back up slightly, Descartes, the skeptics, and many other thinkers besides postulate as a basic ontology the existence of a singular, unchanging cosmos. Without this type of cosmos, the theory of error sketched in the previous paragraph would be inconceivable, and skepticism could never get off the ground. The dictum “Appearances can be deceiving” relies on the dichotomy of appearances and reality, the former being self-evidently (and massively) plural, the latter being singular. If the latter itself were plural, there would be no sense in even talking about the kind of error the skeptic presupposes. There would be no appearances that failed to correspond to some reality; there would simply be multiple realities. We will come back to this later.
I will refer to the singular, ahistorical view of the world from here on out as “monism,” though of course it must be distinguished from Descartes’ substance dualism. He thought that two fundamental types of substances existed, physical and non-physical; but he also thought that they both existed together in a completely consistent universal whole. In this latter sense, Descartes was a monist.

All right, then. We inhabit an objective world, according to Descartes. But now we have a problem, the problem that the monistic view creates, and that skeptics exploit. If the world is truly singular, why does it appear so plural? How can different people perceive the same phenomena in contrary ways? How can Peter see the road sign as MERGE LEFT while Paul sees it as MERGE RIGHT, for a relatively extreme example? Or how could I see the sign as MERGE LEFT at one time and MERGE RIGHT slightly later?¹⁰

Descartes’ solution is what will come to be known as the subject. The subject is an entity embedded in the objective reality, or perhaps hovering over it, like exhaust fumes, as in the epiphenomenalist metaphysic. The subject is characterized by its unique ability to misunderstand everything about the world. An example from Descartes:

. . . if I look out of the window and see men crossing the square, as I just happen to have done, I normally say that I see the men themselves[.] . . . Yet do I see any more than hats and coats which could conceal automatons? I judge that they are men. And so something which I thought I was seeing with my eyes is in fact grasped solely by the faculty of judgment which is in my mind (Descartes [1642] 2004, Second Meditation, 21).

This is an example of what I am calling the representational subject. There may or may not be men or automatons outside of Descrates’ window, but there certainly are ideas of

¹⁰ Or even at the same time? Experimentally verified cases of such phenomena are catalogued in Dennett 1991, 69, footnote 1.
men in his mind. The subject is an entity essentially different from the external object, one that receives perceptual representations of the outside world, rather than direct experiences—whatever those “perceptual representations” might be (Locke will spell this out more clearly). For Descartes, these representations only become distorted, only lose correspondence with the outside world, when we are too hasty in making judgments about them. And we have spontaneous impulses to make these hasty judgments, which often lead into error (Descartes [1642] 2004, Third Meditation, 26-27). In the Fourth Meditation, a theological spin is put on this, when our overzealous will, combined with our finite nature under the infinite God, is blamed for these judgments (38-41). Instead of original sin, we might call this inherited deficiency “original error.”

This account of error yokes modern philosophy together with the representational. I will show in the next section how this concept was developed by the early British empiricist John Locke.

2.3 Locke and the Submersion of Judgment

Firstly, in Locke’s hands something interesting happens to the concept of judgment. Like Descartes, Locke still takes judgment to be additional to sensation. For a contemporary example, if I see a car coming down the road, I must make the additional judgment that a human being is driving the car. But Locke goes on to note that, “the ideas we receive by sensation, are often in grown people altered by the judgment, without our taking notice of it” (Locke [1689] 1997, Bk II, Ch IX, Sect 8). Our judgments can become so habitual that we perform them unthinkingly, immediately upon having certain sensations. Locke uses the example of the globe. The visual impression we receive from
looking at a globe is a flat circle, but we instantaneously interpret it as a sphere. He goes on:

Nor need we wonder, that this is done with so little notice, if we consider, how very quick the actions of the mind are performed: For as itself is thought to take up no space, to have no extension; so its actions seem to require no time, but many of them seem to be crowded into an instant. . . . And therefore ‘tis not so strange, that our mind should often change the idea of its sensation, into that of its judgment, and make one serve only to excite the other, without our taking notice of it (Bk II, Ch IX, Sect 10, italics in original).

“Without our taking notice of it”? This remark sounds like a candidate for forerunner to “theory-laddeness of observation.” In any case, the point here is that, for Locke, the judgments which are the source of our error (Bk IV, Ch XX, Sect 1) can be carried out unconsciously.

Locke then moves away from Descartes’ position, where error is a direct consequence of misuse of the will. Even so, if we read on at Bk IV, Ch XX, Sect 16, Locke agrees that the misuse of the will is involved, though in a different way:

. . . though we cannot hinder our knowledge, where the agreement [between ideas] is once perceived; nor our assent [which can be in error], where the probability manifestly appears upon due consideration of all the measures of it: yet we can hinder both knowledge and assent, by stopping our inquiry, and not employing our faculties in the search of any truth. If it were not so, ignorance, error, or infidelity could not in any case be a fault. (italics in original)

For Locke, our very decision to apply our faculties in certain types of situations puts us at risk of falling into error. His solution, “not employing our faculties in the search of [certain types of inaccessible] truth,” might appear skeptical at first, but it actually goes far beyond skepticism. For Locke, there are at least some situations where we shouldn’t even try to inquire. The skeptic would say we can inquire all we want, as long as we forever suspend our judgment. Locke argues that suspension of judgment, once inquiry has begun, is impossible, and the only way to prevent error is not to inquire. Locke wants
to make a distinction between those kinds of truth we can judge appropriately and those we should refrain from investigating (this quest will be picked up later by Kant). But it is far from clear whether there are any particular areas of research where our judgments are immune from error, and Locke does not specify how we are to make such distinctions. Ultimately, he argues that we must foster a correct sense of how to apply laws of probability, so that our uncontrollable appetite for belief will of necessity be directed towards what is more likely to be true. But this move just pushes the question back a step: how do we know when we have the correct standard of judging relative probabilities? Even if we could supply ourselves with a probably correct standard of probability, do we really want to suspend inquiry into difficult subject matter, simply because we are liable to error? It is not clear how our sciences could have progressed so far without preliminary foolish (to Locke) blundering around in the dark.

This is an interesting, if underappreciated, conflict. For Descartes, the solution to the prevalence of error is intense analysis of your own mind and perceptions, whereas for Locke, in certain problematic situations, the solution is analytic quietism. But again, this is but a sidenote to my primary point in this section, which is that Locke, in submerging many judgments beneath consciousness, widens the gulf between the object and subject even more than Descartes. The subject’s perceptions of the external world are, at almost every turn, liable to be distorted into error by prejudices, i.e., unnoticed judgments. In many areas of our lives, the right thing to do is to simply accept our inability to access true reality.

So, for Locke, when can we achieve a correspondence with true reality? It must be admitted, now that the moderns have started down this monist road, the skeptical
conclusion keeps insinuating itself. If all of our perceptions are subject to the pernicious influence of under-the-radar judgments, how can we ever be sure we know anything about the objective world? In order to avoid a catastrophe, Locke endorses a settlement originally drawn up by Descartes, though the particular form of it in Locke’s writings owes quite a lot to Robert Boyle: the primary/secondary quality distinction (Berkeley [1713] 1979, xii).

2.4 The Primary Purpose of Primary Qualities

Despite the ever-present possibility of our prejudices making us misrepresent the outside world, Locke goes on to make a fundamental distinction between qualities and ideas. Qualities are what we might call the objective properties of bodies, whereas ideas are our perceptions of those properties (Locke [1689] 1997, Bk II, Ch VIII, Sects 7-8). The representational subject is at its best here: the subject’s perceptions are all representations, or copies, of what is going on in the object.

Locke further imports the primary/secondary quality dichotomy into his ontology. Primary qualities, such as extension, figure, solidity, and mobility, belong to bodies objectively, and our subjective ideas of primary qualities are effective resemblances of the qualities they signify. Secondary qualities, like colors, sounds, and tastes, are not present in bodies objectively, but are in fact ideas caused by the extension, figure, solidity, or mobility of the body affecting our senses. Secondary qualities are only qualities in the sense that certain of a given body’s primary qualities are fit to produce perceptual effects like color and sound in the representational subject (Bk II, Ch VIII, Sects 9-10).

See the previous section on why the modern theory of error and skepticism implies monism.
Before looking at Locke’s arguments for such a distinction, or even after, we might presume that Locke was under the influence of scientific corpuscularism, the idea that all material bodies are built up out of ultimate particles or “corpuscles” (corpuscularism is a forerunner of contemporary particle theories). Not finding a place for color, sound, or taste within the corpuscularist worldview, perhaps he chose, like Boyle and Descartes before him, to lower them to the grade of second-class qualities. This is conjectural, but I think it actually provides a better explanation than the one Locke himself gives, which I will treat presently.

The classic example is of fire. Is heat really in the fire? It seems like it is, but Locke would argue that, at varying distances, fire can cause pain, and we would not want to ascribe “painfulness” to the fire itself. The same applies to the coldness of the snowball (Bk II, Ch VIII, Sects 16-17). Or consider the red and white colours in porphyry: hinder light but from striking on it, and its colours vanish; it no longer produces any such ideas in us: upon the return of light, it produces these appearances in us again. Can anyone think any real alterations are made in the porphyry, by the presence or absence of light; and that those ideas of whiteness and redness, are really in porphyry in the light, when ‘tis plain it has no colour in the dark? (Bk II, Ch VIII, Sect 19)

What do these three examples, heat, cold, and color, have in common? The remainder of Section 19 gives an important clue: “It [the porphyry] has, indeed, such a configuration of particles, both night and day, as are apt by the rays of light rebounding from some parts of that hard stone, to produce in us the idea of redness, and others the idea of whiteness: but whiteness or redness are not in it at any time, but such a texture, that hath the power to produce such a sensation in us.” What the secondary qualities have in common, it seems, is variability. Different observers, or the same observer at different times and distances, can experience varying levels of heat and cold in the same
object, and can see different colors in the same object under different conditions. The primary qualities are real, then, because they do not change, or if they do, it spells a fundamental change in the objective body itself.

What we have here in the distinction between primary and secondary qualities, then, is a microcosm of the object-subject split. As long as a given body exists, truths about its primary qualities, its location at a given time, its velocity, its shape or texture, are singular and cannot be incoherent. The secondary qualities, of course, are relative to the observing subject, and a single body can be the bearer of a plurality of different colors, in this sense. The primary qualities are favored as the “real” qualities, because of their presumed resistance to change. And again, reality is bestowed on the objective world, like the primary qualities, because of its resistance to change and its singularity. Observer-relative representations of the objective world, plural as they are, are tossed indiscriminately into the subject-landfill, for future generations of philosophers of mind to sort out.

In the next section I will attempt to show how George Berkeley’s treatment of primary and secondary qualities prefigures James’ treatment of the monism-pluralism debate.

