A Correspondence Theory of Truth

by

Jay Newhard

B.A., University of California, Santa Barbara, 1994

A.M., Brown University, 1997

A dissertation submitted in partial fulfillment of the requirements for the degree of
Doctor of Philosophy in the Department of Philosophy at Brown University

Providence, Rhode Island

May 2002

This dissertation by Jay Michael Newhard

is accepted in its present form

by the Department of Philosophy

as satisfying the dissertation requirements

for the degree of Doctor of Philosophy

Date_____   _____
                         James Van Cleve, Director

Recommended to the Graduate Council

Date_____   _____
                         Ernest Sosa, Reader

Date_____   _____
                         Nathan Salmon, Reader

Approved by the Graduate Council

Date_____   _____
                         Peder J. Estrup
                         Dean of the Graduate School and Research

VITA

Jay Newhard was born on 01 October 1967 in Allentown, Pennsylvania. He received a Bachelor of Science degree in Chemical Engineering in 1989, and a Master of Science degree in Chemical Engineering in 1991, both from the Pennsylvania State University. In 1994, he received a Bachelor of Arts degree in Philosophy from the University of California, Santa Barbara. In 1997, he received a Master of Arts degree from Brown University. He has taught at the University of Rhode Island, Augustana College, and Texas Tech University.

PREFACE

A number of philosophical theories of truth have been developed upon common pre-philosophical intuitions: a correspondence theory claims that true propositions correspond to reality; a coherence theory claims that true propositions cohere with other true propositions; and a pragmatic theory claims that true propositions are those (belief in) which are pragmatically useful. Each of these theories characterizes truth as a substantive property, but faces serious objections which render it apparently untenable.

Dissatisfaction with these theories has led to theories developed upon more sophisticated philosophical considerations, foremost among them those that challenge whether truth is a substantive property. According to the simple theory of truth, truth is a property, but is simple, unanalyzable, and unsubstantive. The redundancy theory of truth claims that truth is not a property, and that the truth predicate is at best a grammatical expedient, and otherwise redundant. The disquotational, minimal, and prosentential theories are alike in holding that truth is not a substantive property, if a property at all. Other sophisticated attempts are the revision theory, which claims that truth is inherently circular, and the vagueness theory, which claims that the truth predicate is a vague predicate.

The aim of this dissertation is to offer and defend a correspondence theory of truth. I must, therefore, not only show that all of these theories of truth, with the exception of the correspondence theory, are defective; I must also extricate the correspondence theory from the criticisms, now standard, which have been taken as decisive against it.

In chapter 1, I examine the coherence, pragmatic, simple, redundancy, disquotational, minimal, and prosentential theories of truth, and argue of each that it is

unsatisfactory. Special attention is paid to several versions of disquotationalism, whose plausibility has led to its fairly constant support since the pioneering work of Alfred Tarski, through that by W. V. Quine, and recently in the work of Paul Horwich. The discussion of the correspondence theory in chapter 1 is limited to a presentation of traditional versions of the theory and objections to them.

A special problem facing a theory of truth is the Liar Paradox. In chapter 2, I discuss the Liar Paradox and the responses made to it by the above theories. The devastating effects of the Liar Paradox on these theories has led to the development of formal theories of truth, such as the revision theory, Kripke's theory, and the vagueness theory, also examined in chapter 2.

In chapter 3, I present and argue for the indexical correspondence theory of truth (the IC theory), a novel version of the correspondence theory according to which truth is a correspondence property sensitive to semantic context. This context-sensitivity explains why an ungrounded sentence does not express a proposition. Consequently, the IC theory accounts for the similarity between the Liar and Truth-Teller sentences, and provides a philosophically motivated immunity to the Liar Paradox, including empirical versions. Customized versions of the Liar Paradox besetting the IC theory are handled by its context-sensitivity, and by enforcing the distinction between truth and truth value. This same pair of considerations also yields solutions to Löb's Paradox and to Grelling's Paradox. Arguments similar to those given to defend the IC theory show that with one minor alteration, Kripke's formal theory may be used to model the IC notion of truth.

ACKNOWLEDGEMENTS

CONTENTS

CHAPTER 1: THEORIES OF TRUTH

Section 1: Intuitions about the Nature of Truth

There are several intuitions commonly had about the nature of truth.[1] The correspondence intuition is the intuition that true propositions[2] accord with, or correspond to, the way that the world is. For example, if the proposition that Raphael is a painter is true, then Raphael is a painter. Further, the correspondence holds both ways: if Raphael is a painter, then the proposition that he is is true.

Truth is often a very useful notion. The truth of the proposition that a certain painting I own was painted by Raphael is extremely important in selling it for its proper value, or perhaps refusing to sell it. The truth of the proposition that a certain syringe contains adrenaline and not a coagulant may be critical in saving a life. The intuition that truth is useful is the pragmatic intuition about the nature of truth.

It cannot be that two true propositions are inconsistent with one another. For example, the propositions that Raphael did paint a certain painting and that someone born in the twentieth century painted it cannot both be true. The coherence intuition about the nature of truth is the intuition that no two true proposition can be inconsistent.[3]

---

[1] This is not to say that these are the only intuitions had about truth. For instance, there is also the intuition that every proposition is either true or not true. However, while this is an intuition about truth, it is not an intuition about the *nature* of truth.

[2] See section 2 for a defense of the thesis that the bearers of truth are propositions.

[3] Some philosophers may want to include among these intuitions the intuition that truth is not a property. However, each of these three intuitions about the nature of truth entail that it is a property. Although it is possible for intuitions to be inconsistent, it is most natural to understand this view as a reaction to difficulties in characterizing the nature of truth, even if there is some evidence in language use to support it.

There is a certain relation among these intuitions about the nature of truth. If true propositions are those which correspond to the way that the world is, then I can expect that these things are, or could be, useful to me. Similarly, if true propositions correspond to the way that the world is, then they are coherent, since the way that the world is cannot be inconsistent. Thus, the pragmatic and coherence intuitions follow from the correspondence intuition.

It is reasonable to suppose that a usefully believed proposition also corresponds to the way that the world is, and coheres with other usefully believed propositions. However, a proposition might be useful and not correspond to the way that the world is, or not cohere with other usefully believed propositions. For example, my belief that I own a transmogrifier may win me great applause, because this belief, though delusional, proves entertaining. Yet obviously it does not correspond to the way that the world is, and it may not cohere with my belief that there are no such things as transmogrifiers.[4] Therefore, neither the correspondence intuition nor the coherence intuition follow from the pragmatic intuition. Nevertheless, since the pragmatic intuition is a general rule, or rule of thumb, to which exceptions are made, the pragmatic intuition is compatible with the correspondence and coherence intuitions, assuming that a reasonable exception can be made where the pragmatic intuition conflicts with one of the other two intuitions about the nature of truth.

---

[4] Examples of contradictory beliefs are not as unusual as one might expect. See Saul Kripke, "A Puzzle about Belief" in *Meaning and Use*, Avishai Margalit, editor (Dordrecht, The Netherlands: D. Reidel Publishing Company, 1979) pp 239-283 and Nathan Salmon, "Being of Two Minds: Belief with Doubt" *Nous* **29** (1995) pp 1-20.

