

Models, Method and Truth:

How to be an Internalist With Realist Attitudes

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ABSTRACT

In the years since the truth wars of Bertrand Russell and William James the realism/antirealism debate has taken on at least two main forms. There is a debate between those that claim that truth transcends knowledge and those that hold that truth is inseparable from a mind and its concepts. But there is another discussion that has less to do with language and the property of truth, and more to do with the primacy of matter or mind. Philosophers of Science Ronald Giere and Jeffrey Foss share an interest in this latter debate and reject the linguaphilia that permeates philosophy. I will exploit their use of models and argue that from a properly pragmatic perspective it is possible to reconcile an internalist approach to truth with realist attitudes. To do so, I will explore the methodological materialism of Jeffrey Foss and Ronald Giere. I will argue that models make statements true and I will replace the principle of transcendence with a principle of methodological transcendence. I conclude that the *external* aspects of language that philosophers of language have persistently posited can be dispensed with.

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INTRODUCTION

My studies in logic and in the philosophy of language always left me feeling as though I was walking around in a fog. Luckily, I have been encouraged to get above the tight circles of debate. Truth and reference are linguistic phenomena to be found in the study of language. But they are also the masonry on which many philosophical programs in the study of being and the study of knowledge are built. When I finally realized that the various projects in the philosophy of language had to be understood in the context of the metaphysics and epistemologies that their authors were endorsing, I began to make progress. Along the way, I have discovered that a *hidden* metaphysics is a *bad* metaphysics.

This thesis is meant to be located in the philosophy of language. Now allow me to reveal my philosophical prejudices. I think all philosophy is epistemology. I think there is an external world. We think about it, and we talk about it. Here's the catch. I don't think we can think about it without thinking about ourselves. And I don't think we can talk about it without talking about ourselves. Importantly, if we have to choose between a "neumenal blah"¹ and a list of "ultimate objects"², we should go for the neumenal blah.

The problem is this. We don't want to commit to too much metaphysics. But we want to let in enough ontology to preserve a few paradigms of knowledge. Here's the hypothesis. The philosophy of language has been persistently plagued with engaging in too much metaphysics. These metaphysical engagements have located contemporary language debates in the centre of the mind-body conundrum.

This has also resulted in the *disappearance of truth*. From an epistemological perspective, truth ought not to be made redundant. If I reject the metaphysical realism that comes with the classical correspondence theory of truth then I am committed to rejecting the principle of transcendence. The principle of transcendence is the principle that truth-bearers are made true or false by something objective. This means rejecting the law of excluded middle and the ubiquitous notion that truth is eternal.

The difficulty here is that it is hard to account for my belief that there is a world, and that there is only one world, and that this world constrains our theories. Verification transcendent statements, for example, are often obviously true or false. But this means salvaging the principle of transcendence. So I will outline a way to reconcile the motivation behind eternal truths and a

¹ Charlie Martin, "The Need For Ontology: Some Choices" *Philosophy* 68, 1993.

² Susan Haack, *Manifesto of a Passionate Moderate* (Chicago: University of Chicago Press, 1998) 22. This is the term she uses to describe the metaphysical commitments of the logical atomists.

robust sense of fallibilism in order to arrive at an epistemologically active notion of truth *and* a modest realism.

Chapter One will be an overview of how three giants of early Twentieth Century semantics inform the classical correspondence theory of truth. As well, I will look at how the main elements of the classical correspondence theory contribute to the contemporary position that holds that beliefs are made true by mind-independent truthmakers, and how this leads to a disappearance of truth. We shall see in the works of Peirce and Russell a surprising ambivalence with respect to an epistemological conception of truth.

Chapter Two will be a look at how pragmatism *appears* to reject various elements of the classical correspondence theory of truth. This will entail a closer look at the pragmatic maxim, various forms of conceptual relativity and mind-world isomorphism. In the end, however, I will argue that William James entertains two kinds of truth, one of which is compatible with Russell's and Peirce's interest in realism – and one that rejects the classical correspondence theory of truth.

Chapter Three will primarily focus on Ronald Giere and Jeffrey Foss, two modern day pragmatists who work in the philosophy of science. They provide a framework that is abundantly useful for the philosophy of language. Their approach, interestingly, is marked by a deflationary attitude towards language and truth. It is this platform that will provide a way to accommodate an internalist conception of truth and the modest realism we need to preserve various paradigms of knowledge. This program will bear an uncanny resemblance to the pragmatic conception of truth of William James.

In Chapter Four, I will explore the social nature of knowledge and conclude that the methodological materialism of Foss and Giere provides us with a template for the principle of methodological transcendence. And Chapter Five will be an exploration of how this program can be put to work to solve four puzzles in the philosophy of language.

1 TRUTH AND TRANSCENDENCE

1.0 THE GOD'S EYE VIEW

- 2.1511 *That* is how a picture is attached to reality; it reaches right out to it.
 2.21 A picture agrees with reality or fails to agree; it is correct or incorrect, true or false.
 6.13 Logic is not a body of doctrine, but a mirror-image of the world.
 Logic is transcendental.

- Ludwig Wittgenstein¹

Words mirror the world. This is the metaphor that drives the correspondence theory of truth. But the key to enlightenment is the recognition of the limits of every metaphor. *Mirroring* makes it clear that the relationship between language and the world is a symmetrical one. It is as though there are two equal realms, the subjective and the objective. Bertrand Russell thought that these realms constituted two *sides* of an assertion:

An assertion has two sides, subjective and objective. Subjectively, it “expresses” a state of the speaker, which may be called a “belief”, which may exist without words, and even in animals and infants who do not possess language. Objectively, the assertion, if true, “indicates” a fact; if false, it intends to “indicate” a fact but fails to do so.²

Barwise and Perry call these the internal and external aspects of language. They suggest that there are two important ways that God could make a statement true.³ Consider an utterance of “The morning star is not the evening star.” God could create *two* planets: She could create a morning star *and* an evening star. Or She could simply change the meaning of “is not the evening star” to mean something like “is not made of cheese”. In the first instance, She is changing the world, and in the second instance, She is changing the information that is conveyed. This difference is at the center of a long-standing riddle about language. Note that this thought experiment relies on an omnipotent being that has a privileged viewpoint from which to “see” the world and from which to “see” the information conveyed.

This God’s Eye View (hereafter GEV)⁴ will occupy much of this first chapter. I will argue that an important version of the correspondence theory of truth relies on the GEV and derivatively on eternal truth and propositions. But if we are cut off from the GEV then we are also cut off from truth.

¹ Ludwig Wittgenstein, Tractatus, trans. Pears and McGuinness, intro. Bertrand Russell (London: Routledge and Kegan Paul, 1974).

² Bertrand Russell, An Inquiry Into Meaning and Truth (London: George Allen and Unwin Ltd, 1940) 171.

³ Jon Barwise and John Perry, Situations and Attitudes (Cambridge: Bradford Books, MIT Press, 1983) 30.

⁴ Hilary Putnam, Reason, Truth, and History (Cambridge: Harvard University Press, 1981) 49.

1.1 CLASSICAL CORRESPONDENCE

A thorough analysis of the meaning current in everyday life of the term ‘true’ is not intended here. Every reader possesses in greater or less degree an intuitive knowledge of the concept of truth and he can find detailed discussions on it in works on the theory of knowledge. I would only mention that throughout this work I shall be concerned exclusively with grasping the intentions which are contained in the so-called *classical* conception of truth (‘true – corresponding with reality’) in contrast, for example, with the *utilitarian* conception (‘true – in a certain respect useful’).⁵

– Alfred Tarski

Alfred Tarski’s seminal work, “The Concept of Truth in Formalized Languages”, is at the heart of the version of the correspondence theory that I am interested in. Tarski begins his investigation of the classical conception with the following sequence of definitions:

- (1) a true sentence is one which says that the state of affairs is so and so, and the state of affairs indeed is so and so.
- (2) x is a true sentence if and only if p.
- (3) ‘it is snowing’ is a true sentence if and only if it is snowing.⁶

In a footnote, Tarski tells us that the formulation of (1) is as old as Aristotle’s *Metaphysica*. (2) and (3) are derived from (1). (3) marks the standard of material adequacy⁷ by which all of Tarski’s derivations of truth are measured against. Famously, (3) is the convention that most theories of truth make use of. Tarski quickly concludes that it is impossible to define the concept of truth for natural language. However, some formal languages (he calls them scientifically constructed languages and languages of the deductive sciences) do permit definitions of truth.⁸ These definitions of truth are reductions to non-semantic terms. What is interesting is that Tarski draws a distinction between the *classical* conception of truth and the *utilitarian* conception of truth.⁹

Bertrand Russell shares this vision. In *An Inquiry Into Meaning and Truth*, Russell distinguishes between two forms of the correspondence theory of truth. There is the

⁵ Alfred Tarski, “The Concept of Truth in Formalized Languages” 1933. Logic, Semantics, Meta-Mathematics, 2nd ed. Ed. J. Corcoran. Trans. J.H. Woodger (Indianapolis: Hackett Publishing Company, 1956) 153.

⁶ Alfred Tarski “The Concept of Truth in Formalized Languages” 155, 156.

⁷ Tarski requires that any definition of truth must be formally correct and materially adequate. Material adequacy is the requirement that a definition of a concept must capture all of, and no more than, the extension of the concept defined.

⁸ Tarski, pg. 153. Tarski shows that the “poorer” formal languages can consistently define truth while the “richer” languages must take truth to be a primitive that is made precise through axiomatization.

⁹ We shall see a lot more of this utilitarian conception of truth in Chapter Two. This approach to truth focuses on usefulness and is often associated with behaviourism.

epistemological notion and the logical notion. On the logical theory of truth, it is *reality* that makes our linguistic entities (statements for Tarski, and propositions for Russell) true or false:

According to the correspondence theory of truth as Tarski points out, the proposition “it is snowing” is true if and only if it is snowing. This has, *prima facie*, nothing to do with knowledge. If you do not realize that it is snowing, that does not make the proposition “it is snowing” any less true...This is the view of realism and of common sense. And it is this view which has made the law of excluded middle seem self-evident.¹⁰

Russell, like Tarski, favours the classical notion of truth. Truth is a fundamental concept upon which knowledge depends, not vice versa. To achieve this kind of realism Russell develops a theory of truth that results in the mind-independent congruence of propositions and facts.¹¹ Facts are what make (or fail to make) propositions true (or false). Propositions are expressed by classes of sentences. Propositions are believed by subjects and indicate the facts that make them true.

Russell’s foundation is sense data. Facts are experienced via our sense data. These basic facts are then indicated by basic propositions that are expressed by sentences in the *primary* language. The concept of truth is a logical operator like disjunction or negation and is only found in the higher order languages. Tarski’s biconditional describes this semantic assent: the sentence in quotes is in the object language and “is true” is in the meta-language. On this view we have sense data and logic. And here Russell is faithful to the distinction between analytic and synthetic truths. Synthetic truths involve sense data. These truths are basic. Analytic truths involve the internal relations between logical connectives. This program yields what Russell calls the epistemological theory of truth. But this is the psychological aspect of Russell’s epistemology and it is entirely in the first person. On this view, the objects of the theories that organize our sense data into simple, predictive, and useful theories are just logical fictions.¹² This is where Russell breaks company with the early logical positivists that took sense data as the foundation for knowledge.

Russell’s treatment of *logical* truth is motivated by a dilemma. On one horn there is the problem of letting in too much metaphysics. This horn drove the logical positivists to eliminate metaphysics altogether and to show that empiricism must “adopt Berkeley’s phenomenalism

¹⁰ Russell, *An Inquiry* 284.

¹¹ Richard Kirkham, *Theories of Truth* (Cambridge: MIT Press, 1992) chapter 4. Kirkham distinguishes between correspondence as correlation (by convention), as found in Austin, and correspondence as congruence, as found in Russell.

¹² Russell, *An Inquiry* 218.

without his theism.”¹³ It was on this second horn, the problem of letting in too little metaphysics, that the positivists found themselves. After all, we have knowledge and this knowledge is grounded in our experience of *the world*. Russell argues that there are two main alternatives to the problem of letting in too much metaphysics. There is a first-person, epistemological theory of truth, and there is the coherence theory of truth. Russell’s program is meant to avoid both of these positivistic results.

Russell claims that a coherence theory of truth is not compatible with empiricism. The best cases of coherence deny the law of the excluded middle. The worst cases result in a rejection of an independent external world. If the distinction between analytic and synthetic truths is eroded then propositions are true as a result of their *internal* relation to other propositions. Sentences lose all connection to reality and truth becomes a matter of syntax and convention. But then “truth can be determined by the police.”¹⁴ Neurath’s dedication to protocol¹⁵ sentences, for example, puts him afloat on a sea of language:

Neurath’s doctrine, if taken seriously, deprives empirical propositions of all meaning...The purpose of words, though philosophers seem to forget this simple fact, is to deal with matters other than words. If I go into a restaurant and order my dinner, I do not want my words to fit into a system with other words, but to bring about the presence of food...The verbalist theories of some modern philosophers forget the homely practical purposes of every-day words, and lose themselves in a neo-neo-Platonic mysticism. I seem to hear them saying “in the beginning was the Word”, not “in the beginning was what the word means”. It is remarkable that this reversion to ancient metaphysics should have occurred in the attempt to be ultra-empirical.¹⁶

This brings us back to Russell’s epistemological theory of truth. Avoiding this option is more troubling for Russell. The difficulty begins with the observation that science is a social endeavour and the truths of science are taken from the experiences of many individual scientists. But “epistemology cannot begin by accepting testimony, for the correctness of testimony is certainly not among basic propositions.”¹⁷ Russell is suspicious of those empiricists that have not provided an epistemological foundation for this social aspect of science:

¹³ A.J. Ayer, Language, Truth, and Logic (New York: Dover publications, 2nd edition, 1946) 27.

¹⁴ Russell, An Inquiry 148.

¹⁵ As far as I can tell the protocol sentences were meant to be a given in the early Neurath’s project. In this sense, the protocol sentences are very nearly a foundation for the language of physics. But Neurath accepts the parasitic nature of the meaning of protocol sentences on the theory in which they are embedded. This holism in Neurath’s project results in a coherence theory that binds sentences in the observation language with sentences in the theory language. But this only makes the point more salient: the emphasis for Neurath is not on *sense data*, but on *sentences* about sense data.

¹⁶ Russell, An Inquiry 148 – 149.

¹⁷ Russell, An Inquiry 282.

There is a tendency – not confined to Neurath and Hempel, but prevalent in much modern philosophy – to forget the arguments of Descartes and Berkeley. It may be that these arguments can be refuted, though, as regards our present question, I do not believe that they can be. But in any case they are too weighty to be merely ignored. In the present connection, the point is that *my* knowledge as to matters of fact must be based upon *my* perceptive experiences, through which alone I can ascertain what is received as public knowledge.¹⁸

The idea is that Russell wants to arrive at an ontology of “things” by making inferences from sense data. The premises include basic facts and only the conclusions include “things”. He is working from the ground up, in a kind of epistemological order. And sense data, the foundation, are a first person experience. If the testimony of others is to become a premise in our own inference, as it must for science to operate, then we will have to accept more than our own experience (of *basic* facts) into our premises.

But this requires caution since the object is to be ontologically conservative. Russell is trying to develop a theory that explains our willingness to posit other minds but not unicorns. The theory should comply with the intuition that the world, not our social circle, constrains our truths. Russell regularly disparages Meinong for his deficient grip on reality.¹⁹ Russell’s theory of descriptions grows out of this conservative realism:

The sense of reality is vital in logic, and whoever juggles with it by pretending that Hamlet is another kind of reality is doing a disservice to thought. A robust sense of reality is very necessary in framing a correct analysis of propositions about unicorns, golden mountains, round squares, and other such pseudo-objects.²⁰

But allowing that propositions can be verified via the testimony of another scientist is not strong enough. This kind of epistemological sensitivity still only yields a weak epistemological truth. Statements that are completely verification transcendent still fail to have a truth-value and so reject the law of excluded middle. And this does not capture the intuitions that Russell shares with Tarski regarding the classical conception of truth:

We have to consider...whether to sacrifice the law of excluded middle or to attempt a definition of truth which is independent of knowledge.

The difficulties of either view are appalling. If we define truth in relation to knowledge, logic collapses, and much hitherto accepted reasoning, including large parts of mathematics, must be rejected as invalid. But if we adhere to the law of excluded middle, we shall find ourselves committed to a realist metaphysic which may seem, in the spirit if not in the letter, incompatible

¹⁸ Russell, *An Inquiry* 143 – 144.

¹⁹ Bertrand Russell, “The Philosophy of Logical Atomism”, *Logic and Knowledge*, essays 1901-1950, ed. Robert Marsh, (London: Routledge, 1956) 223.

²⁰ Bertrand Russell, “Descriptions”, *The Philosophy of Language*, ed. A.P. Martinich (New York: Oxford University Press, 2001) 222.

with empiricism.²¹

The picture we get here is of two sorts of truths. There are the earthly truths that we know to be true. But these are a subset of all of the true propositions. These latter propositions are made true by the world, independently of our minds. At the end of the day, Russell cannot help but stick to his intuition that “truth and knowledge are different, and that a proposition may be true although no method exists of discovering that it is so.”²² And this is the rub for Russell. His loyalty to the law of excluded middle “involves us in metaphysics, and has difficulties (not insuperable) in defining the correspondence which it requires for the definition of ‘truth’.”²³ To appreciate Russell’s conclusion we have to understand where he is coming from. His membership in the Church of Logic has ensured his commitment to the notion of an *eternal* proposition, and hence an eternal truth. It is to this notion that I will now turn.

1.2 THE FATHERS OF MODERN LOGIC

Thus for example the thought we have expressed in the Pythagorean theorem is timelessly true, true independently of whether anyone takes it to be true. It needs no owner. It is not true only from the time when it is discovered; just as a planet, even before anyone saw it, was in interaction with other planets.²⁴

– Gottlob Frege

I have been arguing that the classical theory of truth has presupposed two realms. Frege, famously, presupposes three. There is the realm of psychology. There is the actual world. And, there is the mediating realm of thoughts. Barwise and Perry note:

He postulated a third realm, a realm neither of ideas nor of worldly events, but of senses. Senses are the “philosopher’s stone” the medium that coordinates all three elements in our equation: minds, words, and objects. Minds grasp senses, words express them, and objects are referred to by them.²⁵

Russell’s theory of descriptions is motivated by a concern for the metaphysically displeasing²⁶ semantic theory that Frege offers. Despite this apparent difference, there are

²¹ Russell, An Inquiry 274.

²² Russell, An Inquiry 288.

²³ Russell, An Inquiry 293.

²⁴ Gottlob Frege, “Thought”, Analytic Philosophy An Anthology, ed. A.P. Martinich and David Sosa (Oxford: Blackwell Publishers, 2001) 25.

²⁵ Barwise and Perry, Situations 4.

²⁶ Frege claims that terms like “the present king of France” fail to refer by denoting the empty set. This, to Russell, is an ad hoc solution that invokes a strange metaphysics. Moreover, statements that fail to refer

overwhelming similarities to Russell's project. They both take for granted the external world and they both take for granted the internal, psychological aspect of language. Importantly, both Frege and Russell are fathers of modern logic. As such they help themselves to propositions. It has been suggested from various quarters that the preoccupation with the language of mathematics and the success of logic has caused early semanticists, such as Frege, to be overly concerned with entailments.²⁷

My claim is that Russell relies, less explicitly, but just as heavily on propositions as Frege. We have seen that Russell admits that statements occupy both worlds. Word meanings are clearly occupants of the psychological realm. For Russell this is the "subjective state" and for Frege this is the "inner world". As logicians, Frege and Russell are not very interested in the psychological aspect of words. For both, this inner world is of mere secondary significance: Otherwise psychology would contain all the sciences within it, or at least it would be the supreme judge over all the sciences. Otherwise psychology would rule even over logic and mathematics. But nothing would be a greater misunderstanding of mathematics than making it subordinate to psychology.²⁸

And for Russell:

Logicians, so far as I know, have done very little towards explaining the nature of the relation called 'meaning', nor are they to blame in this, since the problem is essentially one for psychology.²⁹

Both Frege and Russell mean to clean up philosophy by cleaning up our improper use of natural language. Russell and Frege want to use the "scientific languages" of the deductive logics to pursue their interests. Russell's theory of descriptions, for example, is a prescription for explaining away the ontological difficulties that are presented by referring terms, i.e. the terms that *fail* to refer. Frege thinks that words that "act on the feelings and mood of the hearer" are prominent in poetry and the humanities, "and are therefore less scientific, than the exact sciences, which are drier in proportion to being more exact; for exact science is directed toward truth and truth alone."³⁰ And here Frege is open about his commitment to propositions, or "complete thoughts", that are mind-independent, and independent of the external world. The thought

are, for Frege, neither true nor false and this rejection of the law of the excluded middle is especially alarming to Russell's realist commitments.

²⁷ Barwise and Perry, Situations 28.

²⁸ Gottlob Frege, "Thought", pg. 28. 2001.

²⁹ Bertrand Russell, "Propositions", Logic and Knowledge, essays 1901-1950, ed. Robert Marsh (London: Routledge, 1956) 291.

expressed by the Pythagorean theorem “is surely timeless, eternal, unvarying.”³¹ It would not, I think, be wrong to draw a line of inference from Pythagoras and Plato through Descartes³², and ending in Frege. And it would not, I think, be wrong to draw a parallel line ending in Russell.

The limits of my investigations prevent me from claiming that Russell’s program suffers from a great inconsistency. So instead I want to say that there are two streams of thought in Russell’s work that seem to me to be irreconcilable. These streams are reflected by his distinction between truth and knowledge. In his epistemological work he fully acknowledges that all statements have a psychological aspect. He claims that the current theory of signs and the psychology of symbols is misunderstood and needs greater consideration. Early on in his career, he admits that except “in psychology, most of our statements are not intended merely to express our condition of mind, though that is often all that they succeed in doing.”³³ Even more radical is his claim that meaning “is always more or less psychological, and that it is not possible to get a pure logical theory of meaning, nor therefore of symbolism.”³⁴ In this project, Hume’s empiricism seems to lurk behind Russell’s words.

At odds with all of this is Russell’s claim that pure empiricism is “believed by no one.”³⁵ Russell takes it for granted that sentences *primarily* assert facts. Russell notes that language “serves three purposes: (1) to *indicate* facts, (2) to *express* the state of the speaker, (3) to *alter* the state of the hearer.”³⁶ The order of these purposes is extremely reflective of his logical theory of truth and his foundational approach to knowledge. The state of the speaker and hearer are matters of belief and experience, i.e. verification. But truth transcends these. Propositions that are embedded in psychological contexts like believing, desiring or thinking, are of mere peripheral interest to Russell. These propositional attitudes present a difficulty for formal semantics. Russell has relied on Tarski’s recursive definition of truth as well as the law of excluded middle.

³⁰ Frege, “Thought”, pg. 22.

³¹ Frege, “Thought”, pg. 29.

³² In the *Principles of Philosophy* Descartes helps himself to eternal truths but identifies them as being in the mind. He writes: “But when we recognize that it is impossible for anything to come from nothing, the proposition *Nothing comes from nothing* is regarded not as a really existing thing, or even as a mode of a thing, but as an eternal truth which resides within our mind. Such truths are termed common notions or axioms.” This from *Rene Descartes, Selected Philosophical Writings*, trans. J. Cottingham, R. Stoothoff, D. Murdoch, (Cambridge: Cambridge University Press, 1988) 176.

³³ Bertrand Russell, “The Philosophy of Logical Atomism” 183.

³⁴ Bertrand Russell, “The Philosophy of Logical Atomism” 186.

³⁵ Russell, *An Inquiry* 305.

³⁶ Russell, *An Inquiry* 204.

But this requires that we can assign a truth-value to every proposition. Frege chooses to recognize embedded contexts³⁷ in which propositions would fail to have a truth-value. But Russell is committed to a theory of meaning that will give explicit truth-conditions for every sentence. As such, the propositional attitudes are only an aggravation that is to be explained away by developing more formal semantics.

Psychology figures into Russell's semantics at the foundation, in the object language, as well as in poetic or expressive language. But psychology gets ignored with respect to both propositions and syntax, i.e. the logic. So Russell approaches the external world via the relation between *facts and propositions*. Seen in this light, Russell's program is not so different from Frege's. Propositions are a mediating third realm for Russell just as much as they are for Frege. These mind-independent facts *make* our propositions true or false. They do so because our true propositions have the *same structure* as these facts coupled with the mind-independent structure of logical consequence.

This long route has brought us back to the insight that Russell's classical correspondence theory of truth rests on the notion of non-conventional congruence. It is this mind-independent relation that preserves the eternality of truth even for truths that will *never* be verified. In the last chapter of An Inquiry Into Meaning And Truth, Russell comes clean on this metaphysical bent: When I say "similarity exists", it is this fact about the world, not a fact about language, that I mean to assert. The word "yellow" is necessary because there are yellow things; the word "similar" is necessary because there are pairs of similar things. And the similarity of two things is as truly a non-linguistic fact as the yellowness of one thing.

We have arrived, in this chapter, at a result which has been, in a sense, the goal of all our discussions. The result I have in mind is this: that complete metaphysical agnosticism is not compatible with the maintenance of linguistic propositions.³⁸

³⁷A sentence is referentially opaque if and only if substitution of co-referring terms, within the sentence, changes its truth-value. Co-referring terms are simply expressions that denote the same objects. In referentially opaque contexts, the embedded expressions are traditionally considered to have intension and no extension.

³⁸ Russell, An Inquiry 347.

1.3 AN INHERITANCE FROM C.S. PEIRCE

Everything, therefore, that will be thought to exist in the final opinion is real, and nothing else... And any truth more perfect than this destined conclusion, any reality more absolute than what is thought in it, is a fiction of metaphysics.³⁹

Peirce is inclined to talk about truth and falsity in terms of doubt and belief. The pragmatic maxim is born out of a rejection of the rationalist notion that knowledge rests on certainty and certainty rests on some kind of metaphysical truth.⁴⁰ It is absurd, for example, that Catholics and Protestants should make so much out of their disagreement regarding the sacrament. Peirce asks us to consider the practical differences and disregard any non-substantive differences in their metaphysical stories:

*In order to ascertain the meaning of an intellectual conception one should consider what practical consequences might conceivably result by necessity from the truth of that conception; and the sum of these consequences will constitute the entire meaning of the conception.*⁴¹

This maxim marks the beginning of the pragmatist movement of William James and John Dewey. But it was against these figures that Russell defined his own classical approach to truth. And, to be clear, it was against these figures that *Peirce* defined himself. Peirce was a realist. Like Russell, Peirce felt the verificationism of Comte and Mach was inadequate. This is interesting because the Pragmatic Maxim implicates “sensible” and “operational”⁴² consequences in a way that is not far from positivism. In fact, Carl Hempel, in 1950, wrote that the basic tenet of the principle of cognitive significance “is not peculiar to empiricism alone: it is characteristic also of contemporary operationism, and in a sense of *pragmatism* as well; for the *pragmatist maxim* that a difference must make a difference to be a difference may well be construed as insisting that a verbal difference between two sentences must make a difference in experiential implications if it is to reflect a difference in meaning.”⁴³ For Peirce, what is true is what is real and what is real is what is not to be doubted by an *ideal* mind, in an *ideal* epistemic

³⁹ C.S. Peirce, Collected Papers of Charles Sanders Peirce (Cambridge: The Belknap Press of Harvard University Press, 1960) 8.7 - 8.38.

⁴⁰ C.S. Peirce, Collected Papers 5.593.

⁴¹ C.S. Peirce, Collected Papers, 5.9. Peirce tells us that his maxim is “scarce more than a corollary” of Bain’s definition of belief as “that upon which a man is prepared to act.”

⁴² C.S. Peirce, Collected Papers, 5.401: Peirce writes that our “idea of anything is our idea of the sensible affects”. 5.21: Peirce tells us that a proposition believed in can “itself be nothing but a maxim of conduct.”

⁴³ Carl G. Hempel, “Empiricist Criteria of Cognitive Significance: Problems and Changes”, The Philosophy of Language, ed. A.P. Martinich, Oxford University Press, 2001, pg. 34, my emphasis.

circumstance.⁴⁴ Peirce offered a view of scientific progress and concluded that science would culminate in an ultimate or final theory. But this doctrine led Peirce to dissociate himself from James and Dewey whom he considered not to be realists because they were consumed by utilitarianism and phenomenalism. He renamed his own doctrine ‘pragmatism’ “which is ugly enough to be safe from kidnappers.”⁴⁵

I have so far implicated, in a general way, the tradition of Frege and Russell in the classical correspondence theory of truth. Peirce is important because he was *also* a father of modern logic. In this sense, he completes the holy trinity of Frege, Russell and Peirce. I have found that there are two concepts that we have inherited from C.S. Peirce that contribute to the program I am rejecting. The first is his notion that scientific method will allow us to converge on an ideal scientific view of the world. The second is his contribution to semiotics and the philosophy of language.

Peirce’s doctrine, like Russell, suffers from a tension between two kinds of truths. On one hand he is eschewing metaphysical fictions. Peirce is clear in most passages that truth does not transcend human thought. But in other passages, and especially as Peirce works to distance himself from the pragmatists, his notion of a final opinion takes on the image of an ultimate reality, not far from that of the GEV:

But the answer to this is that, on the one hand, reality is independent, not necessarily of *thought in general*, but only what you or I or *any finite* number of men may think about it; and that, on the other hand, though the object of the final opinion depends on what that opinion is, yet what that opinion is does not depend on what you or I or any man thinks.⁴⁶

What follows from this is that this *general thought* is independent of actual human thought:

Our perversity and that of others may indefinitely postpone the settlement of opinion; it might even conceivably cause an arbitrary proposition to be universally accepted as long as the human race should last. Yet even that would not change the nature of the belief, which alone could be the result of investigation carried sufficiently far; and if, after the extinction of our race, another should arise with faculties and dispositions for investigation, that true opinion must be the one that they would ultimately come to. “Truth crushed to earth shall rise again,” and the opinion that would finally result from investigation *does not depend on how anybody may actually think*.⁴⁷

⁴⁴ C.S. Peirce, Collected Papers, 5.407.

⁴⁵ C.S. Peirce, Collected Papers, 5.414.

⁴⁶ C.S. Peirce, Collected Papers, 5.408, my emphasis.

⁴⁷ C.S. Peirce, Collected Papers, 5.408, my emphasis.

It is a funny sort of opinion that does not rely on thought. Peirce's mention of an alien mind in this passage is not unique. It is one way that Peirce imagines we might account for and remove what is "accidental", "transitory", "arbitrary" and "individual"⁴⁸ in thought. Aliens provide a stabilizing force because they have different *senses* and *feelings*:

The matter of sensation is altogether accidental; precisely the same information, practically, being capable of communication through different senses. And the Catholic consent that constitutes truth is by no means to be limited to men in this earthly life or to the human race, but extends to the whole communion of minds to which we belong, including some probably whose senses are very different from ours, so that in that consent no predication of a sensible quality can enter, except as an admission that so certain sorts of senses are affected.⁴⁹

Of course what follows from this is that senses and feelings play no part in ultimate truths. In this way, Peirce rejects the phenomenalism of Berkeley *and* the scepticism of Hume. What is individual, transitory, etc. in thought is what is in *error*. But the history of the progress of science has been a history of the "drifting" or "gravitating"⁵⁰ towards thought that is not individual, transitory, etc. In "Lessons From The History of Science", Peirce claims that there are three kinds of men: (1) artists "for whom the chief thing is the qualities of feelings", (2) businessmen who "respect nothing but power", and, (3) natural scientific men "to whom nothing seems great but reason".⁵¹ This taxonomy bears an uncanny resemblance to Russell's three purposes of language: artists *express* their qualitative states of mind, businessmen *alter* the states of mind of others and men of reason *indicate* facts. Of course, it is reason that is least fallible.

Peirce claims that it is your own fallibility and the fallibility of your community that "render it possible for you – but only in the Pickwickian sense – to distinguish between absolute truth and what *you* do not doubt."⁵² Human truth is "that concordance of an abstract statement with the ideal limit towards which endless investigation would tend to bring scientific belief, which concordance the abstract statement may possess by virtue of the confession of its inaccuracy and one-sidedness, and this confession is an essential ingredient of truth."⁵³ In other words, human truth is true by virtue of the acknowledgement that it *fails* to be strictly true.

⁴⁸ C.S. Peirce, Collected Papers, 8.12

⁴⁹ C.S. Peirce, Collected Papers, 8.14

⁵⁰ C.S. Peirce, Collected Papers, 8.12

⁵¹ C.S. Peirce, Collected Papers, 1.43.

⁵² C.S. Pierce, Collected Papers, 5.421.

⁵³ C.S. Peirce, Collected Papers, 5.565.

Human truth is *true enough*. Absolute truth, on the other hand, corresponds to reality and reality is what is not doubted from the GEV.

This metaphysically laden sort of truth relation can be understood via Peirce's theory of signs. Peirce distinguishes between three kinds of relations between signs and the objects that are signified. Between a *symbol* and an object is an arbitrary relation that rests on a human convention. This relation is mind dependent. "Snow", for example, is the sign for snow, because we have made a convention that it should be. An *index* is a causal relation or a natural sign. In the case of smoke and fire we say that smoke is an index of fire. And crucially, it is said that an *icon* (a picture is the most common example) refers to an object by virtue of its similarity.⁵⁴ This last notion is the one of critical importance to the classical conception of truth.