2.5 Berkeley Shifts the Grounds of Stability

A major problem for Locke’s ontology, as articulated above, is the fact that so-called primary qualities are just as variable as so-called secondary qualities. The shape of a book appears different when viewed from different angles. The perception of speed is relative to the observer’s own velocity. The solidity of a particular body, its amount of resistance, will depend upon the strength of whoever is trying it.
It might be that the primary qualities, amenable as they are to geometrical reasoning and graphing, are intended to have their observer-relativity built in. I.e., a particular cube flying through the air will necessarily appear as a different shape depending on one’s perspective, by definition. Geometrically defined bodies could be said to lend themselves to this kind of relational analysis, in a way that colors, for instance, might not, and this might be why primary qualities are considered more stable. One would clearly expect two different people, looking at the flying cube from different angles, to see different shapes. We might say the primary qualities are more real because they participate in certain eternal kinds of formal relations. This could count as a better defense of the distinction.

But, as John Dewey notes, this falls apart too. There is no reason why we couldn’t define secondary qualities relationally as well:

The fire has really but one temperature. How is that fact to be reconciled with the fact that at different distances it seems to be of many different temperatures? Of course, it can not; but the statement is so mixed as to be absurd; the problem, not the solution, is at fault. The temperature of the air affected by the fire changes with distance; this is a physical fact, and what is felt is the temperature of the air. Thus to say that the fire feels colder as we recede is to state an incontrovertible fact; there would be a problem only if it were not so (Dewey [1927] 1998, 192).

Berkeley uses the similarities between primary and secondary qualities to argue against the reality of any kind of “primarily qualified” matter (Berkeley [1713] 1979, 24-30). If even the supposed primary qualities are observer-relative, how could such matter be characterized as independent of the mind? Or are the “real” primary qualities something beyond solidity, texture, etc, “something-we-know-not-what”? This question leads to an other: Why postulate something we have no experience of, something we have no reason to believe exists? These criticisms apply equally well to any
fundamentally non-experienceable kind of “substance” (30-35). Locke agreed that substance was unknowable in itself, but insisted that it must exist, there being no discoverable inherent power in the primary qualities of bodies themselves that could account for their cohesion (Bk II, Ch XXIII, esp. Sects 1-4).

The first objection to this pioneer of idealistic metaphysics is the fact that our ideas are relatively consistent in their appearance, and must originate somewhere. Why not hold onto physical matter, or at least metaphysical substance, in order to account for the structure and the causal origin of ideas? Berkeley finds the singular solution to both of these problems in God, who transmits ideas to our individual minds and gives to them what consistency they have (45-50).

Thus, Berkeley overcomes the myth of primary qualities inhering in matter, or accidents attached to substance. Unfortunately, all this move does is shift the weight of everything to the subject pole. Well, that’s not exactly true. The objective world is actually still in play. Physical matter has simply given way to the eternal mind of God; there is still a changeless, singular reality that we are ultimately not privy to which makes experience possible. We only receive imperfect representations of the ideas of God. The representational subject lives on.¹²

2.6 Kant’s Ptolemaic Revolution

Immanuel Kant’s most famous string of sentences is found in the Preface to the second edition of his Critique of Pure Reason:

¹² Along the lines of the primary/secondary qualities being a microcosm for the object/subject, we could read Berkeley’s abandonment of primary qualities for the utterly mind-dependent network of ideas as an analog for extreme social constructivism, wherein nature is abolished in favor of social structure, and we are left with Bloor’s version of the social always failing to touch the natural, as treated in Section 1.5 above.
Up to now it has been assumed that all our cognition must conform to the objects; but all attempts to find out something about them \textit{a priori} through concepts that would extend our cognition have, on this presupposition, come to nothing. Hence let us once try whether we do not get farther with the problems of metaphysics by assuming that the objects must conform to our cognition \ldots This would be just like the first thoughts of Copernicus, who, when he did not make good progress in the explanation of the celestial motions if he assumed that the entire celestial host revolves around the observer, tried to see if he might not have greater success if he made the observer revolve and left the stars at rest. (Kant [1781/1787] 2007, xvi, italics mine)

This is the alleged Kantian Copernican Revolution. But something seems disingenuous about Kant’s remarks comparing his work to the work of Copernicus. As Bruno Latour notes, “Originally it [the Copernican Revolution] meant the shift from geo- to heliocentrism. Paradoxically, Kant uses it to mean not a decentering of the human position in the world but a recentering of the object around the human ability to know” (Latour 1999, 305). Kant’s transcendental idealism is better thought of as a Ptolemaic Revolution, making the world revolve around the human standpoint in a way more extreme than any of his forerunners.

Kant’s \textit{Critique of Pure Reason}, as well as much of the resultant phenomenological tradition, is concerned primarily with spelling out the structures built into our phenomenal ego, or our old friend the subject. The primary structures, articulated in his Transcendental Aesthetic, are space and time, which are not in themselves concepts or experiences, but rather the synthetic \textit{a priori} ground of all experience, or that which makes experience of objects possible at all. Kant sees no reason to believe that space, time, or any of the empirical objects we perceive exist independently of us (Kant [1781/1787] 2007, A19/B33-A49/B73).

But Kant bristles at being lumped together with Berkeleyan subjective idealists. For Kant there are \textit{phenomena}, the matter of our perception, which are merely
representations of the truly external *noumena*, or things-in-themselves, which we can ultimately know nothing about. In the second edition of the *Critique* he devotes an entire section to the “Refutation of Idealism” (Kant [1781/1787] 2007, B274-B279), but his argument is summed up nicely in a footnote to that edition’s Preface:

. . . all the determining grounds of my existence that can be encountered in me are representations, and as such they themselves need something persisting distinct from them, in relation to which their change, and thus my existence in the time in which they change, can be determined. . . . I am conscious through inner experience of my existence in time (and consequently also of its determinability in time), and this is more than merely being conscious of my representation; yet it is identical with the empirical consciousness of my existence, which is only determinable through a relation to something that, while being bound up with my existence, is outside me. (Bxxxix-Bxl, bold in original)

The reference to “empirical consciousness of my existence” suggests that, in this passage, Kant is referring to the phenomenal ego, or the subject as experienced by the subject, rather than the transcendental ego, that is, the real subject, which we know as little about as any other noumenal thing-in-itself. If this phenomenal self-consciousness is in fact what Kant is writing about, then he has thoroughly misunderstood Berkeleyan idealism. Kant’s own position posits a phenomenal framework of space and time that merely reflects the structure of our cognitive architecture. On the absence of noumenal time, Kant writes:

If we abstract from our way of internally intuiting ourselves and by means of this intuition also dealing with all outer intuitions in the power of representation, and thus take objects as they may be in themselves, then time is nothing. It is only of objective validity in regard to appearances, because these are already things that we take as objects of our senses; but it is no longer objective if one abstracts from the sensibility of our intuition, thus from that kind of representation that is peculiar to us, and speaks of things in general. *Time is therefore merely a subjective condition of our (human) intuition . . . and in itself, outside the subject, is nothing.* (Kant [1781/1787] 2007, A35/B52, bold in original, italics mine)
Time is not a feature of mind-independent reality for Kant. In this respect, Kant’s position is indistinguishable from Berkeley’s. Both agree that time and space do not exist independently of perception. Kant seems to be taking Berkeley to be saying that there is no ontological distinction between perceptions or ideas generated solely by our willful imagination, such as unicorns, and ideas that we receive from outside ourselves, such as the idea of a horse standing in front of me, chewing hay. But we cannot forget that there is a world outside of our individual minds for Berkeley: the world of other minds, especially God’s. Imaginary, “purely mental,” “inner” experiences are different from “real,” “outer” experiences, as far as Berkeley is concerned. Kant’s refutation of idealism is directed at a position that few if any philosophers have ever held.

Where Kant breaks with the real Berkeley is in his assertion that noumenal, or things-in-themselves, exist independently of any mind (again, Berkeley would hold that ultimately real, “objective” things are ideas in God’s mind). If the passage above from the “Refutation” is referring to noumenal objects, then Kant’s reliance on the experience of time crashes his argument, as time is simply a form of human intuition, not a noumenal reality. What is left to justify Kant’s assertion of naked things-in-themselves?

In Part II, Division I, Book II, Chapter III of his Transcendental Doctrine of Elements, Kant writes:

All our representations are in fact related to some object through the understanding, and, since appearances are nothing but representations, the understanding thus relates them to a something, as the object of sensible intuition: but this something is to that extent only the transcendental object. This signifies, however, a something = X, of which we know nothing at all nor can know anything in general [.] (Kant [1781/1787] 2007, A250, italics mine, bold in original)
Kant’s argument for noumenal things-in-themselves then seems to hang on nothing other than his choice of the terms “representation” and “appearance” (or their German analogs, Vorstellung and Erscheinung, respectively). A “representation” by definition must be representing something unseen. An “appearance” must be of an underlying reality. With a change of terminology, Kant would rapidly devolve into a subjective idealist.

Ignoring the baseless nature of some of Kant’s assumptions, I wish to briefly point out what Kant has accomplished. If the phenomena and the noumena really are the primary constituents of reality, then the subject and the object have been petrified. Rigor mortis has set in, and neither pole has anything to do with the other any longer. Knowledge is ultimately only of the knower herself, and true reality is banished, with the cold comfort of a guarantee that there is at least something out there. Kant’s claim to fame is putting the nail in the coffin of truth-knowledge relations, opening the door for the somewhat more explicit formulations of social constructivists like David Bloor.

I do not have the space in this essay to trace the adventures of this representational subject through the philosophy of G.W.F. Hegel, and those who came later. To quickly gloss over the rest of the philosophical history of the representational subject, Hegel attempts to deal with the contradictions of experience by building them into the very logic of a monistic universe. James himself spends a lot of time refuting the absolute idealist tradition that Hegel started (see any given essay in Part III of James 1977), so there’s little reason for me to do it here. Eventually, twentieth century philosophy will dead end in analytic epistemologists, like those addressed in Chapter 1, trying and failing to make knowledge relevant to objective truth, and phenomenological
and post-modern philosophers, not to mention sociology-centered social constructivists, reveling in the provincial pleasures of the subject and the social structure it finds itself embedded in.

The question I wish to pose is, what if we did away with the object-subject split entirely? This is certainly not an original proposition. But I believe William James has a unique version of this position, though he does not couch it in these terms. To foreshadow what is to come further on: if we abolished the objective reality, the static universe, would we be left with mere subjectivism? My answer, and what I take to be James’, is no. The subject was only ever invented to account for the fact that monism never made any sense, and to turn what is evidently a pluralistic universe into a monistic world littered with “opinions” and “cultures” that could be disposed of with the wave of a hand rather than epistemological/ontological due process. The subject never served any purpose other than to explain error, which, in the philosophy of the representational subject, was always taken as a failure of correspondence to the monistic reality. It is my contention that the metaphysical baggage of subjectivity causes more problems than it solves. Monism ultimately fails to explain error in any reasonable sense. There is a better way.

2.7 Empiricism Radicalized

The first order of business, for James qua radical empiricist, is to get rid of the representational subject once and for all. This will require the ousting of monism.