Similarly, it is reasonable to suppose that a certain proposition coheres with other propositions, and also corresponds to the way that the world is, and is usefully believed. However, supposing that my belief that I own a transmogrifier coheres with my other beliefs, it obviously does not correspond to the way the world is, and may not be useful, if no one is entertained by my expressions of it. Therefore, neither the correspondence intuition nor the pragmatic intuition follow from the coherence intuition. As above, the coherence intuition is compatible with the correspondence and pragmatic intuitions, assuming that reasonable exceptions may be made where the coherence intuition conflicts with one of the other two intuitions about the nature of truth.

Therefore, the correspondence intuition is the strongest of the three intuitions about the nature of truth, since from it the others follow, but it follows from neither the coherence nor the pragmatic intuition.

Three theories of truth may be formulated based on the three intuitions about the nature of truth. These theories are traditionally termed 'robust' since according to each, truth is a substantive property. The **correspondence theory** is the theory that a proposition is true if and only if it corresponds to a fact, where a fact is a mereological part of the actual world.[5] The **coherence theory** of truth is the theory that a proposition is true if and only if it is not inconsistent with the set of propositions already accepted as true. The **pragmatic theory** of truth is the theory that a proposition is true if and only if

---

[5] Note that a mereological part of the actual world may be a non-proper part, that is, the entire actual world.

belief in it tends to maximize the believer's utility.[6] A corollary to each theory is that the truth predicate expresses the property, truth, as specified by the theory.[7]

Although as rules of thumb the three intuitions are compatible, as theories specifying the necessary and sufficient conditions for a proposition to be true, the theories are not compatible. For example, the correspondence theory's sufficient condition is incompatible with the coherence and pragmatic theories' necessary conditions, since a proposition corresponding to a fact may be inconsistent with propositions previously accepted, and need not tend to maximize or even increase the utility of someone believing it. Similarly, the coherence theory's sufficient condition is incompatible with the correspondence and pragmatic theories' necessary conditions, since a proposition which is not inconsistent need not correspond to a fact, and need not tend to maximize or increase the utility of someone believing it. Also, the pragmatic theory's sufficient condition is incompatible with the correspondence and coherence theories' necessary conditions, since a proposition which maximizes the believer's utility need not correspond to a fact or cohere with other accepted propositions.

A philosophical theory of truth has a duty to account for each of these three intuitions. This duty is met either by its granting the intuition as a rule of thumb or by explaining why, even as a rule of thumb, the intuition is erroneous. For example, the correspondence theory accounts for all three intuitions by granting each: the correspondence intuition follows trivially from it, and the pragmatic and coherence

---

[6] Utility may be construed broadly so as to include pleasure, efficiency, health, wealth, or some other preferred indicator of the good life.

[7] Therefore, this corollary claims that truth is expressed by 'is true' as it occurs predicatively and as it occurs in the operator 'it is true that'; likewise for predications in other languages and/or in other compositional constructions. Obviously, the corollary is a semantic claim while the theories of truth are metaphysical theories.

intuitions follow from it as rules of thumb. The coherence theory grants the coherence

intuition, and is [consistent] with the correspondence and pragmatic intuitions, but

needs to be supplemented in order to grant or deny either of these. Similarly, the

pragmatic theory grants the pragmatic intuition, and is [consistent] with the

correspondence and coherence intuitions, but must be supplemented in order to grant or

deny either of these. Thus, the correspondence theory enjoys a *prima facie* advantage

over the coherence and pragmatic theories in virtue of its strength.

Section 2: Truth-Bearers

The intuitions about the nature of truth are intuitions as to what sort of property truth is.

The question may also be raised as to what sort of thing, or things, bear truth. In section

1, both beliefs and propositions are treated as bearers of truth. In addition, it is plausible

to suppose that sentences are bearers of truth. However, reflection raises the

consideration that the proposition that Raphael was a painter is true whether or not

anyone ever believes this proposition, and whether or not this proposition is ever

expressed by a sentence.[8]

---

[8] A proposition is also taken to be what is expressed by a complete, grammatical sentence, i.e., its
semantic content. While it might seem illicit to assign both roles to propositions, it seems that
communication is impossible unless propositions do play both roles, or else some plausible
relation is established between that which is expressed by a sentence and that which is believed.

   If these roles are assigned to different entities, then there are three sorts of things which
bear truth: sentences, their semantic contents, and beliefs (qua mental states). It might then be
held that beliefs are the primary bearers of truth, and that the semantic contents of sentences are
true if they are related to beliefs in an appropriate way, and sentences are true if their semantic
contents are true. Note that on this view semantic contents are true in a secondary sense, and
sentences are true in a tertiary sense. Christopher Gauker criticizes the general view whereon
propositions are assigned a dual role, and goes some way in arguing for this alternative in
Thinking Out Loud: An Essay on the Relation Between Thought and Language (Princeton, New Jersey:
Princeton University Press, 1994). See also his "Truth in Context", unpublished, available online
at ucaswww.mcm.uc.edu/philosophy/gauker/papers.html.

Analysis of language provides evidence for the propriety of ascribing truth both to sentences and to propositions. The report made by the standard English construction " 'snow is white' is true" may be made as effectively by the standard English construction "it is true that snow is white"; the first construction seems to indicate that sentences are truth-bearers, while the second seems to indicate that propositions are truth-bearers. Grammatical constructions containing quantifiers, such as 'something he said is true' and 'most of the things he said are true', provide inconclusive evidence for deciding whether it is sentences or propositions that are the bearers of truth, since 'something he said' could refer either to sentences or to their semantic contents.

If one construction were eliminable in favor of the other, it could be argued that the uneliminated construction indicates that its truth-bearers are primary. For example, if truth attributions to sentences are eliminable in favor of truth attributions to propositions, it may be argued that propositions are the primary bearers of truth. However, the Langford-Church translation test may be used to show that truth attributions to sentences are not eliminable, at least not without the loss of expressibility of truth to foreign sentences.[9] Also, since in a given language there are propositions not expressible in it, but which are denotable in it, truth attributions to propositions are not eliminable in favor of truth attributions to sentences. Therefore, the attempt to find an eliminable construction is fruitless.