So symbols, indexes and icons have different mechanisms that determine how they represent their objects. These mechanisms are the interpretants. They form the third ontological category in the triadic relation of sign, signified and interpretant. This category is not to be found in the actual minds of any one individual, but rather in *thought in general* or the *ultimate opinion*: ...the pragmatist holds and must hold, whether that cosmological theory be ultimately sustained or exploded, namely, that the third category – the category of thought, representation, triadic relation, mediation, genuine thirdness, thirdness as such – is an essential ingredient of reality, yet does not by itself constitute reality...The truth is that pragmatism is closely allied to the Hegelian absolute idealism, from which, however, it is sundered by its vigorous denial that the third category (which Hegel degrades to a mere stage of thinking), suffices to make the world, or is even so much as self-sufficient.⁵⁵

So, thoughts, and the mechanisms of representation, are real even if they are not actual. This way Peirce maintains a theory of truth that allows truth to obtain or fail to obtain independently of any particular individual actually knowing it: "That which any true proposition asserts is *real*, in the sense of being as it is regardless of what you or I may think about it."⁵⁶

1.4 FROM STABLE TRUTHS TO ETERNAL PROPOSITIONS

We all start from "naïve realism", i.e., the doctrine that things are what they seem. We think that grass is green, that stones are hard, and that snow is cold. But physics assures us that the greenness of grass, the hardness of stones, and the coldness of snow, are not the greenness, hardness, and coldness that we know in our own experience, but something very different. The

⁵⁴ C.S. Pierce, *Collected Papers*, 1.295, 1.558, 2.274 – 2.276, 8:228. For some discussion of this, see Catherine Elgin, *Between the Absolute and the Arbitrary* (New York: Cornell University Press, 1997) chapter 8.

⁵⁵ C.S. Peirce, *Collected Papers*, 5.436.

⁵⁶ C.S. Pierce, *Collected Papers*, 5.432.

observer, when he seems to himself to be observing a stone, is really, if physics is to be believed, observing the effects of the stone upon himself. Thus science seems to be at war with itself: when it most means to be objective, it finds itself plunged into subjectivity against its will. Naïve realism leads to physics, and physics, if true, shows that naïve realism is false. Therefore naïve realism, if true, is false; therefore it is false.⁵⁷

The tension between the foundation of epistemology, and the trump card of realism is a recurring theme in both Peirce and Russell's work. Somehow, from the greenness, hardness and coldness of the first person experience, we develop objective theories of an external world. The strain is substantial since Peirce, Frege and Russell adhere to a mind-independent truth relation. In his chapter, "Egocentric Particulars", Russell discusses indexicals, tenses, demonstratives, such as "I", "you", "here", "this", "that", "now", "was." He considers the denotations of sentences, in which these terms appear, to be speaker relative and context relative. This has consequences for certain kinds of sentences; their truth-value, like that of naïve realism, will fluctuate. A first person claim such as "My name is Sherwin" will be true on some occasions of utterance and not on others. And a claim about the greenness of grass is false, *if is true*. Bear in mind that Russell is not a Hegelian. To remove this apparent contradiction we view the sentence in relation to the speaker and the context. Now its significance is indexed to the particular time, place and speaker of the utterance. And here again lies the tension between truth and knowledge. Knowledge is a first person endeavour and truth is not. Somehow, from these meagre first person expressions we have to move to the language of physics:

Before embarking upon more difficult questions, let us observe that no egocentric particulars occur in the language of physics. Physics views space-time impartially, as God might be supposed to view it; there is not, as in perception, a region which is specially warm and intimate and bright, surrounded in all directions by gradually growing darkness.⁵⁸

So even an atheist cannot help but imagine how God might view the world and equate this with ideal science. It is worth noting that Russell's distinction between the GEV and the first person perspective persistently reflects the difference between sense qualities like heat and light, and the properties of logic or *geometry*.

By the time W.V.O. Quine came out with Word and Object in 1960, a lot of this classical approach to truth had been challenged on various fronts. Quine himself is part of the revolution and has been influenced by the American pragmatists to whom Russell was opposed. Quine's views are central to my overall program. But for now, consider how, in a chapter called "Flight

⁵⁷ Russell, An Inquiry 15.

⁵⁸ Russell, An Inquiry 108.

From Intension”, Quine captures the importance of the movement away from the subjective meaning of a sentence.

The idea is that science is in the business of constructing simple, predictive and coherent theories of the world. This requires that we do not admit too many sentences whose truth-value are fickle. Quine claims that if “we are limning the true and ultimate structure of reality, the canonical scheme for us is the austere scheme that knows no quotation but direct quotation and no propositional attitudes but only the physical and behaviour of organisms.”⁵⁹ And so despite Quine’s substantial disagreements with Russell’s program he agrees that there is something about public knowledge of reality that requires this movement away from intensions towards eternal truths.

In a remarkable passage, Quine notes that this flight from intension begins with the important difference between utterances and written sentences: “Insofar as some utterances of a sentence can be true and other utterances of it false, demands are placed on our knowledge of the circumstances of utterances; and such knowledge is scarcer for script than for speech.”⁶⁰ In order to evaluate the truth-value of an utterance, sometimes one needs information that is not explicit in the sentence itself. This information is given in “extra-linguistic” ways, such as a wink or awareness of who the speaker is, or the fact that the description “the largest cat in the room” is being used to refer to a painting of a cat. Quine has here told us that extra-linguistic knowledge is *scarcer for script than for speech*. Consider the following evolution of utterances:

- S1 I see that the scientist believes that the water is cooling.
- S2 Max Planck believes that the water is cooling.
- S3 Max Planck measures and discovers that the water has a mass of two kilograms and has a temperature change from 20 to 19 degrees Centigrade and is under one atmosphere of pressure.
- S4 Max Planck measures that the water at 2:00 p.m. GMT, November 22, 2002, has a mass of two kilograms and undergoes a temperature change of one degree Centigrade and is at one atmosphere of pressure.
- S5 Max Planck measures that the water at 2:00 p.m. GMT, November 22, 2002, on the kitchen counter of the house at 1346 Carnsew St, Victoria, has a mass of two kilograms and undergoes a temperature change of one degree Centigrade and is at one atmosphere of pressure.

Clearly, S1 could not be uttered truly by very many individuals. If we recruited volunteers to utter S1, the truth-value would be true on some occasions and false on most. In so far as the truth-value of S2 no longer depends on the belief state of our volunteer, its truth-value

⁵⁹ W.V. Quine, Word and Object (Cambridge: MIT Press, 1960) 221.

⁶⁰ Quine, Word and Object 227.

has become somehow less fickle. Still, clearly the truth-value is dependent on the non-linguistic, contextual information that is fixed at the moment of the utterance. S3 is true or false regardless of any mental state at all – the content of any utterance of S3 has been sterilized of any non-physical or non-behavioural information. It is unclear how the speaker of these sentences would succeed in getting reference to go through in order for them to be true, but issues of reference will bog down my point here. What is important is that once S3 has been indexed to the time (S4) and the location (S5), its truth-value has become stabilized, i.e. any utterance of S5 will have the same truth-value of any other utterance of S5. This movement from an unstable truth to a stable truth has something to do with making contextual information explicit in the linguistic mechanisms of the sentence. The pragmatic information is *packed into* the semantic content. But there is a second important mechanism in the quest to eternalize truths:

Writing is essential to serious science, as rendering it cumulative; and the longer the preservation, the dimmer the circumstances of utterance. Furthermore, the spirit of theoretical science encourages fixity of truth values also apart from the demands of writing. What is true here-now tends the more to be true also there-then, the more it is of the sort that scientists aspire to discover. Though scientific data go back to observation sentences, which are true only utterance by utterance, the sentences of the theory that is projected from those data tend to be eternal.⁶¹

The idea is that from a series of sentences like S5, we might generalize from these specific yet eternal truths (ignore the false ones) to get eternal truths that have greater utility and which allow us to summarize other truths:

- S6 The amount of heat required to change the temperature of water is proportional to the mass of the water and to the temperature change. Let this proportion be 1 kcal/C°, for water at 20 degrees Centigrade and at 1 atmosphere of pressure.
- S6* $Q = cm\Delta T$, where $c = 1.00 \text{ kcal/kg}\cdot\text{C}^\circ$
- S7 Max Planck measures the water at 2:00 p.m. GMT, November 22, 2002, on the kitchen counter of the house at 1346 Carnsew St, Victoria, to have lost 40 kilocalories of energy.

So Quine has identified two dimensions of eternal truths that are reflective of Frege's notes on thoughts. Frege claims that "only a sentence with the time-specification filled out, a sentence complete in every respect, expresses a thought" and if this thought is true, "it is true not only today or tomorrow but timelessly."⁶² This is suggestive of a sentence like S5. But Frege's favourite example of an eternal truth is the Pythagorean theorem. This is a truth of geometry, and it is more generally true in a way akin to S6 or S6*.

⁶¹ Quine, *Word and Object* 227. Note that Quine uses the key word "tend." I will argue in chapter two that there is an important difference between the flight from intension and arriving at the GEV.

⁶² Gottlob Frege, "Thought", pg. 29.

Keep in mind that, as a logician, Quine is consumed by the difficulties that modal and attitudinal contexts create for logical entailments. These difficulties are raised because statements are thought to have loyalties to the physical and the mental, i.e. to both sides of the “division between behaviourism and mentalism.”⁶³ Quine points out that when we apply logic to sentences that are not eternally true, we risk the fallacy of equivocation. Sentences that are not entirely explicit are acceptable for those “in the know.” That is, they are acceptable for those that have all of the required background knowledge. Otherwise, they require disambiguation. And this is why the standard semantic approach that is embedded in the logical tradition, posits propositions. Like eternal truths, propositions are unambiguous, complete thoughts (Frege’s term) that provide stable truth vehicles. This stability makes propositions safe objects of analysis for propositional attitudes and as “translational constants.”⁶⁴ The strategy that Quine opts for, however, is to jettison the abstract posit of the proposition by disavowing mentalism. Russell chose to admit the mental when it came to knowledge and then deflate its significance on the issue of logical truth. Frege dealt with the mentalist difficulties of embedded contexts (like attitudes and indirect quotation) by giving up the law of the excluded middle and positing a Platonic third realm. Peirce, at least initially, was more honest about the dependence of truth on the first person psychology of belief and doubt. But he ended up eliminating the significance of the mental when it comes to the ultimate opinion, absolute truth, and mind-independent truth-making. And Quine, famously, chooses to eliminate the mental aspect of sentences altogether.

Quine’s strategy will elicit more attention in a later chapter on Pragmatism. The point for now is this: eternal truths, whether sentences or propositions, are a crucial component of real knowledge and science for Russell, Frege, Peirce and even Quine⁶⁵:

The relation of eternal sentences to our logic is like that of silver dollars to our economy: mostly we do not see them, but we reckon in terms of them.

The primary distinction of eternal sentences is that they are the repository of truth itself, and so of all science. Insofar as a sentence can be said simply to be true, and not just true now or in this mouth, it is an eternal sentence.⁶⁶

⁶³ Quine, Word and Object 219.

⁶⁴ Quine, Word and Object 206.

⁶⁵ Quine does note that logic and science *tend* toward eternal sentences and this is, as we shall see, an important difference.

⁶⁶ Quine, Word and Object 227.

1.5 THE ENTRENCHMENT OF LOGIC IN SEMANTICS

Alfred Tarski developed the model-theoretic concept of truth against which the syntactic or proof-theoretic conception is weighed for soundness and completeness. A sentence is thought to be logically true if it is true in all *models*. An argument is logically valid if the conclusion is true in every *model* in which all the premises are true. We say in this case that the conclusion follows from the premises if it is *impossible* for the conclusion to be false if the premises are true. By fixing a model that values the premises of a valid argument, it can be seen that the conclusion does not provide any *contradictory* information.⁶⁷ The content of the premises is merely made explicit, although often in a surprising way. A valid argument, after all, can be made into a conditional sentence that is true *in any model* when the premises are conjoined and made into the antecedent and the conclusion is taken as the consequent. But Tarski is preserving the notion that truths are made true by *states of affairs*. So a valid argument (or a logical truth) preserves truth *in any state of affairs*. This is just to say that logical truths, like eternal truths, are true not just here or now but in the *mouth of any speaker*.

Where logic is chasing validity, science is chasing soundness. Our scientific arguments are supposed to have more than a truth preserving relation between premises and conclusion. We are interested in having true premises. This is just to say that we want to know what states of affairs obtain. There is a feeling that truth in a model only works for science if we can converge on an ultimate model. Hence the importance of the GEV. In view of Tarski's interest in states of affairs, truth in an ultimate model would just be truth about the ultimate state of affairs. In short, this would be truth about the world.

Notice that through all of this, propositions are tacitly assumed. If you *think* that the conclusion of a valid argument is false while the premises are true, then you have simply failed to *understand* the propositional content of the sentences of the argument.

There is a huge and diverse opposition to the classical correspondence theory of truth in the contemporary language debates. Despite this, there is a strong undercurrent of acceptance of the notion of the eternality of truth. It is often quietly assumed by positing propositions or by invoking the modern term "information". Consider Nathan Salmon's explicit defence of such a notion:

⁶⁷ We will see that this classical conception of entailment does provide *unwarranted* information.

In this sense pieces of information are eternal... Not just some; all information is eternal. The eternalness of information is central and fundamental to the very idea of a piece of information, and is part and parcel of a philosophically entrenched conception of information content.⁶⁸

He then identifies information content with propositional content:

A proposition or piece of information does not have differing truth values at different times. A proposition is fixed, eternal and unvarying in truth over both time and space.⁶⁹

These presuppositions lend themselves to the schism between information that is semantically encoded and information that is pragmatically imparted. Whatever it is that is eternally true is true *in the mouth of every speaker*. So whatever it is that is eternally true does not rely for its content on the parts that change from utterance to utterance, i.e. the pragmatic considerations. Here in lies the schism between semantics and pragmatics. Consider the information content of the following two sentences:

- T1 Hesperus is Hesperus.
- T2 Hesperus is Phosphorus.

If you accept the task, then you are required to consider *the* content of T1 and T2. This is Frege's puzzle.⁷⁰ The tacit assumption has been that there is a *single* proposition for sentences like T1 and T2 and that an adequate semantic theory will explain why these sentences have different internal and external aspects (see [1.0 The God's Eye View](#)). For those of us who want to get off the Theory-Of-Everything train, these sentences will have different meanings depending on how they are viewed, i.e. how they are interpreted.⁷¹

A common response from the classical school will be that we must not commit the *pragmatic fallacy*. They will say that *clearly everyone* understands these sentences and the fact that we do means *there is* propositional content. *And* it does not rely on context or tone or other pragmatic considerations. These sentences, after all, *are both true*, and we know so. A *good theory of everything* will tell us why. Furthermore, we must not try to *explain away* the difficulties that arise from the internal and external significance of T1 and T2 by confusing the semantically encoded information (i.e., whatever it is that is so obviously true) with the

⁶⁸ Nathan Salmon, Frege's Puzzle (Cambridge: MIT Press, 1986) 25.

⁶⁹ Salmon, Frege's Puzzle 26

⁷⁰ Frege's answer is to divide between the inner meaning, the thought or proposition, and the truth-value of the proposition.

⁷¹ David Johnston basically makes this point in his unpublished paper "Propositional Acts", where he also relies on the notion of an identity criterion to group propositional acts into types.

information that is pragmatically imparted (i.e., whatever it is that is situational and inessential to whatever it is that is true).

This should remind us of the attitude that the early semanticists had towards language. Sentences and propositions, first and foremost, indicate facts and act as vehicles for truths. This preference for semantic content over pragmatic content comes from a tradition that was interested in eternal truths and the GEV. We should be suspicious of circularity, then, of an argument for the classical theory of truth that comes from this schism. *The tradition that upholds this schism has assumed the central tenets of the position that they are arguing for.*

1.6 TRUTHMAKERS AND THE DISAPPEARANCE OF TRUTH

The terms of the correspondence relation are truthmakers and truths. Truthmakers entail truths. Our favoured truthmakers are states of affairs or their constituents. Something must now be said about truths, but I can only be brief, indeed dogmatic.⁷²

Truths, for D.M. Armstrong, are true propositions. Propositions are classes of token thoughts and beliefs that have the same intentional object. When token thoughts or beliefs have the same intentional object, they express the same proposition. Propositions and intentional objects are not part of Armstrong's ontology – they do not conform to his naturalistic tendencies. But thoughts and beliefs are actual states of the mind. Thus, the *fundamental* correspondence “is not between entities called truths and their truthmakers, but between the token beliefs and thoughts, on the one hand, and truthmakers on the other.”⁷³

So this is a modern paradigm of the classical correspondence theory of truth. The difficulty of this program is neatly captured by Armstrong. He remarks that the substance-attribute metaphysics of Aristotle has been the center of controversy for Western philosophy: “Substance seems unknowable and ungraspable.”⁷⁴ In the face of this kind of skepticism, most philosophers opted to discard substances. But Armstrong wants to argue that *there is* an ontological ground. And to fend off skepticism he argues that these states of affairs are truthmakers. No problem then, our propositions really are made true by things in the world after all. But how do we know which propositions are true? This was a difficulty for Russell as well:

⁷² D.M. Armstrong, A World Of States Of Affairs, Cambridge University Press, 1997, pg. 131. Armstrong credits C.B. Martin as the founder of the truthmaker principle.

⁷³ Armstrong, A World Of 131.

⁷⁴ Armstrong, A World Of 113.

For each fact there are two propositions, one true and one false, and there is nothing in the nature of the symbol to show us which is the true one and which is the false one. If there were, you could ascertain the truth about the world by examining propositions without looking around you.⁷⁵

True propositions are no good unless you *know* that they are true propositions. This requires that you have knowledge of the truthmaker. This is a problem for Armstrong since his appeal to mind-independent truth *making* is meant to be a response to skepticism. His solution is to help himself to the success of science and especially to the notion of a *completed physics*.⁷⁶ Armstrong tells us that it would “be worthwhile to try to work out the identification of the spacetime world with a world of our sorts of states of affairs in detail,” and that while this identification is speculative, it is a “plausible, hypothesis in empirical metaphysics.”⁷⁷ In short, Armstrong is a physicalist. While he admits talk of beliefs, desires, and thoughts (he is not an *eliminative* physicalist) he argues that these mental states are *nothing but* physical states (identity or reductive physicalist). One might wonder. If you claim that we have access to the GEV, why do we need the correspondence theory of truth? After all, on this account of truth making, thinking that a proposition is true has nothing to do with its being true. Armstrong himself oscillates between the correspondence theory and the redundancy theory. He ultimately opts for the correspondence theory because at a “deeper, ontological, level the Correspondence theory tells us that, since truths require a truth-maker, there is something in the world that corresponds to a true proposition,” i.e. that the “correspondent and the truthmaker are the same thing.”⁷⁸ This is a huge metaphysical concession and one that quietly motivates much of the classical correspondence theory. For Armstrong, like Russell, the structure of reality *can be* inferred from the structure of language because reality, while “independent of the mind that knows it, has a ‘propositional’ structure.”⁷⁹

The catch is that we are all fallibilists. For Peirce, this modest form of skepticism is a crucial part of modern science and modern philosophy. Even Russell, a staunch foundationalist, admits that “our knowledge is in some degree liable to error, and that we are fallible even in our

⁷⁵ Russell, “The Philosophy of Logical Atomism” 187.

⁷⁶ Armstrong, A World Of 6-8.

⁷⁷ Armstrong, A World Of 138.

⁷⁸ Armstrong, A World Of 128. Armstrong is quick to point out that the relation from truthmakers to truths is “one to many”.

⁷⁹ Armstrong, A World Of 3.

most dogmatic moments.”⁸⁰ It is this intuition that leads to the redundancy theory of truth or a rejection of a mind-independent truth relation.

1.7 RECAPITULATION

It has been generally accepted that language has two aspects, a mental and a physical. The classical correspondence theory of truth has been variously employed to cross this mind-world divide. Truths correspond to the GEV, independently of the mind. Truths, on this theory, transcend all that is specific and arbitrary about the mind. The physical sciences are successful because they concern themselves with Truth and Logic, not psychology.

Suppose Armstrong is right about the philosophical tendency to reject substance in the face of scepticism. I contend that there is another common reaction to scepticism that has the same substantive conclusion. This is simply to say that the GEV and the substance are one, and that we have access to the GEV. The classical correspondence theorists accepted the distinction between substances and attributes and then formulated a transcendent truth relation with substances. Hence, human truths that have components like coldness, hardness and whiteness are, strictly speaking, false. On this kind of metaphysically laden truth-theory the transcendent nature of truth and the fact of our fallibility leads to truth’s disappearance. Peirce, Frege and Russell all thought that truth *was* mysterious.

It is commonplace to admit that if all of the minds were extinguished from the universe then all of the knowledge would be erased as well. Most people agree that even if the libraries remained the *meanings* of the words and sentences would not. But what of the propositions? It is evidence of a dogma that we might be persuaded to agree that the logical arguments would still be *valid*, that the names and definite descriptions would still *denote* things in the world, or that the math equations of the long-dead physicists would still be *about* worldly phenomena. Most will affirm that a picture would still *represent*. And most will affirm that the T sentences would still be true.

⁸⁰ Bertrand Russell, Theory of Knowledge, The 1913 Manuscript, eds. E.R. Eames and Kenneth Blackwell, (New York: Routledge, 1984) 167.

2 PRAGMATISM

2.0 THE GOD'S EYE VIEW – EPISTEMOLOGICAL AND METAPHYSICAL

83. The truth of certain empirical propositions belongs to our frame of reference.

94. But I did not get my picture of the world by satisfying myself of its correctness; nor do I have it because I am satisfied of its correctness. No: it is the inherited background against which I distinguish between true and false.

205. If the true is what is grounded, then the ground is not true, nor yet false.

I have arrived at the rock bottom of my convictions. And one might almost say that these foundation-walls are carried by the whole house.

– Ludwig Wittgenstein¹

I introduce Wittgenstein here briefly because of his famous philosophical reversal. The early Wittgenstein thought that there was a structural relationship between sentences and facts. This conviction was shared, of course, by Russell. The logical atomism of the Tractatus exerted a deep influence on the Vienna Circle. And interestingly, the positivist criterion of meaning is rooted in the pragmatic maxim *and* the Tractatus.² In the Tractatus, propositions are mirrors of reality. And sentences that are not reducible to atomic facts and logical relations fail to mirror reality and so fail to have a truth-value. This division between logic and fact became the division between syntax and semantics. This was a conclusion we observed in the first chapter – logic is interested in validity and science is interested in soundness. Note that, in both cases, knowledge is tied to language.

It is perhaps surprising that scientists could be interested in the relation between *sentences* and the world. Linguistics and sociology aside, today's scientists have successfully distanced themselves from language issues. Science is so much lab work and math that it is hard to imagine that the philosophy of language and the philosophy of science could have such a deep crossover. But, so it was – the logical empiricists changed the face of *semantics* by trying to square it away with science. It is understandable in so far as science is a paradigm provider of knowledge of the world. And we have seen in Chapter One that this project likewise exercised Frege, Russell and Peirce. As Russell claimed in the introduction to the Tractatus, “The essential business of language is to assert or deny facts” and a perfect language or a “perfect notation

¹ Ludwig Wittgenstein, On Certainty, ed. G.E.M. Anscombe and G.H. von Wright (New York: Basil Blackwell 1969).

² Wittgenstein tells us that tautologies are propositions without sense, since they are always true. Contradictions are propositions without sense because they are always false. But sentences that fail to express propositions have no possibility of truth or falsity and are therefore *nonsense*.

would be a substitute for thought.”³ Our inheritance from this is two-fold: thought is still considered by many to be dependent on language, and theories are still considered to be *sets of sentences*.

The passages above, however, were recovered from Wittgenstein’s notes after his death. They are evidence of the profound shift in Wittgenstein’s language philosophy in the course of his lifetime. They go far in capturing the alternative vision that William James and the early pragmatists will construct in response to the classical correspondence theorists.⁴ The most salient feature is the dependence of truth on the “background”, “picture of the world”, or “frame of reference”. Sentences do not correspond or reach out to the GEV and become true or false. Truth is *distinguished* within a *background model*. And most importantly, the meanings of the propositions are *carried* by the meanings of our background models – and the meanings of our background models in turn *rest* on the meanings of propositions.

In stark opposition to the classical conception of truth and the truthmaker hypothesis, a sentence no longer stands in a direct relation to the world. Hilary Putnam has been a longstanding champion of this point. And in recent years he has rediscovered his pragmatist roots. He has ventured even to hint that *Wittgenstein* was a pragmatist.⁵ And, interestingly, Putnam started his career as a metaphysical realist.

Putnam characterizes a metaphysical realist as a philosopher that accepts (1) the world consists of a fixed totality of mind-independent objects, and (2) there is exactly one true and complete description of the way the world is, *and* (3) that truth involves some sort of correspondence.⁶ He calls this position the “*externalist* perspective, because its favourite point of

³ Wittgenstein, *Tractatus* x, xi.

⁴ In *Wittgenstein and William James*, Russell B. Goodman explores the “deep influence” that James had on the work of Wittgenstein. Goodman notes that “Seventeen people are mentioned in the *Investigations*, among them Beethoven, Schubert and Goethe; the Gestalt psychologist, Wolfgang Köhler; and the physicist Michael Faraday. Five others are mentioned twice—Lewis Carroll, Moses, and three philosophers: Wittgenstein’s Cambridge colleagues Frank Ramsey and Bertrand Russell, and Socrates. The three remaining people named in the *Investigations* are also philosophers: Gottlob Frege and William James, each mentioned four times, with only St. Augustine exceeding them with five citations.” This passage was found at http://www.american-philosophy.org/archives/2003_conference/2003_papers/bd-1.htm.

⁵ Hilary Putnam, *Pragmatism*, (Cambridge: Blackwell, 1992) 27, 52. In the end, he hedges on this view. He seems to make the general claim, instead, that Wittgenstein and James were both neo-Kantians.

⁶ Hilary Putnam, *Realism with a Human Face* (Cambridge: Harvard University Press, 1990) 30. Also *Reason, Truth, and History* (Cambridge: Harvard University Press, 1981) 49. Putnam credits Hartry Field with these distinctions.

view is a God's Eye point of view.”⁷ It can be seen now that my emphasis on the various guises of the GEV and eternal propositions has been to establish that metaphysical realism is the heir of classical correspondence.

On these theories, the “recognition-transcendent”⁸, or “non-epistemic” truth relation is some kind of correspondence by *congruence* between truth-bearers and the GEV. Note that to this point the GEV has been used equivocally as both the mind-independent world (a metaphysical notion captured by (1)) *and* as the ultimate description of that world (an epistemological notion captured by (2)). This equivocation follows from the perfect isomorphism between propositions and facts, or eternal truths and eternal truth-makers. Even if you uphold the distinction between descriptions and the world, in the epistemic limit the description *of the description* and the description *of the world* will be identical. More often, however, in the epistemic limit, the distinction between descriptions, and the world breaks down; eternal truths and the world are one. And yet the separation between descriptions and the world is as real as the separation of what is *known* and what is in the *world*. In short, epistemology should not be confused with ontology. It will be helpful henceforth to distinguish between the metaphysical GEV (GEV \mathbf{m}) and the epistemological GEV (GEV \mathbf{e}).

So, for example, Peirce has eternalized truths by invoking the notion of stability of belief (and doubt) in the limit. This final opinion is a scientific *description* and is therefore, at first glance, the GEV \mathbf{e} . But Peirce makes this final opinion the *ontological* ground of our truths by making it mind-independent and then invoking non-conventional representation. As such, the final opinion becomes the GEV \mathbf{m} . More straightforwardly, Russell preserves the law of excluded middle by positing mind-independent congruence between propositions and facts. Like modern truthmakers, these facts constitute the GEV \mathbf{m} that our completed physics is congruent *with*.

Importantly, we have seen that Russell and Peirce both grapple with another kind of truth. This sort of truth admits the importance of the mental and the first person point of view. This approach takes seriously the question of *how we know*, as well as the issue of what the mind might contribute to truth. In this chapter I will explore various strands of early pragmatism⁹ that

⁷ Putnam, *Reason, Truth, and History* 49.

⁸ Hilary Putnam, “Three Kinds of Scientific Realism”, *Philosophical Quarterly* 32 (1982): 128.

⁹ What I mean by pragmatism should be more or less clear by the end of this chapter. I lean on William James, predominantly, but there are important overlaps with Dewey's rejection of the Peircean ideal science as well as Dewey's conception of truth as warranted assertion.

take up these epistemological issues and turn it into opposition to mind-independent similarity relations, eternal truths, and the GEVe.

2.1 HUMAN TRUTH AND INQUIRY

As I understand the pragmatist way of seeing things, it owes its being to the breakdown which the last fifty years have brought about in the older notions of scientific truth. “God geometrizes,” it used to be said; and it was believed that Euclid’s elements literally reproduced his geometrizing... We hear scientific laws now treated as so much ‘conceptual shorthand,’ true so far as they are useful but no farther...

I fancy that these changes in the current notions of truth are what originally gave the impulse to Messrs. Dewey’s and Schiller’s views. The suspicion is in the air nowadays that the superiority of one of our formulas to another may not consist so much in its literal ‘objectivity,’ as in the subjective qualities like its usefulness, its ‘elegance’ or its congruity with our residual beliefs.¹⁰

This passage by William James, from “Humanism and Truth”, predates Quine’s From a Logical Point of View by forty years. Quine’s call for a return to pragmatism will echo these notes on usefulness, elegance and coherence remarkably well.¹¹ Quine’s analysis of theory choice includes trade-offs between literal truth and such human interests as simplicity, continuity with common sense, and coherence.

We have seen that Pragmatism has its roots in Peirce. Its popularity at the beginning of the twentieth century was felt both in its agreement with and its opposition to logical empiricism. In recent years, pragmatism has been associated with a kind of pernicious relativism and has fallen out of fashion. In short, the tension between *utilitarian* and *classical* conceptions of truth is still with us. Susan Haack captures this intuition well as she wonders, “Could Russell have been right in suspecting pragmatism of a morally debilitating tendency, of leading to ‘cosmic impiety,’ or at least fascism?”¹² Certainly Peirce would have thought so. Utilitarian or human truth is not compatible with Peirce’s notion of genuine inquiry. The characterization of truth as beliefs that work, or as whatever is an “expedient in action” or as merely “warranted assertion” is tantamount to fudging your conclusions. This kind of human truth is thought to warp intellectual inquiry

¹⁰ William James, The Meaning of Truth, in The Works of William James, ed. Frederick H. Burkhardt, (Cambridge: Harvard University Press, 1975) 40.

¹¹ My investigation into Quine has led me to distinguish between the Quine of From a Logical Point of View and the Quine of Word and Object and later. The Early Quine has more clearly pragmatic tendencies with respect to theory choice and so even truth. This is reflected in his rejection of the analytic/synthetic distinction. The later Quine seems to forget these beginnings and becomes a sort of correspondence theorist leaning towards a disquotational account. We will see more of this in section [3.2 Quine And An Infinite Regress](#).

¹² Susan Haack, Manifesto of a Passionate Moderate (Chicago: University of Chicago Press, 1998) 23.

with political and social motives. Russell characterizes Dewey's analysis of truth, as warranted assertibility, as too instrumentally minded:

Inquiry uses "assertions" as its tools, and assertions are "warranted" in so far as they produce the desired results...In this process there is no finality, and therefore no assertion is warranted for all time, but only at a given stage of inquiry. "Truth" as a static concept is therefore to be discarded.¹³

This entails a rejection of the law of excluded middle and *knowledge*:

One difficulty, to my mind, in Dr. Dewey's theory, is raised by the question: what is the goal of inquiry? The goal, for him, is not the attainment of truth, but presumably some kind of harmony between the inquirer and his environment...The question is: what happens as the result of my inquiry? Dr. Dewey rejects the traditional answer, that I come to know something, and that, as a consequence of my knowledge, my actions are more successful. He eliminates the intermediate stage of "knowing", and says that the only essential result of successful inquiry is successful action.¹⁴

Of course, no humanist would deny that good inquiry leads to knowledge.¹⁵ But Russell has here presupposed that knowledge requires classical correspondence. We shall see that William James criticizes this presupposition by observing that this kind of truth involves us in supernaturalism. It is significant, however, that James does not reject this supernaturalism flat out. At the end of the day, James' position will not be so far from the correspondence theorist's. Where Russell fails to understand humanism *from the inside*, James captures astonishingly well the correspondence theorists view of pragmatism:

This pragmatist talk about truths in the plural, about their utility and satisfactoriness, about the success with which they 'work,' etc., suggests to the typical intellectualist mind a sort of coarse lame second-rate makeshift article of truth... As against this, objective truth must be something non-utilitarian, haughty, refined, remote, august, exalted. It must be an absolute correspondence of our thoughts with an equally absolute reality. It must be what we *ought* to think unconditionally. The conditioned ways in which we *do* think are so much irrelevance and matter for psychology. Down with psychology, up with logic, in all this question!¹⁶

¹³ Russell An Inquiry 319.

¹⁴ Russell An Inquiry 321.

¹⁵ Although Quine in Ontological Relativity, suggests that this behaviourist strain runs through Dewey's writings as well. My reading of The Quest For Certainty, certainly did not reveal this behaviourism to me.