Radical empiricism

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13 Some would even say the philosophy behind the representational subject, since ancient times, has been mobilized to crush political due process, or democracy in general. See Latour 1999, Chs. 7 and 8.
treats the doctrine of monism itself as an hypothesis, and, unlike so much of the half-way empiricism that is current under the name of positivism or agnosticism or scientific naturalism, it does not dogmatically affirm monism as something with which all experience has got to square. . . . *Prima facie* the world is a pluralism; as we find it, its unity seems to be that of any collection; and our higher thinking consists chiefly of an effort to redeem it from that first crude form. (James [1897] 1977, 134)

The world, as we first experience it, seems made of all manner of confusing, even contradictory experiences. The monist move is to insert some kind of “world-substance” underneath the “accidents” of experience. Ideally, this world-substance will validate a large number of our experiences as sufficiently real, pointing us toward a more economic way to make our perceptions cohere. But, due to the contradictory nature of many of our experiences, inevitably many of them will be relocated to the realm of “imagination” or “error.” As I argued above, the representational subject is invented to house these refugees, and the resulting radical disconnection of the human mind with the world is then ignored, except by opportunistic skeptics and nihilists.

James, particularly in his essay “Does ‘Consciousness’ Exist?”, envisions a philosophical account of the individual’s relations to a wider world without recourse to the representational subject. A key example is the experience of a human being looking at a white piece of paper.

According to Lockean empiricism, the paper is a kind of inscrutable substance, outfitted with corpuscular primary qualities, which affect our senses in a particular way to create internal resemblances of those primary qualities, as well as novel secondary qualities. None of the latter are actually attached to the paper itself for Locke. The mind, in this model, merely represents the objective reality. If we asked a Berkeleyan idealist, she would say that there is no substance or matter involved, no primary or secondary
qualities, but merely ideas being transmitted to our finite minds by God’s infinite mind. Our ideas, here, are still pale imitations of the fixed and eternal ideas of God, and so we remain representational subjects.

James is doing something different: “When I see the thing white paper before my eyes, the nature of the thing and the nature of my sensations are one” (James [1895] 1977, 154). There is no representation going on here. There is no army of subjective experiences arrayed against a single all-powerful object. The paper and his experience of the paper are **numerically one**. What can he possibly mean by such an assertion?

To back up a bit: James’ thesis is that if we start with the supposition that there is only one primal stuff or material in the world, a stuff of which everything is composed, and if we call that stuff “pure experience,” then knowing can easily be explained as a particular sort of relation towards one another into which portions of pure experience may enter. The relation itself is a part of pure experience; one of its “terms” becomes the subject or bearer of the knowledge, the knower, the other becomes the object known. (James [1912] 1977, 170)

This position is often referred to as “neutral monism,” the idea that everything in the world is made of one kind of substance that becomes differentiated in practice. Before anyone becomes concerned over the use of the term “monism” here, I must point out that the supposition of neutral monism is only a pedagogical device that James ultimately rejects in favor of what Ruth Anna Putnam has termed “neutral pluralism” (James [1912] 1977, 179; Putnam 1997, 297-298, Note 1). I will get to the grounds of her interpretation shortly.
For the moment, we will take neutral monism seriously. The world is made of experiences which evolve into various entities, some physical, some mental. The mental variety is (generally) more dynamic, cycling through a much faster series of changes than the physical. This is the case because what we normally think of as “consciousness” is simply the interaction, and interpenetration, of an animal body with its environment. Since an animal body is usually in constant motion of one sort or another, the rapid churning of experience that we think of as a “mind” is to be expected.

This concept of “interpenetration” needs to be unpacked a bit. James uses the metaphor of the geometric point situated at the intersection of two straight lines (James [1912] 1977, 173). There is no real mystery about how such a point can be considered to be a part of two (otherwise) distinct lines. Neither should there be a mystery about the fact that James’ “consciousness” and the piece of whiter paper are largely (though not completely) identical at an instance of him looking at the paper. The paper and James are independent processes of experience that “run through” each other, just like the perpendicular lines run through points in James’ diagram (James [1895] 1977, 157).

When James casts his gaze on the paper, what is happening ontologically is the union, however brief, of the experiential processes we refer to as “William James” and “that white piece of paper.”

James goes on to say that,

*Experience . . . has no . . . inner duplicity; and the separation of it into consciousness and content comes, not by way of subtraction, but by way of addition*—the addition, to a given concrete piece of it, of other sets of experiences, in connection with which severally its use or function may be of two different kinds . . . . What represents and what is represented is . . . numerically the same;

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14 It is worth noting that, for the radical empiricist, minds depend on experiences, rather than the other way around. Radical empiricism might justifiably be called a kind of “eliminative idealism.”
but we must remember that no dualism of being represented and representing resides in the experience *per se*. In its pure state, or when isolated, there is no self-splitting of it into consciousness and what the consciousness is “of.” Its subjectivity and objectivity are functional attributes solely, realized only when the experience is “taken,” *i.e.*, talked of, twice, considered along with its two differing contexts respectictively, by a new retrospective experience, of which that whole past complication now forms the fresh content (James [1912] 1977, 172, 177, italics in original).

Returning to the example of the paper: in the lived experience of staring at a white piece of paper, the only kind of duplicity that I find is that of the paper occupying one position in space, and my head occupying another position a few feet away. But there is no meta-consciousness of a representational consciousness filtering information from an imperceptible external world. The subject and the object, as in mental and physical entities that might not quite match up, actually develop *later on* in experience, when we begin to catalog and sort previous experiences (or, to rid the argument of the tinge of phenomenalism, we could say “when experiences begin to catalog and sort themselves”)\(^{15}\)

So for instance, after the initial “white paper experience,” call it E1, a split occurs: following one fork, we will have a piece of paper that is subject to destruction through burning and also will never be eaten by a unicorn; call this E2a. Following the other fork we have a piece of paper than can be burned without being consumed and can be fed to innumerable hungry unicorns; call this E2b. These two new experiences will be classified as object and subject in common parlance, and this is perfectly fine, as long as they are not taken in the monistic sense articulated in previous sections. Objects and subjects are properly thought of as the descendants of primary experiences, or of the

\(^{15}\) Years later, A. J. Ayer will make a very similar argument about mental and physical facts being sorted and defined functionally (Ayer 1936, 130-131).
interactions of experiences. The objective, then, will be the experiences, or actant networks (see Chapter 3), of inanimate objects and unconscious life forms, and the subjective will be the experiences, or actant networks, of animals (perhaps specifically human animals). The new object-subject relationship is simply that of animals interacting with the non-animal world, with no philosophically problematic unbridgeable gap between the two. All an animal has to do to bridge the object-subject divide is to paw a leaf on the ground, or climb a tree, or even just sit vacantly and shed fur.

A helpful heuristic device for understanding the relations of experiences is Thomas Kasulis’ notions of integrity- and intimacy-oriented cultures. Integrity cultures are largely defined by an external conception of relationships, where the two relatents, say, James and the white paper, retain their integrity. That is, they exist as inviolable individuals (Kasulis 2002, Ch. 3). Their relationships do not change their natures at all. Such a relationships can be diagrammatically expressed like so:

![Diagram of James and the Paper Externally Related](image)

**Figure 2-1**
*James and the Paper Externally Related*

The straight line between the James and the paper represents an integrity relationship. It is this kind of integrity that defines the traditional object-subject relation. In the metaphysics of traditional Western cultures, the mind never alters what it perceives
(without mechanical interaction, e.g. pushing an object off of a table). The objective world is usually taken to produce changes in the subject, but it is not at all clear how this is possible, and we end up with the extreme of integrity, where the object and the subject are related but have nothing to do with each other.

Intimacy-oriented cultures, on the other hand, emphasize an internal model of relationships. For these cultures, if A is related to B, then A is actually a part of B; they have become integrated to some degree. If the relationship breaks, A and B both walk away with a part of themselves missing, transformed by the experience. Figure 2-2 below illustrates how an intimate ontology would visualize James’ relation to the piece of paper:

![Figure 2-2 James and the Paper Internally Related](image)

When James looks at the paper, when he holds it, an overlap occurs that renders the experience of the white paper as one identical fact of the world. Certainly, there are aspects of the paper that James does not know about (perhaps he has never looked at the
back side of it) and there are aspects of James’ life that the paper does not touch. But in the moment of his interaction with the paper, he and the paper merge, if only slightly.  

What I take James to be arguing is something like this: once James puts down the piece of paper and tearfully walks out the door, never to return, both he and the independently existing sheet of paper exchange bits of themselves and carry them away. The paper will appear “in James’ mind” on lonely nights, and forensic experts will be able to detect James’ fingerprints all over it. And neither will ever be exactly the same.

This has been an account of how radical empiricism presents a world made of independent bits of experience and how they come together, mutually transform one another, and go their separate ways. I should restate that “experience” here is not a universal kind of stuff, but just a catch-all word designed to be general enough to apply to any given entity that exists, be it a color or a city or a dog or a swift motion. James’ “experiences” have a lot in common with Justus Buchler’s “natural complexes” (Buchler 1966), as well as with Bruno Latour’s “actants” (Latour 1999). But what exactly do I mean by “in James’ mind” in the paragraph above? And where do imagination and error re-enter the picture? Surely, we do not want to abolish those concepts, but simply to resituate them more comfortably. Let’s see what can be done about that.

2.8 Imagination and Error

I should start with the easy stuff. In a radical empiricism of this sort, “imagination” will be an affair of the kinds of effects a particular experience can make on

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16 In “The Thing and Its Relations,” James seems to repudiate any over-reliance on internal relation to explain how things in the world interact (James [1912] 1977, 214-226). I do not think it is clear that he is addressing precisely the same issue, and if he is, I take him to be mistaken in the cited essay.

17 It seems right to mention that the latter author’s work has exercised a strong influence on how I read William James. Ch. 1 of Pandora’s Hope reads like the itinerary for a philosophical research program that Latour has been unwilling to carry out himself. The historical approach of this essay is in part designed to help put an honest argument behind some of Latour’s more unreasonable claims.
other experiences. If a particular experience’s effects are only detectable as faint traces that pale in comparison to more intense experiences, it will be classed as imaginary.

Consider the popular case of the unicorn. My unicorn-experiences are all faint and don’t have any substantial impact on my more intense experiences. For instance, I can have the faint, willful experience of riding a unicorn to school, but in the end I find myself sitting in a chair at home. The unicorn leaves no hoof-prints on my carpet, leaves no musk that my friends will detect when they come over, etc. These might seem like uncontroversial facts, but it is important to remember that the imaginary nature of the unicorn is the consequence, and not the cause, of these facts. There is no essentially imaginary unicorn that is the fountainhead of my unicorn-experiences. The unicorn is imaginary because it fails to produce enough substantial effects within the network of other objects and entities that I cannot afford to ignore. These objects and entities, of course, are themselves classified as more real than the unicorn.