However, there are three general considerations indicating that propositions are the primary bearers of truth. Since for any language there are propositions which it

---

[9] Michael Dummett, for example, points out that the quotation construction ' 'S' is true' cannot be dispensed with, since it is required to explain the truth conditions of foreign sentences. See Michael Dummett, "Of What Kind of Thing Is Truth a Property?" in *Truth*, Simon Blackburn and Keith Simmons, editors (Oxford: Oxford University Press, 1999) pp 264-281, at pp 279-280.

does not express, and for that matter there are propositions not expressible in any language, it seems that a proposition may be true even if no sentence expresses it. Also, it seems that what an English speaker expresses in uttering "snow is white" is the same thing which a French speaker expresses in uttering "la neige est blanche". That is, either the English speaker and the French speaker have both said something true, or they both have not. But for this to be so, it must be that the propositions they express (with respect to a given context) are the same, since the sentence types are different. Hence, since snow is white, the proposition expressed by these sentences (with respect to a given context) is true, and the English and French sentences are true in the sense that (in a given context) they express a proposition which is true.[10]

Finally, neither sentence tokens nor sentence types are adequate primary bearers of truth. Consider the true sentence token 'snow is white'. There is a very strong intuition that knowledge of the truth of that sentence token justifies the claim that, e.g., the quoted type-identical token in the previous paragraph is true. Strictly speaking, however, this claim is not thereby justified. The suggestion is obvious that both tokens are true since they are tokens of the same type. However, tokens of the same type are not always alike in truth value. For example, some but not all tokens of the sentence type 'snow is falling here and now' are true. Therefore, neither sentence types nor tokens are adequate primary bearers of truth.[11]

---

[10] Note that the same argument can be given using sentences of the same language, for example, using the sentences 'attourneys are educated' and 'lawyers are educated', provided 'attourney' and 'lawyer' are synonymous.
    Also note that the argument holds whether it is sentence types or tokens which are taken to be truth-bearers.

[11] It may be hypothesized that these or similar considerations, together with skepticism toward propositions, motivated some philosophers to suggest that truth is borne by statements. If so, then some light is thrown on the notion of a statement, though far from enough to clearly distinguish them from sentence tokens, sentence types, and propositions.

There are further, technical reasons for thinking that propositions are truth-bearers. First is the case of ambiguous sentences, including both syntactically ambiguous sentences, such as 'humans are flying planes', or lexically ambiguous sentences, such as 'Jean-Paul is at the bank'. Since ambiguous sentences express more than one proposition, it is possible for one of these propositions to be true and the other not. If sentences are truth-bearers, then we must say that the sentence, or sentence type, is both true and not true. In order to avoid this contradiction, we should speak of the proposition expressed with respect to a given context as being true or not.

Other sentences, though neither syntactically nor lexically ambiguous, contain terms whose semantic contribution to the proposition expressed depend on the context of utterance. A sentence such as 'Cecil is hungry now' expresses different propositions with respect to different non-simultaneous contexts of utterance.[12] Since Cecil may be hungry in certain contexts of utterance and not in others, it is preferable to think of this sentence as expressing a different proposition with respect to each non-simultaneous context of utterance, some true, some not, in order to avoid the contradiction that the sentence is both true and not true.[13]

---

[12] The semantic content of context-sensitive terms need not vary with the context. For example, 'that' has the same content in 'That is heavy' and 'I am not carrying that' provided that the same object is demonstrated. The point is that some sentences contain one or more terms whose semantic contribution *can* vary with the context of utterance.

[13] Moreover, the sentence itself, understood either as a token or a type, is intuitively neither true nor false apart from the context from which its context-sensitive terms take their content.
    Note also that if the Law of Excluded Middle is taken to hold for truth-bearers, that is, if one claim held about truth-bearers is that all truth-bearers are either true or false, then sentences are not truth-bearers. However, consideration of truth-paradoxical cases shows that the Law of Excluded Middle must be rejected regardless of the choice of truth-bearer; see chapter 2.

Section 3: Correspondence Theories of Truth

Recall that the correspondence theory of truth is the theory that a proposition is true if and only if it corresponds to a fact, where a fact is a mereological part of the actual world.[14] Aristotle is frequently cited as giving the first statement of the correspondence theory: "to say that that which is is not or that which is not is, is a falsehood; and to say that that which is is and that which is not is not, is true."[15] In more explicit terms, the view that truth is the adequation of things and the intellect is attributed to the ninth century neo-platonist Isaac Israeli by Thomas Aquinas.[16] Although Aquinas uses the word 'correspondentia' at least once, the current terminology is due largely to Bertrand Russell: "truth consists in some form of correspondence between belief and fact."[17]

The first challenge faced by a correspondence theory is to specify the sense in which 'correspond' is to be understood. 'Correspond' may be read in a weak sense which is synonymous with 'correlate'; that is, a proposition corresponds to a fact if and only if there is a material equivalence between a proposition and a fact. 'Correspond'

---

[14] Recall also that as a corollary to the correspondence theory, the truth predicate expresses this notion of truth.

[15] Aristotle, *Metaphysics, Books Γ, Δ, and E*, Christopher Kirwan, translator (Oxford: Clarendon Press, 1993) p 23; the passage is at *Metaphysics* 1011b26. Nevertheless, if emphasis is given to *say*, the passage seems to be stating a disquotational theory. Marian David reads Aristotle this way, and cites (in conversation) a history evenly divided over these two readings. (See Marian David, *Correspondence and Disquotation: An Essay on the Nature of Truth* (New York: Oxford University Press, 1994) pp 4, 18.) This reading also allows him to reconcile reading Tarski, who explicitly aims to capture the classical notion of truth, as a disquotationalist. (*ibid*., p 62-63n) While this is an interesting interpretive idea, Tarski also explicitly identifies the classical notion of truth with the correspondence notion. Hence, David's is very likely a misreading of Tarski, and I suspect of Aristotle as well.

[16] Thomas Aquinas, *De Veritate* Q. 1, A. 1.

[17] Bertrand Russell, *The Problems of Philosophy* (Oxford: Oxford University Press, 1912) p 190.

may also be read in a stronger sense, on which to say that a true proposition

corresponds to a fact is to say that the proposition represents a fact.

Section 3.1: Three Weak Correspondence Theories

There are three versions of the weak correspondence thesis that a proposition

corresponds to a fact if and only if there is a material equivalence between a proposition

and a fact. On one version, there is a material equivalence between every true

proposition and some fact or other. This material equivalence is trivially true, and

certainly does not capture a sought-after or interesting theory of truth.[18]

On the second version, there is a material equivalence between every true

proposition and a particular proper fact,[19] e.g., the fact that grass is green. Thus, on the

second version, there is a material equivalence between the proposition that snow is

white and the fact, e.g., that grass is green. Obviously, this is not a satisfactory notion of

correspondence.

To arrive at the third version of the weak correspondence thesis, consider the

intuition that the proposition that snow is white and the proposition that grass is green

have something in common, namely, that they both bear the property, truth. If each

proposition corresponds to a different fact, then it seems that truth is not something they

have in common. On the third version, there is a material equivalence between

---

[18] Nevertheless, G. E. Moore arrives at this view in *Some Main Problems of Philosophy*: "using the name 'correspondence' *merely* as a name for *this* particular relation, we can at once assert 'To say that this belief is true is to say that there is in the Universe *a* fact to which it corresponds; and to say that it is false is to say that there is *not* in the Universe any fact to which it corresponds." (G. E. Moore, *Some Main Problems of Philosophy* (New York: The Macmillan Company, 1953) p 277; Moore's italics.) This view is given a more detailed exposition and defense by C. J. F. Williams, *What Is Truth?* (Cambridge: Cambridge University Press, 1976).