¹⁶ William James, Pragmatism, in Pragmatism In Focus, ed. Doris Olin (New York: Routledge, 1992) 48.

2.2 CLASSICAL TRUTH AND ISOMORPHISM

We have seen in Tarski a footnote to Aristotle regarding the classical conception of truth. Putnam argues, more specifically, that the notion of truth as *congruence* comes from Aristotle:

The theory, like modern theories, employed the idea of a mental representation. This presentation, the mind's image of the external thing, was called a *phantasm* by Aristotle. The relation between the phantasm and the external object by virtue of which the phantasm represents the external object to the mind is (according to Aristotle) that the phantasm *shares a form* with the external object. Since the phantasm and the external object are similar (share the form), the mind, in having available the phantasm, also has directly available the very *form* of the external object.¹⁷

At the turn of the last century, this basic idea was still flourishing. A true mental representation must share a form with an object of the world. We have seen that Russell and Peirce relied heavily on this intuition. This is in many ways astonishing, since empiricism persistently rejected this similarity relation between our thoughts and the world. Putnam notes that this idea survived the empiricist revolution in the form of the Lockean Intuition.¹⁸ It is the primary qualities that are thought to save us from skepticism by persisting in their resemblance. We have seen this in Peirce, Russell, and Frege: whatever is poetical and individual in thought is mere human psychology; all things logical and geometrical are scientific and part of the pursuit of truth. Propositions are of this latter sort, and as such they are the essence of thought. Michael Dummett describes this Fregean worldview so as to reveal both its Aristotelian and Lockean underpinnings :

I can tell you what my pain is like, or what I am visualizing, but I cannot transfer to you my pain or my mental image. It is of the essence of thought, however, that it is transferable, that I can convey to you exactly what I am thinking: as Wittgenstein said, in a passage critical of this conception of Frege's, you as it were take the thought into your mind; I do more than tell what my thought is like – I communicate to you that very thought.¹⁹

The essence of thought is the *form* that does not change from mind to mind. It is the part of the thought that is *the same*. And here we can sympathize with those philosophers that have been taken in by this magic trick of the essences. One observes a silver dollar²⁰ in the mind of one person and then another silver dollar in the mind of another, and it is natural to conclude that

¹⁷ Putnam, Reason, Truth, and History 57.

¹⁸ Putnam, Reason, Truth, and History 57. This is a point that we will also see Jeffrey Foss make in Chapter Three.

¹⁹ Michael Dummett, "Frege's Distinction Between Sense and Reference", Truth and Other Enigmas (London: Duckworth, 1978) 116-144.

²⁰ I am using "silver dollar" to refer to the eternal truths that Quine thought were essential to the trade of science.

these silver dollars were the *same* object. These thoughts were *taken in*; we say of these people that they were identically *informed*. And of course this gives all of the causal powers to the ideas themselves. It is the ideas that come and go and so are real. And of course this kind of Platonism is a quick way to reject skepticism.

William James does not fall for this magic trick. In the Principles of Psychology, James notes that for “the ancients, and by unreflecting people perhaps today, knowledge is explained as the *passage* of something from without into the mind – the latter, so far, at least, as its sensible affections go, being passive and receptive.”²¹ Here James is affirming the distinctness of the physical and the mental. In the field of psychology, James calls for a “*thoroughgoing dualism*.”²² There is the “mind knowing” and the “thing known” and neither “gets out of itself or into the other, neither in any way *is* the other, neither *makes* the other.”²³ For James, what is true of sense-impressions is also true of language. He quotes Professor Bowne, on what happens when two people converse:

When we speak of an exchange of thought, even the crudest mind knows that this is a mere figure of speech...To perceive another's thought, we must construct this thought within ourselves; ...this thought is our own and is strictly original with us...By describing the mind as a waxen tablet, and things as impressing themselves upon it, we seem to get great insight until we think to ask where this extended tablet is, and how things stamp themselves on it, and how the perceptive act would be explained even if they did.²⁴

This is an important move that puts the relation between thoughts caused by the world and thoughts caused by language on a similar mysterious footing. Neither sort of thought is obviously similar to, or of the same form of, its cause:

The vulgar notion of correspondence here is that the thoughts must *copy* the reality – cognitio fit per *assimilationem* cogniti et cognescentis; and philosophy, without having ever fairly sat down to the question, seems to have instinctively accepted this idea; propositions are held true if they copy the eternal thought; terms are held true if they copy extra-mental realities. Implicitly, I think that the copy-theory has animated most of the criticisms that have been made on humanism.²⁵

Hilary Putnam, in Pragmatism, suggests that James rejects truth as similarity to reality, not because it is false, but because it is *empty*. It is empty because anything can be said to be similar with any other thing. The claim that a truth-bearer copies reality is hollow if the criteria

²¹ William James, The Principles of Psychology, Vol. One (New York: Dover, 1950) 219.

²² James, The Principles of Psychology 218.

²³ James, The Principles of Psychology 218.

²⁴ James, The Principles of Psychology 219. James is here quoting B.P. Bowne from Metaphysics (New York: Harper and Brothers, 1898) 407-410.

²⁵ James, The Meaning of Truth 50.

for similarity is not specified. Putnam claims that philosophers ranging from Michael Dummett to Nelson Goodman run with James' basic point that truth ought not to be "simply a mystery mental act" that is "totally independent of the practices by which we *decide* what is and is not true."²⁶ Putnam himself is a strong opponent of the copy theory of truth. Putnam claims that only a mind can compare two or more entities in order to confirm if an appropriate similarity relation obtains. A belief in a human-independent similarity relation commits us to a supernatural metaphysics:

...the idea of an intrinsic similarity metric, a metric highly sensitive to what we regard as relevant conditions, or normal conditions, one which gives weight to what sorts of features *we* count as similarities and dissimilarities between states of affairs, is one which once again implies that the world is like a mind, or imbued with something very much like reason.²⁷

In Reason, Truth, and History, Putnam associates the maintenance of this kind of similarity metric with the notion of the GEVE. A sentence or a picture cannot *represent* an object of the world, by itself. A picture of Winston Churchill, drawn by ants in the sand, can no more be *about* Churchill than a sentence written by a monkey can be *about* quantum mechanics. A sign and its object are related by a mind.²⁸ By stipulation of the thought experiment, only a supernatural mind could relate the drawing or the sentence with the relevant object.²⁹

The thought experiment is reversed in the case of unverifiable statements. In this case, we "have" the sign but not its object. James asks us to imagine a universe in which Caesar existed but the speaker who announces, "Caesar really existed", has no connection to this fact. James notes that most people would "naively deem truth to be thereby uttered, and say that by a sort of *actio in distans* my statement had taken direct hold of the other fact."³⁰ James predates Putnam's GEV approach by claiming that transcendentalists invoke an "absolute mind which, as it owns all the facts, can sovereignly correlate them."³¹ Where Russell claims that something's

²⁶ Putnam, Pragmatism 11.

²⁷ Hilary Putnam, Realism and Reason, Cambridge University Press, 1983, pg. 218.

²⁸ Compare James, The Meaning of Truth 33. Here James claims that there is "no self-transcendancy in our mental images *taken by themselves*." An image points at its object if it can by mental association and motor consequence lead the subject to an experience of the object. The sign and its object are intra-experientially related.

²⁹ Note, however, that we find ourselves in the position of an omnipotent being in these kinds of thought experiments. This leads to the paradox that these thought experiments both require and reject a GEVE.

³⁰ James, The Meaning of Truth 120.

³¹ James, The Meaning of Truth 120-121.

being similar is a fact, independent of the mind, James cannot. And so where Russell thinks that truth is static and mysterious, James cannot:

Caesar *had*, and my statement has, effects; and if these effects in any way run together, a concrete medium and bottom is provided for the determinate cognitive relation, which as a pure *action in distans*, seemed to float too vaguely and unintelligibly.³²

That only God can get this external perspective leads naturally to the realization that this is true even of *verifiable* statements. We construct the meanings of statements and we confirm their veracity from within the confines of *our own* phenomenal conceptual scheme. The relation between the sign and its object is an *intra-experiential* one.³³ What remains is the conclusion that “nothing at all we say about any object describes the object as it is ‘in itself’.”³⁴ For James, this neo-Kantian point is realized in humanism:

When we talk of reality ‘independent’ of human thinking, then, it seems a thing very hard to find... We may glimpse it, but we never grasp it; what we grasp is always some substitute for it which previous human thinking has peptonized and cooked for our consumption. If so vulgar an expression were allowed us, we might say that wherever we find it, it has been already *faked*.³⁵

The basic intuition that our thoughts resemble the world, and that truth is an isomorphism between the *essence* of reality and the *essence* of thought involves us in a too *supernatural* metaphysics. James tells us that if “our symbols *fit* the world, in the sense of determining our expectations rightly, they may even be the better for *not* copying its terms.”³⁶ It is ironic that Russell thought we could read off the structure of the world from language, and that Armstrong thinks that the world has a propositional structure. We have seen that Russell (our classical truth theorist) criticized the positivists for being ultra-metaphysical. Armstrong (our modern day truth theorist) claims to be committed to naturalism. And yet, for their claims about the structure of the world, we might chastise both Russell and Armstrong for engaging in supernaturalism. For James, the tendency to arrive at an absolute conception of the world is in large part the reductionist nature of rationalism.³⁷ It is to reductionism that I will now turn.

³² James, The Meaning of Truth 121.

³³ James, The Meaning of Truth 34.

³⁴ Putnam, Reason, Truth, and History 61.

³⁵ James, Pragmatism 120.

³⁶ James, The Meaning of Truth 51, my emphasis.

³⁷ James, Pragmatism 28. Here James distinguishes between the tough-minded empiricist and the tender-minded rationalist, who tends towards monism.

2.3 CLASSICAL TRUTH AND REDUCTIONISM

These [T-shirts] allow people to sum up their world view in a statement no wider than their chest...My ambition is to live to see all of physics reduced to a formula so elegant and simple that it will fit easily on the front of a T-shirt...Today, many particles later, we have the standard model, which reduces all of reality to a dozen or so particles and four forces.

– Leon Lederman³⁸

I think it is important that in this passage it is hard to tell if Lederman's formula is a reduction of theory or of reality. We have seen this kind of ambiguity regarding the GEV**e** and the GEV**m**. If a completed physics is a perfect mirror of reality then it will be hard to distinguish between the object of God's knowledge (GEV**m**) and God's knowing of the object (GEV**e**). As if to confirm this identity, Lederman tells us that if we fail in our search for the "perfect T-shirt" then we fail to know the mind of God. It is this ambition for reduction that James recognizes as the copy theory of truth and a failure of rationalism:

Your typical ultra-abstractionist fairly shudders at concreteness: other things equal, he positively prefers the pale and spectral. If the two universes were offered, he would always choose the skinny outline rather than the rich thicket of reality. It is so much purer, clearer, nobler.³⁹

Between the crowded world of coldness, hardness, and whiteness and the austere world of geometry (or Lederman's physics), the vicious abstractionist will always choose the austere world and *deny* the world of concrete experience. This *denial* is what James also calls *vicious* abstractionism. He is not denying that complex phenomena can be *usefully* decomposed into a more basic stuff in order to reveal internal logical relations. Nor is he denying that apparently different phenomena can be described by a common logic. These processes are fundamental to science. We start with wet stuff, blue stuff and fiery stuff and we end up with atomic elements. A description of the relation between force, mass and acceleration is interesting *because* it applies as much to baseballs as it does to the moon. We might say that the slogan on "Newton's T-shirt" is *efficient* in the same way that "apple" is efficiently used to refer to thousands of different token objects.⁴⁰ The trick, for James, is to realize that, in the absence of a GEV**e**, we are not committed to any *one* method for cutting up or conceiving of the world. After we organize various phenomena into a clear and useful ontology we often find ourselves thinking that this ontology is

³⁸ Leon Lederman and Dick Teresi, The God Particle: If the Universe is the Answer, What is the Question? (New York: Bantam Doubleday Dell Publishing, 1994) 21.

³⁹ James, Pragmatism 48.

⁴⁰ I am borrowing this term from Barwise and Perry. They think efficiency is a fundamental property of language, whereby a single expression can be used in many situations.

final. For James, this sort of complete reduction is part and parcel with the search for essences.⁴¹ The history of science, of course, is a history of realizing that our ontologies are not absolute or final.

Scientists, however, have been largely *motivated* by the search for an absolute ontology. Seen in this light, reductions are a fall-out of *aspiring* to tie truths to a GEV**m**. For truth bearers to be isomorphic with the pertinent components of the GEV**m**, they must be in an appropriate form. Truth-bearers that are not in this form are made to *fit* by way of translation. If the translation is not perfect, the remainder is jettisoned. We have seen in Chapter One that this flight from *intension* is thought to result in eternal truths.⁴² The subjective aspect of a statement is purged in order to reveal its objective form. For those that think that theories are sets of sentences, the same will apply to theories. An old theory is replaced with a new theory if the sentences of the new theory tend to be isomorphic with the world, without remainder. This process ends when the theory and the world are isomorphic.⁴³

The goal here is to arrive at an ultimate *description* of the world in which every true sentence can be translated. The positivists rejected the concept of a GEV**m**, but they upheld the notion of a GEV**e** (See [1.6 Truthmakers And The Disappearance Of Truth](#)). Carnap, for example, in 1934, claims that sentences that are capable of being true or false can be translated into the *universal language* of science. And although it is *grounded* in the partial languages of sense data and protocol sentences, it is the language of physics that is perfectly inter-subjective and is a “total system”. In fact, sentences that cannot be reduced to this physical language, are not properly scientific. The scientific parts of Biology, Sociology and even philosophy are reducible to physics; all scientific inquiry is physics. This thesis of physicalism leads to the thesis of the unity of science. Unable to help himself to the notion of an underlying material world, it is

⁴¹ James, Principles of Psychology 147.

⁴² For Russell, Peirce and Frege this flight from intension seems to end in the eternal, where for Quine it is a tendency *towards* the eternal.

⁴³ It is in this sense ironic that the logical positivists made reductions a proper tenet of their doctrine since they essentially denied the very meaningfulness of the claim “The theory and the world are identical.” In so far as they rejected metaphysics, they rejected the GEV**m**. For the logical empiricists, the dream of ultimate objectivity consisted in logic and sense data. What is specific to the psychology of an individual is the long metaphysical story they try to pass off as the *explanation* of what they *observed*. In short, the *theory* that organizes the observational facts into the “underlying nature” of the world is merely the religious beliefs of the author. In this case the reductions from statements about theoretical objects to observation statements will not go through. Theories that are properly disinfected of their *explanatory* language, however, will be successfully reduced. The goal here is to arrive at an ultimate *description* of the world in which every true sentence can be translated. So even though the positivists rejected the concept of a GEV**m**, they upheld the notion of a GEV**e**.

as if Carnap preserves the intuition that there is one unified world by arguing that there is one unified GEVe.

The spirit of this program is close to that of the pragmatic maxim: two theories that are *empirically adequate*, are thought to be equally *true*. Remember that pragmatism is founded on a maxim that is meant to return the abstract matters of metaphysics to the world of experiential fact. Descriptions that are equivalent in their practical consequences, are equivalent *in toto*. Suppose we have two theories about the hardness of diamonds. In one case, diamonds are hard all of the time. In the other case, diamonds *become* hard every time they come into contact with another thing. In regard to the practical consequences these theories are equivalent. For Peirce, the meaning of the claim “This particular diamond is hard” is the same regardless which theory the speaker adheres to. James is disposed to describe the difference between metaphysics and science in terms of *knowledge by acquaintance* and *knowledge about*.⁴⁴ Knowledge about, to which science is the main contributor, always terminates in the former, while “metaphysical discussions are so much like fighting with the air; they have no practical issue of a sensational kind.”⁴⁵

Peirce argues that the simple fact that two people *believe* different metaphysical stories is not a practical difference by which to distinguish the meaning of two different stories.⁴⁶ This is compatible with the logical positivists who are trying to eliminate the contingent psychologies of individuals from scientific truth. But Jamesian Pragmatism is not just positivism; he is *not* rejecting metaphysics or demoting ethics. James’s sensitivity to the psychology of human behaviour leads him to consider the affects different metaphysical stories, with the same empirical status, have on the humans that hold them.⁴⁷ So although our two stories about the hardness of diamonds have the same testable consequences, they somehow have different meanings. And, contra Peirce, these theories are significantly different in so far as they result in different *behaviours* in their respective believers. Ultimately, James is giving grounds to reject the strong logical reductions of the meaning of sentences into a GEVe by denying that we ought to jettison the remainder.

⁴⁴ James, The Meaning of Truth 31-33.

⁴⁵ James, The Meaning of Truth 31.

⁴⁶ C.S. Pierce, Collected Papers, 5.397-5.402.

⁴⁷ Famously, in “The Will To Believe”, James argues that holding a belief in God (or an atheist worldview) is not only compatible with empiricism, but is warranted on practical or humanist grounds.

But these reductions also rely on the idea that every significant sentence is translatable into an analytic or synthetic truth. These reductions require translational constants, i.e. propositions. If propositions are eternal truths, complete thoughts, or components of the Final Opinion like the kind presupposed by Russell and Peirce, then we might wonder if it is worth it to commit to such *supernatural* entities. Indeed, it should be surprising that *empiricists* rely so heavily on these entities. More importantly, should we help ourselves to the very entities that we are pursuing? Our ability to make strong reductions is a consequence of having access to a GEVe. And our having a GEVe is a consequence of being able to make strong reductions. So James hedges on strong reductionism by hedging on the notion of an absolute conceptual scheme (see section [2.6 Truth And Conceptual Relativity](#)) It is James rejection of a neat and tidy synthetic–analytic distinction that leads to his irreducible pluralism.

2.4 PHILOSOPHY OF MIND AND HOLISM

We have thus three opinions to consider. There are first those who deny that there is a character called ‘mental’ which is revealed in introspection. These men may be called ‘neutral monists’, because, while rejecting the division of the world into mind and matter’, they do not say ‘all reality is mind’, nor yet ‘all reality is matter’. Next, there are ‘idealistic monists’, who admit a character called ‘mental’, and hold that everything has this character. Next, there are ‘dualists’, who hold that there is such a character, but that there are things which do not possess it.⁴⁸

Russell is here referring to the neutral monism, or *radical empiricism*, of William James. He expresses both suspicion and admiration for this philosophy. It should be noted that Russell’s ambivalence about the neutral monism of James is extraordinarily similar to his ambivalence about the neutral monism of Carnap and other Positivists. Admiration, because it is an effective use of Occam’s razor on the two worlds dichotomy of the dualists. Russell himself is suspicious of dualism. He notes that common sense “divides human beings into souls and bodies, and Cartesian philosophy generalized this division” which is so “familiar, and of such respectable antiquity, that it has become part of our habits, and seems scarcely to embody a theory.”⁴⁹ But ultimately, Russell cannot help but rely on this division. And we have seen, in [An Inquiry into Meaning and Truth](#), that Russell’s discussion of language repeatedly invokes the subjective and the objective, the mental and the physical, the psychological and the logical. Russell affirms this duality because an individual’s “perceptual whole W is, from the standpoint of physics, inside my head as a physical object” and, conversely, the physics “space-time whole and part is too

⁴⁸ Bertrand Russell, “On The Nature of Acquaintance” 129-130.

⁴⁹ Bertrand Russell, “On The Nature of Acquaintance” 129.

elaborate and inferential a concept to be of much importance in the foundations of theory of knowledge.”⁵⁰

Where Russell relies on a distinction between knowledge and content, James erodes this distinction. Where Russell relies on a distinction between analytic and synthetic truths, James undermines it. And where Russell separates concepts into the part that is human and the part that is not, James is suspicious:

Not being reality, but only our belief about reality, it will contain human elements, but these will know the non-human element, in the only sense in which there can be knowledge of anything. Does the river make its banks, or do the banks make the river? Does man walk with his right leg or with his left leg more essentially? Just as impossible may it be to separate the real from the human factors in the growth of our cognitive experience.⁵¹

James believes that it is by the *growth of our cognitive experience* that we end up with our theories of reality; i.e. not by subtraction, but by addition. Thus, the “essential contrast is that *for rationalism reality is ready-made and complete from all eternity, while for pragmatism it is still in the making, and awaits part of its complexion from the future.*”⁵² As a radical empiricist, mind stuff and physics stuff is merely one kind of stuff in two different contexts. This one kind of stuff is experience. Like paint, we might see this one stuff on the shelf in a can or we might see it in a painting, surrounded by other paints. In the first case, it is merely a physical object that is represented by our mind. In the latter context, we see the paint as having meaning or representing. The crux is that both the subjective and the objective are kinds of experience and experience “*has no such inner duplicity; and the separation of it into consciousness and content comes, not by way of subtraction, but by way of addition.*”⁵³

It is in light of this program that James’ notion that truth is a “relation, not of our ideas to non-human realities, but of conceptual parts of our experience to sensational parts.”⁵⁴ Despite Russell’s claims that James is a behaviourist, he is not. But this is common reaction to those who want to speak of the meaning of a sentence in terms of “practical consequences”, “use”, or “propensity for action”. The obvious alternatives to a mind-world dichotomy are to deny the world, or to deny the mind. And Russell cannot help but think that James is denying the mind.

⁵⁰ Russell An Inquiry 340.

⁵¹ James, Pragmatism 120-121.

⁵² James, Pragmatism 123.

⁵³ William James, Essays in Radical Empiricism, in William James: The Essential Writings, ed. Bruce W. Wilshire (New York: Harper & Row, 1971) 165.

⁵⁴ James, The Meaning of Truth 51.

Truth is, in part, a disposition to act successfully. And Russell expresses skepticism about descriptions of belief in terms of behaviour because it excludes the possibility that belief could be an *isolated phenomenon*:

James and Dewey would say; when I believe a proposition, that means that I act in a certain fashion, that my behavior has certain characteristics, and my belief is a true one if the behavior has certain characteristics, and my belief is a true one if the behavior leads to the desired result and is a false one if it does not. That, if it is true, makes their pragmatism a perfectly rational account of truth and falsehood, if you do accept their view that belief as an isolated phenomenon does not occur.

And then he reiterates the important difference between logic and psychology:

That is therefore the first thing one has to consider. It would take me too far from logic to consider that subject as it deserves to be considered, because it is a subject belonging to psychology, and it is only relevant to logic in this one way that it raises a doubt whether there are any facts having the logical form that I am speaking of.⁵⁵

This is an insightful admission that psychological holism is in direct opposition to his reductionist program. Russell's notion of a sense datum presupposes that facts, and beliefs about them, can be isolated phenomenon. Of course, William James is much more aware of the complex nature of the human psychological process, in which experience doubles for both the subjective and the objective. For James, the notions of psychic atoms and simple ideas are "mythological."⁵⁶ Without these simples there can be no hard and fast dichotomy between sentences in the object language and sentences in the meta-language. And without these there can be no absolute dichotomy between synthetic and analytic truths.

It is interesting that James may have been influenced by Peirce's rejection of an absolute synthetic-analytic distinction in regards to meaning. Peirce wants to explain why the meaning of a scientific term grows as inquiry progresses. In this vein, Peirce talks about the growth of knowledge. Similarly, James talks of *cognitive growth* to explain conceptual knowledge. For Peirce, this growth is not the linear relationship of simple chains or links of reasoning. Rather the picture is of a cable of mutually reinforcing fibres.⁵⁷ Between Peirce's influence on James and James' sensitivity to human psychology, a kind of holism finds its way into James' very definition of truth. For James, what is true must be compatible with older truths and, more importantly, older *bodies* of truths.⁵⁸ New experiences force us to adapt our beliefs. James

⁵⁵ Russell, "The Philosophy of Logical Atomism" 223.

⁵⁶ See The Principles of Psychology, Chapters VI, IX, and XIV.

⁵⁷ C.S. Peirce, Collected Papers, 5.265. See Susan Haack, Manifesto of a Passionate Moderate 51.

⁵⁸ James, The Meaning of Truth 35. See also the introduction by H.S. Thayer, XXXII.

recognizes that there are different ways to accommodate these experiences. A new idea ought to “preserve the older stock of truths with a minimum of modification” so that a new truth “is always a go-between, a smooth-over of transitions.”⁵⁹ In short, the new truth has to accommodate a reasonable adaptation of the old web of experience.

This is essentially the point Quine will make forty years later in “Two Dogmas of Empiricism”. Here Quine’s call for a “shift toward pragmatism”⁶⁰ includes a rejection of reductionism and a rejection of the clear distinction between synthetic and analytic truths.

2.6 HUMAN TRUTH AND CONCEPTUAL RELATIVITY

Up to about 1850 almost everyone believed that sciences expressed truths that were exact copies of a definite code of non-human realities. But the enormously rapid multiplication of theories in these days has well-nigh upset the notion of any one of them being a more literally objective kind of thing than another. There are so many geometries, so many logics, so many physical and chemical hypotheses, so many classifications, each one of them good for so much and yet not good for everything, that the notion that even the truest formula may be a human device and not a literal transcript has dawned upon us.⁶¹

There are, in short, *so many conceptual schemata*. Truth is not static, for James, for the same reason that a conceptual scheme is not absolute. James tells a story about a camping party in the mountains where an argument erupted. The dispute was regarding a man who continuously circled a tree trying to see a squirrel that also circled the tree so as to hide from the man. The party was exactly split over the truth of the claim ‘The man goes round the squirrel.’ James, of course, deals with the apparent contradiction by distinguishing two interpretations of the predicate ‘goes round’. If ‘goes round’ means “passing from the north of him to the east, then to the south, then to the west, and then to the north of him again, obviously the man does go round him.”⁶² Contrariwise, if what is meant by ‘goes round’ is the ability to flank and circle behind the squirrel, then “it is quite as obvious that the man fails to go round him.”⁶³ In the language of propositions, we would say that James effectively shows that there are two separate propositions. Observe that the connection between a single sentence and each proposition is the differing background conceptual scheme. On one hand there is the human-relative spatial model; i.e. the model *from the point of view of the man*. And on the other hand there is the compass-relative

⁵⁹ James, The Meaning of Truth 35.

⁶⁰ W.V. Quine, “Two Dogmas of Empiricism”, From a Logical Point of View 21.

⁶¹ James, The Meaning of Truth, 40.

⁶² James, Pragmatism 38.

⁶³ James, Pragmatism 38

spatial model; that is, the model from a *bird's eye point of view*. James tells us that since neither conceptual scheme is absolute, neither proposition is absolutely true.

James is operating on the principle that when you meet a contradiction, you ought to make a distinction. Instead of being committed, exclusively, to the man's point of view or the bird's eye point of view, we can now move between them. We have created a *meta-model*, in which the differing interpretations are tied to their background models. Since the *object* models are compatible, there is no contradiction.⁶⁴

We have seen in Quine's "Flight From Intension" how movement away from language that is tied to the first person point of view is necessary for logic and science. We avoid equivocations and provide stable truth vehicles by making the background models *more explicit*. We have seen in Peirce and Russell that what is specific or individual to a human mind plays *no* part in absolute truth.⁶⁵ The question, then, is whether or not this meta-model somehow transcends human psychology.

This elimination of the human point of view is really a corollary of maintaining a GEVe (or GEV**m**). We have seen that the GEVe (or GEV**m**) has been the conceptual scheme (or ontological ground) that truths stand in a static and eternal correspondence with. It would not be wrong, I think, to interpret the tension between the GEVe (or GEV**m**) and the first person point of view as the tension between the phenomenal and the physical, or the mental and the material. This is the fundamental tension between the humanist and the classical conception of truth. Humanists⁶⁶ think truth is tied to human interests, human intentions and human knowledge. Metaphysical realists tie truth to a framework that *transcends* human knowledge; truth is tied to an absolute conceptual scheme or an absolute ontology.

This struggle has been a cornerstone of philosophy particularly since the chasm between philosophy and science really widened in the late Nineteenth Century. Peirce himself struggled between pragmatic truths – "‘pragmatic’ in the Kantian sense of *pragmatisch*, experiential"⁶⁷ –

⁶⁴ Note that from the squirrel's point of view the meaning of 'goes round' is also connected to being flanked. Then, from this background conceptual scheme, it is also the case that the man fails to go around the squirrel. In this case then, the sentence "The man goes round the squirrel" has a very similar meaning, the same truth-value, but is tied to a different background model. Note that the indexical in "I go round the squirrel" draws out the difference between these background models.

⁶⁵ Again, although Peirce's ideal-realism sometimes ties a mind to the GEVe, his invocation of alien minds disposes of the need for a *human* mind.

⁶⁶ "Humanist" is the term often used to refer to the early pragmatists such as James, Dewey and Schiller. They each allow that human interests and human capacities figure into truth and theory choice.

⁶⁷ Susan Haack, "Pragmatism, Old and New", *Pragmatism and American Philosophy* 2004, Vol 1 No1.

and the *pragmaticism* of the final opinion. At the turn of the Century, Edmund Husserl sought to ground the other sciences in phenomenology.⁶⁸ Russell began with sense data and ended up with mind-independent facts, and struggled to understand how to reconcile the GEV^m with knowledge by acquaintance. Thirty years later, Thomas Nagel observes an *incompleteness* between subjective and objective points of view, and Frank Jackson argues that physicalism cannot capture all knowledge, in particular not knowledge by acquaintance. In 1953, W.V.O. Quine, in From a Logical Point of View, tries to put this tension to rest:

Here we have two competing conceptual schemes, a phenomenalist one and a physicalist one. Which should prevail? Each has its advantages; each has its special simplicity in its own way. Each, I suggest, deserves to be developed. Each may be said, indeed to be more fundamental, though in different senses: the one is epistemologically, the other physically fundamental.⁶⁹

Quine is here dismissing the search for a single foundational conceptual scheme. This is a view that Quine might have inherited from Rudolph Carnap. In 1934 Carnap tells us that sense data and protocols are the edifice of all knowledge and this edifice is “Methodical Positivism”. But similarly, his *physicalist* stance might be seen as “Methodical Materialism”:

The adjective ‘methodical’ is intended to express the fact that we are referring to a thesis which speaks simply of the logical possibility of certain linguistic transformations and derivations and not at all of the ‘reality’ or ‘appearance’ (the ‘existence’ or the ‘non-existence’) of the ‘given’, the ‘mental’ or the ‘physical’. Pseudo-statements of this kind occasionally occur in classical formulations of Positivism and Materialism...When the two views are so purified they are, as we have seen, in perfect harmony...⁷⁰

This perfect harmony between the methodical materialism and methodical positivism looks a lot like the radical empiricism of William James. Whether we call it stuff in the mind or stuff in the world has mostly to do with the context in which the stuff is viewed. We have seen that William James propounds a stout dualism in the context of psychology. This is because “every natural science assumes certain data uncritically, and declines to challenge the elements between which its own ‘laws’ obtain, and from which its own deductions are carried on.”⁷¹ Thus any given field will have its own foundation.⁷² Questioning the laws and the deductions of the assumed data is to step away from the foundation so that one may ask questions about it.

⁶⁸ Bruce Wilshire claims that James’ thought was of “pivotal importance” for Edmund Husserl and for the foundation of phenomenology. William James; The Essential Writings, pg. xi.

⁶⁹ W.V. Quine, “On What There Is”, From a Logical Point of View, Harvard University Press, 1953, pg.17.

⁷⁰ Rudolph Carnap, The Unity of Science, 1934, reprinted in 1995 by Thoemmes Press, pg. 94.

⁷¹ James, The Principles of Psychology vi.

⁷² I am inclined to interpret this notion of a foundation, the assumed data and its internal logic, as talk about models; i.e. ontologies and the logics that organize them.

Abandoning the foundation is okay as long as one does not confuse this meta-field with the field itself. And, in fact, in James' other writing, he has an interestingly deflationary attitude towards the principles of psychology. As a philosopher, he is not a dualist. It is this flexibility that marks the Twentieth Century pragmatist. We do not have to come to an absolute position with regards to physicalism, phenomenism, or dualism.

Where Russell and Peirce *struggle* with two kinds of truth, James is free to take on both truth relations. We have seen that James' opposition to the classical conception of truth has many facets. In this project, James focuses on human truth. This kind of truth must "work", "make a difference" be "expedient", and "benefit" – it is an "intra-experiential affair". It must provide a connection between old experiences and new, and it must provide a smooth transition between the old truths and the new. A new concept that does not provide this smooth transition is *outré*.⁷³ From this perspective, a claim that we are merely brains in a vat is simply false. On the Jamesian sense of practical difference, a brain in the vat theory is empty, debilitating, and *outré*. We are, on the Jamesian version of *human* truth, warranted in asserting that we are not brains in a vat.⁷⁴

James gives evidence that he is committed to another kind of truth though. In this mode, he expresses agreement with the classical conception of truth. James admits that truth is agreement with reality.⁷⁵ He does not *deny* that truth is a form of copying.⁷⁶ And he helps himself to the notion of reality-in-itself. Indeed James thinks that reality-in-itself is a perfectly true concept.⁷⁷ When operating in this mode, he will have to admit, like other realists and fallibilists, that it might be true that we are merely brains in a vat. Interestingly, James is often accused of contradicting himself.⁷⁸ Seen from the outside his notions of truth are viewed as an inconsistency. But if we join James in his dictum, "meet a contradiction, make a distinction", we

⁷³ James, Pragmatism 45. See also Putnam, Pragmatism 15, 16.