This conception of the difference between the imaginary and the real is admittedly heavily influenced by Bruno Latour’s Irreductions:

The real is not one thing among others but rather gradients of resistance. . . . There is no difference between the “real” and the “unreal,” the “real” and the “possible,” the “real” and the “imaginary.” Rather, there are all the differences experienced between those that resist for long and those that do not, those that resist courageously and those that do not, those that know how to ally or isolate themselves and those that do not. (Latour [1984] 1988, 1.1.5.1-2)

The unicorn is imaginary, is less real than my chair, because it resists less, because it can fall apart much more easily than my chair can. For instance, if my thesis committee demands a radical revision in my list of examples, the unicorn may perhaps vanish, never to appear in my writing again, whereas my chair will live on.
It might seem like my fondness for Latour is carrying me away from the central subject matter, but I believe that radical empiricism supports this kind of ontology quite comfortably. If we do not have a God-like independent access to all of objective reality, if, in fact, reality is not even the sort of thing that we can have or lack that kind of access to, our judgments of reality and unreality have to be based on experiential cues. And the fact is, I have experiences of chairs and unicorns. The unicorn experiences, again, are much less intense, and do not seem to have much of an impact on my apartment. In fact, I can invoke unicorn-experiences willy-nilly as I please. But I don’t have that same kind of control over my refrigerator, or my television. I have to negotiate with those entities in order to get what I want out of them. And experientially, this is the only criterion of their greater reality.

Our judgments of what is real, and therefore of what thoughts or ideas ultimately “agree” with reality in some sense, do not require access to a singular ahistorical objective reality, but only a comparative measure of the resistance of multiple experiences (see Latour [1991] 1993, Ch. 4 on the specifics of his version of this approach). True statements or ideas, then, are those things that can be successfully linked to the more real experiences we have and are. Since the gradient of reality is far more gentle than the subject-object divide would have it, different ideas can be more or less true relative to each other, the false being those with minimum truth. James puts it this way: “True ideas are those that we can assimilate, validate, corroborate and verify. False ideas are those that we can not.” (James [1907] 1977, 430, italics in original). My chair at home gets along with my carpet in such a way that they can affect each other
very easily. My unicorn does not have the same impact on either, and therefore becomes imaginary or erroneous.

But there is an interesting paradox that emerges in James’ writings on truth, one that, I think, is connected to what I am calling the problem of historicity. In “Pragmatism’s Conception of Truth,” he writes, “Truth happens to an idea. It becomes true, is made true by events. Its verity is in fact an event, a process: the process namely of its verifying itself, its verification. Its validity is the process of its validation” (James [1907] 1977, 430, italics in original). Under this definition of verificationism, an idea would not be true or false until it was verified or falsified. My idea that my car is still in the parking lot right now is neither true nor false, but will become so once I walk outside and look for my car. For James, truth is about our relation to external objects, about the effect they exert on our “minds,” said minds being concatenations of external objects themselves, in immediate contact with other objects that spill beyond the border of the mind, if only because they are not involved as intimately in the process of mental churning. The concepts of truth and falsity are going to apply to the objects that we are in immediate contact with (or, as we will see later, those to which we are connected via a relatively secure chain of mediators). And this is why the charge that James’ theory of truth is too subjective, or even solipsistic, falls flat. James’ theory is actually one of the least subjective or solipsistic theories ever conceived, because it effectively eliminates the subject altogether. If we wanted to translate radical empiricism into subject-object language, we might say there there is no such thing as subjectivity. Everything is
external or objective.\textsuperscript{18} What distinguishes his view from any eliminative materialism is the fact that James does not presume an unsubstantiated monism. The world is a plurality of times and spaces, and it might be reasonable to think of radical empiricism as a kind of “eliminative idealism.” I will have a chance later on to write more on this subject, especially in Chapter 3, but this should be enough for now.

It should be admitted that, if this overly simple verificationism were all James had to say about the matter his theory would be a very worthless theory of truth. What use would it be to cease to consider any ideas valid or invalid until I saw incontrovertible evidence, and only while I was seeing incontrovertible evidence? (See Schlick [1934] 1959 for an argument that we \textit{should} take this view of truth, or at least knowledge, seriously.) Many epistemologists would want to bring in probability and trustworthy authority to fill any gaps here, but James does not mention either of those at this point.

But, as we know, James does not leave it at this:

Truth lives, in fact, for the most part on a credit system. Our thoughts and beliefs “pass,” so long as nothing challenges them, just as bank-notes pass so long as nobody refuses them. But this all points to direct face-to-face verifications somewhere, without which the fabric of truth collapses like a financial system with no cash-basis whatever. You accept my verification of one thing, I yours of another. We trade on each other’s truth. But beliefs verified concretely by \textit{somebody} are the posts of the whole superstructure (James [1907] 1977, 433).

If our truths live on credit, then our own personal verifications of them are not necessary. It is only necessary that \textit{someone, somewhere, at some time}, verify them. An idea can be true if it is \textit{verifiable in principle}, we might say.

Unfortunately, there seems to be a problem with the notion of verifiability in principle. While we cannot deny that there certainly are many facts that are verifiable in principle. While we cannot deny that there certainly are many facts that are verifiable in principle.

\textsuperscript{18} James would not put it this way, but his commitment to dismantling “consciousness” lays the groundwork for such claims. See Dewey 1940 for something similar to this interpretation of James.
principle, this kind of verifiability has no epistemic force. In order to accept that a particular fact is verifiable in principle, one must have already accepted the fact itself. For instance, hundreds of thousands of people claim that the saving experience offered by Jesus Christ is verifiable in principle. Does this warrant my acceptance of the claim? It does not seem like verifiability can be farmed out like this.\footnote{I discovered this particular kind of argument, ironically, in a book by the Reformed theologian John Frame (see the “Empiricism” section of Ch. 4 of Frame 1987). I had crept up on it myself, however, in my Undergraduate Honors Thesis (Hale 2007).}

Using a scientific example, I can only believe that certain results of a particular experiment can be “in principle” obtained by anyone if I believe the results in question had already been obtained by someone using a sound methodology. If the results themselves are what is in question, it makes no sense to appeal to the replicability of said results. Does anyone ever say to themselves, “I’m not convinced that the Earth is spherical. But if it \textit{was} spherical, it would be possible to find evidence that it was spherical. So it must be spherical.” This line of reasoning about why facts are to be accepted is clearly inadequate.

We might try falling back on a theory of justified authority here. Instead of believing, say, scientific claims about the structure of the atom because such claims are verifiable in principle, we could rely on scientific authority. Such authority would have to be justified through the scientific community’s success at predicting events in our everyday lives, or through their contribution to the production of successful technologies, or something else of the sort. I do not think this is an unreasonable position, but we must take care to remember that all such authority is fallible. Going with the scientific example, I must admit that I take scientific practice to be the most epistemologically
rigorous human activity. If we know anything, scientific facts are what we know. And the revisability of scientific knowledge is going to mean the revisability of truth.

James’ analogy of the credit system seems to imply this revisability. If I am justified in calling true what someone else claims to have verified, I always run the risk of such truth failing, either because the claimant lied to me, or was mistaken, or some other factor unknown to either of us changed the situation. Truth is mutable.

This account of truth sheds light on what “error” is going to have to be in a pluralistic, radically empirical universe. Error is broken truth, a truth that stops functioning at a particular point in time, and afterwards becomes false. To apply James’ comments quoted above to falsehood, we might say, “Falsity happens to an idea. It becomes false, is made false by events. Its falsity is in fact an event, a process: the process namely of its falsifying itself, its falsification. Its invalidity is the process of its invalid-ation.” Since different truths resist harder than others—resistance is not all-or-nothing, as ontological excluded middle theorists would claim—truth, and with it existence, will need to be measured on a scale. To return to my above example, the most accurate way to speak about my car would be to say that, “My car objectively kind-of exists.” Again, this quasi-existence is relative to me and my immediate environment. The car may very well have the highest possible degree of existence in its own world (see Section 3.4.3 below).

What this begins to look like is a kind of coherence theory of truth, though we must not define any specific formal requirements of this coherence; whether or not experiences harmonize can only be determined in practice, and there is no telling what kind of heterogeneous experiences can become coherent, or what kind of apparently cozy
experiences can fall into incoherence. Christians find one God in three Persons coherent, and scientists find the unity of space and time coherent.

This is as far into this subject that I can go in the space provided. While I have obviously been pushing a pro-radical empiricist account here, there are still questions that need answers. For instance, when James leaves the paper, how does he know anything about which attributes truly belong to the “objective” paper? He surely knows what experiential bits of his encounter with the paper he brought with him, but what can he know about the “prehistory” and final state of the white paper, independent of his merging with it on the one occasion? I will take up these issues in the next chapter.

2.9 Conclusion

Hopefully I have presented a persuasive argument for the untenability of the representative subject as threaded through Descartes, Locke, Berkeley, and Kant. I believe that William James laid the groundwork for a possible alternative that will make for a pluralized ontology made up of various “experiences” (or “complexes,” or “actants”) that interact with each other and produce common spaces and times. I have drawn this out into what I take to be a more “naturalized” account of imagination and error, though I suspect to make this stick I will need a “naturalized” account of nature (and society) to go along with it. This will be part of what I attempt in Chapter 3.

The broader purpose of Chapter 3 will be to show that contemporary actor-network theory (ANT) serves as a modern version of James’ radical empiricism. I intend to show how ANT has found a way to make the revisability of knowledge and ontology applicable, in a more direct, empirical fashion, to scientific practice, and perhaps other human endeavors.
Chapter 3

Actor-Network Theory and Historicity

3.1 Introduction

I have shown in the previous chapter how William James’ radical empiricism provides one possibility for understanding how, by expanding the scope of revision to include truth and ontology, knowledge can have something to do with truth and truth can have something to do with reality. In this chapter, contemporary actor-network theory will be held up as a presently popular, more systematically carried out version of radical empiricism. Its usefulness in sociological study is recognized by many, but I will ultimately argue that ANT is doing something different: creating the possibility for an empirical science of ontology. A systematic account of how this science is being developed is far beyond the scope of this thesis, but it is necessary to mention to bring home how the practice of knowledge revision touches nearly every aspect of our lives, and how it can improve understanding and practice in academic as well as everyday contexts.

First, I need to paint a picture of the constructivist account of knowledge, necessarily in broad strokes. Traditional approaches to the study of knowledge-acquisition invoke a concept of discovery that implies that knowledge is like a buried gem, waiting to be unearthed. This chapter begins with the argument that the mining
metaphor of discovery, in scientific and other contexts, is misleading. The mining model of a disconnected subject digging up a hidden objective world ignores the role of revision and self-correction in all good research (and brings with it a brood of other problems, as we saw in Chapter 2). The present chapter presents an alternative account of the growth of knowledge that is more responsive to actual scientific practices. One of the discovery-mining metaphor’s competitors is the construction metaphor, wherein knowers play a more active role in generating knowledge. Too often, social constructivism fails insofar as it reiterates the discovery-as-mining metaphor, with social reality rather than nature itself as the gem to be unearthed. As we saw in Chapter 1, social constructivism also runs the risk of destroying any connection between knowledge and truth. An actor-network approach, however, rejects ahistorical social structures as well as un-revisable natural structures. Instead, actor-network theory studies the emergence of new ontologies that result from the interactions of human and non-human actors (or actants). Knowledge pertains to truth, and truth in turn pertains to reality, but in ever emergent ways.