[19] 'Proper fact' abbreviates 'proper mereological part of the actual world'. Likewise, 'improper fact' abbreviates 'improper mereological part of the actual world', i.e., the entire actual world.

every true proposition and the entire actual world.[20] However, the proposition that

grass is green could be true even if most of the actual world were very different. That is,

intuitively, it is the proper fact that grass is green, and only this fact, which bears on the

truth expressed by 'grass is green'. As a result, this intuition must yield to the stronger

intuition that, for example, the truth of the proposition that snow is white depends only

on snow's being white, and not on the fact that grass is green, or on any other fact,[21] and

that the proposition that snow is white would be true even if much of the actual world

were otherwise.[22] Therefore, the third version of the weak correspondence thesis is also

unsatisfactory.

---

[20] Note that the third version is a likely reformulation for avoiding the obvious objections to the first two versions.

[21] Of course, exception is to be made for facts to which the fact that snow is white is reducible; the intuition should be clear nevertheless.

      Also, it should be noted that the intuition that two true propositions have a property in common does *not* need to be abandoned, though it needs to be clarified; a view respecting this intuition is discussed in chapter 3.

[22] In "True to the Facts" (in *Inquiries into Truth and Interpretation* (Oxford: The Clarendon Press, 1984) pp 37-54), Donald Davidson offers a slingshot argument for the conclusion that if a proposition corresponds to one fact, it corresponds to all facts; Davidson calls this "The Great Fact." (cf. p 42) Charitably reconstructing, the argument has us consider the following three schemas:

(i)   the proposition that p corresponds to the fact that q
(ii)   the proposition that p corresponds to the fact that (q and r)
(iii)   the proposition that p corresponds to the fact that r

Thus, it seems that stipulating that 'p' and 'q' be assigned the same value does not prevent 'p' from corresponding to the arbitrary fact that r. In Davidson's example, 'p' = 'q' = 'Naples is farther north than Red Bluff', and 'r' = 'London is in England'. Thus, if the inferences from (i) to (ii) to (iii) are permitted, every proposition corresponds to any arbitrary fact. Further, since this can be repeated for every fact, every proposition corresponds to all facts, i.e., The Great Fact.

      It must be granted that on a strong reading of 'correspond', (i) is a plausible schema, provided it is instantiated only for like assignments of 'p' and 'q'. However, on a strong reading of 'correspond', (ii) may not be inferred from (i), since 'p' does not represent the fact that q and r, even where 'r' is necessarily true, e.g., ⌜Marty Willson-Piper is identical to Marty Willson-Piper⌝. Further, it is not clear *what* principle is supposed to license the inference from (ii) to (iii). Davidson writes that substitution of 'the fact that b' for 'the fact that a' is permitted provided that 'b' and 'a' are logically equivalent. Surely, mere sameness of truth value is not sufficient for logical equivalence, though Davidson's 'q' and 'r' merely share truth value. The principle is more

More fundamentally, because the weak sense of 'correspond' is a mere, unexplained correlation, false propositions correspond to facts just as true ones. For instance, in the weak sense of 'correspond', the proposition that snow is orange corresponds to some fact or other; it corresponds to the fact that roses are red, and it corresponds to the entire actual world. Therefore, this reading of 'correspond' is too weak, and must be rejected.

Section 3.2: Three Strong Correspondence Theories of Truth

On the strong reading of 'correspond', the fact to which a true proposition corresponds is the fact *represented by* that proposition. In order to give 'correspond' this reading, an account is required to explain how a proposition represents a certain fact and no other.

One characterization of the strong correspondence relation draws on the similarity of pictures representing facts; that is, a true proposition resembles the fact it corresponds to.[23] However, in a picture there are degrees of exactness in proportion,

plausible for the usual notion of logical equivalence, requiring at least sameness of modal profile for the propositions expressed by '*a*' and '*b*'. If such a principle is adopted, the inference from (i) to (ii) is more plausible where '*r*' is a true identity statement between rigid designators. However, the move from (ii) to (iii) is then implausible, since the propositions expressed by '*q* and *r*' and '*r*' do not have the same modal profile.

It is worth noting that slingshot arguments typically offer negative conclusions; for example, Alonzo Church's original slingshot argument offers the negative conclusion that the designatum of a sentence is not a proposition. ("This is already sufficient to show that the designata of §₁ and §₂ cannot be propositions...." See Alonzo Church, "A Review of Rudolph Carnap's *Introduction to Semantics*" *The Philosophical Review* **52** (1943) pp 298-304.) The positive conclusion that all true propositions correspond to The Great Fact requires further argumentation; Church goes on to argue that the designatum of a sentence is a truth value. However, Davidson's argument for his positive conclusion appears to involve his committing the fallacy of composition. (This fallacy may be avoided by assigning to '*r*' the proposition corresponding to The Great Fact.)

[23] Characterizing the correspondence relation by means of an analogy with pictures is generally credited to Ludwig Wittgenstein for his work in *Tractatus Logico-Philosophicus* (London: Routledge and Kegan Paul Ltd., 1922) despite the brevity of his remarks on truth there (see propositions 4.05 and 4.06) and the appearance of Frege's criticisms of the picture theory in 1918

shape, and color for which no analogous degree of exactness is to be found in a proposition. This disanalogy drives at a more fundamental problem with understanding correspondence as resemblance: generally, a proposition is not like the fact it corresponds to.[24] Thus, it is unhelpful to analyze correspondence in terms of a notion which is not understood, and does not lend itself to being understood, at least in the present analogy. Thus, the correspondence-as-depiction theory is a non-starter.

Instead of depiction, representation might be taken as a semantic notion; very roughly, it might be held that a true proposition represents a fact to which it is semantically related.[25] If the fact is taken to be a simple entity or a unified complex entity, a true proposition bears a simple relation to a fact. If the fact is taken to be an ununified complex entity, there is a complex representation relation between the parts of a proposition and the parts of a complex fact. These two views of facts yield the simple strong correspondence-as-representation theory, and the complex strong correspondence-as-representation theory, respectively. In order to eliminate some cumbersomeness, I will refer to them as the simple strong correspondence theory, and the complex strong correspondence theory, until one is shown to be preferable.

(see ff.). Under the influence of Wittgenstein, Russell develops the picture analogy into the notion of formal correspondence, which fails as badly as the picture theory of meaning. See "Truth and Falsehood", Lecture 13 of *The Analysis of Mind* (London: George Allen & Unwin Ltd., 1921) pp 253-278. Wilfrid Sellars explores several possible interpretations of Wittgenstein's picturing relation in "Truth and 'Correspondence' " (*The Journal of Philosophy* **59** (1962) pp 29-56), none of which are more fruitful or promising than this one.

[24] Exceptions include propositions about propositions, and singular propositions.

[25] For example, the fact may have as constituents particulars picked out by whatever descriptive content has been contributed to the proposition, *etc*. At this point in the discussion, the nature of the semantic relation will be left only roughly characterized so that more immediate issues may be addressed. The only constraint on the semantic relation is that it give an account as to how a proposition represents a certain fact and no other.

Two main objections may be raised against the simple and complex correspondence theories. The first stems from further skepticism regarding representation; the second stems from considering false propositions.