⁷⁴ In the Peircean sense of practical difference, a brain in the vat theory is empirically equivalent to a naturalistic view of the universe and simply collapses into such a naturalistic view by way of reduction. That a theory is debilitating is no concern for Peirce. Peirce, however, in his own work goes beyond this positivist reading of his pragmatic maxim by invoking a correspondence relation with the Final Opinion, a GEVe, and so would claim that a brain in a vat hypothesis is ultimately true or false. For Peirce, if we have no warrant to assert or deny the brains in a vat hypothesis then our brain in a vatness is a *buried secret*.

⁷⁵ This is a theme that runs throughout The Meaning of Truth.

⁷⁶ Note that James's claim regarding copying is modest: "those thoughts are true which guide us to beneficial interaction with sensible particulars as they occur, whether they copy these in advance or not." (The Meaning of Truth, 51) In this passage he does not deny that that truths might copy realities after all.

⁷⁷ James, The Meaning of Truth 131.

⁷⁸ Richard Kirkham, Theories of Truth, (Cambridge: Bradford Books: The MIT Press, 1992)

see that his differing accounts of truth are accompanied by differing conceptual schemata. We have a *metaphysical* truth relation and an *epistemological* truth relation. Although neither conceptual scheme is *more absolute* than the other, as an empiricist, James is naturally more at home with the experiential conceptual scheme:

Contemned tho they be by some thinkers, these sensations are the mother-earth, the anchorage, the stable rock, the first and last limits, the terminus a quo and the terminus ad quem of the mind. To find such sensational termini should be our aim with all our higher thought. They end discussion; they destroy the false conceit of knowledge; and without them we are all at sea with each other's meaning.⁷⁹

Although neither conceptual scheme is more absolute, neither do we have to admit that they are symmetric or equally endowed. This is a conclusion that we have seen Quine converging on. In "On what there is", Quine notes that we should "by all means see how much of the physicalistic conceptual scheme can be reduced to a phenomenalist one; still, physics also naturally demands pursuing, irreducible *in toto* though it be."⁸⁰ He tells us that each conceptual scheme has its own "simplicities" and "advantages". But like James, it is the experiential conceptual scheme that has *epistemological priority*:

From among the various conceptual schemes best suited to these various pursuits, one - the phenomenalist - claims epistemological priority. Viewed from within the phenomenalist conceptual scheme, the ontologies of physical objects and mathematical objects are myths.⁸¹

⁷⁹ James, The Meaning of Truth 31.

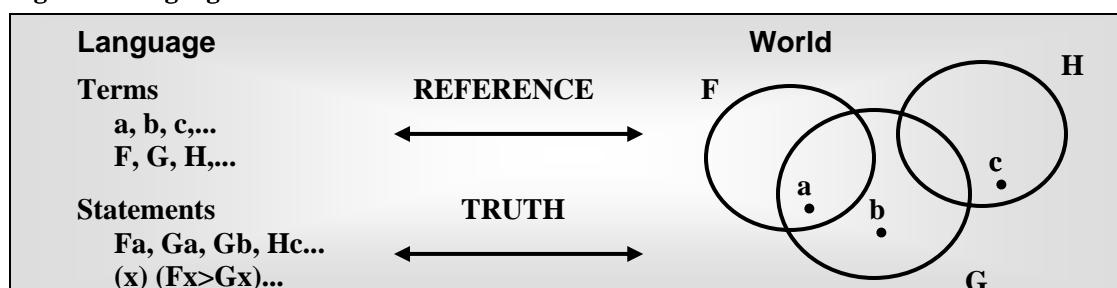
⁸⁰ W.V. Quine, "On What There Is", From a Logical Point of View 19.

⁸¹ W.V. Quine, "On What There Is", From a Logical Point of View 19.

3 TRUTH WITHOUT TRANSCENDENCE

3.0 GIERE AND THE SENTENTIAL PARADIGM

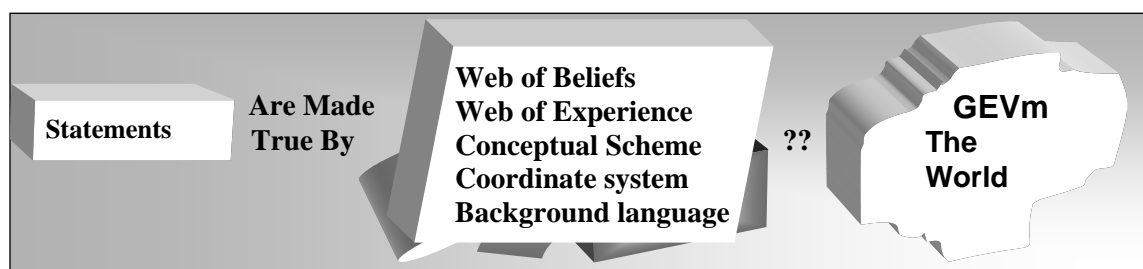
Figure 1 Language And The World



This diagram¹ appears in the conclusion of Ronald Giere's Science Without Laws. He calls this the standard objectivist account of reference and truth. The relationship here is the kind that we have seen requires *action at a distance* and *mirroring*. Linguistic structures, such as sentences, statements, and propositions, *reach out* and *hook into* the world. On this paradigm, knowledge is based on truth and truth is transcendent. Ronald Giere wants to reject this linguistic approach to knowledge and science.

But we have seen that pragmatists can hang truth from a less metaphysical pole – an epistemological perspective. On this pole, truth hangs together with warrant, coherence and utility. On this approach, truth is a mind dependent relation. Truths are no longer grounded by the world but by conceptual schemes. How these conceptual schemes are themselves grounded, i.e. what their relationship is to the world, is no longer clear:

Figure 2 Mediators



It is, at first, astonishing that Giere is at home with this kind of approach. He is after all, a self-described naturalist. His commitment to naturalism is two-fold. It is primarily a strategy that gives *priority* to naturalistic explanations in all epistemological endeavours. This aspect of

¹ Ronald Giere, Science Without Laws (Chicago: University of Chicago Press, 1999) 239.

his naturalism comes directly from William James.² It is also an affirmation that *the world* constrains our theories – he is not a social constructivist. So human knowledge is grounded, *somehow*, by the world, but statements are defined (and made true) by human knowledge.

Interestingly, this cleavage parallels two distinct movements in the post-Logical Empiricist era. The rejection of the direct relationship between linguistic structures and the structures of the world led, I think, to two general approaches to truth.³ Broadly speaking, in the philosophy of language *anti-realism*⁴, and an internalist approach to truth, has carried the day. And, broadly speaking, in the philosophy of science, *realism*⁵ and an externalist approach to theories has carried the day. But, given their respective fields and respective starting points, it is clear that these philosophers are talking about different things. This is a position that you find expressed among various philosophers. James Young, Global Antirealist that he is, captures this bifurcation well:

If questions about truth and reality are divorced (and here the anti-realist is a marriage-breaker), a commitment to truth conditions which are internal to a system of beliefs does not carry with it a commitment to idealism...Anti-realists are free, qua anti-realists, to be naturalists and maintain that speakers are natural objects in a world of natural objects...if both naturalism and anti-realism are correct, the causal relations between speakers and their sentences, on the one hand, and the physical world, on the other, are not semantic relations.⁶

Young is here separating the internal relations of language, and the potential external relations that a speaker's system of beliefs has with the world. Patricia Churchland, from the other end of the philosophical spectrum, makes a similarly interesting claim in 1980:

² Giere, Science Without Laws 70-71.

³ I am overlooking those that cling to the linguistic paradigm. We have seen that Armstrong tends this way, and another Australian realist, J.J.C. Smart thinks that scientific theories are "systems of sentences or perhaps propositions." See "Idealism and Realism", Essays Metaphysical and Moral.

⁴ I mean here the rejection of the truth-maker hypothesis, the affirmation of truth as a conventional property, and the rejection of the law of the excluded middle.

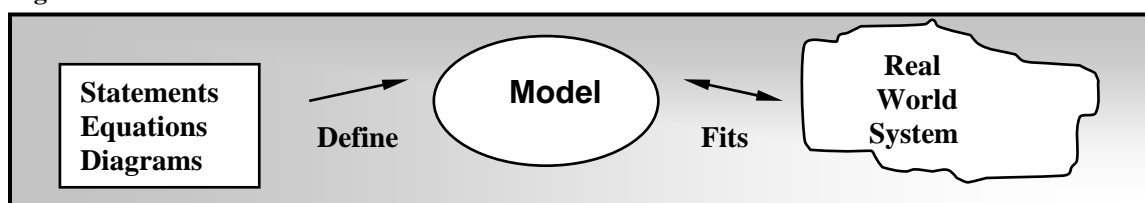
⁵ Realism, in the philosophy of science, resists definition. At the core of this vague notion, however, is the affirmation of a mind-independent world. Robert Klee summarizes: "The standard assumption among most people is that the different sciences study a common world...It is a further traditional view that the common universe in question has a structure, a nature, independent of what our scientific theories assert about that structure or nature. The phenomena of the world constrain the content of science, science doesn't constrain the phenomena of the world." Robert Klee, ed., Scientific Inquiry, "Realism and Antirealism" (New York: Oxford University Press, 1999) 313.

⁶ James Young, Global Anti-realism (Aldershot, Hants, England ; Brookfield, Vt: Avebury, 1995) 31. That Young stipulates that the relations between the world and a speaker's beliefs cannot be semantic suggests either that his notion of semantic content is narrower than the notion of significance and meaning and that he is well entrenched in the sentential paradigm. This is no surprise since he thinks that "to hold a belief is simply to hold a sentence to be true." (pg. 3).

Between the obviously non-linguistic information processing and the obviously linguistic behaviour, there appears to be much of a cognitive sort going on in the brain-mind in virtue of which the intelligent behaviour is intelligent...we should expect a theory of information processing in humans to be a special case of the theory of information processing in organisms generally. The problem then, for information-processing research, is to find a model of how we (our nervous systems) intussuscept information, transform and filter it, and come to represent the world in the astonishingly complex, rich, and efficient way that we do.⁷

Churchland here is taking a rather deflationary tack with respect to the place of language in understanding human knowledge.⁸ Young's interest is language and the property of truth, and Churchland's interest is how we come to represent the world. Like Churchland, Giere considers himself one of a number of philosophers of science that "have been developing an alternative to the Logical Empiricist account of scientific theories."⁹ On this alternative view, scientific theories are not sets of sentences but are collections of models. The following diagram is Giere's "attempt to picture the relationships among language, models, and objects in the real world."¹⁰

Figure 3 Models



The primary representational relationship between theories and the world does not include linguistic mechanisms (i.e. denotation, satisfaction, or *truth*) – it is a relationship “between two non-linguistic entities.”¹¹ The metaphor at the heart of this program is of a person that is constrained to viewing a building from different distances and angles. One feature of this account of scientific descriptions is that since the views of the building are still views *of a building*, perspectivalism is “*prima facie* a form of realism, not relativism or constructivism.”¹² Giere extends this notion of a view to the notion of a map, which stands as an analogy for scientific models. Maps are an appropriate metaphor because maps “represent spatial regions

⁷ Patricia Churchland, “Language, Thought, and Information Processing” *Nous* May, 1980: 149.

⁸ She claims that this course falls out of her rejection of epistemological foundations, unrevisable theories, First Philosophies and *a priori* sanctity. It is interesting that, like Giere, she wants to naturalize epistemology and reject the linguistic paradigm.

⁹ Giere, *Science Without Laws* 122.

¹⁰ Giere, *Science Without Laws* 123. Diagram 7.1.

¹¹ Giere, *Science Without Laws* 123.

¹² Giere, *Science Without Laws* 80.

from particular *perspectives* determined by human interests” and yet “maps may be maps of something. So maps can be understood realistically.”¹³

We have seen in Chapter One and Two that Russell, Peirce, and Lederman all share a vision of the progress of science that *converges* on an ultimate science. Note however, that the relation between our models and the world is piecemeal and patchy. Maps, for example, “are always partial”¹⁴ – hence there “is no total or universal perspective, or, alternatively, there is no perspective from nowhere or from everywhere at once.”¹⁵ This is a refusal to entertain the dream of achieving the Nagelian conceptions of the “external standpoint”, “objective view”, or “understanding the world as it is in itself”, “the view from *nowhere*”¹⁶ or Bernard Williams’ *absolute conception of reality*.¹⁷ Ronald Giere’s *perspectival* realism is a flat out rejection of the GEVe.

3.1 LINGUAPHILIA, MODELS AND FOSS

The body is the storm centre, the origin of co-ordinates, the constant place of stress in all that experience-train. Everything circles round it and is felt from its point of view. The word 'I' then, is primarily a noun of position, just like 'this' and 'here.' Activities attached to 'I' or 'this' position have prerogative emphasis, and, if activities have feelings, must be felt in a peculiar way. The word 'my' designates the kind of emphasis.¹⁸

A belief of the primary sort is a map of neighboring space by which we steer. It remains such a map however much we complicate it or fill in details. But if we professedly extend it to infinity, it is no longer a map; we cannot take it in or steer by it. Our journey is over before we need its remoter parts.¹⁹

¹³ Giere, *Science Without Laws* 81, my emphasis.

¹⁴ Giere, *Science Without Laws* 81.

¹⁵ Giere, *Science Without Laws* 80.

¹⁶ Thomas Nagel, *The View From Nowhere* (New York: Oxford University Press, 1986) Nagel applauds Williams’ account (*The View From Nowhere* 15).

¹⁷ Bernard Williams, *Ethics and the Limits of Philosophy* (Cambridge: Harvard University Press, 1985) 139. It should not surprise that Williams account matches Peirce’s: “This notion of an absolute conception can serve to make effective a distinction between “the world as it is independent of our experience” and “the world as it seems to us.” It does this by understanding “the world as it seems to us” as “the world as it seems peculiarly to us”; the absolute conception will, correspondingly, be a conception of the world that might be arrived at by any investigators, even if they were very different from us.” Nagel applauds Williams’ account (*The View From Nowhere* 15).

¹⁸ William James, “The Experience of Activity” (chapter 6) *Essays in Radical Empiricism* 155-189. *Principles of Psychology*, vol. I 299-305.

¹⁹ Frank Ramsey, *Foundations of Mathematics* (London: Routledge & Kegan Paul, 1931) 238.

Maps and models have been of some interest in philosophy. Armstrong, in Belief, Truth, and Knowledge, suggests that belief states might be helpfully understood as a cognitive map. He claims to be following Frank Ramsey whom I quoted above. The picture theory of language might be seen as a narrow sort of model approach to language. Colin McGinn claims that models were used more explicitly by Wittgenstein.²⁰

Despite this sort of sideline interest in models and maps, they have not been widely recognized in philosophy as an alternative to the linguistic paradigm.²¹ There is deeper skepticism of the linguistic paradigm in other fields, however. In 1943, Kenneth Craik published the cognitive science classic, The Nature of Explanation, in which he suggests that human beings are processors of information. The nature of thought, for Craik, came down to the utility of predicting events which gives thought its “immense adaptive and constructive significance as noted by Dewey and other pragmatists.”²² Craik held that reason came down to three essential processes:

- (1) ‘Translation’ of external processes into words, numbers *or other symbols*,
- (2) Arrival at other symbols by a process of ‘reasoning’, deduction, inference, etc., and
- (3) ‘retranslation’ of these symbols into external processes (as in building a bridge to a design) or at least recognition of the correspondence between these symbols and external events (as in realizing that a prediction is fulfilled)

Craik realized that models, in their real world employment, are *paradigm instances* of these three stages. Colin McGinn thinks that Craik’s work is surprising since he wrote it in the heyday of behaviorism and despite this he posits mental models and finds himself “cheerfully up to his neck in internal structures and processes.”²³ Phillip Johnson-Laird, in 1983, wrote Mental Models, where he employs models along Craikian lines to attempt explanations of language, inference and consciousness. Importantly, Craik felt that words and numbers were not enough to explain the richness and efficiency of our representations or the inferences we make based on them, and that the essential feature of this modeling is not “propositions but symbolism.”²⁴ This is perhaps the driving intuition of Johnson-Laird’s work – where rule-following and language

²⁰ Colin McGinn, Mental Contents (New York: Basil Blackwell, 1989) 177.

²¹ McGinn puts forward a theory of externalism that uses mental models to explain how it is that words seem to have wide content.

²² K.J.W. Craik, The Nature of Explanation (Cambridge: Cambridge University Press, 1943) 50, my emphasis.

²³ McGinn, Mental Contents 173.

²⁴ K.J.W. Craik, The Nature of Explanation 57. Unfortunately, Craik’s commitment to the notion of correspondence and the notion that “thought models, or parallels, reality” (57) distances him from the mind-centered epistemology of William James, or indeed, Jeffrey Foss.

syntax fail to explain our thought processes, mental models have, in principle, no such limitations.

Despite the linguaphilia that has lingered in philosophy, this sort of pressure has been evidenced for some time. In the Twentieth Century, there was a plethora of entities posited to help interface between linguistic structures and the world. There have been pictures, versions, depictions, and representations, logics, subsistent entities, beliefs, webs of belief and webs of experience, background cultures, contexts, concepts and conceptual schemes, paradigms and scientific paradigms, conventional facts, coordinate systems, thoughts, forms, and, of course, propositions. Nelson Goodman has even posited worlds, and lots of them. And, like the facts above, these worlds are not to be confused with *the* world, which Goodman simply rejects.

The advantage of replacing these things with models is that we have a reasonable idea what models, and maps, are. They are real enough to avoid the baggage of Fregean Thoughts, eternal sentences or propositions. By their very nature, they “are incomplete, they are simpler than the entities they represent”²⁵ and so, *prima facie*, we still have a real world (See Section 3.6, [Star Modeling And Possible Verification](#)). The fact of their incompleteness makes them more tolerable than possible worlds (See Section 5.3, [Internalism And Water Is H2O](#)). They are flexible enough that they can include linguistic structures and their complexity avoids the oversimplifications that come with pictures. And they are different enough from linguistic structures that we can avoid the *obvious circularity* of background languages and sets of sentences and the resultant coherence theories.

The difficulty with invoking maps and models is that, like words and sentences, they *seem* to inhabit two worlds. On one hand, they are objects. A map by itself, for example, is just paper and ink. On the other hand, they have *meaning*. They are subjective – they can be understood or misunderstood, and they can be private, misleading or false. Giere imports human intentions into his use of scientific models. Contra Peirce, maps by themselves, cannot represent physical space. Giere’s thesis is that humans *use* maps to represent physical space and this instrumentalism is evidenced by the fact that “making maps is a cognitive and social activity of humans.”²⁶ Similarly, scientific models require human *interpretation* and human *use*. Hence, the fit (not a correspondence or a match) between a model and the world is an observer-relative fit, not unlike James’ truths.

²⁵ P.N. Johnson-Laird, Mental Models (Cambridge: Cambridge University Press, 1983) 10.

²⁶ Giere, Science Without Laws 81.

The importance of models for language philosophy stems from two related sources of tension. If models have a central role in science, as Giere and Foss argue, and science is an exemplar of human knowledge, then it will be important for us to see how language (now demoted from its vital status) interfaces with these models. The other source of pressure comes from cognitive science. Patricia Churchland summarizes this force in “Language, Thought, and Information Processing”. She recognizes that we, at least sometimes, process information linguistically. On the other hand, the bulk of the information we get *through our senses* is not linguistic. Nor is it processed linguistically. The results, for example, “of information processing in the retina cannot be described as the person’s believing that p, or thinking that p, or thinking that he sees an x, or anything of that sort.”²⁷ Clearly, we speak about what we see and we see entities that can be spoken. But between seeing and speaking a lot goes on. But it is not just sensory information that is at stake here. Churchland and others are aware that although higher level thinking is often linguistic, there is an array of higher level thinking that cannot be accounted for linguistically. Importantly, mathematical and geometric thinking do not fit into the linguistic paradigm. This leads Roger Penrose to speculate that other kinds of thinking “perhaps such as *philosophizing*, seem to be much better suited to verbal expression” and “perhaps this is why so many philosophers seem to be of the opinion that language is essential for intelligent or conscious thought!”²⁸

So, any philosophy of language is going to have to allow for connections between our linguistic processes and our non-linguistic processes.²⁹ Importantly, these non-linguistic processes include a spectrum. At one end of the spectrum, we have the biological information processing that we share with other species. At the other end of the spectrum we have the kind of information processing we find *in the sciences*. In the language of models we might say that we have the kind of models that are manifest in the information processing systems that we share with non-human animals. And, at the other end of the spectrum, we have the kind of models we find in the sciences.

In Chapter One and Two we saw an epic struggle between the objective and the subjective, between the metaphysical and the epistemological perspective, between the view from God’s perspective and the first person point of view. This struggle ended for James (and Quine,

²⁷ Patricia Churchland, “Language, Thought, and Information Processing” *Nous* May 1980: 147.

²⁸ Roger Penrose, *The Emperor’s New Mind* (New York: Oxford University Press, 1990) 549.

²⁹ It is interesting that language philosophers achieve this by positing propositions or simply by talking about information. It is said, for example, that information is prior to language. I think this makes sense, but not if we have to be neo-Platonists.

although we will see that Quine eventually moves away from this approach) contra *both* the phenomenologists *and* the metaphysical realists, in the acceptance of the *priority* of the epistemological conceptual scheme and the *usefulness* of the metaphysical conceptual scheme. Now we find ourselves faced with a similar tension between phenomenological *models* and scientific *models*. Foss provides a framework by which to understand and exploit this fundamental asymmetry between these different models.

To do so Foss asks us to reconsider the relationship that science has to an individual. Like Giere, he thinks that science is in the business of constructing models.³⁰ Here Foss extends Wilfred Sellars' notions of the scientific and manifest model ('image' for Sellars).³¹ Our first endowment is a manifest model. This way of modeling the world gives us the world as it is presented to our senses. The relationship between the manifest model and the scientific model of an individual is one of *complementarity*.³² Where James thought that there was one kind of stuff in different frames, the picture we get from Foss is that there is one world and the scientific and manifest models are two complementary ways of seeing it. This fundamental relationship is further characterized as the privilege and self-centeredness of the manifest and the power and dependence of the scientific.³³

These models are likened to maps in so far as the map is not to be mistaken for the terrain. The value of the map is a matter of its utility to its user – how precise, accurate and understandable it is, and how much scope it has.³⁴ Here-in lies Foss's commitment to the instrumental value of metaphysics *and* the world.

If an individual cannot understand the map, then it is not useable – it has to present information in a way that is understood by the individual. For example, every map must have a key that “provides a *reality interface*, without which the map cannot make any meaningful contact with the world.”³⁵ This key specifies mapping conventions like scale and purpose. The manifest modeling system is *privileged*, in this respect, because it is *always* usable by the person – the manifest model is *self-keying*. But the scientific model is a less self-centered way of viewing the world and it arises out of the communicative and social nature of humans. The trick

³⁰ Jeffrey Foss, Science And The Riddle Of Consciousness (Boston: Kluwer, 2000) 43-46.

³¹ Foss, The Riddle 75-79.

³² Foss, The Riddle 70.

³³ Foss, The Riddle 79, 83.

³⁴ Foss, The Riddle 47.

³⁵ Foss, The Riddle 105.

to using these models is to *key* it to one's manifest model. Humans employ this kind of model to operate in a shared world that can be mapped in a way that is common to all individuals.

This discussion of two complementary ways of seeing a single unified world gives richness to the notions of subjectivity and objectivity, or the phenomenal and the metaphysical. We cannot talk about objectivity without talking about the escape from self-centeredness and the power of scientific modeling. It is in this sense that there can be no disembodied scientific point of view. The flight from self-centeredness is a relative matter. Any given map of the terrain is dependent on perspectives. Science does not eliminate self-centeredness – it makes self-centeredness explicit. Foss suggests:

Thus the idea that science has the complete *elimination* of self-centered relativism as its goal makes no clear sense. Nevertheless, we can make sense of the movement away from the complete self-centeredness of the manifest mapping towards a less provincial view. The movement *away* from the self-centered coordinates towards the compass coordinates permits vastly larger numbers of people to share the modeling of directions. Left, right, in front, and behind work for me, now, but must be translated if I need to communicate with you. North, south, west, east serve as a common system for all. The *ideal* would be a system that would serve for all intelligent beings whatever: a model of the world that is not merely true-for me, or even merely true-for us, but rather true-for every possible thinker.³⁶

So it is not the case that some coordinates need translation and some do not. Every set of coordinates require translation by the user. The important notion here is that the key for some coordinate systems is explicit in the context, where-as the key for self-centered coordinates is often private and obstinately hidden. An individual may visualize the mechanics of the solar system entirely from a first person perspective. Her understanding of the movements of planets and the sun around the Earth would have to be very sophisticated to be accurate and successfully precise.³⁷ If we were to try to contact an alien species that was hovering beyond Pluto, we might try to direct them to Earth by giving them coordinates with respect to Pluto. The model of the solar system would then take on the view from Pluto. At least one sense of the flight from self-centeredness is simply the ability to change perspectives. Some, like Peirce, Nagel, and Williams have taken this kind of perspectivism to account for a future ideal science that is somehow devoid of perspectives. Foss wonders what the tendency towards an ideal model might entail: Towards what? Ideally towards a model that, by not being tied in any way at all to our own point

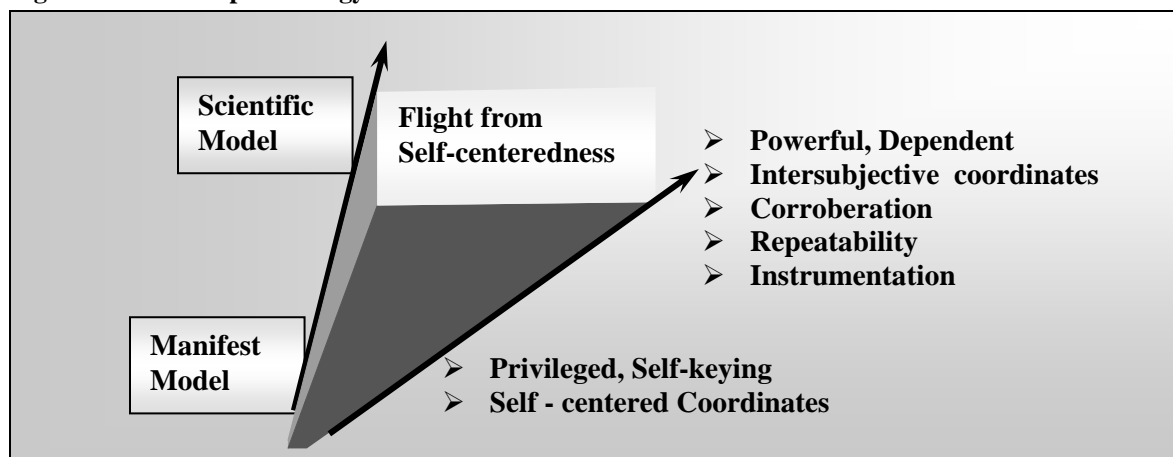
³⁶ Foss, The Riddle 84.

³⁷ Physics tells us that the actual frame of reference which our subject employs does not, in principle, change her results; there is no theoretical preference. It is only for practical reasons that we usually put the sun in the middle. It is hard to know what to make of this, however, since the very notions of force and acceleration and mass have been formulated in order to be free of the frame of reference. This principle of relativity was one that Newton introduced and that Einstein *salvaged*.

of view might accommodate any point of view, and in this universally intersubjective sense achieve the only practical measure of objective truth. Whether or not this ideal can be approached, whether, indeed, it even makes any sense at all to try to move towards it, there is nevertheless a clear methodological sense in systematically moving away from the self-centeredness of the manifest model. History teaches that this de-relativization of our maps and models is one essential thread of scientific progress.³⁸

This metaphor is fundamentally different than the kind we find in Peirce or Russell. Foss tells us that we are *not converging* on an ultimate viewpoint. He has suggested that objectivity emerges from an ability to accommodate many points of view. The objectivity of a model is not a measure of its *impartiality* so much as its *poly-partiality*; the views from many places. This aligns Foss with James' affirmation that knowledge of reality grows, not by subtraction, but by addition.³⁹ If our Plutonian aliens are unable to key our view-from-Pluto to their own manifest model, then the "the map cannot be used, and indeed is only a potential map."⁴⁰ Hence the "power and scope of the scientific modeling is positively correlated with the power and scope of the manifest model" and so even "the most precise model is useless unless it has an interface with reality."⁴¹

Figure 4 Fossian Epistemology



³⁸ Foss, The Riddle 85.

³⁹ See [2.4 Philosophy Of Mind And Holism](#).

⁴⁰ Foss, The Riddle 105.

⁴¹ Foss, The Riddle 115.

3.2 QUINE AND AN INFINITE REGRESS

Since, then, everything on the soil of the country is shown on the map, and since the map lies on the soil of the country, the map itself will be portrayed in the map, and in this map of the map everything on the soil of the country can be discerned, including the map itself with the map of the map within its boundary. Thus there will be within the map, a map of the map, and within that, a map of the map of the map, and so on *ad infinitum*...It is therefore the precise analogue of pure self-consciousness. As such it is *self-sufficient*. It is saved from being insufficient, that is as no representation at all, by the circumstance that it is not *all-sufficient*...⁴²

Foss's flight from self-centeredness should remind us of Quine's flight from intension. Note that the evolution of sentences in Chapter One (See [1.4 From Stable Truths To Eternal Propositions](#)) began with a first person observation and ended with a scientific truth. Demonstratives and indexicals, which make use of contextual information, were removed and replaced with terms that did not rely on the context.

Propositions are meant to be eternal and mind-independent carriers of information. But the pragmatists have tried *at length* to impress us with the fact that knowledge never leaves humans behind and that we cannot converge on a view of the universe that somehow eliminates first person phenomena like *white* or *cold*. Where Russell suggested that statements made from God's perspective contradict statements made from the first person perspective, we see now that each sentence relies on its *own background model*. A statement that is made true by the manifest model is *not necessarily* contradicted by a statement that is made true by the scientific model.

Quine replaced propositions with *eternal* truths, by forming sentences that are true on every occasion of utterance. These sentences are said to be context-free. But, unlike propositions and Fregean thoughts, this does not mean that they are true when they *lack* a context. On an occasion of utterance, a sentence is used to make a statement. And statements are *always* embedded in contexts. But the particulars of the context no longer impinge on the *meaning* of the statement. This should remind us of James' disambiguation of the meaning of "goes round." We avoid contradictions and misunderstandings by getting clear on meaning. We get clear on meaning by trying to make our frame of reference, or our relevant background model, explicit. Quine and Foss both recognize that objectivity is a movement away from the self, making what is specific to an individual, and a particular context, *explicit* in the background model.

Importantly, while a statement can be context-free, a statement is always *background model dependent*. While the meaning of a statement can succeed in transcending any particular

⁴² Peirce, *Collected Papers*, 5.71. Peirce is here revealing his appreciation for non-conventional representation and his belief in the self-sufficiency of consciousness. Peirce also reveals his belief that a map is infinitely divisible. What you get are maps *all of the way down*.

context, a statement cannot transcend its background model. This is because the background model *can never be made entirely explicit*. Making the background model entirely explicit in a statement is tantamount to Peirce's self-sufficient and infinite map.

What we succeed in doing is making the background model *explicit enough* for another human hearer. This amounts to an important constraint on the notion context-free. Since statements are always used *by humans*, contra Peirce and Russell, a human modeling system just happens to be a part of every context. We shall see that the *stability* that human truths achieve is better thought of as *metastability* (See section [4.1 Star Modeling As Cultural Phenomenon](#)).

Quine never seemed to understand fully how to apply the Fossian framework and at the end of the day, Quine ends up attempting to eliminate the self. Evidence of this is his rejection of meaning and translational constants, his commitment to behaviorism, and the joint concepts of the inscrutability of reference and the indeterminacy of translation. In the 1960s Quine prepared the essays that would comprise his collection, Ontological Relativity. Here Quine's elimination of the first person approach to philosophy and epistemology reaches its full power in his *naturalization* of epistemology. At least one reason for this is Quine's commitment to the linguistic paradigm.⁴³

Quine, like James, is acutely aware that signs and their objects are both just different forms of the same stuff. Where James sees this stuff as experience, however, Quine sees this stuff as stimuli. Quine claims that "gavagai", "rabbit", "rabbithood", "undetached rabbit part" and "rabbit stage" are each possible translations of a foreign language user's correlation of a sign and its object. Given that these are functionally equivalent, we are meant to conclude that it is impossible to talk *of the difference in meaning*. Quine tells us that this is, following Dewey, a rejection of the museum myth of signs and their *psychic* meanings, since, according to this myth, there is a right or wrong interpretation. This is partly why Quine gave up on propositions in the first place. Having done so, he has no translational constants and hence, even eternal truths are dependent on a background *language*. He quickly expands these findings from intensions to the *extensions* of terms. Here again, if the terms are functionally equivalent, then:

It is meaningless to ask whether, in general, our terms 'rabbit,' 'rabbit part,' 'number,' etc., really refer respectively to rabbits, rabbit parts, numbers, etc., rather than to some ingeniously permuted denotations. It is meaningless to ask this absolutely; we can meaningfully ask it only relative to

⁴³ From Word and Object on, Quine leaves behind the pragmatism he professed in From a Logical Point of View. The middle of Quine's career is marked by the ontological and intensional relativity of Ontological Relativity, which seems to hang together with his naturalization of epistemology. In the latter part of his career he endorses a disquotational account of truth. Truth for Quine was non-epistemic and hence *supernatural*.

some background language. When we ask, “Does ‘rabbit’ really refer to rabbits?” someone can counter with the question: “Refer to rabbits in what sense of ‘rabbits’?” thus launching a regress; and we need the background language to regress into.⁴⁴

Quine suggests that this regress is infinite and problematic. He thinks that we overcome this problem, in practice, simply by being behaviorists and simply overlooking the epistemological difficulties. He thinks this regress into background languages is analogous to the relative nature of position and velocity in a coordinate system. Communicating the position and velocity of an object to an agent is impossible without specifying the coordinate system. But coordinate systems are themselves relational, i.e. they are not absolute. In order to specify this coordinate system we need to rely on another, *larger*, coordinate system.