This chapter begins with an introductory account of the merits of actor-network theory (ANT), with particular attention paid to its epistemological and ontological aspects. I will explain the original “special” principle of symmetry in the social study of scientific knowledge, where the recognition of true and false claims are both explained by social causes, as well as ANT’s general principle of symmetry, where the emergence of new natural and social facts is described without reference to Nature or Society. The valuable insight of ANT is its rejection of all reductionist explanations, which has significant consequences for epistemology and ontology.
The next section of this chapter will be devoted to showing just how much Bruno Latour’s ANT metaphysics inherits from the radical empiricist writings of William James. Latour’s “circulating reference” theory of truth bears an incredible resemblance to James’ verificationist writings. Additionally, James’ “experiences,” when properly understood, are indistinguishable from Latour’s “actants,” again, when properly understood.

The penultimate section will be devoted to an explication of ANT in terms of Thomas Kasulis’ assimilationist epistemology. I will also treat a few unresolved issues of the interpretation and application of ANT, particularly with regard to the problem of historicity, as hinted at in the previous chapter. There will be (at least) two options for how radical empiricism/ANT can deal with this problem.

The final section will be devoted to a discussion of a significant, albeit speculative, possibility: that ANT is not a sociological theory, but rather the clumsy beginnings of an empirical science of ontology. Judged by Rudolf Carnap’s standards, ANT has not reached the quantitative stage of a developed science, but it has reached the comparative stage, wherein qualitative assessments can be made.

The chapter concludes that ANT, in its radical empiricist interpretation, creates the possibility of a “constructive realism,” wherein genuine discovery is possible, but only in terms of active, dynamic, and renegotiable relationships between the human and non-human worlds.20

20 This “human/nonhuman” dichotomy is not intended by ANT practitioners to privilege humans as a special kind of actant, nor to insist that there are but two types of thing to take into account. It is rather intended to emphasize the role of non-human actants in human social relationships. There is nothing in particular that sea shells have more in common with microwaves than they do with humans. It might be the case, of course, that certain artifacts are tied more firmly to the human world than other artifacts or natural
3.2 Actor-Network Theory and Practice\textsuperscript{21}

One of the foundational texts in the social study of scientific knowledge is David Bloor’s 1976 *Knowledge and Social Imagery*. His was the first articulation of a symmetry principle for the sociological study and interpretation of scientific facts. Bruno Latour would later dub this the “special” principle of symmetry, in contrast to ANT’s “general” principle of symmetry. The principle of symmetry runs something like this.

Modern sociologists, philosophers, and psychologists of science often treat scientific successes as unbiased insights into the nature of the world. When scientists get it right, the mind-independent world gets the credit; but when scientists err, their failings, as individual reasoners or members of a short-sighted community, get the blame (see, e.g., Lakatos 1971, 105-108; also, Peters [1958] 1965, 9-16, on the sole sufficiency of rational, purpose-driven reasons explanations over psycho-physical causal explanations; and Ryle 1949, 325-327, on why purposive actions need no psychological account). For example, a traditional sociologist of science might argue Albert Einstein was a genius whose vision penetrated the depths of the universe, while Newton’s commitment to absolute space and time was a socially conditioned aberration. Isaac Newton may have been a genius also, but his vision of absolute space and time was not genius at work, but the result of his philosophical milieu. Or perhaps he was under the influence of certain inherited, though faulty, intuitions that all humans share. This asymmetrical sociology of science was extended to the explanation of the acceptance of facts in different societies. Groups that believed facts were reasonable; groups that denied them were biased by social forces.

\textsuperscript{21} For a more thorough introduction to actor-network theory, see (Latour 2005).
According to Bloor’s principle, a symmetry-respecting sociologist does not treat those who discover or accept current scientific facts as immune to social influence. Einstein’s work was just as socially conditioned as Newton’s, or Joseph Priestley’s, for that matter. Every particular fact can be described as arising from both natural reality and social reality, analogous to Kant’s phenomena that arise from the interface between ego and the noumenal world (see Fig. 1 at Bloor [1976] 1991, 32; cf. Fig. 4.2 in Latour 1999, 134). The acceptance of different facts by different societies should not be described in terms of the difference between rational and irrational groups, but by universal social laws that express themselves in different ways in different locales (Bloor [1976] 1991, 18-23).

But this Kantian move is a mistake. Bruno Latour, and other ANT sociologists, historians, and philosophers, later declared this “social turn” insufficient, though a step in the right direction. It fails, Latour argues, because it presumes a determinate set of social laws that explain every historical occurrence of believing or failing to believe a natural scientific proposition. However, as natural scientific beliefs change, so do social scientific beliefs. Fixed sociological laws are going to be just as elusive as fixed natural laws (see Latour [1991] 1993, 91-96, and Latour 1987, 141-144 for a fuller explanation of the general principle of symmetry).

The actor-network approach is an attempt to rewrite the rules of sociology without reference to a final substratum of “the social.” Emphasizing the need to study associations, not only of humans but of non-human actors (or actants), ANT scholars perform field and historical studies analyzing scientific practice and the emergence of

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22 Latour’s substitution of “State of Affairs” for “Experience” on one axis might amount to a subtle distortion of Bloor’s point, but this has no effect on my argument.
new natural and social scientific actants, such as microbes (Latour [1984] 1988 and Latour 1999, Ch. 4) and financial markets (Callon 1999). Sociology is no longer about describing how human beings use objects to reshape their world, where the world is somehow *given*, but how human beings *and* objects comprise associations, or *networks*, that generate reality. For Latour, reality becomes a gradient of resistance, not a transcendent realm of being. Any given actor-network is as real as it is stable. That which falls apart when attacked is less real than that which holds together relative to the frameworks within which theories of the world compete and vie with one another. ANT is a social metaphysics without recourse to an “aether theory,” so to speak. Just as relativity in physics postulates that light propagates without needing to be immersed in an underlying substance (or aether), ANT insists that networks do not require a fundamental, permanent medium of transmission. Instead, the above-mentioned gradients of reality are created through the interaction of the networks themselves. The comparative strengths and weaknesses of networks in relation to one another comprise the contours of the real.

The actor-network theory of reality is significant because it accords well with our experiences. As William James is fond of noting, our experience of the world is plural, i.e., we are constantly confronted with all sorts of objects, events, processes, etc., that seem to contradict one another, or to have nothing to do with each other (James [1897] 1977, 134-135). To remedy this confusion, to “redeem [the world] from that first crude form,” as James puts it, we find theories that can “weld” these heterogeneous experiences into a consistent whole. Consider the yarn about Newton and the apple. At first, the apple and the moon seem to have very little to do with each other. Ancient physics assigned them completely different realms of being because of the apparent
contradictions between the way earthly and celestial objects behaved. But Newtonian theory connects the apple and the moon as made of the same kind of matter, moving through the same kind of space, obeying the same laws of gravity.

The experience of contemplating Newton’s abstract physical theories is not different in kind, in any epistemologically meaningful way, than the experience of the apple and the moon. Theory, or rational thought, is a type of experience, and, as we know, theories present the same kind of experiential inconsistencies as more concrete experiences. Not only can Newton’s theory be replaced by Einstein’s, but relativity and quantum mechanics, placed side by side, create certain contradictions that have yet to be resolved. Theories are historical occurrences. Like more mundane experiences, they are better understood as events occurring at the conjunction of certain other kinds of experiences, or as new entities produced by the interweaving of actants. Theories are historical occasions, and the metaphor of “welding” other experiences, or gluing them together, is misleading, simply because the apple and the moon do not persist as the same entities that they were prior to Newton.

Certainly no one would deny that the scientific conception of the apple is not exactly the same as the intuitive “folk” conception of the apple. But to many it may seem odd to extend the scope of this change in conceiving a thing to include the nature of the thing itself, even after we have seen, in the previous chapters, the folly of holding knowledge at a distance from truth and reality. In Section 3.4, I will explain why actor-network theorists in particular hold this view. But first I turn to making explicit the connection between radical empiricism and actor-network theory.
3.3 Experiences and Actants

It might not be immediately clear what connection I am drawing between radical empiricism and ANT. But, as I will show, ANT is something of a sociological version of William James’ more psychology-oriented radical empiricism.

The radical empiricist metaphysic, at first blush, appears to be an idealist metaphysic. If the world is made strictly of “pure experience,” it seems everything is strictly made of “ideas” in Berkeley’s sense. The world begins to look like a world of minds contemplating ideas, ideas which perhaps originate in a God, to give them a semblance of objectivity.

But this is far from James’ intention. In “Does ‘Consciousness’ Exist?”, James quotes approvingly from Münsterberg’s *Gründzüge der Psychologie*:

If you agree that the perceptual object [pure experience] is not an idea within me, but that percept and thing, as indistinguishably one, are really experienced *there, outside*, you ought not to believe that the merely thought-of object is hid away inside the thinking subject. The object of which I think, and of whose existence I take cognizance without letting it now work upon my senses, occupies its definite place in the outer world as much as does the object which I directly see. (James [1912] 1977, 176)

To start with a reconstruction of the first half of the first sentence: “... the perceptual object [or pure experience, for James] is not an idea within me ... [but is] really experienced *there, outside* [.]” James’ approval of this is definitive proof that the “pure experience” he speaks of is emphatically *not* an idea inhering in a mind, but an external reality. The rest of the passage indicates a commitment even to the external reality of *ideas themselves*, such as memories. I have endeavored in the previous chapter to denounce the subject and the object, as traditionally conceived, once and for all. But if this destruction appears too extreme, we can read radical empiricism, rather, as rejecting
the subject, as I argued in Section 2.8 above. Radical empiricism, if it is an idealism, is not a subjective idealism, but an objective idealism, or better, an eliminative idealism. Rather than ideas inhereing solely in minds, minds are constructed out of objective, pre-mental experiences. James puts it this way:

Consciousness connotes a kind of external relation, and does not denote a special stuff or way of being. The peculiarity of our experiences, that they not only are, but are known, which their “conscious” quality is invoked to explain, is better explained by their relations—these relations themselves being experiences—to one another. (James [1912] 1977, 178, italics in original)

This is certainly not Berkeley’s idealism (nor Kant’s). Experiences are objective, mind-independent entities. They need no noumenal world, nor any God, to support them. Consciousness itself is merely a concatenation of certain experiences, or, rather, a bubbling cauldron of experiences rapidly altering their relations in a relatively systematic fashion. A whirlpool might be a good metaphor (cf. Latour [1984] 1988, on eddies of actants).

In fact, James distances his position even further from subjective and transcendental idealism:

First of all, this will be asked: “If experience has not ‘conscious’ existence, if it be not partly made of ‘consciousness,’ of what then is it made? Matter we know, and thought we know, and conscious content we know, but neutral and simple ‘pure experience’ is something we know not at all. Say what it consists of—for it must consist of something—or be willing to give it up!”