In "The Thought,"[26] Frege voices several important skeptical considerations against correspondence theories of truth, often taken as decisive. He argues that only objects which are intended to represent something are eligible to be true, and also that this view is problematic:

> Obviously one would not call a picture true unless there were an intention behind it. A picture must represent something. Furthermore, an idea is not called true in itself but only with respect to an intention that it should correspond to something…. It would only be possible to compare an idea with a thing if the thing were an idea too. And then, if the first did correspond perfectly with the second, they would coincide. But this is not at all what is wanted when truth is defined as the correspondence of an idea with something real. But then there would be no complete correspondence, no complete truth. So nothing at all would be true; for what is only half true is untrue.[27]

Frege's objection to the correspondence theory may be seen as a dilemma. If the proposition shares all of its properties with the fact to which it corresponds, then there is not mere correspondence, but identity. Not only is this not what is captured by the correspondence intuition, it is absurd to suppose that the proposition is identical to a fact since, even when true, a proposition differs in ontological status from a fact. If the

---

[26] Gottlob Frege, "The Thought: A Logical Inquiry" in Blackburn and Simmons (1999) pp 85-105. All references to "The Thought: A Logical Inquiry" are to the Blackburn and Simmons volume except where noted. This translation, by A. M. and Marcelle Quinton, is reprinted from *Mind* **65** (1956) pp 289-311, and differs from that appearing in *Propositions and Attitudes*, Nathan Salmon and Scott Soames, editors (New York: Oxford University Press, 1988). "Der Gedanke. Eine logische Untersuchung" was originally published in *Beitrage zur Philosophie des deutschen Idealismus* **1** (1918) pp 58-77.

[27] *ibid.*, pp 86-87.

proposition shares some but not all of its properties with the fact to which it

corresponds, then there is not truth, "for what is only half true is untrue." The second

horn of the dilemma is of course a phantom argument. If the correspondence relation

were a sharing of, say, three quarters of the proposition's properties with a fact, then any

proposition meeting this quota would be true.

Frege's argument continues,

> But yet? Can it not be laid down that truth exists when there is
> correspondence in a certain respect? But in which? For what would we
> then have to do to decide whether something were true? We should have
> to inquire whether it were true that an idea and a reality, perhaps,
> corresponded in the laid-down respect. And then we should be
> confronted by a question of the same kind and the game could begin
> again.[28]

This argument is offered as further support for the second horn of the dilemma, but is

likewise a phantom argument. Of course we will always be able to raise the question as

to whether the proposition and fact correspond in the laid-down respect, but we do not

have to answer this question in order to establish the correspondence into which we

initially inquired. Again, *were* truth to consist in correspondence in a certain respect,

then as long as the laid-down criterion for correspondence is met, the proposition is true.

Frege objects that if we analyze one concept in terms of another, then it is fair

game to raise the same analytical question about the analysans which we raised about

---

[28] *ibid.*, p 87.

the analysandum.[29] This game threatens an infinite regress when it is noticed that it can

begin again *ad infinitum*. However, what is threatened by the regress is our

understanding of the concepts, not the coherence of the concepts themselves, or the

coherence of their analysis. For example, if knowledge is correctly analyzed as justified

true belief, then, tautologously, it is correct to analyze knowledge as justified true belief.

If my purpose in doing this analysis is to understand knowledge, then I am not much

further along if I do not grasp the concept of justification; and my task appears

multiplied if I also do not grasp the concept of truth or belief. Although my failure to

grasp one or more of these three concepts may require further analysis, the regress it

threatens is a difficulty borne by the analyzer, not the analysandum.[30]

There is also a worry due to false propositions, again in the form of a dilemma,

that the semantic relation through which true propositions represent facts may likewise

relate false propositions to facts, in which case there would be a distinction between true

and false propositions without a difference. On the other horn of the dilemma, if no

---

[29] Frege's objection is not to be confused with the paradox of analysis. According to G. E. Moore (1952), analysis is a relation entirely between concepts. Thus, if correct, an analysis presents two forms of the same concept. Paradox results from comparing the analysandum and analysans: intuitively, the two concepts are not identical, but according to the principle underwriting analysis, they are identical, if the analysis is correct. See C. H. Langford, "Moore's Notion of Analysis" and G. E. Moore, "A Reply to my Critics: Analysis" both in *The Philosophy of G. E. Moore*, P. Schilpp, editor (La Salle, Illinois: Open Court Press, 1952) pp 319-342 and pp 660-667, respectively.

[30] I have omitted from the passage quoted from Frege his objection that the correspondence relation "is contradicted, however, by the use of the word 'true', which is not a relation word and contains no reference to anything else to which something must correspond." (*ibid.*, p 86) While the linguistic evidence Frege cites tends to support his point, this is not enough to constitute an argument against the correspondence thesis. That is, while 'is true' does not *appear* to contain any reference to anything else to which something must correspond, this evidence is *prima facie* only. Each of the three theories of truth characterizes truth as a relation, or relational property, so that the only way to respect this *prima facie* evidence is to reject all three theories. The most plausible way to do this is to claim that truth is not a property at all, but this comes on the pain of rejecting the very same *prima facie* evidence that 'is true' is a predicate expressing a property.

such semantic relation holds, then it may seem that false propositions are meaningless.[31] The second horn of this dilemma is simply a confusion. For a sentence to be meaningful is for it to express a (non-defective) proposition. The semantic relation holding between a true proposition and a fact is a distinct, independent relation, and does not interfere with the semantic relation holding between sentence and expressed proposition; nor does the failure of a relation to hold between a proposition and a fact interfere with the relation between a sentence and the proposition expressed, which is the sentence's meaning. A sentence can be meaningful, that is, can express a proposition, even if it is false and corresponds to nothing. There is no difficulty here; this objection quite simply fails.

On the first horn of this dilemma, if a false proposition corresponds to something just as a true proposition, then, as Bertrand Russell objects, "the difference between truth and falsehood [is] quite unexplicable."[32] Russell's objection may be avoided by taking the second horn of the dilemma; that is, by holding that false propositions correspond to nothing. Although this results in an asymmetry between true and false propositions, since all true propositions correspond to distinct facts,[33] while false propositions are all alike in corresponding to nothing, it does not follow that false propositions are meaningless. Russell's objection is that if both true and false

---

[31] See Plato's "Sophist" in *The Collected Dialogues of Plato*, Edith Hamilton and Huntington Cairns, editors (Princeton, New Jersey: Princeton University Press, 1961). Plato's objection is most accurately reported as being that false propositions correspond to nothing and so mean nothing.

[32] Bertrand Russell, "On the Nature of Truth and Falsehood" in *Philosophical Essays* (New York: Simon & Schuster, Inc., 1966) p 152. G. E. Moore unearths this problem in *Some Main Problems of Philosophy* (London: George Allen & Unwin, 1953) p 250.