Astonishingly, Quine admits that in this case we stop the regress *by pointing*. This is entirely analogous to Foss’s use of maps. By pointing, agents can reconcile their coordinate system with yours – now they have *keyed* your frame of reference to their self-centered mapping system. This coordinate system is not absolute, but *it is shared*. We get clear on meaning by sharing our frame of reference. We do this by making our frame of reference explicit enough, and we do this, quintessentially, by *pointing*. The meaning of “goes round” is relative to a frame of reference (a model), in the same way that the velocity of an object is relational to a frame of reference. Where Quine is looking for background languages and background coordinate systems of *higher* and *higher* order, William James has told us that it is our *sensations* that are the “mother-earth, the anchorage, the stable rock, the first and last limits, the terminus a quo and the terminus ad quem of the mind” and “without them we are all at sea with each other’s meaning.”⁴⁵

Strangely, Quine admits this when he notes the importance of *pointing*. But it is as if pointing is a sort of second rate solution. The conclusion is supposed to be that in the case of reference, reference cannot be absolute since there is no absolute background *language*, there is only an infinite regress of background languages. This regress launches Quine, contra James and Foss, into “an ontology of abstract objects” that “is part of the ship which, in Neurath’s figure, we are rebuilding at sea.”⁴⁶ This ontological relativity is, for Quine, the flip side of relativity of

⁴⁴ W.V. Quine, “Ontological Relativity” in Ontological Relativity and Other Essays (New York: Columbia University Press, 1969) 49.

⁴⁵ James, The Meaning of Truth 31.

⁴⁶ W.V. Quine, “Ontological Relativity”, Ontological Relativity and Other Essays 16.

meaning. All we ever get is functional or behavioral equivalence.⁴⁷ This should remind us of various mysterian maneuvers in the philosophy of mind, like the inverted spectrum problem. In fact, Quine himself endorses this analogy since, “it is very much like asking whether our neighbor may not systematically see everything upside down, or in complementary color, forever undetectably.”⁴⁸

The answer to Quine’s infinite regress is the same as the answer to the coordinate system problem or the inverted spectrum problem: there is nothing closer to a human brain, in the entire universe, than another human brain: and there is nothing closer to a human mind, in the entire universe, than another human mind.⁴⁹

3.3 BETWEEN THE SCIENTIFIC AND THE MANIFEST

There is no such thing as a universal map. Neither does it make sense to question whether a map is true or false. The representational virtues of maps are different. A map may, for example, be more or less accurate, more or less detailed, of smaller or larger scale. Maps require a large background of human convention for their production and use.⁵⁰

By rejecting the linguistic paradigm we see that we have a way to ground our linguistic practices in our common structure, and our common experience. Once we see that humans have fundamentally similar modeling systems we can begin to compare and contrast the variety and plasticity of higher level conceptual schemes. I take it that this is what goes on in much of the humanities. Hermeneutics, anthropologists, historians, psychologists, sociologists, historians of science, etc., are all in the business of trying to understand the variety of conceptual schemes humans develop to organize the data of their manifest modeling system. And despite the lingering presence of the myth of the blank slate, what is being found is that humans are not

⁴⁷ In Ontological Relativity and Other Essays, Quine argues at length from various findings in logic that show that if a theory (a set of sentences) is satisfied by a model, then there are infinite models that can satisfy this theory.

⁴⁸ W.V. Quine, “Ontological Relativity”, Ontological Relativity and Other Essays 49.

⁴⁹ It is disconcerting for some philosophers that these claims about our phenomenology are not justified within our phenomenology. These claims are, after all, the tentative conclusions of our scientific modelling. The irony of Quine’s program is that, at the end of the day, he provides the framework to justify these conclusions. Quine, for example, admits that there are two unassailable tenets of empiricism: “One is that whatever evidence there *is* for science *is* sensory evidence. The other, to which I shall recur, is that all inculcation of meanings of words must rest ultimately on sensory evidence” (pg. 75). This leads eventually to Quine’s notion of the mutual containment of epistemology and natural science. He has been driven away from the conclusion above by his marriage to behaviouristic psychology and the linguistic paradigm. For a longer exposition of this argument see Foss, 2000, 4.3 What May - And Ray - Didn’t Know, 4.5 Explaining The Color Purple, and 5.1 Disinfecting Introspection.

⁵⁰ Giere, The Riddle 214.

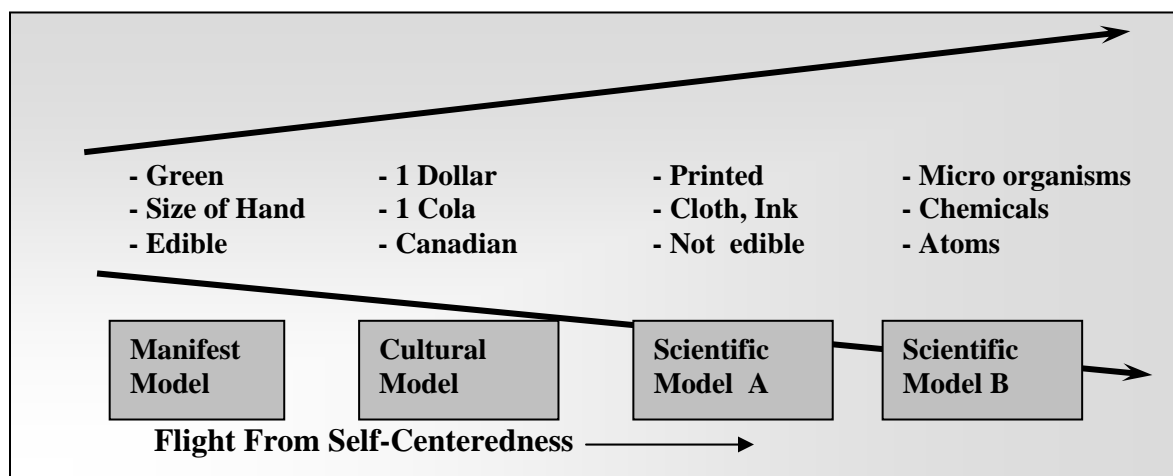
infinitely plastic. There are constraints on what a human can become and the kinds of conceptual schemes that humans can develop.

But there is another, more general advantage, to taking on a model approach to human knowledge. If we accept that it is our manifest model that is the truthmaker of our statements about our first person sense experience, and if we accept that it is our scientific models that are the truthmakers of our scientific statements, then we have to accept that statements that fall between these two ends of the spectrum can be made true or false by the corresponding intermediary models.

Foss argues that while our scientific modeling has certain salient properties that set it apart from our manifest modeling, there is no single line that demarcates them. Nonetheless, they are separable, and between them we find a host of cultural models that connect them the way the branches of a tree are connected to the roots. From a historical perspective we see that the scientific modeling system grew out of the “innumerable cultural models past and present that have mediated our interchange with the world.” Importantly, our cultural models have mediated our interchange with *other humans*.

This is significant for those who want to talk about the reality of more than just electrons or superstrings. Our scientific models make true (or false) our statements about *electrons*, legal models make true our statements about *marriage* (these might conflict with our religious models) and manifest models make true our statements about *qualia*. Our ethical models make true our ethical statements. Our literary models even make statements about Hamlet true. We can account for the truth of a claim regarding the *value* of a dollar bill by accounting for the social and economic models that give money value.

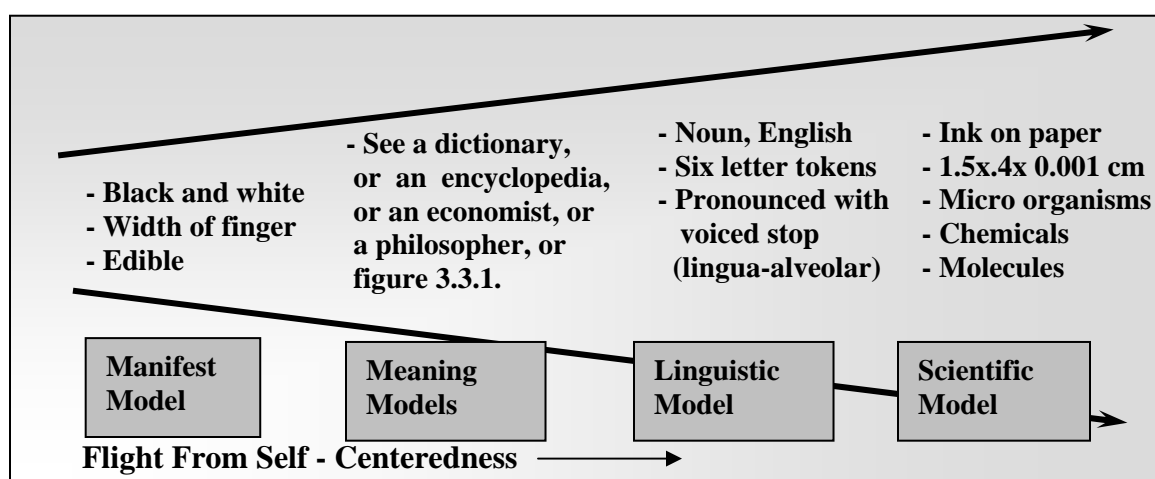
Figure 5 Models of a Dollar



You can imagine a disagreement between a child and a scientist over the edibility of a dollar. Clearly, they mean different things – they have different background models. Or suppose that a child states that a dollar is gold. It is inappropriate to respond that, since the dollar merely *appears* green, the statement is false. It is also inappropriate to maintain that although the sentence is meaningful and warranted, that the goldness of the dollar is not *real*. It is a fact that the dollar is gold and it is likewise a fact that a dollar is worth a cola.

We have so many truth-making models we might wonder how to account for false statements or poor models or models about things that are *not* real. These are issues I will begin to cash out in the following sections. First we must recognize that, like money, linguistic entities are themselves constituents of multiple models. James and Quine both recognized the similarity and the difference between signs and objects. For James, both are forms of experience – the same stuff surrounded by different contexts. We have seen that Quine is sympathetic with that kind of relativity, but his behaviorism leads him to think of signs and objects in terms of stimulus and response. Even so, Quine notes, famously, that “confusion of sign and object is original sin, coeval with the word.”⁵¹ Russell claimed that proper separation of symbol and thing symbolized eliminates half of the problems of philosophy. In a grammatical or lexical context, a sentence is well-formed or not well-formed, and a word is spelled correctly or incorrectly. In a materialist context a word is ink on paper or chalk on a chalkboard. When a word is *used* in a statement it acquires a more interesting status:

Figure 6 Models of the word, “dollar”



⁵¹ Quine, Ontological Relativity and Other Essays 15.

Until now I have taken a deflationary approach to language but now I am forced to hedge. Giere and Foss argue that the scientific model is best understood as a predominantly non-linguistic model. And clearly the manifest model is *mostly* non-linguistic.⁵² But all of the mid-level cultural models probably have linguistic structures built right into them. There are those who argue that thought itself is best understood as language. While this is clearly untenable it is unreasonable to suppose that we never process information linguistically. But I am not a cognitive scientist and I am not a linguist. I propose to wave my hands here and claim that this should be left open. Let's admit that these mid-level cultural models have linguistic components and affirm that these models are still largely *grounded* in our manifest models.

We can see why the later Wittgenstein was interested in the way we use words and sentences with respect to language games and background frames of reference. The mid-level cultural levels by which words get their various meanings, despite being grounded in our common manifest model, exhibit a high degree of plasticity. Failing to make the background model explicit enough leads to misunderstandings with those that do not share your model. One example of how philosophers have gotten clear on meaning is the rise of the use-mention fallacy. With the formalization of the use-mention fallacy, a system was devised to make explicit the distinction between the use of a word and the mention of a word. But this is merely to make distinct what I have indicated in Figure 6 as one facet of the linguistic model. We have not devised a simple way to make explicit the overabundance of other models. We are confronted again with the practical difficulties of making background models explicit enough. We have seen, in section [3.2 Quine And An Infinite Regress](#), that this difficulty is ultimately surmounted by realizing that humans, by virtue of being human, share certain background models. And we shall see (section [4.1 Star Modeling As Cultural Phenomenon](#)) that this simple fact is levered into work by scientists by using geometric models extensively.

But getting to understand the various meanings (background models) of the word “dollar” requires research into the humans, communities, cultures, and the sentences, paragraphs and linguistic practices in which it operates. Here again we see that despite the myth of the blank slate there are constraints on what a human can become as well as on the kind of mind a human can come to have. Perhaps the most generalized and substantiated results of this hypothesis come from linguistics. Despite the variety that is observed in the syntax of different languages, it

⁵² I say mostly here because there seems to be a difference between our tutored and untutored senses. There are sounds in other languages that I would have difficulty ever distinguishing. Similarly, I lack the ability to quickly and persistently distinguish between different visual representations of words from languages with different script.

appears that there is an underlying uniformity. Variety and underlying uniformity reflect two conditions for a theory. A theory has to be descriptively adequate, and so it must account for the variety of linguistic structures. But a theory has to exhibit explanatory adequacy as well. Here a theory of language should “show how each particular language can be derived from a uniform initial state under the ‘boundary conditions’ set by experience.”⁵³ The picture is, roughly, that humans are born with a language template that gets “filled in” as they learn a language. This template sets the parameters for the development of a language. This hypothesis of a generative grammar is empirically successful, and Chomsky himself suggests that acquiring language, for children, is better described as *growing* a language, much like the way we grow a mustache or a visual system.

3.4 THE FORGOTTEN PURPOSE OF LANGUAGE

It was for too long the assumption of philosophers that the business of a ‘statement’ can only be to ‘describe’ some state of affairs, or to ‘state some fact’, which it must do either truly or falsely.
- J.L. Austin⁵⁴

We have seen that Russell thinks that language “serves three purposes: (1) to *indicate* facts, (2) to express the state of the speaker, (3) to *alter* the state of the hearer.”⁵⁵ The order of these purposes reflects the priority given to their respective studies. Questions of truth and reference, the holy grails of philosophy of language, largely ignore (2) and (3). Semantics has concerned itself with (1), while (2) and (3) have been the purview of the lesser science of pragmatics. There are those that contend, contra Russell, that the only purpose of language is to alter the state of the hearer. Of course, expressing the state of the speaker and indicating facts are then merely *special cases of altering the state of the hearer*.

In Consciousness Explained, Daniel Dennett speculates that there was a time “in the evolution of language when vocalizations served the function of eliciting and sharing useful information.”⁵⁶ The picture here is of early hominids vocalizing proto-linguistically in ways that would cause hearers to do things. Sometimes, these early hominids would cause hearers to share information by expressing distress or “asking for help”. Sometimes responses were elicited and sometimes these acts would have “just the right effects on the inquirer, breaking it out of its rut,

⁵³ Noam Chomsky, New Horizons in the Study of Language and Mind (Cambridge: Cambridge University Press, 2000) 7.

⁵⁴ J.L. Austin, How to Do Things with Words (New York: Oxford University Press, 1965) 1.

⁵⁵ Russell An Inquiry 204.

⁵⁶ Daniel Dennett, Consciousness Explained (Boston: Little, Brown and Company, 1991) 195.

or causing it to ‘see’ a solution to its problem.”⁵⁷ Dennett then extends this causal view⁵⁸ of language to the self:

Then one fine day (in this rational reconstruction), one of these hominids “mistakenly” asked for help when there was no helpful audience within earshot - except itself! When it heard its own request, the stimulation provoked just the sort of other-helping utterance production that the request from another would have caused. And to the creature’s delight, it found that it had just provoked itself into answering its own question.⁵⁹

Dennett observes that the efficacy of auto-stimulation is not limited to language so he is not merely expressing the linguistic paradigm. But Dennett is focusing on the public aspect of language. By talking aloud we reveal ourselves to those around us. So Dennett has a story about how this trick was improved by making it private. Interestingly, these speculations are made reasonable by findings regarding people with split brains (although Dennett himself is cautious of such experiments). The point of this line of thought is twofold. First, and this is Dennett’s interest, is that this leads us to reject the notion of a Central Meaner. This is perhaps the focus of his book – we are not best thought of as a soul or captain of a ship. Actually, this also was James’ interest in the stream of consciousness. Dennett notes this when he mentions that James “lampooned the idea of the Pontifical Neuron somewhere in the brain.”⁶⁰ This line of thought has interesting ramifications for the private language argument of Dewey and Wittgenstein.

More importantly Dennett takes seriously the causal powers of language as well as its closeness to the way we think. We cause people to do things and we cause ourselves to do things. I am forever finding notes to myself that remind me to do stuff. We read directions so we can operate machinery and we recite rhymes if we cannot “take the directions with us.” My friend, for example, causes herself to tighten bolts by reciting (every time and out loud), “lefty loosey, righty tighty.”⁶¹

There have, of course, been those in the philosophy of language that have come to grips

⁵⁷ Daniel Dennett, Consciousness Explained 195.

⁵⁸ It should be noted that Dennett’s view of science is radically different from your average pragmatist: “a theory will have to be constructed from the third-person point of view, since all science is constructed from that perspective.” (71).

⁵⁹ Daniel Dennett, Consciousness Explained 195.

⁶⁰ Daniel Dennett, Consciousness Explained 228.

⁶¹ I once asked Merrill Livesey how this helped her to remember and she admitted that at first it did not help. She had to eventually remember that “to the right” meant that the *top* of the bolt had to move to the right (i.e. not the bottom). This is an interesting case for two reasons. The statement is poignantly background model dependent and it is a clear case of having to key a model to one’s manifest model in order to provide a useful interface with the world.

with these causal powers of language. Speech Act theory along the lines of Austin, Searle and Grice has grown into theories about illocutionary and perlocutionary acts (but has always been considered descriptive and second rate among semanticists). It was the causal powers of language that interested James and Dewey and it was the causal powers of language that led Peirce to this formulation of the Pragmatic Maxim:

Pragmatism is the principle that every theoretical judgment expressible in a sentence in the indicative mood is a confused form of thought whose only meaning, if it has any, lies in its tendency to enforce a corresponding practical maxim expressible as a conditional sentence having its apodosis in the imperative mood.⁶²

He is here claiming that the significance of any indicative sentence is expressible as a conditional whose consequent clause is an *imperative*. An imperative is a paradigm case of a statement whose primary purpose is to alter the state of the hearer. Proper consideration of this form of Peirce's pragmatism could have stopped logical empiricism in its tracks. The Principle of Cognitive Significance reduces imperatives to mere emotivism. But on this formulation of the Pragmatic Maxim, all assertions are emotivist, as was the Principle of Cognitive Significance itself.

We have, in short, found ourselves ensnared in a fact/value distinction. Once Russell's program is inverted, we risk sliding into psychologism. Viewing language as social and causal can obscure the notion of *right* speech as well as the notions of truth and falsity. It is tempting here to slip into a Rortyesque reduction of truth to an expression of assent. Although I have rejected classical correspondence I have not rejected epistemology. We will see in the following sections how various dimensions of normativity arise within our epistemology.

I contend that by becoming acutely aware of the social and causal nature of language we can improve our epistemological position. This should not be a surprise since knowledge is a *relation* between a subject and the world. There are those that think that linguistics does not contribute to semantics. We can see now that this is clearly not the case. Meaning happens to be intimately connected to syntax. Moreover, the study of the *causal* nature of language is the domain of psychology, cognitive science and *linguistics*. In so far as language philosophy and epistemology are prescriptive they cannot be completely cut off from the descriptive and explanatory endeavors of linguists nor, for that matter, cognitive science. This would be like a traffic cop that refuses to understand the powers and capacities of vehicles and roads.

⁶² C.S. Peirce, Collected Papers 5.18.

But we are stuck between the causal nature of language and the idea that it is something objective that make our statements true. I have claimed that it is our models that make our statements true. Foss has told us that we have to understand the objectivity of the scientific model in terms of our flight from self-centeredness. So, we have a way to account for objective truthmakers.

3.5 THE HUMAN SERPENT AND REALISM WITHOUT TRUTH

By omitting the fact that *he* [behaviourist] – an organism like any other – is observing, he gives a false air of objectivity to the results of his observation. As soon as we remember the possible fallibility of the observer, we have introduced the serpent into the behaviourist's paradise...And therefore the behaviourist, when he thinks he is recording observations about the outer world, is really recording observations about what is happening in him.⁶³

When Russell wrote this in the introduction to his 1940 classic, he was trying to create tension by casting doubt on the groundedness of psychology and physics. He concludes that science is “at war with itself: when it most means to be objective, it finds itself plunged into subjectivity against its will.”⁶⁴ He did not know that sixty years later Foss would be reversing this in order to argue that *the subject is at war with herself*: when she most means to be subjective, she finds herself plunged into objectivity in a flight from self-centeredness. We do not reduce, eliminate or transcend our subjectivity since the “*consciousness of the individual subject is a necessary component of every scientific observation.*”⁶⁵ This is the serpent that troubles Russell and that James accepts as a vital aspect of truth:

The trail of the human serpent is thus over everything. Truth independent; truth that we *find* merely; truth no longer malleable to human need; truth incorrigible, in a word; such truth exists indeed superabundantly – or is supposed to exist by rationalistically minded thinkers; but then it means only the dead heart of the living tree...⁶⁶

Susan Haack points out that recognition of this human serpent often leads to one of several Momentous Tautologies. There is Nelson Goodman's “you can't picture the world without picturing it”, and Putnam's “you can't describe the world without describing it” and Berkeley's “you can't think of a physical object without its being in your mind.”⁶⁷ Note that the Momentous Tautology cannot be applied to God. You might, however, include in this litany,

⁶³ Russell An Inquiry 15.

⁶⁴ Russell An Inquiry 15.

⁶⁵ Foss, The Riddle 134.

⁶⁶ James, Pragmatism 47.

⁶⁷ Haack, Manifesto of a Passionate Moderate 163.

Patricia Churchland saying “you can’t represent the world without *processing* information” and Giere and Foss saying, “you can’t model the world without *modeling* it.”

This serpent does not trouble Giere or Foss, or indeed most philosophers of science. Russell is concerned that if science is essentially a subjective endeavour, then science is not an exemplar of human knowledge. But one person’s *modus ponens* is another person’s *modus tollens* – Giere and Foss presuppose that science works, and that it is an exemplar of human knowledge. Giere observes, that the fact that anybody should have to defend that science successfully provides us with knowledge of the world, or that there is progress in science, “should be regarded as a scandal in science studies.”⁶⁸ This means that while science *is* essentially a product of consciousness, it is not essentially subjective. This is a move that Quine partially anticipates by naturalizing epistemology:

The old epistemology aspired to contain, in a sense, natural science; it would construct it somehow from sense data. Epistemology in its new setting, conversely, is contained in natural science, as a chapter of psychology. But the old containment remains valid too, in its way... There is thus reciprocal containment, though containment in different senses: epistemology in natural science and natural science in epistemology.

This interplay is reminiscent again of the old threat of circularity, but it is all right now that we have stopped dreaming of *deducing* science from sense data.⁶⁹

A model is measured by its value for humans. Without models, a human cannot *function*. Functions have to be understood within a teleological framework and this introduces normativity.⁷⁰ This sort of normativity will allow us to avoid radical postmodernism. So all of the normative work that James did for conceptual schemes, that Quine did for webs of belief, and that Wittgenstein did for frames of reference (see [2.0 Background](#)), and that Goodman (dare I say) did for Worlds, probably applies to models. What we have seen with Foss is that he has provided us with *a model* of the way we model. We see that models have various properties and

⁶⁸ Giere, *Science Without Laws* 22. Giere’s appeal to claims that like “The continents move” and “There are nine planets in our solar system” is reminiscent of Peirce’s famous challenge to his audience to *bet him* that the stone in his hand would not fall should he let go of it.

⁶⁹ W.V. Quine, 1969, “Epistemology Naturalized”, *Ontological Relativity and Other Essays* 83, 84, my emphasis. The difference is of course that Quine thinks this leads to the rejection of the “old enigma of epistemological priority.” (pg. 84). This leads to the displacement of the individual and the elimination of the mind from knowledge or science.

⁷⁰ John Searle, *Mind, Language, and Society* (London: Weidenfel & Nicolson, 1999) 121-122. Searle uses a human heart as an example. We have described with some success the causal relationships human heart has with various systems of the body. But given our presupposed teleology of the human body, we can say that heart has a function in the body. And given that we value life and survival, the functioning of a heart can be seen to be good or bad. Searle notes that functions are “never observer-independent.”

inter-relationships and these models do different things for us. Foss has given us insight into what makes models work well and how we might *improve them*.

The slogan “realism without truth” comes from Giere as he works to provide a picture of science that distances it from the sentential paradigm. Truth is not a relation between models and the world. Models allow us to separate internalist issues regarding truth and externalist issues regarding the fit between models and the world. The main difficulty with accepting that knowledge is a patchwork of well-functioning models, is that it is hard to imagine that our best models fail to be isomorphic with the world. This has been the standard among realists. For Craik and Johnson-Laird, similarity in “relation-structures” between a model and the process it models *is* a criteria for a good explanation.⁷¹ In fact, the notions of similarity and analogy are recurring themes in Craik’s theory of explanation. We have seen that the *main* charge against similarity between our representations and the world has been supernaturalism. Similarity is a mind dependent relation, and we are, as it were, trapped inside, forever unable to make the comparison between our models and the GEV_m. I suggest that similarity is an indispensable and real relationship that exists *between models*. This kind of talk appears to some as an ominous gap between our models and the world.

3.6 STAR MODELING AND POSSIBLE VERIFICATION

“What a useful thing a pocket-map is!” I remarked.

“That’s another thing we’ve learned from *your* Nation,” said Mein Herr, “map-making. But we’ve carried it much further than you. What do you consider the *largest* map that would be really useful?”

“About six inches to the mile.”

“Only *six inches!*” exclaimed Mein Herr. “We very soon got to six *yards* to the mile. Then we tried a *hundred* yards to the mile. And then came the grandest idea of all! We actually made a map of the country, on the scale of *a mile to the mile!*”

“Have you used it much?” I enquired.

“It has never been spread out, yet,” said Mein Herr: “the farmers objected: they said it would cover the whole country, and shut out the sunlight! So we now use the country itself, as its own map, and I assure you it does nearly as well...”⁷²

The relationship between models and terrains comes with advantages and dangers. The fact that the model is not the terrain allows us to interact with the model without the risk of undergoing the analogous interaction with the terrain. Seeing what unfolds in our model allows

⁷¹ K.J.W. Craik, The Nature of Explanation 51.

⁷² Lewis Carroll, Chapter XI, “The Man in the Moon”, Sylvie and Bruno Concluded, 1893.

us the luxury of not having to wait around to see how the terrain unfolds.⁷³ And by creating models which *abstract* from real world systems we helpfully *exclude* unwanted information; when I consult a map of campus, I don't want to know the location and position of 90 billion blades of grass. Underdetermination of a theory by evidence⁷⁴ is the necessary fallout of having a theory that tells us something *new*. We abstract from *past* events and make predictions about *future* events, and we abstract from events over *here* and make predictions about events over *there*. Although the trail of the human serpent runs over this endeavor, just as it does for thinking, picturing, describing, and representing, it does not follow that these methods somehow deny that which it is abstracted from:

The surveyor, I think, would reply, "Sir, you have proved that my lines cannot make up the land, and that, therefore, my map is not the land. I never pretended that it was. But that does not prevent it from truly representing the land, as far as it goes. It cannot, indeed, represent every blade of grass; but it does not represent that there is not a blade of grass where there is. To abstract from a circumstance is not to deny it."⁷⁵

We have seen in Peirce that recognition of the limits of our knowledge is an important aspect of truth and realism (see [1.3 An Inheritance From C.S. Peirce](#), pg. 16,). Peirce here tells us that this map does not *pretend* to tell us about the blades of grass. Neither a statement about the grass nor its denial is warranted by this map. Here again, recognition of the *fact of the gappiness* of our maps and models seems to be an important aspect of realism.

Importantly, both Peirce and Russell thought that truth should outrun human knowledge. For Peirce, a statement could be true despite what anybody said about it. And for Russell, truth was a wider concept than either knowledge or verification. This sort of fallibility is a vital component of realism. But they were supernaturally minded in their explanation of truth. That sentences are eternal, or that propositions stand in a direct truth-making relation with the world has been described as *action at a distance* and *God's truth*. In so far as a final science is meant to be a collection of these kinds of supernatural truths I have rejected this notion of a final science.

⁷³ Note that this is the case with scientific models and less true with lower level models.

⁷⁴ The problem of underdetermination of a theory by evidence comes largely from Quine. It is a very general phenomenon not unrelated to problems of induction. Roughly, Quine thinks we have a reason to be relativists since multiple, even infinite, models [or possible worlds] will shine the light of truth on our theories. Conversely, infinite theories will be made true by any given model [or possible world] and are therefore be functionally equivalent. This gap between theory and data is a direct result of the paucity of the data; the data underdetermines our theory. By a weak verificationist standard, these functional equivalences translate into total equivalence. We might think of these theories as tokens of the same theory type.

⁷⁵ Peirce, [Collected Papers](#) 5.329.

There are metaphysical realists who feel Peirce was not realist enough because of the problem of buried secrets.⁷⁶ Peirce's realism has been called transcendental idealism: it is transcendental because truth outstrips its warrant – it is idealist because truths are those entities that are real with respect to an ideal rational *mind*, in the long run. This is, in a nutshell, the conflict between pragmatism and trying to maintain the GEVe. Susan Haack thinks that Peirce is committed to the view that statements about the past which are buried *are neither true nor false*.⁷⁷ If this is true, then Peirce, despite my portrayal of him in Chapter One, has denied that the GEVe can ground our statements.

I would argue that it is not consistent with Peirce's notion of inquiry. Admitting that events in the past are sometimes buried is the thin edge of the wedge. On Peirce's own account, we are not just talking about what is humanly possible to uncover. We are making claims about what is possible for all *alien* inquirers. Now we might wonder if the past really is buried. In short, the question of verification transcendence comes down to the distinction between what is verifiable *in practice* and what is verifiable *in principle*. The notion of in principle verifiability has multiple dimensions. There are technological issues, matters of human (and alien) interest, questions of physical possibility, and logical possibility. I have argued that since Peirce invoked alien minds and mind-independent representation that this brought him to the widest notion of possible verification – the notion of a God inquirer. Certainly, this is where Russell arrives when he considers the possibility that there are propositions for which there is no possible evidence. He considers the statement, "There is a cosmos which has no spatio-temporal relation to the one in which we live":

Such a cosmos can be imagined by a writer of scientific romances, but by the very nature of the hypothesis there can be no inductive argument either for or against it. When we feel that there must be or not be such a cosmos, I think that we imagine a Deity contemplating all the worlds that He has made, and thereby we surreptitiously restore the link with our own world which, in words, we have denied.⁷⁸

Here we find, for the second time, a devout atheist invoking a God. This is as perfect a rejection of naturalism as one will find in philosophy. Russell considers "rigidly" rejecting God

⁷⁶ Susan Haack fits into this camp, as well as J.J.C. Smart who suggests that Peirce should be seen as one of many Twentieth Century objective idealists. See J.J.C. Smart, "Idealism and Realism", Essays Metaphysical and Moral (New York: Basil Blackwell, 1987) 175.

⁷⁷ Haack, Manifesto of a Passionate Moderate 22.

⁷⁸ Russell An Inquiry 278. In this passage Bertrand Russell footnotes: Olaf Stapledon, The Star Maker (London: Methuen, 1937) Olaf Stapledon published this science fiction exploration of the spiritual awakening of intelligent life in the universe.

as well as “a miraculous heightening of our own perceptive faculties”, in which case the hypothesis is neither true nor false. However, if we do that, *the hypothesis is not a proposition*, and therefore we have failed “to show that there are propositions which do not obey the law of excluded middle.”⁷⁹ If he had opted for this, Russell, like various verificationists, and pragmatists would have connected cognitive significance to the future *possibility* of verification. He rejects this rigid response, though, and it seems to be on methodological grounds. Russell’s notion of what is, and what is not, verifiable is modest. When we “embark upon an investigation, we *assume* that the propositions concerning which we are inquiring are either true or false; we may find evidence, or we may not.”⁸⁰ Here he defers, like Peirce,⁸¹ to the unpredictable advances we achieve in science:

Before the spectroscope, it would have seemed impossible ever to ascertain the chemical constitution of the stars; but it would have been a mistake to maintain that they neither do nor do not contain the elements we know. At present, we do not know whether there is life elsewhere in the universe, but we are right to feel sure that there either is or is not. Thus we need “truth” as well as “knowledge”, because the boundaries of knowledge are uncertain, and because, without the law of excluded middle, *we could not ask the questions that give rise to discoveries.*⁸²

What follows from this is that the land is greater than our maps, i.e. we do not make the land. Similarly, contra Nelson Goodman, we do not make stars but we do make models of stars. One might wonder how it is that I can refer to land or stars that have not been modeled – what is the significance of a term like “unmodeled star”? The answer relies acutely on our recognition of the fact of the underdetermination of our theory by the data. Our theories are gappy and incomplete. It does not follow from this that the world is gappy or incomplete. Like Russell, we should accept the future possibility of providing a model which *fills in* a gap in our theory.