To this challenge the reply is easy. Although for fluency’s sake I myself spoke early in this article [“Does ‘Consciousness’ Exist?”] of a stuff of pure experience, I have now to say that there is no general stuff of which experience at large is made. There are as many stuffs as there are “natures” in the things experienced. If you ask what any one bit of pure experience is made of, the answer is always the same: “It is made of that, of just what appears, of space, of intensity, of flatness, brownness, heaviiness, or what not.” . . . Experience is only a collective name for all these sensible natures, and save for time and space (and, if you like,

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for “being”) there appears no universal element of which all things are made. (James [1912] 1977, 179)

Experiences, then, are not ideas in any conventional or idealist sense. External objects are just what they are, nothing else, and the significant departure from the naturalist position here is the lack of reductionism. The world of experience is made of all sorts of heterogeneous experiences, like tables, tastes, swift motions, and minds, all connected (or disconnected) horizontally, none (in-themselves) more or less real than another (I have discussed above how they may be more or less real in relation to each other, and I will engage these relational realities again in the following section). Instead of, for instance, a table being reducible to “more fundamentally real” atoms, the table is, rather, tightly linked to atoms in a horizontal cue of experiences.

Compare this account of “pure experience” with Bruno Latour’s ANT mantra: “Nothing can be reduced to anything else, nothing can be deduced from anything else, everything may be allied to everything else” (Latour, [1984] 1988, 163). Like James’ experiences, actants exist horizontally, none more fundamentally real than the others, none “containing” the others in the fashion that premises are supposed to contain their logical conclusion.

Latour goes on to say:

I use “actor,” “agent,” or “actant” without making any assumptions about who they may be and what properties they are endowed with. Much more general than

24 An interesting metaphor to pursue would be that of space-time for actor-networks. Actor-networks would be flat in the sense that no particular actant lacks existence. On the other hand, as more massive clumps of matter produce gravity by “weighing down” space-time (to pile metaphor upon metaphor), certain expansive networks would drag the real down, pulling more actants toward themselves, thereby extending their influence, though distant actants would not be very much affected by such “black hole” networks.

25 This point is foreshadowed by Berkeley: (Berkeley [1713] 1979, 77-78).
“character” or “dramatis persona,” they have the key feature of being autonomous figures. Apart from this, they can be anything—individual (“Peter”) or collective (“the crowd”), figurative (anthropomorphic or zoomorphic) or nonfigurative (“fate”). (Latour [1984] 1988, 252, note 11)

The term “actant” is intended, by ANT scholars like Latour, to be as general, as catch-all, as James’ “experience.” In both ontologies, nothing can be reduced, but only horizontally linked, tightly or loosely, to other actants/experiences. “There are neither wholes nor parts” (Latour [1984] 1988, 164, 1.2.3.1), but only “experiences of small” and “experiences of big” that can be allied with each other under certain circumstances. For instance, a tomato can be allied with a pattern of cells through the mediation of a microscope—or even just a biological theory. The addition of the microscope strengthens the tie between the tomato and a collection of tomato cells, because it makes it more difficult for humans, our technological tools, and the organic materials that we implant in the tomato to resist that tie. For the time being, we have to take the cellular structure of tomatoes into accounting when mutating our crops. This was not always the case, and it might not always be the case.

Table 3.1 below summarizes the list of similarities between experiences and actants:

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26 It should be noted that Latour is borrowing the term “actant” and parts of its definition from the field of semiotics. See (Greimas [1979] 1983, 5-6). What’s new in ANT is the extension of the term beyond textual signs to material objects and human social actors.

Table 3.1
A Comparison of Experiences and Actants

<table>
<thead>
<tr>
<th>Experiences</th>
<th>Actants</th>
</tr>
</thead>
<tbody>
<tr>
<td>General term for objects, persons, actions, relations, etc.</td>
<td>General term for objects, persons, actions, relations, etc.</td>
</tr>
<tr>
<td>Able to join in relationship (be tied together) with other experiences</td>
<td>Able to join in relationship (be tied together) with other actants</td>
</tr>
<tr>
<td>Non-reducible; fundamentally real in themselves—yet capable of horizontally relating to other experiences</td>
<td>Non-reducible; fundamentally real in themselves—yet capable of horizontally relating to other actants</td>
</tr>
</tbody>
</table>

Frankly, I see no grounds for making a distinction between experiences and actants. “Actants” seems preferable as a term, simply because of the confusion engendered by employing “experience” to describe mind-independent objects. From now on, I will use “actants,” relying on “experiences” only when I explicitly reference James.

For the above reasons, I take ANT to be a sociological application of radical empiricism. Science is a constructive enterprise, an effort designed to tie certain experiences together, to make them difficult to disjoin. The Earth and the predicate “moves through space” once had very little to do with one another. The Earth was stable at the center of the universe, and the sun and the stars revolved around it. But, starting in the 16th century, the two experiences/actants became increasingly bound to each other. Presently they are well-nigh inseparable: the Earth moves through space, and the

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28 Additionally, Latour’s circulating reference “epistemology” is quite similar to James’ verificationism (Latour 1999, Ch. 2, esp. 74, where Latour quotes James directly).
concept/action of “motion through space” applies to the Earth. To reject either claim is foolish and incorrect. The fact that they appear to be the same claim dressed differently (“Earth moves through space” vs. “Motion through space applies to Earth”) is only more evidence that they have been very intimately bound; imagine a married couple that has been together so long that their friends cannot even think of one of them without thinking of the other. Some philosophers would argue the two sentences in the parentheses above analytically imply one another, each being contained within the other, like a serpent swallowing its own tail. But, with the Quineans, ANT scholars are going to reject the analytical character of any statements:

To say something is to say it in other words. In other words, it is to translate. . . . A word [or sentence] is put in the place of another which it does not resemble. A third word says that they are the same [. . .] A is not A, but B and C. Rome is no longer in Rome, but in Crete and among the Saxons. This is called “predication.” That is to say, we cannot speak properly, moving from the same to the same, but only roughly, moving from the same to the other. (Latour [1984] 1988, 2.2.1, my bracketed insertion, italics in original)

Moving from “Earth moves through space” to “The predicate ‘motion through space’ applies to Earth,” is a translation, and all translations produce alterations. To utter these two sentences together, to an untrained ear, would not automatically produce assent to their identity; schooling is necessary for that, in order to learn what sounds uttered in what contexts are to be considered synonyms (Latour [1984] 1988, 2.1.3.2). Appealing to the “proper” understanding of the sentences is of no avail to the analytic enthusiast; many educated individuals obstinately reject their point (Quine and Latour being prime examples), and branding dissenters “irrational,” in whole or in part, is no argument. Certain Charismatic Christian groups are known for accusing individuals of “not having enough faith” when these individuals do not experience miracles of healing. Outsiders of
this kind of faith are rightly skeptical of such claims. Should we be any less skeptical of intellectual groups accusing individuals of “not having enough reason” when the individuals do not experience miracles of understanding?

This joining of experiences often involves tearing other experiences apart. For instance, there was a time when God was inextricably bound to the biological order, when the natural design of living things was too obvious to have come from chance. Even Richard Dawkins, hardly a friend of theism, concedes that “the living results of natural selection overwhelmingly impress us with the appearance of design as if by a master watchmaker [. . . [W]hen it comes to beauty and design, [William Paley, nineteenth century theologian and champion of the theory of divine design] hardly even began to state the case” (Dawkins [1987] 1996, 21). Prior to the emergence of the theory of natural selection, the apparent design of the world, particularly the world of living things, was more than enough to make the hypothesis of God overwhelmingly probable. Then Darwinists came along and largely succeeded at disentangling nature from God and marrying it to the process of natural selection. This scientific success is an example of scientific progress because the relation of animals and plants to natural selection continues to offer greater resistance than the relation of animals and plants to God. Colloquially, we might say there is more evidence for natural selection than there is for God, though at one point there was plenty of evidence for God and none for natural selection. The emphasis on the terminology of “resistance” is designed to emphasize, again, the link between epistemology and ontology, which I will elucidate further in the next section.
3.4 ANT Infaphysics

Now that we understand the connections between James’ and Latour’s ontologies, I need to more systematically lay out the infrastructure of an ANT metaphysic, or, as Latour might have it, an “infaphysic” (Latour [1984] 1988, 4.7.1. at 231-232). My discussion here will necessarily have to be taken in conjunction with Sections 2.7 and 2.8 above.

The best gateway text, as far as I am concerned, was not even written by an ANT practitioner. It is Thomas P. Kasulis’ *Intimacy or Integrity: The Philosophy of Cultural Difference*. To reiterate the description from Section 2.7, Kasulis articulates two distinct culture types, the integrity-oriented and the intimacy-oriented. Most Western cultures would more generally identify as integrity-oriented, and a major component of this orientation is the emphasis put on external relations. Two people, or two objects, that exist in relation to one another are not fundamentally altered or affected by the relationship. They each maintain their complete integrity, and the end of the relationship takes nothing away from either of them. An intimacy perspective, on the other hand, understands relation internally: relatents become a part of one another, altering each other’s identity to some degree. When a break up occurs, the people/things formerly in the relationship are no longer precisely the same entities. Kasulis’ Venn diagrams are necessary in making the difference in these orientations clear and distinct, with externally related entities represented by circles bridged by a line and internally related entities represented by overlapping circles (see almost any give page of Kasulis 2002). For instance, an external relationship between Louis Pasteur and his microbes is represented like this:
Whereas an internal relationship between Pasteur and his microbes is represented like this:

In traditional Western epistemology and metaphysics, discovery reigns, precisely because the object under investigation is taken to be a complete, unalterable individual that exists out there in the world, endowed with the same integrity we recognize in human individuals in our politics and ethics. Pasteur’s discovery of microbes accomplishes no fundamental shift in the nature of the microbes; they were always there, waiting to be found, and he simply put himself in the right spatio-temporal position in order to become externally related to them.
But this integrity scheme breaks down entirely once we take the problem of revision seriously. Which fermentation is the “real” fermentation, that caused by the natural degradation and instability of matter, or that caused by microbes? Which Pasteur is the “real” Pasteur, the vitalist quack or the heroic biochemist? To answer the questions and save the integrity paradigm, naturalists and social constructivists divide themselves up and start making their campaign speeches.

The naturalist tack is a stupefying fait accompli: they pretend to have accomplished the Cartesian feat of arresting revisability, of isolating a fundamental core of objective reality that they can call home and that gives their “materialism” a fixed content. When asked how they managed this, ironically enough, they credit an empiricist philosophy, despite their evident and abiding commitment to rationalism. There is perhaps nothing more eerie than the spectacle of Descartes’ immaterial Christian subject-soul manifesting so powerfully at the séances of the Four Horsemen of the New Atheism.

To illustrate this image more concretely, I will draw on the example of the popular Daniel Dennett to illustrate naturalism’s enduring Cartesian commitments, particularly because Dennett has gone to greater lengths than most to deliberately rule the Cartesian Theater out of his philosophy of mind.

3.4.1 Multiple Drafts Ontology

Dennett argues that most materialist philosophers of mind are closet Cartesians. “Cartesian materialists,” as he calls them, reject the idea of a non-physical soul, but are still committed to a physical central seat of consciousness, which constitutes the audience for all the sensory perceptions that other parts of the brain are sending to it (Dennett
1991, 101-111). This leads to all sorts of difficult conundrums about the accuracy of our perceptions which I will not detail here.