[33] Even this is not correct, strictly speaking, since <water freezes at 32°F>, <water melts at 32°F>, <water freezes at 0°C>, and <water melts at 0°C> presumably correspond to the same fact; but the general asymmetry between true propositions corresponding to facts they represent and false propositions corresponding to no fact.

propositions correspond to something, there is a distinction without a difference. However, on this view, the difference between true and false propositions is plain, since true propositions correspond to facts, and false propositions correspond to nothing.

The first horn of the dilemma may be braved by adopting one of two alternative views of falsity, which make use of the notion of a way for things to be. A description of a way for things to be is a description of part of a possible world. Generally, a way for things to be is a proper mereological part of a possible world; if the description is complete, the way for things to be is a possible world.[34] A way for things to be is sometimes called a state of affairs.

On the first alternative view of falsity, a true proposition corresponds to a fact, and a false proposition corresponds to a (merely possible) way for things to be.[35] Since a fact and a way for things to be differ in ontological status, the difference between true and false propositions is explicable. On the second alternative view of falsity, both true and false propositions correspond to a way for things to be; the difference is that the way for things to be to which a true proposition corresponds is actual, while the way for things to be to which a false proposition corresponds is not actual.[36] This second view faces several objections: although the status of the way for things to be differs, the correspondence relation itself appears to be the same for true and false propositions. There is the worry that actuality cannot be defined without appealing to truth, in which case, this view is circular. Also, it may be objected that compared with the first view,

---

[34] Since the description of a possible world includes its total history, a way for things to be must be indexed to a time. In the discussion, I overlook this dimension of ways for things to be.

[35] It is important to note that a way for things to be is indexed to a time to avoid difficulties arising from change.

[36] J. L. Austin held this view of falsity; see his "Truth" *Proceedings of the Aristotelian Society*, *supplement* **24** (1950) pp 111-128, reprinted in Blackburn and Simmons (1999) pp 149-161.

the introduction of ways for things to be does not accomplish anything, so that this view

multiplies entities beyond necessity. Nevertheless, both views of falsity are viable. I

defer further discussion of falsity to chapter 3.[37]

A notorious difficulty facing a correspondence theory of truth is the Liar

Paradox. The Liar Paradox is an extremely difficult problem which challenges any

theory of truth; it is the topic of chapter 2. Other problems facing the correspondence

theory of truth include the problem of negative facts (for example, accounting for the

fact to which the true proposition expressed by 'snow is not orange' corresponds), the

problem of counterfactual conditionals (for example, accounting for the fact to which the

true proposition expressed by 'if Barry Sanders had played two more seasons in the

NFL, he would have become its all-time leading rusher' corresponds), and the problem

of true singular negative existentials (for example, accounting for the fact to which the

true proposition expressed by 'Santa Claus does not exist' corresponds). Though these

problems are genuine, they are beyond the aims of this chapter to show that only the

correspondence theory of truth adequately treats the correspondence intuition. I do not

dismiss these problems, but defer a more detailed discussion of them until chapter 3.

Section 3.3: Conclusions about Correspondence Theories of Truth

The correspondence relation may be held to be the relation of material equivalence

between proposition and fact. This reading of 'correspondence' yields three weak

correspondence theories: a material equivalence between a true proposition and some

---

[37] A third view of falsity is offered and defended in section 22.3 which shares certain features
with each of the two views of falsity discussed here.

fact or other, some particular fact, or the entire actual world. None of these views is satisfactory, since material equivalence is too weak a notion of correspondence.

The correspondence relation may also be held to be a representation relation, which is a stronger relation than material equivalence. Correspondence-as-depiction is an unhelpful way to understand correspondence, since propositions are fundamentally unlike the things they represent. Instead, it may be held that the relevant representation is semantic, yielding the simple correspondence-as-representation theory if it is held either that facts are simple or unified, and the complex correspondence-as-representation theory if it is held that facts are complex entities. The traditional objections to these last two versions of the correspondence theory fail; hence, they are *prima facie* viable, though they face several other problems. In what follows, I will drop the cumbersome reminders in the names of the simple and complex strong correspondence theories, and will speak of the correspondence theory. The issue of whether the simple or complex view of facts is to be accepted and the other problems facing the correspondence theory are addressed in chapter 3.

Section 4: Coherence Theories of Truth

Recall that the coherence theory of truth is the theory that a proposition is true if and only if it is not inconsistent with the set of propositions already accepted as true. F. H. Bradley and Harold H. Joachim defend versions of the coherence theory. Both of these philosophers are idealists about propositions, which is to say that for them truth-bearers are mental acts, or judgments, rather than propositions. Bradley was convinced by considerations similar to Frege's that truth, knowledge, and reality could not be separated from each other, on pain of regress. "The identity of truth knowledge and

reality, whatever difficulty that may bring, must be taken as necessary and

fundamental."[38] For Bradley, reality is an "all-inclusive reality"[39] which truth strives to

comprehend. This is to say, first of all, that reality is mind-independent, and truth,

because it is borne by judgments, is mind-dependent. It is also to say that as our

knowledge increases, that is, as our body of judgments increases, truth approaches

reality. Thus, strictly speaking, what is true is the body of judgments, not any particular

judgment *per se*. "Hence, being the same as reality, and at the same time different from

reality, truth is thus able to apprehend its identity and difference."[40]

Since this rings of paradox, it is charitable to note that for Bradley there are two

grades of truth: truth, and ultimate truth.

> In the sciences we use working ideas and convenient mythology, and,
> while not admitting that these have ultimate truth, I should think it
> absurd to deny them truth altogether. And surely so it may be again
> with morality and religion. The ideas that are really here required, most
> certainly, I should say, must be true. But to conclude from this that they
> have ultimate truth for metaphysics is to my mind irrational.[41]

From this passage, it seems that ultimate truth corresponds to reality. But since minds

are finite and reality is infinite, in the end truth cannot be a correspondence property, so

that the correspondence theory must be rejected. Instead, Bradley adopts the thesis that

---

[38] F. H. Bradley, "On Truth and Copying" in Blackburn and Simmons (1999) pp 31-45 at p 35.
Bradley's views on truth and related issues are presented in various essays collected in *Essays on Truth and Reality* (Oxford: Clarendon Press, 1914) and in *The Principles of Logic*, second edition (London: Oxford University Press, 1922).

[39] *ibid.*, p 38.

[40] *ibid.*, p 37.

[41] *ibid.*, p 43.

a body of judgments is true because none of the individual judgments comprising it are inconsistent with any other.

It appears that Bradley has worked himself into a corner. If ultimate truth is a correspondence to reality, then truth is not genuinely a grade of ultimate truth, since it is coherence among judgments. Despite the names, truth has no relation to ultimate truth. This flies in the face of Bradley's claim that truth is supposed to approach ultimate truth.