While Russell’s adherence to the law of the excluded middle is not naturalistic enough, he has given us an important insight into how we might naturalize the intuition that truth is wider than knowledge. What this amounts to is that we should hedge on the Principle of Transcendence.⁸³ While I maintain that it is models that make statements true, and our models

⁷⁹ Russell *An Inquiry* 278.

⁸⁰ Russell *An Inquiry* 288, my emphasis.

⁸¹ Peirce makes use of the same example: “Who would have said, a few years ago, that we could ever know of what substances stars are made whose light may have been longer in reaching us than the human race has existed? Who can be sure of what we shall not know in a few hundred years?...how is it possible to say that there is any question which might not ultimately be solved?” 5.409

⁸² Russell *An Inquiry* 288, my emphasis.

⁸³ This is the principle that sentences are made true or false objectively or by the external world. It has its roots in logic and the hope of a GEVe.

are mind dependent technologies, I think that we can save what is important about the law of excluded middle by formulating a Principle of *Methodological* Transcendence. To see how this works we will have to examine Foss's Methodological Materialism and a more thorough defence of the GEV**m**.

4 TRUTH AND EPISTEMOLOGY

4.0 WIDE AND NARROW CONTENT

A favourite way of opposing the more abstract to the more concrete account is to accuse those who favour the latter of 'confounding psychology with logic.' Our critics say that when we are asked what truth *means*, we reply by telling only how it is *arrived-at*. But since a meaning is a logical relation, static, independent of time, how can it possibly be identified, they say, with any concrete man's experience perishing as this does at the instant of its production? This, indeed, sounds profound, but I challenge the profundity. I defy any one to show any difference between logic and psychology here. The logical relation stands to the psychological relation between idea and object only as saltatory abstractness stands to ambulatory concreteness. Both relations need a psychological vehicle; and the 'logical' one is simply the 'psychological' one disemboweled of its fulness, and reduced to a bare abstractional scheme.⁸⁴

Russell's conundrum regarding the "greenness, hardness, and coldness that we know in our own experience" has been a recurring theme. Science tells us that the curb in my neighbourhood "is not really yellow." Despite this it seems clear that statements like "the curb is yellow" is true. Both "the curb is yellow" and "the curb is not yellow" are made true by different models by different models with different virtues. How can we account for the instability that this seems to create in truth? An answer here seems to have something to do with what "the curb" actually means. Reference has been a problem that I have been putting off and I will continue to do so. The bottom line, however, is that questions of content come down to both truth and reference. We shall see in this chapter and the next that Russell's interest in the external aspect of language as well as the paradox that "naïve realism, if true, is false" have taken shape in the discussion of wide content.

Narrow content takes seriously the claim that truth, and meaning, is internal to a mind and its concepts. Wide content is the claim that truth, and meaning, are somehow, not merely *in the head*. Concepts get their content from, and truths are made true by, external or objective conditions. I contend that once we reject the sentential paradigm and allow ourselves the flexibility of models, we can account for the most important aspects of wide and narrow content.

Strictly speaking the framework I am building is mentalistic and internalist. Truths are made true by models and models are mind dependent technologies. But Foss provides us with a framework that can account for important aspects of wide content. Since the scientific modeling system provides us with objectivity, the statements that it makes true, are made true *objectively*. Since the various scientific models are constrained by the world, the statements that it makes false

⁸⁴ James, The Meaning of Truth 85.

are themselves *constrained* by the world. It is interesting that wide and narrow content get so much attention in the philosophy of language. Philosophers of science have spent eighty years trying to account for various aspects of objectivity and wide content. All we need to do is posit an interface between statements and scientific models, and then defer to the “wide” content of these models.⁸⁵

We have seen that before the philosophy of science and the philosophy of language went their separate ways, Peirce and Russell gave us clues on how to account for wide content – *we are uncertain about what we will discover and what we will verify*. And this implies another component of wide content – *we ought also to be uncertain about what others have already, elsewhere, verified*. These two dimensions of uncertainty are essential in accounting for the intuitions that lie behind wide content. It is no surprise that we can find in contemporary language philosophy, two mechanisms that mirror these components. Along one dimension we find that language is social and there is a division of linguistic labour. Along the other dimension, we find that the meanings of language grow and we find another division of labour, *into the future*. If models can account for these two dimensions we can account for the intuition that truth is wider than knowledge, while still maintaining an internalist conception of truth.⁸⁶ Interestingly, where epistemologists often find the social nature of humans to be a weakness or obstacle to be overcome in order to arrive at knowledge of the world, the components of wide content *rely* on the social nature of humans.

4.1 SOCIAL NATURE OF KNOWLEDGE

Unclear as it is, the traditional doctrine that the notion “meaning” possesses the extension/intension ambiguity has certain typical consequences. The doctrine that the meaning of a term is a concept carried the implication that meanings are mental entities. Frege, however, rebelled against this “psychologism.” Feeling that meanings are *public* property - that the *same* meaning can be “grasped” by more than one person and by persons at different times - he

⁸⁵ This explains, perhaps, the tenacity of the sentential paradigm. If scientific theories are objective, and scientific theories are sets of sentences, then it will be easy, via coherence, to show how our sentences interface with a larger linguistic structure. However, since language is not essential to knowledge or science, this approach has become strained.

⁸⁶ An attractive aspect of this approach is that meaning, knowledge and truth all become part of the same spectrum. - knowledge is wider than meaning, and truth is wider than knowledge. This is satisfying because it introduces normativity at every level. Paintings and sculptures are now all potential models by which we might usefully guide our experience. Further, ill-formed sentences and poems, can also define or illustrate models that are useful. Conversely, models that are “well-dressed” may do nothing for us and we are able to claim that they are *poor* models that fail to provide knowledge. We will see more of these gradations in section [4.2 Two Epistemological Principles](#).

identified concepts (and hence “intensions” or meanings) with abstract entities rather than mental entities...⁸⁷

Frege thought that thoughts were mind-independent. And Russell thought that the primary purpose of language was to indicate mind-independent facts. My concern is that this mainstream view of language tends to discuss at length the metaphysics of truth and reference while glossing over basic epistemological principles. Once we have abandoned the classical correspondence account of truth, we are free to think about truth in terms of human interests and human capacities. On my account, truthmakers are human constructed models. But this means that truthmakers are not simple entities. Models get their objectivity along a *variety* of dimensions. Most important is their predictive capacity. But no individual human is able to apprehend or use all of the possible models that there are. So no individual is able to use all possible models to make predictions or to test their predictive capacity.

This amounts to a rough and dirty distinction between understanding a model and understanding its warrant. I have used my car manual, for example, to change the head gasket, timing belt, and brakes on my stationwagon. This manual was a compilation of pictures, diagrams, and directions and I used these models to navigate the inner workings of my car and fix it. Of course, I was only able to do so because I have other models which the scientific model of the car depended on. A blind person, for example, could not have used that manual. The fact that I could successfully use the models is evidence of their objectivity. But, crucially, I do not really understand just how objective the model is, since I do not even understand all of the possible uses of the models. Conversely, I do not understand where the predictive capacity of these models fail (i.e. mechanics can tell both when the models overdetermine and underdetermine). I do not understand what instruments or processes were used to provide the information about torque or metal deformation specifications.

To cognize about the objectivity of a model is to model a model. This reflexivity marks a the creation of higher level models that are a vital part of being able to make our models more objective. But it also means that a complex model is made by many people and no individual may understand its full potential or its full objectivity. This social aspect of knowledge and science is a difficulty for empiricism. And even empiricists that tend towards pragmatism struggle with this tension:

⁸⁷ Hilary Putnam, “Meaning and Reference”, The Philosophy of Language, 4th ed. A.P. Martinich (New York: Oxford University Press, 2001) 288.

Rationality, reasonableness, reputation, scientific credentials - all of these epistemic standards must ultimately bow to the authority of empirical experience. This cannot always be the experience of other people, or else empiricism would amount to the acceptance of the authority of others. In the end, the empirical scientist, like those who learn from him or her, must interpret the model in terms of his or her own experience. How else could we understand its empirical content?⁸⁸

Foss is here affirming the difference between understanding a model and understanding its warrant. He is also suggesting that the act of understanding a model is not enough to warrant its use. Empiricism, he claims, cannot *amount to* the authority of others. It was this social aspect of knowledge and science that troubled Russell and Carnap. Where testing the predictive capacity of theories is largely a matter of repeating experiments, Russell notes that “others may repeat the experiment, and in the end the result becomes part of public knowledge; but this public knowledge is merely an *abstract or epitome* of private knowledges.”⁸⁹ This is part of the motivation for his distinction between metaphysical and epistemological truth. For Russell, and Frege, this was a problem only for epistemological truth. They were able to save the reality of public *truths* via propositions and the supernatural truth relations that came with them.

But pragmatic considerations have cut us off from this supernatural truth relation. So *public truth* is a useful fiction like “the average Canadian.” Similarly, the sum of all possible uses of a model is a useful fiction like the sum of all possible models.⁹⁰ And like all useful fictions, it has limits to its usefulness. The sum of all models is beyond any one individual and the justification and the objectivity of these models is also beyond any one individual. We have returned again to the conclusion that we are cut off from the GEVe. But more than this, once we recognize how very little any one individual can actually come to know, we must recognize that issues of trust and integrity are at the very heart of questions of fact and truthmaking.

Consider the standard model of the solar system. Most people take it on faith that the Earth travels in an ellipse. This ellipse presupposes a certain frame of reference. Change the frame of reference to the center of the Milky Way and the path of the Earth now looks very different. Similarly, most people take it on faith that the Earth is somehow tethered to the Sun by a force. By a geocentric frame of reference, the Earth is standing still. And by a relativistic model, the Earth is not experiencing any magic force at all. The Earth is traveling in a straight line through curved space. Nonetheless, the standard models that people use to make sense of

⁸⁸ Foss, The Riddle 103.

⁸⁹ Russell An Inquiry 143, my emphasis.

⁹⁰ I think this is a good way to see the truth relation of classical correspondence - it is a useful fiction like the God's Eye View.

their experience of the world are justified. But most people have not themselves understood these justifications. They have, reasonably, accepted the objectivity of these models on trust. I think this trust is well-founded. We might say that this trust is itself justified. This kind of second-order justification is a standard component of human knowledge and an important dimension of the felt objectivity of a model. As individuals, we cannot repeat every experiment and we cannot verify every observation. And as individuals, we cannot check the math or review the logic of every calculation. Instead, we rely on the integrity of instruments and systems of checks and balances. Most importantly, we rely on the integrity of individuals. The results of this are far-reaching. As Russell points out in 1940, if we commit ourselves to “first person” empiricism, it is not just substance and reality and secrets of the glacial epoch that disappear:

From the epistemological point of view...we may suppose that there are no unobserved occurrences...According to Carnap, there is only a linguistic question: “reality” is a metaphysical term for which there is no legitimate use. Well and good, but let us be consistent. I have not myself observed what I have learnt from testimony or from history...

...If a doctor says to you “your wife has cancer”, you feel no doubt that what you hear expresses a thought; you also have no doubt that, if the doctor is right, your wife is having and will have painful experiences which will not be yours. Your emotions would be quite different if you thought the whole thing merely a linguistic abbreviation for describing certain experiences of your own. This, of course, is no argument. But I notice that those who take the sort of view that I am combating always avoid applying it as against other human beings, and are content to apply it to such matters as the glacial epoch, which have very little emotional content. This is illogical. If the glacial epoch is only a linguistic convenience, so are your parents and your children, your friends and your colleagues.⁹¹

I take Russell’s point here, perhaps more seriously than he did. Where Russell claims that his appeal to human interests and healthy human functioning is not an argument, I think that it is. And I think that the kernel of humanism in this passage also asks us to be better epistemologists. Suppose a doctor tells someone, Harry, that his wife has cancer. Harry is in a position of having to decide whether to trust the doctor’s model or not. But the doctor’s model includes a model of Harry’s wife’s painful experiences (his wife’s manifest modelling). So Harry is also in a position of having to trust his wife’s modelling of the world.

If Harry chooses not to commit to his wife’s model or the doctor’s model, the Doctor’s statements and the wife’s statements will not be made true by the models that Harry makes use of. Seeing this situation from the outside, we see that Harry ought to make use of better models and the wife’s statements and the Doctor’s statements are made true by the models that *we* make use of (the models we have stipulated). If Harry chooses not to commit to his wife’s model or the

⁹¹ Russell *An Inquiry* 281.

doctor's model, observe that *we* will think that this tells us more about Harry than it does about the real world situation. We are in a position of trying to understand and compare the background models of these humans. And importantly, these models can tell us about them as well as about the world. But as we will see in the next section, these sorts of epistemological considerations apply to *less* value-laden situations as well.

4.2 TWO EPISTEMOLOGICAL PRINCIPLES

You must bring out of each word its practical cash-value, set it at work within the stream of your experience...

*Theories thus become instruments, not answers to enigmas, in which we can rest. We don't lie back upon them, we move forward, and, on occasion, make nature over again by their aid. Pragmatism unstiffens all our theories, limbers them up and sets each one at work. Being nothing essentially new, it harmonizes with many ancient philosophic tendencies. It agrees with nominalism for instance, in always appealing to particulars; with utilitarianism in emphasizing practical aspects; with positivism in its disdain for verbal solutions, useless questions, and metaphysical abstractions.*⁹²

Suppose we are looking at an ancient map. We ought not to immediately infer that this map tells us about the world. We should first realize, that the map gives us information about those that made it. We might infer, for instance, that they *thought* that North America was the size of England. Even here, before we make this inference, we might first speculate that they merely *wanted* someone else (perhaps us) to think that they thought this. In this case, the makers of the map did not themselves think that North America was the size of England. If this is the case, then some statements that were made true by the map, were not held to be true by the makers, since they did not hold that the map was well-warranted. So "The New World is the size of England" is a statement that was not made true by a map that the makers actually *used* in that capacity. But "The New World is West of England" is a statement that was made true by a map that the makers actually *used*. And, in fact, even the sham map can be used with success in this capacity.

Because we are in an epistemologically privileged position of overseeing this thought experiment, we can stipulate which models are good and which are not, and which statements are made true and which are not. In those cases when we are not in a privileged position, if we have information about the integrity of the map makers or their intentions or interests, then we are generally in a better position to judge their sincerity. If we found out that this map was intended

⁹² James, Pragmatism 42.

for the king of another country, (perhaps to dissuade him from investing in the New World) then we will be more likely to judge this map to have been insincere.

But prior even to this inference we might first helpfully become aware of our own interests and capacities. So we might realize, for instance, that our inclination to interpret a land mass in the middle of the Atlantic as North America is a reflection of *us*, not the makers of the map. Indeed, they might have thought the land mass was the Orient, or they might have wanted someone to infer that it was. Indeed, it might have been their eagerness to find a good investment that led them to interpret the land mass as the orient. There is a recurring theme here: as good detectives we must become acutely aware of *ourselves* to improve our inferences and our knowledge of the world. Again, this should be no surprise, given that knowledge is a relation between a subject and the **GEVm**.

If one was particularly distrustful, one might decide that all of their models told them only about themselves. In such a case, one ends up in a sort of Cartesian theatre where one does not make inferences about “out there” since “out there” could be a mad scientist or an evil demon or a mental institution. I am inclined to think that this level of distrust tells me more about the individual than it does about the nature of the world. To survive and pursue healthy lives, we need to make predictions and inferences. As soon as you do this, whether it is getting directions or paying the rent, you are making judgments about the makers of the maps and models you are employing, and you are making judgments about the real world systems that the maps and the models are about. The catch is that we use language to express the models we employ, and to express the models we want others to employee. Often, the models we use and the models we foist on others are not the same. And often, the model that is expressed to us and the model we end up constructing are not the same.

So, for example, suppose we happen to manifestly hear a cow say “hello.” Before we make inferences about the world, we ought to realize that the fact *we heard* a cow say “hello” tells us more about *us* than the intention of the cow. If we spoke only Japanese, for instance, we would not have heard the cow. Hearing a cow say “hello” might remind us that we are high on acid. Or suppose you hear your name spoken from across the room at a party. This phenomenon tells us about yourself, your interests and your capacities. In this case, you ought not to conclude too hastily that someone was talking about you, or that anyone actually said your name. Or suppose that we find that an army of ants has written a sentence that looks roughly like, “Squares have four sides” (or a picture of Winston Churchill). Here again, I am inclined to think that this visual experience tells us more about us and our own models, then it does about the ants.

Or suppose that someone tells you that “Aliens are causing environmental damage.” What we do is construct a model of the background model he is operating from. Suppose that we infer that this person has *sincerely* expressed a background model about aliens and pollution. Further suppose that we eventually become confident that our model of his model is precise and accurate enough that we can claim *to make use of his model*, or that we *could* make use of his model. We would arrive at this position if the speaker made their background model explicit enough. Understanding the model does not commit us to inferences about the world. This is to say that we do not think that this model will help us to function in the way the speaker would expect. Nonetheless, their background model does have information content, and *used properly*, this model can help us navigate the world. As a business contractor for this speaker we could use this model to protect or improve our professional relationship, and as television producers we can use this model to design television programs. And importantly, the model can be understood well enough that if, in the future we get the right evidence, the model could turn out to be a scientifically useful depiction of our world.

Any given model is an *interaction* between a knower and the GEV \mathbf{m} , and as such, its content is given by both. So for any given model, we are in the business of trying to figure out how we can use it. As good detectives we must realize that we are sometimes warranted to make judgments about whether a model tells us *more* about the world or *more* about the maker. And as good detectives we must realize that sometimes a model tells us *more* about ourselves than about the maker. And like James and Putnam we must also realize that we cannot always separate the human contribution to a model of the GEV \mathbf{m} . I contend that PPS and PPH can help us negotiate between our own models, the models of other people and the GEV \mathbf{m} .

I have offered broad reasons for turning to models as a way to understand truths and truthmaking. But I intend to limit this model approach to truthmaking to a small class of sentences. We shall see that Giere and Foss (and Nancy Cartwright) think that, like other truths, scientific laws have to be brought down to Earth. Although I will take advice from their model approach to scientific laws, I will treat less complex cases of mostly simple indicatives.

4.3 GENERALIZATIONS AND LAWS OF NATURE

The conclusion I am inclined to draw from this is that, for the most part, the laws of physics are true only of what we make. The social constructivists tend to be scornful of the ‘true’ part. There is almost always the suggestion lurking in their writings that it is no surprise that the laws work for the very situations they have been designed to work for. The scientists in turn tend to shrug their shoulders in exasperation: ‘you try for a while and you’ll find out. It is a major

achievement to get anything to work, and it is just as hard to get a good model to describe it when it does.'

- Nancy Cartwright⁹³

The conclusion that Nancy Cartwright draws is that the laws of physics seem to be true with respect to the very carefully constrained and insulated environments in which they can be successfully applied. She refers to the laws of nature simply as *ceteris paribus* principles. She claims that "the laws of our contemporary science are, to the extent that they are true at all, at best true *ceteris paribus*."⁹⁴ Taking up an example from Neurath, she points out that none of the models we have can predict when and where a thousand dollar bill will land when dropped from some height in Saint Stephen's Square. Like Austin's Martian Goose (see section [5.1 Facts And Hexagons](#)), we don't take this to falsify Newton's science of gravity. This is because the non-gravitational influences on the dollar bill are too strong and too difficult to measure. Interestingly, we only use Newton's model in those carefully constrained situations where we find that it works, or where we *project* that it *will* work. She observes that "When the models are too bad a fit, the theory is not disconfirmed; it is just inapplicable."⁹⁵ Where we cannot find these situations, we create them, as in the case of airplanes:

The thousand dollar bill comes as it comes, and we have to hunt a model for it. Just the reverse is true of the plane. We build it to fit the models we know work. Indeed, that is how we manage to get so much into the domain of the laws we know.⁹⁶

This relationship between the laws of nature, models and the world, is similar to that of Foss and Giere. What they have each concluded is that scientific theories are not simply the collections of sentences that philosophers have thought they were. The covering law model of science is therefore inadequate to describe the relationship between theories and the world. And, as a corollary to this, that the *laws of nature* are not the God-given imperatives that scientists and philosophers have thought they were. I think that this view of the laws of nature captures the intuition behind eternal truth and the Principle of Transcendence.

We can approach this by looking at a central motive in Foss's project. It is packaged as a *reductio ad absurdum* argument regarding Newton's science of gravity. On Newton's account the claim that, "The force of gravity is proportional to the product of the masses divided by the

⁹³ Nancy Cartwright, The Dappled World (Cambridge: Cambridge University Press, 1999) 47.

⁹⁴ Cartwright, The Dappled World 33.

⁹⁵ Cartwright, The Dappled World 26.

⁹⁶ Cartwright, The Dappled World 28.

square of the distance between their centres of gravity" is true.⁹⁷ Now suppose that we find out that "centre of gravity" is a fictional abstraction like 1.6 Canadian children. Suppose we find out, as people did in the Twentieth Century, that Newton happened to overlook time dilation and other relativistic affects. Or, suppose that we find out that on Einstein's theory of gravity, gravity is not even described as a force. Newton's presuppositions that the mass of a moving body is constant, that space is an absolute fixture in which bodies move about, and that bodies can travel at *any* velocity, are all, strictly speaking, false. Foss observes that "Newton's laws might just as well be called Newton's fictions."⁹⁸ On the sentential paradigm, these findings commit us to the position that every claim that Newton made about gravity was, strictly speaking, false. The same holds for engineers, pilots, baseball players and astronauts. And if the concepts of relativistic physics proves inadequate in 30 years, then everything humans have said thus far about gravity has been, strictly speaking, false. But this is absurd. This is why Foss wants to abandon the black and white nature of truth and falsity that comes with the sentential paradigm. We can focus, instead, on the properties of precision and accuracy that models afford us. On these more flexible criteria Newton's model is, in many contexts, still excellent. It happens to be the model that fills physics texts and it happens to be the model by which we still successfully launch satellites.

But the Law of Universal Gravitation and Newton's Laws of Motion are supposed to be *universally* true. Like Foss, Giere argues that on the sentential paradigm these laws are, strictly speaking, *not even true*. It might be, after all, causally impossible to find a real world gravitational system where there are no electromagnetic or nuclear forces involved. The laws require so many qualifiers, or *ceteris paribus* principles, that it is "impossible to fill in the proviso so as to make the resulting statement true without rendering it vacuous."⁹⁹ Perhaps more convincingly, *it is* impossible to fill in the proviso sufficiently since undoubtedly our future physics will warrant more qualifiers. In 1988, Hempel argued that the proviso that makes a Law of Nature true is implicit.¹⁰⁰ Giere's rejoinder here is that if the proviso were actually implicit then one would think that proviso could have at least been formulated:

This problem is particularly evident in cases where the implicit proviso must be understood to be expressed in concepts that are not even known at the time the law containing the implicit proviso is first formulated. Most of the laws of mechanics as understood by Newton, for example, would have to be understood as containing the proviso that none of the bodies in

⁹⁷ $F_g = Gm_1m_2/r^2$, where G is a constant that measures the proportional relation of gravity.

⁹⁸ Foss, The Riddle 41.

⁹⁹ Giere, Science Without Laws 91.

¹⁰⁰ Giere, Science Without Laws 90.

question is carrying a net charge while moving in a magnetic field. That is not a proviso that Newton himself could possibly have formulated, but it would have to be understood as being regularly invoked by physicists working a century or more later.¹⁰¹

Giere observes that the fact “no interpretation of science can make everything explicit”, is “one of the major lessons of post-positivist philosophy of science.”¹⁰² In section [1.4 From Stable Truths To Eternal Propositions](#), we saw that the flight from intension was a matter of making contextual and other extra-linguistic information explicit in the statement in order to make the statement less context or viewer dependent. And, like Giere, in section [3.2 Quine And An Infinite Regress](#) we saw that this effort to make extra-linguistic information *completely* explicit can never succeed. In practice, we make the background model that is in question explicit enough for another human to successfully use it.

For example, suppose I claim that “It is five thousand kilometres from Calgary to Halifax.” Given an inquiry regarding the fuel cost of driving from Halifax to Calgary, this statement and the map it defines is warranted. If pressed about my background model I would admit that I once drove from Halifax to Calgary and that I kept track of the distance on my odometer, which might be a source of error. Importantly, I just rounded off the few extra kilometres that my odometer indicated. It would not be warranted, for example, to assert that the distance was five million twelve thousand metres or even five thousand and twelve kilometres. My background model does not provide these details – a model with this level of precision is not warranted. Consider the following statements:

P1: It is 5,000 kilometres from Halifax to Calgary.

P2: Every kilometre is 1,000,000 millimetres.

C1: It is 5,000,000,000 millimetres from Halifax to Calgary.

At first glance, C1 appears to follow from P1 and P2. After all, the relationship between kilometres and millimetres is one of definition. But importantly, C1 only follows if the background model *stays the same*. Suppose P1 is made true by my “driving” model which we are using to estimate the fuel cost of the trip. In this case the margin of error is understood to be several hundred kilometres. But in this case the margin of error for C1 is several hundred million millimetres. As a matter of scientific *convention*, C1 is false because it fails to make explicit the appropriate margin of error.¹⁰³ However, once it is recognized that the background model

¹⁰¹ Giere, [Science Without Laws](#) 91.

¹⁰² Giere, [Science Without Laws](#) 91.

¹⁰³ Actually, even the statement “It is 5000.000 000 kilometres from Halifax to Calgary” is considered, by itself, not to be a valid inference in physics circles since the number of decimals is a way to signal error.

includes the margin of error, it must be granted that C1 is true. It is arguable that there is a missing premise in this argument which ensures that the error is carried through to the conclusion. But this just serves to remind us that, like statements, arguments are background model dependent and that my particular background model will not be useful in a context which requires a higher degree of precision. Neither will it be *warranted* in some contexts. As the stakes get higher the level of justification, quite reasonably, gets higher. I would bet a week's wages on the accuracy of my "driving" model, but I would not bet my life on it.

Small sources of error might include the times that my tires spun or the distances that I diverged from the path (gas station turnabouts and small town food stops). But I would also have to admit that although I kept track of the distance conscientiously, that my trip was five years ago and so my memory is a factor. And of course there are many paths from Halifax to Calgary, and I would have to explain that I took mostly Highway One except at X, Y, and Z. And Highway One itself breaks off in Ontario into A or B, so I would have to provide these details (if I could remember them). Note that these details are only important if the hearer is taking a different path from Halifax to Calgary. A model of the distance, for instance, which presupposes a path from Halifax to Calgary, *via Florida*, will not make true the claim "It is five thousand kilometres from Calgary to Halifax." And a model of the distance, *as the crow flies*, might also falsify this claim.

Note how many models we might invoke regarding the distance from Calgary to Halifax. Distance, after all can be given in units of time if the method of travel is specified, as in "It is eight hours from Calgary to Halifax." But the actual path of this airplane is an arc through three-space so this distance is different than the ground distance. Actually, the highway is also an arc through three-space (the distance is about an eighth of the circumference of the Earth and traverses an even larger portion by degrees of longitude since the circumference at that latitude is so much smaller). And we cannot forget that the Alberta prairies are at a higher altitude than Halifax. We could model the distance between Halifax and Calgary in terms of a straight line that travels through the Earth. But there are still questions regarding the starting and ending points of our measurement. Even if we settled this, every method of measurement will introduce

The number of zeroes ought not to exceed your error. So, we can say that the distance is $5.0 * 10^3$ kilometres or $5.0 * 10^9$ metres, but not $5.00 * 10^9$ metres. It's even better to include the error range. The rules of surrounding the propagation of error through various calculations are an important part of every arithmetic operation.

interesting distortions.¹⁰⁴ The best models include each of these different models as a part. And the fact that we can move between these models is evidence that we make use of a powerful meta-model that facilitates these movements. That we make statements which so often seem true despite the fact that they lack all of these sorts of explicit qualifiers, and *ceteris paribus* principles, results from the fact that we share so many of the background models which make them true. But these models are useable in some contexts and not in others. And these models are warranted in certain circumstances and not in others.

But this is similar to the laws of physics. A law of physics is made true by a certain kind of model, the use of which is warranted in certain carefully insulated conditions. But laws of physics and other generalizations are *slightly* different. We can get a sense of this difference by noting an ambiguity in the way I have been suggesting that statements define models, and that statements are made true by models. Foss and Giere reveal this ambiguity in their discussion of the scientific laws. Giere tells us that statements and equations define models. Laws of nature are statements and equations, so they too must define models. But Giere also tells us that it is the models that provide the carefully disinfected circumstances in which scientific laws are made true:

My reference here to Newton's *equations* of motion rather than his laws of motion is deliberate...Interpreting the equations as laws assumes that the various terms have empirical meaning and that there is an implicit universal quantifier out front. Then the connection to the world is relatively direct. The resulting statement is assumed to be either true or false.

On my alternative interpretation, the relationship between the equations and the world is *indirect*...By stipulation, the equations of motion describe the behavior of the model with perfect accuracy. We can say that the equations are exemplified by the model or, if we wish, that the equations are *true*, even *necessarily* true, for the model. For models, truth, even necessity, comes cheap.¹⁰⁵

So here, like Cartwright, Giere thinks that the laws are true *with respect to a model*. Similarly, we saw that Foss thought that Newton's claims about gravity were true with respect to his gravitational model. But Foss also thinks of scientific laws as rules that govern the transitions from one state of affairs of a model to the next. On this view, the scientific laws look a lot like logic-specific rules of inference, or model-specific transition principles.¹⁰⁶ But this is what

¹⁰⁴ Gravity is considered to be a weak force, and we have confirmed that even the small gravitational field of the Earth introduces measurable relativistic affects.

¹⁰⁵ Giere, Science Without Laws 92.

¹⁰⁶ Foss, The Riddle 99. Foss makes this claim about scientific laws in the second step of his theory of explanation. An explanation consists of: "(i) it begins with an *initial map* specifying an initial state of affairs at a time prior to, or simultaneous with, the phenomenon to be explained. (ii) It employs a set of *scientific laws* governing transitions from one state to the next through time, whereby the other members of

Cartwright meant when she claimed that where we do not find uniformity we *construct it*. Our models are *predictable* because we understand, or rather, we stipulate their laws by which they operate. And if we want “situations to be predictable, we had better engineer them carefully.”¹⁰⁷ In a more general sense, Foss thinks that “scientific laws specify our mapping conventions.”¹⁰⁸ So they guide us in *generating* models and we test the laws by testing the models they generate. We might say that scientific laws are methodological constraints we place on our model *making*. Giere also thinks that scientific laws are methodological principles:

Principles, I suggest, should be understood as rules devised by humans to be used in building models to represent specific aspects of the natural world. Thus Newton’s principles of mechanics are to be thought of as rules for the construction of models to represent mechanical systems, from comets to pendulums...Interpreting them as universal laws laid down by God or Nature is not at all required.¹⁰⁹

I think this is a helpful way to make sense of generalizations like “All snow geese migrate to Labrador” or “All doorknobs operate by turning.” To appreciate this consider the awesome functional capacity we have with respect to doors and doorknobs. There are more tokens of doors in the world than humans can count. But we can classify large numbers of these doors into just a few types. We make use of models that allow us to function and which lead to predictable experiences. The claim that all door knobs operate by turning is interestingly similar to laws of nature. On the one hand, this statement is made true by the cultural and scientific models about doors and doorknobs. On the other hand, these models successfully exclude all of the door handles that are not small, round, and turnable. Moreover, humans do not make doors with *doorknob-like* handles that have to be pressed in and out or moved up and down because this would not provide the uniformity we desire in door functioning. And finally, if we did find such a doorknob-like device, or a *broken* door knob, we would not take this to falsify our useful and well-warranted model. As such, in most situations, the claim “All doorknobs operate by turning” *would still be true*.

However, suppose we find out that a manufacturer is producing a door with a deadbolt and a separate handle that was small and round but did not turn. This doorknob operates by

the series making up the model are derived from the initial state. (iii) It *includes* a map or model of the *phenomenon to be explained*.” This is more refined than the theory of explanation we saw in Craik’s Theory Of Explanation. But the second step has the interesting similarity of an inference or a process of *reasoning*.

¹⁰⁷ Cartwright, The Dappled World 73.

¹⁰⁸ Foss, The Riddle 46.

¹⁰⁹ Giere, Science Without Laws 94 - 95.

simply providing a handle but it does not turn. This discovery effectively constrains the scope of the claim “All doorknobs operate by turning.” Taken as a universal before, it was as much of a hypothesis which guided our *construction of models* as it was a claim made true by a model. Taken as a universal, now, it is made false by the model we have constructed.

But this is a useful way to understand other existential claims as well. The claim “There are no oranges” is made true by the speaker’s model of their house (not their country). If the model was being used to navigate breakfast than the discovery of one rotten orange behind the fridge will not render this model unuseful. If the model was being used to navigate a guest’s allergy, however, a rotten orange warrants a new model that will falsify the original claim.