Dennett’s solution is the Multiple Drafts model of mind:

According to the Multiple Drafts model, all varieties of perception—indeed, all varieties of thought or mental activity—are accomplished in the brain by parallel, multitrack processes of interpretation and elaboration of sensory inputs. Information entering the nervous system is under continuous “editorial revision.” . . . [D]istributed content-discriminations [occurring in different parts of the brain] yield, over the course of time, something rather like a narrative stream or sequence, which can be thought of as subject to continual editing by many processes distributed around the brain, and continuing indefinitely into the future. This stream of contents is only rather like a narrative because of its multiplicity; at any point in time there are multiple “drafts” of narrative fragments at various stages of editing in various places of the brain. (Dennett 1991, 111-113)

There is no central, primary consciousness of internal and external events, receiving accurate or inaccurate representations of the world. There are multiple drafts of a variety of perceptions occurring in our brain, some of which link up provisionally. But at no time do they all come together into a single, “official” perception of a complete world.

Dennett’s model of mind is a pluralist one, then. There is no central self that receives all of our perceptions, but rather a collection of “mini-selves” that continually revise their interpretation of the information they are receiving. Dennett has succeeded in annihilating the Cartesian subject.

Unfortunately, he still clings to the Cartesian object. Dennett does not acknowledge that, if the Multiple Drafts model of mind is correct, then it is impossible in principle to have an experience of a monistic world. Our experiences (used here in the common, non-Jamesian sense of the term) are always partially disconnected and always undergoing revision. It is literally impossible for us to have a perception of, or garner empirical evidence for, a singular, fully coherent universe. Dennett’s blindness to this
logical consequence of his theory shows that he is still adhering to a Cartesian type of monism. However, applying Multiple Drafts more fruitfully than Dennett does, we can see how it necessarily leads to ontological pluralism, or perhaps “Multiple Drafts ontology.”

3.4.2 Throwing Away the Social Ladder

The social constructivist strategy, on the other hand, is to admit the revisability of nature and account for it by reducing our conceptions of nature to artifacts of our social milieus (see Ch. 1 of Bloor [1976] 1991; Collins and Yearley 1992a). While it is fun for the whole family to watch them try to explain quasars strictly by reference to market forces, the fun fades when we realize that their social reductionism has no advantages over their opponents’ physical reductionism. That is to say that any reductionism is going to be the reduction of changing, pluralistic empirical objects and events to a trans-empirical nature or society, and this is nothing but the ontological analogue of the transcendental idealist philosophy of mind that James argues so forcefully and convincingly against (James, [1890] 1977, esp. 37-40). Differences in the world are to be resolved in the acid bath of nature or society, or whatever monistic substance one wants to postulate, just as differences in ideas and perceptions are to be resolved in the unifying—and equally inexplicable—act of a noumenal ego for transcendental idealists. A pluralist insists that the differences between objects of perception, as well as their relations, are simply a part of reality.

29 Here, in “The Stream of Thought,” James targets the “Intellectualists,” who assert a transcendental ego who unifies objects of experience. This ego is asserted in order to account for relations amongst things, which they think cannot be objectively real. James’ radical empiricism takes relations as true aspects of the world itself, and similarly with the lack of relations between some objects, which results in his pluralism.
If we take up an intimate conception of relations between human and non-human actors, though, none of these contortions will be necessary. Objects interacting with other objects and people will simply exchange some properties and produce new relation-dependent mutants at their intersection. Microbes will not be immune to history, nor will social structures. The intersection, or overlapping, of Louis Pasteur and microbes will generate an ontological mutation that will give Pasteur the power to overhaul healthcare in the Western world, and give microbes the power, once a number of other alliances have been forged, to treat skin diseases and even alter the genome of animals in novel and efficient ways. In the ANT account, an experiment, a study, is not a zero-sum game, to be reduced to natural or social causes, or some combination thereof. Research is an event that produces new entities as it modifies old ones in unexpected and unpredictable ways. There was nothing in the microbes or in Pasteur or in French society that could have accounted, beforehand, for the eventual emergence of antibiotics (see Latour 1999, Ch. 4).

The emergence of newly transformed actors, like Pasteur and his microbes, or Newton and his apple, can be read in a weak or a strong sense. It is not clear which meaning Latour seeks to attach to his version of ANT. Indeed, he seems to oscillate back and forth at times. I want to distinguish these readings, which can (very) loosely be thought of as “realist” and “idealist” versions, though I will refrain from using those terms because they tend to imply distasteful things about objects and subjects, more specifically, their existence.
3.4.3 The Weak Reading of ANT

On the weak reading, microbes, or some kind of proto-microbial substance, antedate Pasteur, and are transformed into full-blown Pasteurian microbes once they begin to interact with Western science. The historical experiments and studies are just so many novel contexts that transform the previously existing actants in ways that grant them new properties and involve them in new ontologies.

As Latour notes, this transformation merely extends history to non-humans (Latour 1999, Ch. 3). We generally have no problem speaking of humans learning things and gaining new competencies, or of societies changing their structures in historically contingent ways, but natural objects are unfortunately considered as holding some kind of reserve potential that dictates what they can or cannot do for all eternity. This is a holdover from the substance ontology of previous eras. If everything we perceive when we perceive a substance is “accidental,” inessential to the substance itself, then we never see the unchangeable substance underlying the accidents. This metaphysic is a proto-Cartesian objectivism, where the notion of substance is invoked to sate our desire for an object that does not change with time.

Certainly not everyone buys into substance ontology these days, but, whenever a physical object is spoken of as “having potential,” or properties independent of the object’s context, substance is being tacitly invoked. There is some core reality of the object that determines, so long as the object shall exist, what it can and cannot do. The ANT contention is that any given object is a black box (Latour 1987, Introduction), a tightly wound knot of relationships between a plurality of actants (Harman 2009, 36-47).

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30 This interpretation, for example, is endorsed by Graham Harman (Harman 2009, 79-85). He admits, however, that it does conflict with some of Latour’s statements, which Harman suggests Latour revise.
The potential of an object is determined by its context. For instance, in 1940, stainless steel did not have the potential to fly to the moon. By 1959, it gained that competence.

To suggest that the stainless steel *always* had that potential is to suggest that each object carries within itself the ability to perform a virtually infinite number of distinct tasks. The problem with this definition is that it gives us an unnecessarily incomplete account of a given object operating in the circumstances in which we find it. It is uneconomical in the extreme to define a baseball as “a round, white object with red stitching utilized in the sport of baseball which has virtually limitless potentialities, depending on the context in which it is placed, such as . . .” One might say while we might admit the limitless potentialities of the baseball, we have no need of articulating every one of them, or even knowing every one of them. But this argument would be another in a long line of inexplicable attempts to turn everyday, perfectly graspable objects into mysterious unknowable entities. At least with classical substance ontologists, we could give a complete list of an object’s accidents, even though we could not talk about its substance. Modern substance ontologists deny the possibility of even providing complete list of accidents.

This characterization might seem unfair. Do we really need a complete account of any object’s accidents or potentialities? Perhaps not. But I am left wondering what exactly motivates this position. The ANT notion of potentiality at least has the benefit that it provides a built-in explanation of when an object will behave a certain way and it when it will not.

To sum up, once the entity itself is redefined as a type of relationship between other actants its content depends upon a more or less stable context. Events can happen
to natural entities, and, as a result, microbes, black holes, and redwood trees can gain new competencies and properties.

On this reading something “microbe-like” was always out there, contingent upon certain relationships that humanity simply was not consciously involved in. Once we became involved in these relationships, we changed and they changed, and modern Pasteurians and microbes were born.

The appeal of this weak reading is that it preserves the intuitions of thinkers partial to the discovery metaphor. Though the idea of a fundamental substratum, positioned “under” our experiences is rejected, there is still an outside, a world beyond the fringe of our knowledge that exists whether we perceive it or not. Instead of atoms being in some sense “underneath” the table in my kitchen, they are horizontally tied to the table. If I do not know about atomic theory or the evidence for it, I simply have not gone beyond the table to explore its relations with an external world. Instead of the discovery of atoms, we might speak of the conquest of the frontier of atoms. The table is completely real, atoms or no, and we know what the table really is, whether we understand atomic theory or not; to understand atoms is to become related to a collection of actants that is not identical to the table, but simply intimately related to it.

But there is a catch that might turn off discovery theorists. Consider the example I provided in Section 2.8 of my car in the parking lot. We might say my car has a kind of absolute existence “out there,” beyond the bounds of my experience. It is as real as anything gets, within the bounds of its particular world. On the other hand, my reality is constituted out of the degree of cohesion and adhesion of the experiences related to my body. To say the car “objectively kind-of exists,” as I put it in 2.8, is a bit misleading, as
compared to many of the experiences I am having, the car has a significant degree of
existence. I am strongly tied to the experience of my car residing in the parking lot,
whether I am viewing it presently or not. Nonetheless, this kind of existence is relative.
The existence of the couch in my office shows more resistance to doubt than my car’s
location does.

This is the meaning of pluralized ontology. Actants, or Jamesian experiences,
make up different worlds based upon how intimately they are tied together, and how
much relative distance they have to others. Another example of what I mean by intimacy
here is the relation of the book on my kitchen table to the table itself compared with the
book’s relation to an earthquake in California. If I remove the table, the book falls to the
floor, it suffers a relatively significant change (conversely, if I remove the book from the
table, the table is changed in that it no longer has the weight of a book on it). The book
and the table are rather intimately related. However, while it is conceivable that an
earthquake in California could have some effect on my book in Ohio, it is clear that such
an effect would be much less immediate and significant than the effect of removing the
table. The earthquake is not very intimately related to the book; it is at least considerably
less intimate with the book than the table, and relations like that between the book and
the earthquake are extreme examples of what we would normally call external relations
(though it may or may not be the case that all or most external relations are just
minimally intimate relations).

Whether they are strongly connected or not, though, the table and the book both
eexist (in the “absolute” sense). Their connection, or lack thereof, determines their
relative existence to one another. This relative notion of existence is necessary to
account for the varying degrees of intimacy in different relationships, and it is the successor to the representationalist’s “degrees of belief,” as far as humans are concerned. The representationalist will generally consent to the human mind having more or less certainty about a particular fact, depending upon evidence. But if this evidence bears no relation to the real world (as we established in the previous chapters), the representationalist’s conceptual toolkit needs to be replaced. Once experiences, in James’ sense, are the constituents of reality, there is no belief to be measured against an outside world, but only a sea of relationships that can be broken apart or strengthened (see Latour’s definition of “Belief” at 1999, 304). Relative existence is a good way to describe the replacement for belief.

Another, perhaps more important, task relative existence performs for us is to distinguish between the existence of contradictory entities, and this is the place where monists hit the exits. In a mythology where unicorns are taken to be real live animals existing in the wilderness, not just made up fairy tales, it will be difficult to overcome their reality, depending upon how entrenched the unicorn is in the network. In an associational group strongly committed to the presence of unicorns, the reality of such entities would be perhaps only slightly less than that of my car in the parking lot is in my world. Shifting to my (and our) world, the existence quotient of unicorns is negligibly low, and when not speaking strictly and metaphysically, we would commonly say that unicorns do not in fact exist.