The scientific discoveries Bradley mentions present a problem for his notion of truth, for in scientific discoveries we form judgments which replace our earlier set of judgments, and are also inconsistent with those earlier judgments. On the coherence theory, the only reason to prefer a newly discovered scientific judgment is if it true, i.e., if it coheres, since ultimate truth is beyond human reach. Since the new scientific judgment is inconsistent with the earlier set of judgments, and therefore false, revision seems to be deselected on the coherence theory.[42]

Further, Bradley has wrung out a trilemma for himself concerning the aim of his theory: if his coherence theory is concerned with truth as opposed to ultimate truth, then it may hold interest in psychology, but it is principally descriptive, and not aimed at what philosophers seek in a theory of truth. If his theory is concerned exclusively with what he calls "ultimate truth," then it seems he has surreptitiously adopted a

---

[42] Of course, we are free to replace our judgments which are true on the coherence theory with judgments that are false on that theory; the problem for the coherence theory is not quite that it is impossible to revise our body of judgments to incorporate scientific discoveries, just that it can be explained only as a decrease in the truth of our body of judgments, and perhaps even as irrational, when it seems paradigmatically enlightening.

There is also a problem resulting from certain revision procedures. It seems that on pain of accepting false beliefs, revisions need to be made all at once, or at least that all judgments to be discarded in the course of revision need to be discarded in advance. This is because stepwise revision will render the accepted set of judgments inconsistent, so that any judgment added to that set will result in a set of inconsistent judgments, and so will be false.

correspondence theory. Finally, if his theory is concerned with both, then he has both developed a philosophically uninteresting theory of truth, and surreptitiously adopted a correspondence theory of ultimate truth; plus he incurs the further burden of explaining how the two notions are related.

Joachim's view is more explicitly a coherence theory.[43] Like Bradley, truth is mind-dependent for Joachim, but unlike Bradley, it is not the coherence of a system of judgments or ideas which are true, strictly speaking, but the system itself. For Joachim, the system is not a static system, but something dynamic, a process. Joachim formulates his view as follows:

> Truth in its essential nature is that systematic coherence which is the character of a significant whole. A 'significant whole' is an organized individual experience, self-fulfilling and self-fulfilled. Its organization *is* the process of its self-fulfillment, and the concrete manifestation of its individuality. But this process is no mere surface-play between static parts within the whole: nor *is* the individuality of the whole, except in the movement which is its manifestation. The whole *is* not, if 'is' implies that its nature is a finished product prior or posterior to the process, or in any sense apart from it. And the whole *has* no parts, if 'to have parts' means to consist of fixed and determinate constituents, from and to which the actions and interactions of its organic life proceed, much as a train may travel backwards and forwards between the terminal stations. Its 'parts' are through and through in the process and constituted by it. They are moments in the self-fulfilling process which is the individuality of the whole. And the individuality of the whole is *both* the pre-supposition of the distinctive being of its 'moments' or parts *and* the resultant which emerges as their co-operation, or which they make and continuously sustain.
>   It is this process of self-fulfillment which is truth, and it is *this* which the theory means by 'systematic coherence'.[44]

---

[43] For a view very similar to Joachim's, see Bernard Bosanquet, *Logic, or, the Morphology of Knowledge* (Oxford: Clarendon Press, 1888).

[44] H. H. Joachim, "The Nature of Truth" in Blackburn and Simmons (1999) pp 46-52 at p 50. All emphasis is Joachim's. The selection in Blackburn and Simmons includes sections 24-26 and part of section 27 of Joachim's *The Nature of Truth* (Oxford: Clarendon Press, 1906).

Like Bradley's notion of truth, Joachim's wholistic notion of truth as a process is principally descriptive, and not especially concerned with reality. Thus the same criticism raised against Bradley's view applies to Joachim's: perhaps this notion holds interest in psychology; otherwise it simply is not the notion philosophers were trying to capture in a theory of truth.

A standard objection to coherence theories is that it is possible to have two equally comprehensive systems both of which are coherent but the contents of whose judgments differ. To say that two coherent systems differ in the content of their judgments is to allow the possibility that one system contains judgments whose contents contradict the contents of judgments in the other system; that is, that the systems are inconsistent with respect to one another. In fact, for any cohering system of judgments, we can consider the equally cohering system of judgments formed from the negations of the judgments in the first system. Since both systems approach all-inclusive reality, and either may be the self-fulfilling process, Bradley and Joachim must countenance the truth of both of two sets of judgments inconsistent with one another.[45] Joachim actually seems prepared to accept the case of two equally coherent but inconsistent sets of judgments; in fact, for him, every process, regardless of its course, is

---

[45] This fundamental objection against coherence theories can be pressed against Francis Dauer's attempt to answer it. Dauer attempts to obviate this case by working with a group of competent speaker-observers, G, in order to privilege one system of judgments. However, it will not do to select the competent speaker-observers based on a notion of truth, on pain of vicious circularity; and if truth is not used to select the competent speaker-observers, there is no reason to privilege either system of judgments. Dauer's attempts to provide a non-circular account fail due to an equivocation on 'conceptually impossible' in his principle T: The denial of 'The vast majority of observation statements are true' is conceptually impossible. T is supposed to privilege the judgments made by the competent speaker-observers. However, while it may be conceptually impossible for the members of G to deny that 'the vast majority of observation sentences are true', it is not conceptually impossible *simpliciter*. In fact, any application of T to G can be made likewise to I, the group of incompetent speaker-observers, in order to privilege their system of judgments. See Francis Dauer, "In Defense of the Coherence Theory of Truth" *The Journal of Philosophy* **71** (1974) pp 791-811.

true. This means that revision, if it is attempted, is in the end only a part of the process, and so does not accomplish revision as we ordinarily set out to do. That is, since the parts of this process are temporal, we cannot alter the process—which for Joachim is the bearer of truth—without traveling back in time. Worse, since every process, or at least every process undergone by a rational agent, will proceed coherently, in Joachim's sense, every such process will be true. This consequence exposes Joachim's notion of truth as uninteresting and perfunctory.

Finally, it must be noted that the coherence theory faces a difficulty in explicating its thesis. The central notion in the coherence theory is consistency, which is normally defined in terms of truth. In formal languages, consistency is commonly defined in terms of contradictions, which may be defined syntactically. However, since propositions and judgments do not have the applicable sort of syntax, the coherence theory cannot eliminate the difficulty by appealing to syntax. Obviously, the coherence theorist may not define consistency in terms of truth on pain of circularity.[46] But it is not clear what resources the coherence theory may appeal to. The most plausible route is to claim that consistent judgments are those that a rational person is willing to accept. But this merely fobs the difficulty onto the notion of rationality. To the extent that rationality is normative, the coherence theory is still in need of a plausible account of rationality which does not appeal to truth; to the extent that rationality is non-normative, the coherence theory leaves truth up to the whims of minds making judgments.

---

[46] This objection against coherence theories of truth is made by Bertrand Russell, *The Problems of Philosophy, op. cit.*, p 192.

These same objections beset the attempt to idealize the coherence theory. A set of judgments may be idealized along different dimensions: it may be a maximal set of coherent judgments, the judgments may be those of a mind with privileged abilities and faculties. These modifications depart from Bradley's and Joachim's philosophies, but make the coherence theory more plausible. Nevertheless, for any maximal set of coherent judgments there is the equally coherent set of judgments consisting of the negations of those judgments. It is not as obvious as it may seem that adding epistemic privileges will decide which set contains the true judgments. It will be difficult, if not impossible, to account for the decision without mentioning that the chosen set of judgments corresponds to reality; and in this case, it is correspondence that is doing the work for truth. Also, idealized or not, the notion of coherence cannot be described in terms of truth on pain of circularity, and cannot otherwise, it seems, be given a satisfactory characterization. If the coherence component is dropped and the idealization is retained, the resulting theory is an epistemic theory of truth; these are discussed in section 7.