4.4 METHODOLOGICAL TRANSCENDENCE

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 *somebody are* the posts of the whole superstructure.¹¹⁰

We saw in Chapter One that the GEV_e formed the basis of the ultimate stability of truths as well as the basis for the Principle of Transcendence. And we have seen that the intuition that truth is transcendentally stable, while being rather supernatural, is an important one. I contend that the stability that truth acquires is best understood as meta-stability and that the Principle of Transcendence is best understood, like generalizations and laws of nature, as a guide in generating models.¹¹¹

To appreciate this remember that while pragmatists disagree about the nature of the GEV_m it is a vital part of the pragmatist worldview of Giere, Foss, and James. Like Russell, pragmatists recognize that you need models and their ontological commitments *simply to start an investigation* (see section 3.6 *Star Modeling And Possible Verification*). Where James admits that

¹¹⁰ William James Pragmatism 103.

¹¹¹ This is also a good way to understand the Law of Noncontradiction. Every model worth its salt will not make true a contradiction. So the Principle of Non-contradiction becomes a guide to constructing models: meet a contradiction, make a distinction. If you make use of a model that makes true the claim “The water is hot” and you make use of a model that makes true the claim that “it is not the case that the water is hot” then construct a meta-model that embeds and makes compatible these two different truthmaking models. If the squirrel goes “round the man” and the squirrel fails to go “round the man”, then construct two different truthmaking models that are embedded in a single unifying meta-model.

a concept of a mind-independent world is a perfectly useful concept, Foss extends this to the view that a concept of a single, unified, material world is a perfectly useful concept. Since this commitment to the Big Model *and the GEV* is *methodological*, this realism is best described as metaphysically modest. It is a hypothesis that has led to remarkably many discoveries and one that explains remarkably well the profound uniformity that we experience in the universe.

We have seen that both Giere and Foss see scientific laws as guides or principles that help us generate models. In this light, both Giere and Foss can be seen to be espousing another law of nature. They affirm the Law of Materialism, on methodological grounds, as a way to further science and investigations. And, importantly, it acts as a guide in constructing models:

Of course, from a naturalistic perspective, one cannot offer transcendental arguments in favour of a “one world” hypothesis. One can, however, take it as a methodological rule: Proceed as if the world has a single structure...It is an invitation to further inquiry to find models that eliminate the conflict, although there is no guarantee that such models will be found...¹¹²

And Foss:

Information flows via causation. And causal connection between two things is the best reason for taking them to be in the same ontological order. This fact about the flow of information goes a long way towards justifying the primacy of method over theory. To discover a method of mapping something first requires finding ways to detect it and its features, that is to engage it causally in such a way as to get information from it....Metaphysical modesty says we should not dictate to nature, or second guess her. She leads, we dance...¹¹³

So materialism amounts to a very general or fundamental principle that allows us to generate models. With respect to modelling truths and truthmaking, the Law of Materialism has led us to conclusions that the metaphysical realist has rejected. Importantly, it leads us to try to generate a Big Model. But the Big Model is still a model, and it is still a model *for humans*. After all, even within physics one finds progress. Old models are used to create new models of larger scope, and greater accuracy and precision, which then often embed the older lower level models. But as we have seen, this division of labour and this kind of progress does not merely occur over time. Different models also mark the domain of different sciences. Foss observes that the domain of each “special science is related to the Big Model in the way that an inset map is related to its associated larger map.”¹¹⁴

¹¹² Giere, Science Without Laws 82 - 83.

¹¹³ Foss, The Riddle 181.

¹¹⁴ Foss, The Riddle 53. Note that this is a reiteration of James rejection of *action in distans* with regard to truth. A cognitive relation consists of “affects” that “run together” in a “concrete medium and bottom” (see section [2.2 Classical Truth And Isomorphism](#)).

This picture of a large map which includes numerous inset maps is a powerful image of the way we end up with metastable truths. But note that Foss has told us that our manifest model is different from our scientific model. Not surprisingly, the asymmetries in the models carry over into interesting asymmetries in the way they make statements true. Presupposing the competency of an agent's language faculty we see that the truth of "That is yellow" or "I see yellow" is achieved primarily by the *honesty* of the speaker.¹¹⁵ But interestingly, the truth of "Agent x had an experience of yellow at time x and space y" or "The curb is made partly of carbon, hydrogen and oxygen" is somehow less attached to the sincerity of that *particular* speaker. Given its dependence on manifest models it is still reliant, at some point, on honest testimony.

But it makes sense, I think, to say that while I do not fully understand relativistic physics (or all of the ways it has been verified or all of the uses it has) it is true that clocks with enough precision can measure the time dilation that occurs as a result of the acceleration due to gravity. Even the statement "Time in the Philosophy department moves faster than time in the Linguistics department" is true. The catch is, that it is not made true by a model *that I fully understand* or that I could make full use of in a physics context.

Here, William James' metaphor of the cash value of a truth comes in handy. James thinks that most trade occurs on credit. *Eventually* truths that we accept on credit must be brokered for their cash value. So we accept models and later when we cash them in we learn about its objectivity. We saw that for James, truth *happens* when it becomes warranted. So, in the language of models, we might say that truth happens when we learn just how objective a model actually is. But I have an outsider's sense of just how objective Einstein's theory of gravity is. If I make a claim that goes beyond the warrant of the model that I make use of, then truth does not happen, i.e. truth is not made. But truth *could* happen and this forms the basis of the Methodological Principle of Transcendence: statements are made true by objective models and if no such objective models are at the disposal of a human here or now than such a model *might* be. It is in this sense a principle of truth-on-credit.

Where laws of nature are guides for generating scientific models, and methodological materialism is a guide for generating the Big Model in which other scientific models are embedded, the Principle of Methodological Transcendence is also a guide for generating models

¹¹⁵ A model of truthmaking like the one I have laid out here provides information about truths and truthmakers. Telling someone that what they say is not true is one way of telling them that they have incorrectly used a sentence, or that they have failed to make their background model explicit enough. But this is merely to comment on the linguistic conventions of a particular linguistic structure. By presupposing competency of these linguistic conventions we can focus on the truthmaking end of the relationship between truths and truthmakers.

that can later be verified. It reminds us that we might find or construct a model that makes true, or false, a claim which is currently false, or true, or a claim that is currently not made true nor false.

4.5 STABLE TRUTHS AND AN OMINOUS GAP

To deny, as I do, that there is a “ready-made world” is not to say that we make up the world. I am not denying that there are geological facts which we did not make up. But I have long argued that to ask which facts are mind-independent in the sense that nothing about them reflects our conceptual choices and which facts are “contributed by us” is to commit a “fallacy of division.” What we say about the world reflects our conceptual choices and our interests, but its truth or falsity is not simply determined by our conceptual choices and our interest.¹¹⁶

J.J.C. Smart suggests that it is “characteristic of realists to separate ontology from epistemology and of idealists to mix the two things up.”¹¹⁷ I have relied heavily on the difference between epistemology and metaphysics. I have done so by taking up the distinction between models and terrains, but I have affirmed an internalist theory of language. Separating epistemology and ontology is analogous to the intuition that we ought not to collapse our models with the terrains. Where Armstrong has told us that the history of philosophy can be understood as a struggle between attributes and substances (see section [1.6 Truthmakers And The Disappearance Of Truth](#)), I see the history of philosophy as a struggle between models and the GEV**m**. Armstrong told us that the gap between substances and attributes led to scepticism and this scepticism led to two common responses: (1) reject substance (reject the GEV**m**), or (2) affirm that substance is the truthmaker of our statements (affirm access to the GEV**e**). These are, in broad strokes, the responses of the Empiricists and the Metaphysical Realists. But we want to be both fallibilistic and naturalistic, contra the Metaphysical Realist, and, contra the empiricist, affirm the GEV**m**. Pragmatism has prescribed, for us, a middle path between these two options: affirm substance by affirming the GEV**m**, reject the GEV**e**, but affirm stable truths by affirming other *objective* truthmakers.

Interestingly, unlike James, Dewey, Putnam and Giere, it may not be clear that Foss has rejected the notion of the GEV**e**. To see that he has we might inspect the motivation for Foss’s claim that science is best understood as a collection of models. First of all, scientific textbooks are filled with diagrams and maps and models. And interestingly, a French physics textbook will

¹¹⁶ Hilary Putnam, Renewing Philosophy (Cambridge: Harvard University Press, 1992) 58.

¹¹⁷ J.J.C. Smart, “Idealism and Realism” 169.

be filled with the *same diagrams* and models as an English physics textbook. Furthermore, these diagrams and models are, in many cases, the same diagrams and models that have been occurring in scientific treatises for three hundred years. This unity is an important aspect of Foss's interest. Contra the linguistic paradigm, seeing science as a progression of maps and models provides a view of scientific progress that is not so lumpy and discontinuous. Foss points out that the "flaws of ancient world maps are obvious to the modern eye, and yet they contain lots of information."¹¹⁸ The fact they were used successfully to make journeys is "proof" of their objective content. Moreover, the maps are often astonishingly similar to contemporary ones and you can see these similarities. Although it is possible to show similarities between ancient maps and contemporary ones, this is not always the case.

Early empiricists were impressed with the fact that if one hand is hot and one hand is cold, the respective perceptions of a single body of water would be *cold and warm*. They solved this apparent contradiction by making a distinction. In terms of models, we can say that with respect to the right handed modeling system, the water is warm, and with respect to the left handed modeling system, the water is cold. This should remind us of Russell's remarks concerning the behaviourist's observations – their observations are reflections of an *interaction* between themselves and the thing they are observing. So the information content of our models reflects the *interaction* of our modelling systems and the thing being modeled. So in the case of a body of water, we create a meta-model which accounts for this difference by becoming acutely aware of the different modelling systems. We simply keep track of the prior states of the hands (right hand cold to start, left hand hot to start) so that our meta-model *includes* this information. We might, for example, ask someone whose hands are particularly thermo-static to judge the state of our hands prior to putting them in the water. There are, however, limits to this process. We cannot safely measure the affects of *very* hot and *very* cold things directly on our hands. One solution to this problem would be to try to measure the relative hotness of things via some mediating heat buffer. This could take the shape of an oven mitt that would transmit some of the heat consistently so that one could make consistent judgements. A better answer to this was to rely on our visual modelling system that is safely distant from the dangerously hot or cold item.

This amounts to a higher level meta-model which allows us to use a "temperature yardstick" to measure heat and temperature. This meta-model eventually became objective enough, by accounting for information about the self, that we can predict which hand will feel

¹¹⁸ Foss, The Riddle 42.

cold and which hand will feel warm.¹¹⁹ Importantly, these higher level meta-models of heat and temperature are geometric and have no obvious similarities to the initial tactile modelling of these phenomena. *But this is simply because we have changed our model from being keyed to our tactile modality to being keyed to our visual modality.* Colour aside, the visual modality seems wondrously able to provide us with higher level models of greater scope, precision and accuracy. Foss takes the relation between geometry and vision very seriously, while observing that geometry does not seem limited to vision alone:

We cannot help but notice that geometry itself, the *sine qua non* of science, bears a special relationship to our faculty of sight...On the other hand, there is more to geometry than is given in vision alone...A key piece of evidence concerning the special place of spatial properties in both the manifest and scientific models is the fact that they are not limited to any single sensory modality.¹²⁰

The difference between spatial maps and models, and non-spatial maps and models marks the difference between primary and secondary qualities. But Foss notes that the non-spatial qualities like manifest heat and manifest sound are still located within a *common* spatial modelling system. Thus “when it came to the business of integrating the sensory modalities, the task was best achieved by the modality with the greatest precision, accuracy, and scope.”¹²¹ Foss further notes that “information provided by hearing, smell, touch, taste, and the rest, could be embedded in the information provided by vision, but not conversely.”¹²² But crucially, as Berkeley was happy to point out, the apparent continuity between geometric models does not mean that the causes of the models, i.e. the GEV**m**, is similar to the models themselves. For Foss this conclusion comes packaged as a rejection of the strict difference between the Pythagorean and Galilean intuitions. These intuitions are respectively, “that geometry is part (if not the whole) of the fabric of the physical universe itself” and that “the sensual properties cannot be accommodated in the physical world as conceived according to this Pythagorean ideal of clarity.”¹²³ But we see now that geometry, like colour, sound, and heat, is an aspect of our

¹¹⁹ Because the specific heat of water and our hand is so similar, we can use a thermometer to see if a hand is warmer or cooler than a body of water, and then predict if the human hand will feel warmer or cooler. Even here, though, we need information about perceptive thresholds to predict if the human will register the heat difference or not.

¹²⁰ Foss, The Riddle 87.

¹²¹ Foss, The Riddle 89.

¹²² Foss, The Riddle 89.

¹²³ Foss, The Riddle 60.

models. Whether it is also a part of the GEV**m** is a further inference that, by itself, does not follow.

Take, for example, my favourite yellow curb in my neighbourhood. Someone walks by and on the level of manifest modelling her statement “That is yellow” is true. By virtue of a combination of her manifest model and a cultural model in which curbs are human artefacts, her statement “That is a yellow curb” is true. By virtue of an interior designers’ eye for colour the statement “The curb is saffron” is true. A little building experience will yield a model that will make true the claim “The curb is not concrete.” A more scientific model will make true the claim “The curb is made, in part, by the products of long dead plants and animals” or “The curb is composed partly of hydrogen, oxygen, and carbon.” Each of these statements *are about different things*. These statements define models or *interactions* between a knower and thing known.¹²⁴ Despite the variety of persons and times involved in each of these occasions of utterance, it is also clear that, although the statements are about different things, the models are about the *same* “thing”. Stating or modeling what this “thing” is brings us back to the Momentous Tautology. Nonetheless, most of us judge that there is a such a “thing” and this judgement is evidence of a higher level model which embeds each of these other models. This higher level model *unifies* these lower level models. Not surprisingly, we generally talk about this “thing” via its geometric properties. Foss claims that this unification culminates in a Big Model:

Physics has a special place in science: it is the only science that applies over the entire domain of the Big Model: the big, the small, the present, the past, the living and the non-living...Cosmology, chemistry, biology, and every science must have its specific sub-domain within the Big Model. In fact, each has its own domain on the time line: in the beginning there was only subatomic physics, then physics, then stellar physics, then chemistry, then biology, etc...¹²⁵

This Big Model has, of course, an ontology:

The authority of physics stems from the fact that everything in the world, no matter what, is a physical thing. Of course, this is not universally granted. However, admission of the physical nature of the things and phenomena within its own domain is the *sine qua non* of any special science. Chemists profess that all chemical phenomena are entirely physical, astronomers insist that stars are made only of the ordinary stuff see around us, biologists recognize that all living things are composed completely of the protons, neutrons, quarks, and various other entities

¹²⁴ Note that we seem to view this thought experiment from the outside, which allows me to distinguish between the knower and the thing known. In fact, what I am doing is constructing a model in which we differentiate between someone’s model and the thing it models.

¹²⁵ Foss, The Riddle 55.

listed in physics texts. *This is decidedly not to say all the properties and processes of the world are found in those same texts.*¹²⁶

We find ourselves in a bind here. In our effort to construct meta-models that provide a way to embed the information content of lower level models, we are again stuck with the practical difficulties of becoming aware of this information content and trying to make it explicit. So colour, heat, sound and other sensuous properties are no longer part of our *physical* model of the world. These are not an essential part of the GEV**m**. They *are* an essential part of the lower level models on which the GEV**m** depends – so they are *extrinsic* properties of the *way* we model. But we have “imprinted the geometry of our visual system onto the world, just as we have painted it with sensations of heat and cold.”¹²⁷ If there is to be progress in science and philosophy we must become acutely aware that various geometric properties might not themselves be an essential part of the GEV**m**. They do seem to be, by virtue of the dependence of the scientific models on our manifest model, necessary properties of our most powerful models. We have returned to the Momentous Tautology and we have returned to James’ conclusion that it is difficult to separate what we contribute to our experience from what the rest of reality contributes to our experience. And we have similarly returned to the pragmatist conclusion that knowledge is *for humans* and this cuts us off from the GEV**e**. This led us to Foss’s notion of objectivity that focused on the *addition* of perspectives and information content. But this objectivity is epistemological objectivity. So each statement about the yellow curb is made true by its associated model, *not by the ontology of the model*.

Each model is embedded, for a sufficiently sophisticated individual, in a Big Model. So the ontology of the lower level models and the Big Model *are the same*. This deep sense of ontology is simply the GEV**m**. This is the point of separating epistemology and ontology, and maps and terrains. This is the crux of Giere’s perspective realism and this is the crux of Foss’s riddle of consciousness. We do not have two worlds, we have two views of *one* world.¹²⁸ If Foss makes a mistake here, it is his sympathy with the Fregean view that the truth-value of a statement is given only by the mind-independent GEV**m**:

¹²⁶ Foss, The Riddle 57, my emphasis.

¹²⁷ Foss, The Riddle 90.

¹²⁸ We shall see in section [4.7 Hesperus Is Phosphorous And Water Is H2O](#), that many philosophers are seduced by the apparent advantages of talking about multiple worlds.

"Two worlds, this means two truths or no truths at all. This is the tragedy of the modern mind, which solved the riddle of the universe but only to replace it by another riddle, the riddle of itself."

Why is this a tragedy? Well, the tragedy is this: the very habits of mind which helped us solve the riddle of the universe, those very habits themselves make it impossible for us to understand ourselves. And if we have two truths, and thus two worlds, we've made a mistake because surely the world cannot be two. The world must be one. It cannot have sort of a divide down the middle. So if we have two worlds, then we have no truth at all.¹²⁹

Here we see Foss's sympathy for Koyre's suggestion that the two-worlds dichotomy is a tragedy for truth. Of course, the answer to this tension is that it is simply not the GEV**m** that makes our statements true. Given this we do not have to choose between two truths or none – we see that truths are made true by different sorts of models with different sorts of virtues. It is at the level of the Big Model that the Ominous Gap appears between the Big Model and the GEV**m**. But the Gap between our models and the GEV**m** is present at *every level* and ultimately it simply amounts to *evidence of another sort of buried secret*.

Strangely, the gap between other models and the GEV**m** does not bother us nearly so much as the Ominous Gap. The manifest model of "that yellow thing" is not isomorphic with the thing it models, yet it is decisively factual. The model that makes true "Snow is white" is not isomorphic with the thing it models, yet it is a paradigm fact. There is a gap between the world and the model that makes true "The water is such that my right hand is warm and my left hand is cold." And there is a gap between the GEV**m** and the models of the GEV**m** that make true statements like "The table is round", or "DNA is a double helix", or "Light travels in a straight line." These gaps stem from our inability to *completely* account for our contribution to our model (even the Big Model) of the GEV**m**.¹³⁰

¹²⁹ Foss on Alexandre Koyre, "Science And The Qualities Of Consciousness", September 28, 2001, posted 6 November 2001, revised December 2001, (on <http://www.douglashospital.qc.ca/fdg/kjf/42-TAFOS.htm>.)

¹³⁰ My intuition here is that we will never be able to *completely* account for our contribution. This intuition stems from my agreement with James that knowledge happens by addition, not subtraction, and my belief that the human capacity to build models is not infinitely elastic.

5 TRUTH ON CREDIT

5.0 PUZZLES ABOUT TRUTH

There are several puzzles in the philosophy of language that mark out several obstacles to the formation of any theory of meaning and truth. Many take these puzzles to be evidence that we need to treat language as if it had both an internal and an external aspect. I will show that the internalist can appeal to models to avoid the supernaturalism that comes with either the classical correspondence theory of truth or externalist theories of reference.

1. Austin thought many statements ought not to be thought of as true or false. These statements led to various pragmatic theories about how we use language. But this reinforces the belief that truth-conditional theories of meaning are somehow separate from internalist theories of meaning. I think that if statements like “France is a hexagon” cannot be true or false then statements like “DNA is a double helix” cannot be true or false. But this consequence must be incorrect.¹
2. Frege was interested in the difference between “Hesperus is Hesperus” and “Hesperus is Phosphorous.” It seems like one of these is vacuously true while the other gets its content from the world. Here we have the genesis of the internal and external aspects of language. Famously, Frege thought that the referent of a statement was its truth-value. So truth was an external relation.
3. These internal and external aspects reached their zenith in the possible worlds framework of Saul Kripke. Kripke posited his framework of possible worlds to account for necessity and contingency. Strangely, on this account “Hesperus is Phosphorous” is both *a posteriori* and *necessary*. Putnam later adopted this framework to argue that statements like “Water is H₂O” must get their content from the world, and not just from the head. A close corollary of this claim is the claim that statements like “Beech trees are not elm trees” must be made true by the world and not merely by an internal relation, since few of us do not know what the difference is between Beech trees and elm trees. But this framework breaks the cardinal rule of pragmatism: it presupposes a GEVe and the supernatural truth relation that comes along with it.
4. Metaphysical realism and fallibilism lead quickly to scepticism. One advantage of bringing truth down to Earth is a rejection of scepticism as it comes packaged in brain-in-a-vat theories. How can we reject brain in a vat theories if we have no data to confirm or disconfirm them? Isn’t it possible that the statement “I am a brain in a vat” is true?

¹ Thanks to Jeffrey Foss and Susan Haack for this example.

5.1 FACTS AND HEXAGONS

Although J.L. Austin supported a correspondence theory of truth it was not a classical one. Truth, for Austin, was a matter of convention and epistemological considerations. His speech act theory took seriously the social functioning of language, and it led him to suggest that “perhaps indeed there is no great distinction between statements and performative utterances.”² Truths correspond to facts, but facts are not the classical Platonic fare: “we cannot quite make the simple statement that the truth of statements depends on facts as distinct from knowledge of facts.”³ Interestingly, Austin links reference, similarly, to what is known. The claim, “All snow geese migrate to Labrador” is not made false by one lame goose or the discovery that there are snow geese on Mars. Like Newton’s laws, the trick is to understand when and where the model is useful and when and where it is not.

I think that Austin’s careful attention to context, intentions, and the human contribution to a fact, can be understood in terms of models. It is models that make our statements true, and it is to models and components of models that we often refer. A hearer might point out the anomalous geese to try to falsify the claim “All snow geese migrate to Labrador.”⁴ But the speaker will, reasonably, claim that he did not intend to refer to *those* geese. In particular, his use of “snow geese”, despite the quantifier “all”, excludes those anomalous geese. So he has been misunderstood since *those anomalous geese* lie outside of the model. This is the flip side of saying that the speaker’s statement fails to make his background model explicit enough. His use of “all” was set by the context and his intentions. This is just to say that the speaker has a background model which limits the scope of his statement.

There is no vicious circle here since we have rejected the linguistic paradigm; we can admit all relevant kinds of information processing into the background model. The hearer might complain that the speaker’s background model is inappropriate or fails to be a *good* model. In this sense, Austin’s notion of a fact is merely a normative approach to models. There are good models and bad models, and the best models are constitutive of Austinian facts.

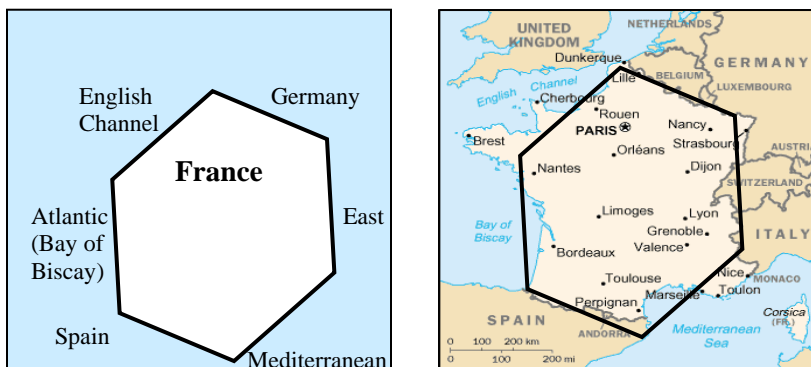
² Austin, How to Do Things 52.

³ Austin, How to Do Things 143.

⁴ Austin, How to Do Things 52.

An example of this is Austin's statement "France is hexagonal."⁵ This statement is a simple indicative but, by itself, it "is a rough description; it is not a true or a false one."⁶ Although Austin repeatedly points out that many statements are not true or false, he admits that they are on some occasions of use.⁷ So we can imagine that "France is hexagonal" is *used* in a context in which its rough nature is "good enough." Austin suggests that it would be good enough for a "general, perhaps, but not for a geographer."⁸ What makes this sentence true in some instances will be a fact, i.e. a model. An utterance of the sentence "France is a hexagon" by a general who wants to describe the number and relation of battle fronts in an expedient way, is *warranted*.

Figure 7 France is a Hexagon



⁵ Austin actually makes use of "France is hexagonal" in his discussion, but I will use the more controversial "France is a hexagon." Austin's sentence is actually more likely to be deemed truth-conditional since

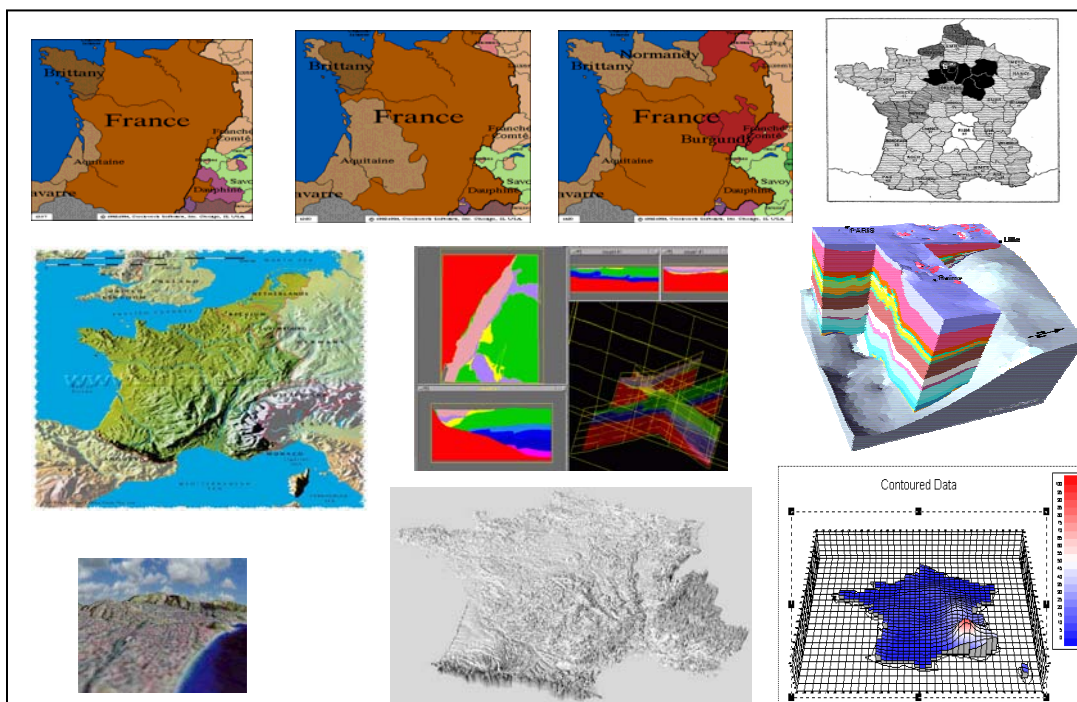
⁶ J.L. Austin, How to Do Things 142.

⁷ It is interesting that we here approach the same normativity that Russell acquired by simply stipulating that statements that were neither true nor false failed to have a proposition.

⁸ J.L. Austin, How to Do Things 142.

We might imagine that he is at a meeting and he draws the six battle fronts on a large chalkboard. He has established a model: he has established a social convention. And he has established a context in which he can truthfully assert that France is a hexagon. He has, in short, established a fact. You might imagine how inappropriate it would be to point out that a hexagon is composed of straight lines and lines are composed of infinite points and these are not properties we ought to attribute to France. It would be similarly inappropriate to point out that France is actually a three dimensional entity, or that France is actually an eleven dimensional entity, or that the battle fronts do not constitute France.⁹

Figure 8 The Shapes of France



The illusion that the shape of a thing is independent of the perspective of the viewer stems from similarities that are retained in a shape regardless of what *size* it is or from what distance it is viewed. So important properties of a three-four-five triangle, for example, remain constant no matter what the units are and no matter what size it is. So where we think that the manifest color of an object is viewer dependent (e.g. light conditions and visual capacity), and we

⁹ These images were found at the following sites: [www.lrs.com/LRSCorp/ IntlDist.htm](http://www.lrs.com/LRSCorp/IntlDist.htm), www.jadot.net/carto/3d/, www.brgm.fr/geofrance3d/bulletin/ bulletin2/bulletin2.html, www.brgm.fr/geofrance3d/bulletin/ bulletin3/bulletin3.html, web.singnet.com.sg/~meilian/france.htm, www.boisestate.edu/courses/hy309/topics/100yw/1337.gif

think that the manifest shape of an object is viewer dependent (e.g. visual capacity, distance and light conditions), we do not think that the scientific shape of an object is dependent on the viewer. But we must admit that shape, like size, *is* dependent on the frame of reference. So, if our frame of reference is three-dimensional, France is three-dimensional. If we account for time, our image of France is four-dimensional. And if we think that we live in an eleven-dimensional universe, then a model of France can be eleven-dimensional.¹⁰ This line of reasoning leads some to conclude that there are no circles or triangles in our universe after all. But this means that the structure of DNA is not a double helix. Models allow us to admit that while DNA is not *absolutely* a double helix, there is a fact that makes true the statement that “DNA is a double helix.” The rejection of an absolute frame of reference should not bother us since humans by and large have a remarkably shared manifest modelling system. We understand each other because every frame of reference is tied to our manifest model.

This is an important inversion of Russell’s program. Of course, *absolutely*, France is not a hexagon. But the general, by making his background model explicit, has allowed the hearers and speakers at the meeting to understand his statement. It is interesting that not just anyone can establish a social convention. There is an issue of authority here but it is not just the command structure of the military that warrants the general’s statement. Suppose a veteran soldier, just returning from a reconnaissance mission, saw the General’s map and announced that “As of this morning, France is a pentagon.” Now we have reason to believe that the General’s model is somehow flawed. We suspect that the predictions based on this model will not be reliable, and we suspect that it will not lead us, by and large and in the long run, to proper functioning.

Now suppose that the General, proudly and dishonestly, rejects the new model. As good pragmatists we do not have to wonder whose statement is true and whose false. The statements have their own truthmakers, and importantly, we do not have to pronounce one model as more essential than the other. The models are more or less useful given certain interests. One model, however, *is* clearly more *objective* than the other. Note that our meta-model by which we understand and embed both the pentagon and the hexagon models allows us to make this comparison. This meta-model accounts for the self-centered coordinate systems of the General and the soldier by *including* this information. It is reasonable to wonder which model agrees with reality more. But short of asking God, we have to first make sense of what we mean by reality.

¹⁰ And interestingly, if we think that we live in a quantum universe, then infinitesimally small points are useful fictions and any geometry that presupposes the standard definitions of a point or a line, is also a useful fiction.

If what is meant by reality is the *model* of the GEV \mathbf{m} which is less shaped by pride or dishonesty, then the pentagon model agrees better with reality.

Here we have an ambiguity in terms like “fact” or “reality” or “world” that is analogous to the ambiguity in “objective” and “GEV”. On one hand people mean mind-independent stuff. On the other hand, people mean a mind dependent perspective of the stuff. As a pragmatist, I want to say that models make our statements true, and good models are facts (epistemological) and they agree with reality (epistemological). This sense of reality and fact, in their truthmaking capacity are not to be mistaken for the GEV \mathbf{m} . The GEV \mathbf{m} , we have seen, might not be essentially geometrical any more than it is essentially white, cold, or big.

5.2 INTERNALISM AND HESPERUS IS PHOSPHOROUS

An omnipotent being interested in making sure the vet was always right could have rectified things in two ways; by breaking Jackie’s leg, or by changing the meaning of BROKEN. The first would be to change the world so as to make accurate what was conveyed by the utterance; the second would be to change the language so that the utterance conveys different information.¹¹

We have seen, in [1.0 The God’s Eye View](#), that Barwise and Perry express a view of language in [Situations and Attitudes](#) that is comparable to Russell’s interest in internal and external aspects. This is surprising since they question the traditional semantics that proclaims that information content is “packed into” a proposition. And, following this, they reject several of the paradigmatic logical doctrines like logical consequence. Language, they say, allows us to use the same sentence (with the same meaning) in many contexts but with different interpretations. This property is the *efficiency* of language. But this has the consequence that “*linguistic meaning of an expression in general greatly underdetermines its interpretation on a particular occasion of use...meaning underdetermines interpretation on a particular occasion of use.* Or, for short, *meaning underdetermines interpretation.*”¹² Hence, it is only the interpretations of sentences that have truth-values. So, following in the tradition of Austin, “absolute truth is a property of statements, not of sentences.”¹³

What they mean here by absolute truth here is simply that given the rock bottom interpretation of a statement, it is either made true or it is not, *by the way the world is*. They hold that model theory “does not study linguistic expressions *per se*, but the relationships that hold

¹¹ Barwise and Perry, [Situations](#) 30.

¹² Barwise and Perry, [Situations](#) 36.