The kind of relativism presented here is not Protagorean perceptual relativism, nor cultural relativism, as technically neither perceptions nor cultures exist for anything to be relative to. And, as I will explain in the final section, ANT provides a unique way of
measuring the relative size and strength of minimally related networks, perhaps making it correct to say that, on the whole, unicorns lack sufficient existence. But the caveat here is that the weak reading of ANT, in admitting the weak existence of anything conceivable, must always leave open the door for a type of absolute existence that would apply to every car, unicorn, or microbe in its own, human-free world. The ANT practitioner needs this in order to account for revisability, the reality of distinct entities gaining and losing existence. There was a time when phlogiston had a strong enough existence to declare it, in common language, as “existing.” Now it does not. If outer objects, circulating in their own worlds outside of human society, are taken to have absolute existence, then various entities we consider mythical must have this same kind of absolute existence, while lacking any strong relative existence in our particular network. Microbes, through the actions of Pasteur (and the microbes themselves), entered into our collective, were socialized into human society, transforming us as we transformed them. But they had always existed (in the absolute sense) before we engaged them, just as phlogiston had.

The weak version of ANT retains certain aspects of the discovery theorist’s ontology, notably the human-independence of objects. However, the cost is the granting of “absolute existence” to anything and everything. This cost might be too high for many. Is there another way to interpret ANT writings? Yes, but it may turn out to be even more expensive.

3.4.4 The Strong Reading of ANT

The strong reading of ANT is going to be a bit stranger. Instead of reading the microbes as simply new-and-improved versions of previously existing entities, the
microbes will emerge, as absolute novelties, with no precursors, from the internal relations forged between Pasteur, a lactic acid ferment, his lab equipment, the French Academy, etc. On this view, microbes simply did not exist prior to the 1860s. Latour accounts for the “optical illusion” of their previous existence by re-forging time as a resultant of two dimensions: history “as it happened” and history as reformatted by science: “After 1864 airborne germs were there all along” (Latour 1999, Ch. 5, quotation from 173). The universe was made of absolute space and absolute time prior to the 1900’s, after which space-time had always been relative. Nature was designed by God prior to the latter half of the 1800’s, when evolution began to correctly describe the prehistory of life on the planet.

What Latour seems to have done here is to invert the authority of natural history to human history. Popularly, the natural history of the Earth and the universe is taken to have precedence over the history articulated by human documents. The Biblical creation narrative, for instance, is an important historical document, but not one many take to be an accurate account of the formation of the Earth. Our fundamental ontology is often defined by recourse to the events of natural history, which human history must always be tested against. Insofar as our records of Napoleon’s fall from power presuppose no supernatural events, they pass the test of natural science and are declared truthful. Insofar as the Bible gives a natural account of ancient events, and enjoys the external support of other contemporary documents, it gains in credibility. But supernatural events recorded in the Christian Bible, such as the resurrection of Jesus Christ, cannot even be considered possibly true, because of their manifest contradiction of the laws of physics and biology, both of which play a tremendous role in articulating our natural history.
Latour’s account of the “discovery” of microbes, however, grants primary reality to the human historical emergence of the microbe, which did not “really” exist until the 1860’s, although it was retrojected into natural history after the 1860’s. This move owes to his denial of a natural or social substratum underlying the actants that exist and act at a particular time. If no microbe-experiences or –actants were around in 1859, then they simply were not there (Latour 1999, 168-172).

Latour’s retreat to an apparent historical realism is uninspiring to me, simply as a result of reflecting on the plethora of divergent networks that had to go into solidifying a dominant time-line. I.e., history is every bit as constructed as science, and forms a significantly shorter, or weaker, network, which would seem to indicate we have every reason to privilege the reality of natural history over that of purely human history.

If we are going to accept the strong reading, we are much better off, in my opinion, simply postulating multiple histories, one of which we are entrenched in more firmly than the others, i.e., the microbiological history. Here, the emergence of completely brand new microbes comes with a (provisional) reformatting of time as well. But it would be incorrect to say that microbes did not exist prior to the 1860’s, simply in virtue of the fact that natural science is \textit{much} harder to overturn than most (though not all) historical facts.\footnote{I treat this issue in more detail in a paper I am presenting at the 2012 Ohio Philosophical Association, \textit{“Neurath’s Boat, Theseus’ Ship, and Chisolm’s Nonintactly Persisting Universe”} (Hale 2012).} The reality of spontaneous generation, prior to Pasteur’s work with airborne microbes, is weak, not only from our present historical perspective, but also comparatively with Pasteur’s when its own strength in its period of popularity is taken into consideration. The theory of airborne germs has survived far more tests than
spontaneous generation ever did. It is therefore more real, perhaps even across generations or epochs.

What the weak reading and the strong reading of ANT have in common, what the reason is for even formulating them, is their recognition of the significance of revision in scientific history, as well as human history at large. A representationalist account makes knowledge impossible and the real world inaccessible. If ANT’s claims about history and the reality of certain substances seem outlandish, fit for science fiction time travel stories, consider again the commitment of representationalists to an alternate dimension (the objective world) which never has any discernible impact on our lives or experiences. Even if ANT doesn’t quite give us what we want, something other than representationalism is required, and ANT is at least an honest attempt.

3.5 Conclusion: Empirical Metaphysics?

In this section I will speculate, ever so briefly, on the wider significance of ANT ontology, starting with the reaction of some sociologists to ANT developments. I don’t have the space to treat all of the follow-up issues in detail, but they are certainly worth considering for future research.

There are some in the science studies movement who attack Latour for being too hostile to sociological and philosophical strategies such as deconstruction (for instance, Cohen [1997] 1999, who considers the ANT approach downright “repressive,” 84). But a more important criticism, to my mind, is that of Harry Collins and Steven Yearley. Their basic methodological ontology is social realism, wherein scientific practice is to be accounted for solely in terms of social forces, making no reference to the scientists’ objects of study themselves (Collins and Yearley 1992a, 309, 314-315). No agency is
granted to the scallops in Michel Callon’s classic ANT analysis of the interactions of scientists, fishermen, and scallops in St. Brieuc Bay (Callon [1986] 1999); all the sociologist should be concerned with is the things that the scientists and the fishermen do: the notes they take, the rituals they engage in, the politics of their two-way interactions, etc. The sociologist has no right to speak on behalf of “things” (Collins and Yearley 1992b, 385). This is because 1) the sociologist does not have the expertise of the natural scientist, and is therefore unqualified to explain the behavior of natural entities, such as scallops; and 2) a sociological account of the emergence of scientific knowledge that relied on the natural world conspiring with the scientist would be a step backward, a retreat to the classical model, where scientific facts are produced through flat-out discovery. If natural objects determine the facts that scientists propagate, Collins and Yearley think we have thrown social explanation out the window.

It could be argued that Collins and Yearley practically admit that their social realism is a sociopolitical ploy to undermine the authority of natural science, without regard for the accuracy of the perspective (Collins and Yearley 1992b, 382-383). But, not being a sociology graduate student, I am not qualified to make judgments about the sociological appropriateness of ANT.

But let us suppose, for the sake of argument, that Collins and Yearley are right. If Latour wants to give scientists (and their objects of study) the right to collectively generate and define nature, there is no reason why he should not allow sociologists (and their subjects of study) to generate and define society. Indeed, Latour seems to say as much himself (Latour 1987, 141-144; cf. 94-100). But, if ANT itself is intended as a sociological theory, it becomes unclear why it should be in competition with theories of
social scientific practice any more than it is with natural scientific practice. Indeed, can the study of social science itself be a social science at all?

Those interested in applying the sociological study of science to sociology itself have affirmed that such practice is possible, according to the principle of reflexivity (Collins and Yearley 1992a, 303-309; Woolgar 1992, 332-337), whereby the sociological method invoked in studying natural science is affirmed to be just as applicable to social science, indeed, to the social science of studying natural science itself. This coheres well, perhaps is identical with, my stance on epistemology in Section 1.3: any epistemological theory must apply equally to itself as it does other knowledge claims.

Some might cry foul at this account of the legitimate cultivation of knowledge. Is reflexivity not just an excuse to make viciously circular arguments? If Epistemological Theory A can only be justified by recourse to Epistemological Theory A, have I really explained anything? Or is the circularity here so immediate and vicious that reflexivity becomes a kind of brute foundationalism, with Epistemology A being declared in need of no justification?

We might as well say it. It does not seem as if any epistemological theory can be soundly justified. And if that is the case, then no knowledge claim whatsoever is justified either.

But so much the worse for justification. In practice, lack of justification has never stopped anyone, pauper, priest, or scientist, from generating knowledge. This, then, is another consideration that makes the collapse of epistemology into ontology necessary. We do not find ways of connecting with the outside world; we are always connected with the outside world, and truth and error, or existence and non-existence, are relative terms
gauging how long, and under what conditions, anything can hold out against adversarial pressure. What we are doing when we do science or epistemology is not “justifying” our claims, but rather “fortifying” them, finding creative ways to make them more irresistible to other actants, and more resistant to enemies.

Reflexivity or not, though, the study of human and non-human actants seems outside the bailiwick of sociology proper. We might instead think of ANT as the first awkward attempt to establish an empirical science of ontology. Latour says that

[i]f we call metaphysics the discipline . . . that purports to define the basic structure of the world, then empirical metaphysics is what the controversies over agencies lead to since they ceaselessly populate the world with new drives and, as ceaselessly, contest the existence of others. The question then becomes how to explore the actors’ own metaphysics. (Latour 2005, 51)

Rudolf Carnap claimed that the development of a science falls into three categories: classificatory, wherein objects of inquiry are put into distinct categories; comparative, wherein objects can be roughly ranked relative to some feature; and, finally, quantitative, wherein the features of objects can be measured precisely according to an accepted scale (Carnap [1966] 1995, Ch. 5). ANT, it would seem, has reached the beginnings of the comparative stage. There is no clear standard with which to count the number of actants relative to the cohesion of a particular network or ontology, but there are asymmetries that can be detailed. This is going to be the demarcation criteria for distinguishing science and non-science (Latour prefers “differentiation”; see the definition of “Demarcation vs. Differentiation” at Latour 1999, 305). What makes the natural sciences so powerful, so relatively large, is the rate at which they have succeeded at continuously socializing non-human actants (Latour [1991] 1993, 108-109). New entities (microbes, metals, stars) are almost immediately factored into new technologies
and scientific work, making our world ever more dependent on our intimate relations with objects (see Latour 1987, 91-94). At no other point in human history has any group of humans been this engaged with the non-human world(s).

Whether ANT will ever graduate to the quantitative stage remains to be seen, but in the meantime, it seems a worthy tool for exploring ontology. The primary benefit, as I see it, is that, regardless of whether we pursue the weak or the strong ANT, objects and facts are all treated as constructed, or cultivated, and provisional, in the sense that they depend upon contingent relationships and can always be replaced by other contingent relationships. Rather than a scientific realism, per se, this view of metaphysical/epistemological reality can lead to a scientific relativism, where evidence can once again be directly tied to truth in a way that simply makes no sense under the assumption of a singular unchanging reality. Under the Cartesian system, the scientist is either going to have to abandon any pretension to truth, or to perform the Orwellian task of constantly rewriting (natural) history to prove that present scientific theories have always corresponded to the one true reality and always will.
References