¹³ Barwise and Perry, [Situations](#) 139.

between linguistic expressions and parts of the world.”¹⁴ This attachment to metaphysical truthmakers is a fall out of preserving the law of the excluded middle which turns out to be an important aspect of Barwise and Perry’s realist approach. As in the classical correspondence theory, truths are made true by mind-independent states of affairs. So although their program is in opposition to much of the early logicism of Frege and Russell, they seem to have committed themselves to the part that I have criticized most – the GEVe and the principle of transcendence. To see both the genesis of this externalist intuition and the solution we can review Frege’s puzzle. Consider the following sentences:

E1: The evening star is the evening star.
E2: The evening star is the morning star.

H1: Hesperus is Hesperus.
H2: Hesperus is Phosphorous.

Traditionally there have been two main claims. E1 and H1 are thought to lack the empirical content that E2 and H2 have. And, sentences E1 and E2 are thought to be importantly different from the Hesperus sentences as a result of the difference between proper names and definite descriptions.

The difficulty with the second claim is that it is a claim about sentences instead of statements or utterances. While it is true that definite descriptions differ from proper names it is difficult to say what the philosophical or epistemological significance of this is. Russell, for the most part, collapsed proper names into an analysis of definite descriptions. Others complained that he was overlooking important aspects of reference. Keith Donnellan in “Reference and Definite Descriptions”¹⁵ claimed that definite descriptions are used in both an attributive and a referential capacity. Barwise and Perry’s expansion, in Situations and Attitudes, expand the attributive-referential distinction beyond definite descriptions to include pronouns and other indexicals. Uninterpreted pronouns are *value-free* in the same way that a definite description can be understood to be attributive. To become *value-loaded* they need to be interpreted in the context of a user, a discourse and a resource situation.¹⁶ So interpreted pronouns are *value-loaded* in the same way that a definite description can be understood to be referential.¹⁷

¹⁴ Barwise and Perry, Situations 27.

¹⁵ Keith Donnellan, “Reference and Definite Descriptions”, The Philosophy of Language, ed. A.P. Martinich (New York: Oxford University Press, 2001) 247.

¹⁶ Barwise and Perry, Situations 151. A resource situation is what I would call a background model. If a speaker uses “he” or “the cat” and the hearer understands that the speaker is referring to the cat in a

Interestingly, much of this debate can be bypassed since it largely revolves around the distinction between sentences and the *use* of sentences.¹⁸ I think that there are occasions of use where E1 and H1 are just as informative as E2 and H2 (and conversely where E2 and H2 are just as vacuous). Kripkians and other semanticists will accuse me of committing the pragmatic fallacy (see [1.5 The Entrenchment Of Logic In Semantics](#)). And my response here is that, like knowledge generally, we ought not to try to separate content from the knowing mind.

Suppose there is a camping party of astronauts that have gotten into a heated argument. Half of the party maintains E2 and half of the party maintains the negation of E2. We do not have to pronounce half of the party right and half wrong. As good pragmatists we ask ourselves what the practical outcome of these different background models is. A model that is composed of a point of view from a position on Earth, at different times (call this an Earth's Surface Model), will make false E2 and H2. For example, the evening star is the brightest object (excluding the moon, the sun, human artefacts, and "irregular" astrophysical phenomenon) in my visual field in the *evening* when I face *West*. And the morning star is the brightest object (excluding the moon, the sun, human artefacts, and "irregular" astrophysical phenomenon) in my visual field in the *morning* when I face *East*. This model attributes different properties to the evening star, *as well as Hesperus*, than it does to the morning star, *or Phosphorous*. So clearly, the evening star is not the morning star, and a denial of E2 and H2 is true (See [Figure 4.7.1](#) for a non Earth-surface model that still differentiates Hesperus and Phosphorus).¹⁹

Alternatively, a model that is composed of a frame of reference like the Celestial Sphere

painting that hangs in the speaker's home then the hearer and speaker are making use of the same resource situation.

¹⁷ While I think that proper names can be used in both value-free and value-laden ways Russellians view proper names as attributive uses of definite descriptions and Kripkians view proper names as referential uses of definite descriptions. And Putnam and Barwise and Perry also prefer to understand proper names under a "direct-reference" theory.

¹⁸ I want to separate questions about sentences and other linguistic *types* from questions about truthmaking. Questions about linguistic capacities and linguistic conventions is the purview of linguists, psychologists and cognitive scientists. Descriptions of the relationships between linguistic expressions and models is also the purview of linguists and cognitive scientists. Like Barwise and Perry I want to recognize that the study of *linguistic expressions*, by themselves, is not what is at stake here. While linguistic conventions do come as better or worse, I want to do more, than correct someone's grammar or prescribe a *linguistic usage* - I want to improve the models we use. As a result I have endeavoured, in all of my examples, not to strain linguistic conventions too much. Nonetheless, as good epistemologists we must be aware of the pitfalls of taking conventions and capacities for granted.

¹⁹ I am here overlooking considerations of whether or not to understand "is" as identity or predication. This issue is related to the concern over definite description and proper names and referential and attributive uses of terms.

will make E2 and H2 true. Such a model is composed of multiple viewpoints, and is more objective in the Fossian sense.²⁰ The model we call the solar system also makes true E2 and H2 and is similarly more objective than the Earth's Surface model. So, the models which make true E2 and H2 have more content by virtue of their greater objectivity – they *rely* on the lower order cultural models and manifest models that make E2 and H2 *false*. Constructing the Celestial Sphere model requires embodying the information from the Earth's Surface models of the night sky. And making use of the Celestial Sphere requires an understanding of at least some of the Earth's Surface models. And we have seen at length, that this greater objectivity occurs by the addition of viewpoints not by the subtraction, elimination, reduction, or transcendence of viewpoints.

We can see now that although our intuition is generally that the denial of E2 and H2 are absolutely or eternally false, this is not the case. There are contexts in which the Earth's surface model is useful. And conversely, there are contexts in which we are well-advised not to use the higher level model(s) that make(s) E2 and H2 true. The intuition that the truth of E2 and H2 is *stable*, stems simply from our commitment to a model like the Solar system or the Celestial Sphere.²¹

To really appreciate this, consider the following two scenarios. Suppose first of all that Aidin asserts to Xavier that “Hesperus is not Phosphorus.” Xavier, cautiously argues that if we were to launch spacecraft to Hesperus and Phosphorus that these spacecraft would land on a single massive object we call Venus. Now suppose Aidin agrees that the spacecraft would land on massive objects but denies that they will land on a single massive object. In this situation it seems like both Aidin and Xavier are using a similar frame of reference but Aidin's model is not as useful as Xavier's. Xavier's hypothesis, after all, is correct while Aidin's is not.

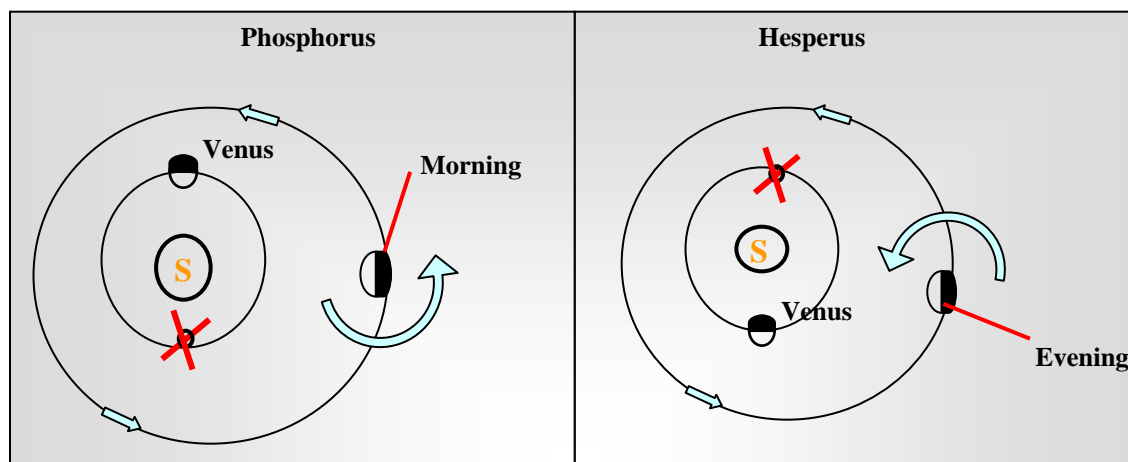
Now suppose that Becket asserts that “Hesperus is not Phosphorus.” In this second case, however, when Xavier argues for the spacecraft hypothesis, Becket agrees. Xavier, a little confused, inquires further into the background model that Becket uses that makes true both the denial of H2 *and* the spacecraft hypothesis. Becket explains that “Hesperus” is used to *include*

²⁰ In this model, the Earth is shrunk to a single point in the centre of clear globe. The “disappearance” of the Earth signals the loss of different perspectives from the Earth's surface, particularly notions of East and West. The stars are thus fixed in place in the Celestial Sphere not exhibiting any measurable movement. The Sun, which from the Earth's surface appears to move alot, moves only in a single revolution per year of the celestial sphere, along a sine wave that reflects the change in seasons. And Planets move in a path reflecting both the Earth's orbit as well as the orbits of the planets themselves.

²¹ It is relevant, I think, that many students of philosophy that learn about this case do not really understand how we came to understand that Hesperus and Phosphorous are the same planet.

the spatial properties of Venus when its location, relative to the Earth and Sun, is such that it can be seen in the Evening. This is to say that Hesperus refers to Venus about a quarter of the time (and accordingly for “Phosphorus”). Figure 4.7.1²² is a diagram that makes true both of the following claims: (1) Hesperus is not Phosphorus, (2) spacecraft launched at both Hesperus and Phosphorus will land on a single massive object.²³

Figure 9 Hesperus is Phosphorus



But what does this mean regarding the difference between H1 and H2, or E1 and E2? Well, as a matter of convention, we often helpfully try to limit the usage of proper names and definite descriptions to a single entity in a model. So it might be confusing to refer to all of the planets in the solar system by a single term. However, in the process of constructing a meta-model which incorporates two or more lower level models we often find ourselves identifying two entities with the same denoting term as being a single entity in our meta-model. So, for example, I meet a Karen on Tuesday and then on Wednesday my friend tells me a story about a Karen. Reasonably, I construct two models about two different people, both having the name Karen. Later, after telling someone about these Karens, they might inform me that “Karen is

²² When Venus is Phosphorus its relative position cannot be otherwise. Venus must rise *before* the Sun in order to be seen in the dark. If Venus was in the alternative position it would rise after the Sun, thus not being seen in its full brilliance. When Venus is Hesperus its relative position cannot be otherwise, since Venus must set *after* the Sun in order to be seen in the dark. Observe that in order to make sense of this model one needs to be able to imagine being on the surface of the Earth in the morning or evening, when Venus and the Sun are in their relative positions.

²³ Note that “the same massive object” is used in such a way that it overlooks the salient spatial differences between Hesperus and Phosphorus. It does not have to be used this way. That I am understood using it this way is evidence of a standard background model for *massive objects* in which the relational positions to other massive objects are not, by themselves, individuating features.

Karen.” Of course, their utterance is an elliptical expression for “Karen₁ is Karen₂” or “Karen from Tuesday *is* Karen from Wednesday.” Note that in either of these statements, the use of subscripts or qualifiers works to make the background models more explicit. The upshot of this is that there are occasions of use when H1 and H2 are *equally* informative. This is to say that a speaker might use either sentence to express a meta-model which resolves both stars into a single planet. The difference is that, in general, sentences like H2 and E2 are more amenable to making statements that make their background models explicit enough for the hearer.

Importantly, there has been no need to invoke external truthmakers. Models, like concepts, conceptual schemes, representations, and webs of belief, are products of the mind. I might find out in another conversation that Karen, in fact, *is not* Karen. This is to say that Karen₁ is not Karen₂. And having a limited knowledge of astronomy and its history, it would not shock me to find out that the morning star (of ancient times) is not the morning star (Venus).

5.3 INTERNALISM AND WATER IS H₂O

...the timeworn example of the two terms ‘creature with a kidney’ and ‘creature with a heart’ does show that two terms can have the same extension and yet differ in intension. But it was taken to be obvious that the reverse is impossible: two terms cannot differ in extension and have the same intension.²⁴

In the Twentieth Century, the internal and external aspects of language culminated in the many worlds of Saul Kripke. From a pragmatic or naturalistic perspective, the possible worlds framework and Kripke’s theory of rigid designation is defective. Of course, if all that is meant by a possible world is a human constructed and humanly useable model by which to function or navigate some terrain, then possible worlds start to look a lot less troublesome.

It is fairly standard among possible world theorists to assume that the intension of a designator is a function from possible worlds to the extensions in those possible worlds. So the meaning of “creature with a kidney” is a function of possible worlds to the creatures in those worlds that have a kidney. In some worlds the extension of “creature with a kidney” is the same as “creature with a heart” and not in others, so the meanings are different. Similarly, “the evening star” and “the morning star” pick out the same planet in some worlds and different planets (or stars) in other worlds. Similarly, the intension of a proposition is a function from possible worlds to a truth-value. The meaning of a proposition is thus the set of possible worlds in which it is

²⁴ Hilary Putnam, “Meaning and Reference”, ed. A.P. Martinich, The Philosophy of Language, 4th ed. (New York: Oxford University Press, 2001) 288.

true. So the meaning of “Hesperus is the morning star” is the set of all worlds in which “Hesperus” and “the morning star” pick out the same object.²⁵ So far this framework supports Putnam’s observation that it is standard to think that identical intensions cannot have different extensions.

Famously, Saul Kripke argued from a possible worlds framework to account for Frege’s puzzle *and* the difference between proper names and definite descriptions. This vital difference turned on the *persistence* that some designators exhibit in their ability to refer to an object. Indefinite and definite descriptions only succeed in referring when the user has properly described the referent. Proper names, however, act as rigid designators since reference seems to “go through” even when the user gets many (or all) of the referent’s properties wrong. The result of this is that sentences like “The evening star is the morning star” are *a posteriori* and contingent, while “Hesperus is Phosphorus” is *a posteriori* and *necessary*. That is to say that “Hesperus is Phosphorus” is true in *every possible world* – in every possible world in which the planet denoted by “Hesperus” exists, it is also denoted by “Phosphorus.”

Rigid designation needs action at a distance and a God’s Eye Perspective to account for possible and necessary truths. In short, the possible worlds framework is not compatible with a naturalistic explanation of truth and falsity. One can also see this in the fact that it is standard to assume that truth is a classical correspondence relation between the intension of a statement and the way worlds are. But we are no longer talking about correspondence to the GEVe, we are talking about a classical correspondence theory for every possible GEVe!

I am not here interested in possible worlds theory directly, however. Putnam uses the possible worlds framework to argue that meaning must be partly determined by the external world since it is not just the meaning of a term that determines its extension. In “Meaning and Reference”, Putnam extends Kripke’s framework to explain how it is that “‘meanings’ just ain’t in the *head*!”²⁶ I have portrayed Putnam thus far as a pragmatist. But since I believe that the views expressed in “Meaning and Reference” are inconsistent with the rest of Putnam’s views, I will refer to him in this context as Putnam₇₃. Where Peirce and Russell were torn between two theories of truth, Putnam also appears to be split. Famously, Putnam rejects classical

²⁵ The GEVe and action at a distance are required to make sense of rigid designation and to explain how modal statements are made true. In short, the possible worlds framework is too metaphysical for a naturalistic explanation of truth and falsity. However, it is standard to assume that truth is a classical correspondence relation between the intension of a statement and the way worlds are. But we are no longer talking about correspondence to the GEVe, we are talking about a classical correspondence theory for every possible GEVe!

²⁶ Putnam, “Meaning and Reference” 291.

correspondence and metaphysical realism and works to equate truth with rational justification. But, like Russell, Kripke, and Barwise and Perry, Putnam₇₃ thinks we need to posit an *external* aspect of language.

To do so, he constructs a thought experiment. Consider, he says, two nearly identical worlds. In one world, Earth's water is composed of H₂O. On Twin Earth, water is composed of XYZ. Now in 1750, science has not advanced enough on either Earth or Twin Earth to recognize the difference between H₂O and XYZ. So for Oscar and Twin Oscar, water and Twin water are not distinguishable. The moral of this story is that the concepts of Oscar and Twin Oscar only succeed in referring to the substance of their own world: so the extension of Oscar's use of "water" excludes XYZ while the extension of Twin Oscar's use of "water" excludes H₂O. But H₂O and XYZ are, by hypothesis, properties of water and Twin water that are contingent in the sense that these properties are contributed by the particular world (GEV_m) that Oscar and Twin Oscar find themselves in. Nonetheless, Oscar and Twin Oscar have concepts for water and Twin water of identical structure:

If a space ship from Earth ever visits Twin Earth, then the supposition at first will be that 'water' has the same meaning on Earth and on Twin Earth. This supposition will be corrected when it is discovered that 'water' on Twin Earth is XYZ, and the Earthian space ship will report somewhat as follows.

"On Twin Earth the word 'water' means XYZ."²⁷

So there are two claims being made by the Earthlings:

C1: On Twin Earth the word "water" means H₂O.

C2: On Twin Earth the word "water" means XYZ.

The reasoning here seems to be that the initial claim, C1, was *false* but it was *corrected* with C2. So, Putnam₇₃ concludes that the wide content of "water" can only be explained by accounting for "external" features of the world. It is surprising that Putnam₇₃ championed this claim since it is an indistinguishability problem of a sort close to his "brain in a vat" interest.²⁸ He suggests that it is through a division of linguistic and non-linguistic labour, that the identical intensions of Oscar and Twin Oscar individuate the distinguishing molecular features of H₂O and

²⁷ Putnam, "Meaning and Reference" 289.

²⁸ The parallel is quite astonishing since we might imagine that Oscar and Twin Oscar are in worlds that are indistinguishable to Oscar and Twin Oscar, except that Twin Oscar is actually a brain in a vat. The only difference between the thought experiments is the difference in the extent to which the secrets are buried. But the question of whether it is possible for Twin Oscar to find out that he is a brain in a vat or whether it is possible for the first Twin Oscar to find out that Twin water is XYZ is a matter of *stipulation*. In either case, as creators of these thought experiments we act as truthmakers.

XYZ.²⁹ The Twin Earth thought experiment places the reader (and the creator) in the very position that Putnam spent much of his career claiming we cannot allow ourselves the benefit of imagining – the God’s Eye Point of View. From our privileged position we can compare, without mistake, Twin Earth and Earth and even the conceptual structures of Oscar and Twin Oscar. We thus construct the meta-model that provides the “external content” of the meaning of Oscar’s use of “water” and Twin Oscar’s use of “water.” Moreover, we see *in advance* that the model that makes true C1 is deficient and as outside observers we are already committed to the model that makes C1 *false*.

Moreover, Putnam₇₃ suggests that it is through a division of linguistic and non-linguistic labour that the identical intensions of Oscar and Twin Oscar have different extensions on the basis of the distinguishing molecular features of H₂O and XYZ. But we are making use of the contentious notion of “external” here without sufficient need. As internalists, we can admit that language and knowledge are social. It is as if all of our models have notes at the edges, gaps and uncertainties that say things like “consult so-and-so for more information”, “see this-and-that reference”, “the error on these figures is such-and-such”, “be advised: this part is questionable”, “defer to expert”, “defer to future research”, “defer to Swedish Engineering”, *et cetera*. If Putnam₇₃ means that the sum of knowledge is not in a single head then, like Russell (see [4.1 Social Nature Of Knowledge](#)) we can agree. But what is supposed to follow from the slogan that “meaning ain’t just in the head” is that the GEV_m somehow determines a designator’s extension.

In order to really appreciate this consider the following statements:

W1: Water is identical to Twin water.

W2: Water is H₂O.

W3: Twin water is XYZ.

W4: H₂O is XYZ.³⁰

²⁹ I have already suggested that a division of labour can occur across time just as easily as it can across space. Putnam distinguishes between Oscar on Earth in 1950 and Oscar on Earth in 1750, and Twin Oscar on Twin Earth in 1750 and Twin Oscar on Twin Earth in 1950. But Putnam also uses a similar thought experiment regarding “beech” and “elm” that focuses on the spatial dimension of a division of labour. Putnam concludes with natural kind terms like Gold, which he says in 1973, are rigid designators for which we rely on scientists for the bulk of the labour.

³⁰ I put these statements in this order to resemble similar logical puzzles about substituting designating terms into opaque contexts like belief, the attitudes and modal environments. Compare: (1) Hesperus is Phosphorus, (2) It is possible that Hesperus is not Phosphorus, (3) It is possible that Hesperus is not Hesperus. As well: (1) The number of planets is nine, (2) It is possible that the number of planets is ten, (3) It is possible that nine is ten. Also: (1) Oscar believes that water is XYZ, (2) Water is H₂O, (3) Oscar believes that H₂O is XYZ. Of course, keeping track of the truthmaking models in these situations prevents any of these poor inferences from going through, and preserves truth when they do.

The most important thing to remember when assessing these statements is that the GEV_m does not make our statements true – statements are made true by models that are warranted. The various problems regarding these statements can easily be cleared up by keeping track of the background models. So we distinguish between the manifest or cultural model of water (WATER_{cultural}) and the scientific model of water (WATER_{scientific}). So we must realize that the models WATER_{cultural} and TWIN WATER_{cultural} *are* identical. The conceptual structures, after all, are identical by hypothesis. So W1 is made true by a model (our thought experiment) that compares the *cultural or manifest* models of Oscar and Twin Oscar. Short of being God, “water” and “Twin water” cannot be used to refer only to the GEV_m – it is only the Principle of Methodological Transcendence that offers a clue to Oscar and Twin Oscar that water is not identical to Twin water. And by the Principle of Methodological Transcendence, Oscar and Twin Oscar realize that W1 might be made false, elsewhere or some other time. And, within Putnam’s thought experiment it is stipulated that about fifty years after 1750, models of water and Twin water were developed that made water and Twin water distinguishable. At that point “water” and “Twin water” get their meaning from WATER_{scientific} and TWIN WATER_{scientific} and these are not identical, by hypothesis.

And similarly, WATER_{cultural} cannot be identical to WATER_{scientific} – they have different human contributions. The *ontologies* of WATER_{manifest} and WATER_{scientific} are identical perhaps, but again, we cannot say what this thing is without challenging the Momentous Tautology. The scientific model *depends* on the manifest and cultural models of water. And WATER_{scientific} *is* identical to H₂O – the scientific model *of water* just is the scientific model we call H₂O.

Similarly, TWIN WATER_{cultural} is not identical to TWIN WATER_{scientific} (XYZ). W2 and W3 are therefore made true by two kinds of models. If “water” and “Twin water” are used to mean WATER_{scientific} and TWIN WATER_{scientific}, then W2 and W3 are tautologies. More interestingly, W1 and W2 are made true by models that embed both the manifest and scientific models such that we might say that WATER_{scientific} and WATER_{cultural} and WATER_{manifest} are different models of the same stuff. But we are here not identifying the models, we are framing a relationship between manifest, cultural, and scientific models. We have seen that this relationship is one of complementarity. In this case we are triangulating on what I have been calling the GEV_m. Importantly, we see that by keeping track of the various background models we will not be led to any dubious inferences and truth is thus preserved.

5.4 THE TRUTH ABOUT BRAINS IN VATS

It is precisely the fact that James's emphasis on what he calls the "plasticity" of truth, on our role as "coefficients of the truth on the one side", is balanced by the insistence that we share and perceive a common world, by the insistence that "we register the truth which we help to create", which distances him from all forms of scepticism...Pragmatists hold that doubt requires justification just as much as belief...That one can be both fallibilistic and antisceptical is perhaps *the* basic insight of American Pragmatism.³¹

We have seen that Putnam aligns himself with James on two counts. Putnam rejects the God's Eye View. And Putnam outlines a framework that brings truth down to Earth by explaining truth in terms of rational justification. One of the main motivators for his program was his interest in rejecting various brain-in-a-vat theories. Like James' rejection of truths that are *outré* or unusable, Putnam's interest in rational justification allows him to introduce *a priori* criteria for excluding theories that are, on the basis of current sense data, indistinguishable. So he rejects metaphysical realism and insists on treating truth as internal to a conceptual scheme. While Putnam expresses this *sort* of internalism, he is also well entrenched in the sentential paradigm. And we have seen that Putnam has some externalist tendencies, especially with respect to the issues of reference and meaning.³² And interestingly, in 1981, even as he was rejecting brain-in-a-vat theories he was also insisting that truth, more than justification, is *stable in the ideal limit*:

To reject the idea that there is a coherent 'external' perspective, a theory which is simply true 'in itself', apart from all possible observers, is not to identify truth with rational acceptability. Truth cannot simply be rational acceptability for one fundamental reason; truth is supposed to be a property of a statement that cannot be lost, whereas justification can be lost. The statement 'The earth is flat' was, very likely, rationally acceptable 3,000 years ago; but it is not rationally acceptable today. Yet it would be wrong to say that 'the earth is flat' was true 3,000 years ago; for that would mean that the earth has changed its shape.³³

³¹ Hilary Putnam, Pragmatism (Cambridge: Blackwell Publishers, 1992) 20 - 21.

³² We are again faced with the inconsistency in Putnam's worldview. On a Kripkean possible worlds framework, the meaning of a proposition is the set of possible worlds in which it is true. But Putnam rejects *this* by rejecting metaphysical realism.

³³ Putnam, Reason, Truth, and History 55.

Putnam is here expressing a funny combination of views. He invokes the notion of rational justification in the *ideal* to account for the intuition that “The Earth is flat” was just as false 3,000 years ago as it is now. We have seen that I simply reject that it is in any way meaningful to talk about the absolute or eternal truth or falsity of a *sentence*. So we must consider the *use* of a sentence as it includes a user, a context and a background model. And on my view, the truth-value of “The Earth is flat” is really a question of what the background model is and what it is used for. Importantly, there were people of 3,000 years ago that used a model that made their claim true.³⁴

As we saw with Austin’s general, the warrant of a model is a matter of what it is used for. As such, there were contexts in which the model was warranted 3,000 years ago, and there remains to be contexts in which a flat Earth model is still well-warranted. Canadians who make claims about driving distances, for example, very rarely model Canada as a three dimensional surface of the Earth.³⁵ So an everyday claim about distance is made true by a partial flat-Earth model. Importantly, I do not think that this commits us to the notion that the Earth has changed shape. *Within* our standard three-dimensional model of the Earth, its spherical nature has been largely static for about 4.5 billion years. But shape is dependent on the frame of reference so clearly the shape of the Earth is free to change as we change our model of it.

If, however, we suppose that the frame of reference for the 3,000 year old flat Earth model is the same as current models in which the Earth is spherical, then their statement is not made true *objectively*. That is, it is not a model that was verified or well-founded or that made good predictions. It was a model that was accepted on credit but could not be brokered for cash. This fits into the divisions of labor that come with using models as truth-makers. Interestingly, when compared with current models, the flat Earth model would not be useful in some contexts while it would remain useful in others. So although the statement, “The earth is flat” was eventually made false by an objective model, it was still *made* false.

For Putnam, truth outstrips rational acceptability *in the ideal*. What differentiates Putnam’s position from positivism (verification *in principle*) is that Putnam refuses to “limit in

³⁴ There is a sense in which the spherical nature of the Earth was a kind of buried secret to the people of 3,000 years ago (and continues to be for many people alive today). Nonetheless, it was a question we might suppose that many were settled on.

³⁵ Moreover, a relativistic approach to gravity tells us that, like the Earth’s orbit around the sun, a geodesic can be understood as a *straight* line in curved space. As such the notion of flat seems to depend on our frame of reference.

advance what means of verification may become available to human beings.”³⁶ This open-mindedness is what Putnam considers to be the difference between William James’ pragmatism and *science worship*. Of course this still leaves the door open for metaphysics in a way that makes it possible to *multiply senses*. In Putnam’s scheme the Brains in a Vat hypothesis is not rationally acceptable, and therefore there is no factual basis in this hypothesis. Nonetheless, the Brains in a Vat hypothesis might be *true*.

Foss has argued that we can preserve the content and truthfulness of Newton’s claims by understanding them with respect to Newton’s useful and warranted models. James would argue that we must understand the truth and content of “I am *not* a brain in a vat” by appreciating the cash-value of its background model.³⁷ I have argued that we must appreciate the truth and content of “That curb is yellow” with respect to its background model. On the Principle of Methodological Transcendence, the statement “I am a brain in a vat” is made true when a useful and warranted model makes it true. But Putnam, despite all of his work to be able to say otherwise, ends up admitting that it is possible that the statement “I am a brain in a vat” is true *right now* even though he does not know it to be so!

To his credit, Putnam preserves this antisceptical intuition by appealing to his notion of rational acceptability. It is our *a priori* reasoning, our “intelligence and common sense”³⁸, which tells us that the Brain in a Vat hypothesis is an unwarranted assertion. By way of defending this *a priori* reasoning, Putnam adds that it is not possible *in practice* to dismiss all *distinguishable* theories, even those that are strongly falsifiable on a Popperian model:

For example, the theory that if I put a flour sack on my head and rap the table 99 times a demon will appear is strongly falsifiable, but I am certainly not going to bother to test it. Even if I were willing to test it I could think of 10^{100} similar theories, and a human lifetime, or even the lifetime of the human species, would not suffice to test them all. For logical reasons, then, it is necessary to select, on methodological grounds, a very small number of theories that we will actually bother to test; and this means that something like a prior selection is involved even in the Popperian method.³⁹

Nonetheless, the Principle of Methodological Transcendence tells us that we should be philosophically fallibilist enough to admit that one day a model might be warranted such that it

³⁶ Hilary Putnam, Realism With a Human Face ix.

³⁷ Note that if we make the brain in a vat hypothesis equivalent to a God or substance hypothesis (by removing any possibility of differentiation) then all we have to go on are the human qualities of these competing theories.

³⁸ Putnam, Reason, Truth, and History 195.

³⁹ Putnam, Reason, Truth, and History 197.

would make true the claim that “We are brains in vats.” So on the basis of possible future data, our theory type will be further constrained. Broadly, this is Popper’s method. Note that Jamesian pragmatism is more selective than Popperian falsificationism because, in the mean time, we can discard theories on wider grounds. The claim “We are brains in vats” would be made true by the model in which we are actually brains in vats. But this model has no warrant and little usage. If someone happens to use this model they can make true the claim “I am a brain in a vat.” But the claim would not be made true *objectively*. And, in fact, most people make use of models in which this claim is made false. And, most of the rest of us make use of a model in which this claim does not have a truth-value.

Interestingly, Putnam’s particular rejection of metaphysical realism has a flipside. Where Giere and Foss endorse a perspectivalism that amounts to multiple views of a single unified world, Putnam rejects the very sensibility of a unified world. In short, Putnam is unable to separate materialism from essentialism and the God’s Eye View.

The appeal of materialism lies precisely in this, in its claim to be natural metaphysics, metaphysics within the bounds of science. That a doctrine which promises to gratify both our ambition (to know the noumena) and our caution (not to be unscientific) should have great appeal is hardly something to be wondered at.⁴⁰

And later:

Materialists think of the whole universe as a “closed” system, described as God might describe it if He were allowed to know about it clairvoyantly, but not allowed to interfere with it.⁴¹

And later still:

There is no more evidence that science converges to one final world-view than there is that literature or morality converge to one final world-view...The contemporary tendency to regard interpretation as something second class reflects, I think, not a craving for objectivity but a craving for absolutes...Craving absoluteness leads to monism, and monism is a bad outlook in every area of human life.⁴²

I take this as evidence that Putnam has failed to fully appreciate the pragmatic advantage of positing a single causal order. The problem is that Putnam is unable to separate the idea of a methodological materialism from the reductive programs that have strong metaphysical

⁴⁰ Hilary Putnam, Realism and Reason 210.

⁴¹ Hilary Putnam, Realism With a Human Face 49.

⁴² Hilary Putnam, Realism With a Human Face 131.

commitments. Given his interest in the interdependence of fact and value he does not approve of any metaphysics that might reduce value to facts, or the converse:

If I dared to be a metaphysician, I think I would create a system in which there were nothing but obligations. What would be metaphysically ultimate, in the picture I would create, would be what we ought to do (ought to say, ought to think). In my fantasy of myself as a metaphysical superhero, all “facts” would dissolve into “values”...What I do think, even outside of my fantasies, is that fact and obligations are thoroughly interdependent; there are no facts without obligations, just as there are no obligations without facts.”⁴³

The upshot of this is that the notion of rational acceptability or warrant or justification are normative terms. And as such models and facts, are thoroughly entangled with values. But this is just more evidence that materialism is not, and will never be, a God’s Eye View of the universe. Materialism is a *human understood* model that guides our human-centered *modeling* of the world. Science requires an interplay between our manifest and our scientific models – we need the power of our higher level models to guide our lower level modeling. As an exemplar of human rationality science is *necessarily* reflexive. One such theoretical model is materialism and our commitment to the notion that existence precedes theory. It is in this context that a flat out rejection of metaphysics and ontology is not cogent.

The degree to which we engage in metaphysics is determined by the degree to which it affects the practice of scientific modeling. The rejection of an absolute conception of the world stems from such metaphysical modesty. And our rejection of an absolute conception of the practice of science should as well. We *ought* to be fallibilists, but we *ought* also to accept, *prima facie*, the metaphysical commitments that justify why our models work. And this is a happy pragmatic answer to those who want to speak of brains in vats. *This kind* of metaphysics has to first be shown to matter to human activity.

⁴³ Hilary Putnam, Realism With a Human Face 115.

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