It might be suggested that the relation of coherence be defined in terms of entailment. However, the same circularity problems beset this definition, since entailment is standardly defined in terms of truth (truth-preservation). Also, entailment is highly implausible as a relation uniting an entire set of judgments. Many judgments arrived at through sensory experience simply are not related by entailment. As a result, this version of the coherence theory is too strong.[47]

---

[47] Another attempt to defend the coherence theory of truth is made by Nicholas Rescher, *The Coherence Theory of Truth* (Oxford: The Clarendon Press, 1973). Rescher distinguishes between defining the (meaning of the) truth predicate and giving criteria for determining whether a proposition is true. Rescher readily concedes that the meaning of the truth predicate is a

Section 5: Pragmatic Theories of Truth

Recall that the pragmatic theory is the theory that a proposition is true if and only if

belief in it tends to maximize the utility of the believer's life, where utility may be

construed broadly to include pleasure, efficiency, health, wealth, or other preferred

indicator(s) of the good life. The view of William James most clearly represents the

pragmatic theory.[48] James characterizes his view as follows:

> Pragmatism...asks its usual question. 'Grant an idea or belief to be true,'
> it says, 'what concrete difference will its being true make in any one's
> actual life? How will the truth be realized? What experiences will be
> different from those which would obtain if the belief were false? What,
> in short, is the cash-value in experiential terms?'
>   The moment pragmatism asks this question, it sees the answer:
> *True ideas are those that we can assimilate, validate, corroborate and verify.*
> *False ideas are those that we can not.* That is the practical difference it
> makes to us to have true ideas; that, therefore, is the meaning of truth,
> for it is all that truth is known-as.
>   This thesis is what I have to defend. The truth of an idea is not a
> stagnant property inherent in it. Truth *happens* to an idea. It *becomes* true,
> is *made* true by events.[49]

---

correspondence notion, but that the criterion for truth is coherence. These two positions need not be orthogonal to each other; if, for example, it is claimed that coherence is the criterion which ought to be used, then there is a tension between the two claims. However, Rescher's claim is the more modest one that coherence is a generally effective test of truth.

[48] James explicitly follows the views of the pragmatists F. C. S. Schiller and John Dewey. Though pragmatism can be found as early as the Skeptics, Charles Sanders Peirce is perhaps the pioneer of pragmatism. Peirce's version of pragmatism, however, is much more epistemological than James's, and so does not as clearly represent the pragmatic theory as stated here. Peirce's view is better likened to the assertability theory. See Charles Sanders Peirce, *Collected Papers of Charles Sanders Peirce, Volume V: Pragmatism and Pragmaticism*, Charles Hartshorne and Paul Weiss, editors (Cambridge, Massachusetts: Harvard University Press, 1934) *passim*.
     For a more recent view along very similar lines, see Richard Rorty, *Philosophy and the Mirror of Nature* (Princeton, New Jersey: Princeton University Press, 1979), *Consequences of Pragmatism: Essays 1972-1980* (Minneapolis, Minnesota: University of Minnesota Press, 1982), and "Solidarity or Objectivity?" in *Post-Analytic Philosophy*, John Rajchman and Cornell West, editors (New York: Columbia University Press, 1985) pp 3-19.

[49] William James, "Pragmatism's Conception of Truth" in Blackburn and Simmons (1999) pp 53-68, at p 54. All emphasis is James's. "Pragmatism's Conception of Truth" is reprinted from William James, *Pragmatism: A New Name for Some Old Ways of Thinking* (New York: Longmans, Green and Co., 1907) pp 197-236.

> ...the possession of true thoughts means everywhere the
> possession of invaluable instruments of action....[50]

James's italicized characterization sounds like verificationism; and in a sense it is. For James, we verify beliefs by putting them into practice: if they work, that is, if putting them into practice increases utility, then they are assimilated, validated, corroborated, and verified, and hence true; if they fail they are falsified. An idea which is never tested, or never made either to work or to fail, is neither true nor false.

There are several challenging cases for the pragmatic theory. It is easy to come by an idea (proposition) which is so trivial as to never be tested. In the sense of 'work' adopted by the pragmatist, the idea that the ten thousandth digit of the decimal expansion of pi is either even or odd is not likely to be put to work; it will not affect anyone's utility except the mathematically interested, and in the case where no one has the relevant interest, the idea remains untrue for pragmatism. Although it may be entirely unimportant, it seems that this idea is true, was true before pi was ever discovered and would remain true beyond the doom of all mathematically inclined creatures.

Another problem case results where a coincidental error maximizes utility. For example, suppose a series of murders is being committed. Eventually, someone is wrongly accused of the murders, is arraigned, prosecuted, and given a lengthy jail sentence. Suppose that no more murders are committed once the accused has been arraigned. From the increase in utility resulting from prosecuting a wrongfully accused suspect, it follows, on the pragmatic theory, that the idea that the accused committed

---

[50] *ibid*., p 55.

the murders is true, yet by supposition it is false. In fact, the circumstances which lead

the pragmatic theory to say that this idea is true need not even be coincidental: it could

be that the real murderer realizes that if she commits more murders, the accused is likely

to be acquitted, and the murder investigation will continue, making her own

apprehension more likely. The murderer may realize that any penalty can be avoided

by quitting while ahead. Nevertheless, on the pragmatic theory, the idea that the

wrongfully accused committed the murders is true, yet by hypothesis it is false.

Other cases involving error also plague the pragmatic theory. My belief that

drinking water is healthy may be true, intuitively, but if it leads me to accidentally drink

a noxious liquid—perhaps by mistake, perhaps due to another's machinations, perhaps

because I am stranded at sea—then belief in the idea tends to minimize utility.

Furthermore, if this belief works for someone else, then James must either say that it is

both true and false, or that truth is relative to the believer. The latter seems to be more

consonant with pragmatism, but it is counterintuitive nevertheless. Even for James, it

leads to an uncomfortable reluctance to revise our beliefs: if I accept the pragmatic

thesis, then I ought also to simply accept the possibility that an idea believed and

verified by someone else can be falsified by me. This leaves me with no motive to revise

my beliefs based on the results of others, since things just can turn out this way.

The same problem occurring between believers can occur over time within a

system of beliefs. Since an idea is "*made* true by events"[51] it is possible for an idea to be

corroborated or verified at one time, and not corroborated at another time. The

phlogiston theory, and Ptolomeic astronomy were true for a time, according to the

pragmatic theory, since they worked. It is not clear whether the appropriate position for

---

[51] *ibid*. p 54.

pragmatism is to regard these theories as less true than their successors, since they work

less well, or to regard them as false, since they are no longer assimilated and verified.

Both options seem straightforwardly problematic, since intuitively, a theory does not

change from being true to false, or vice versa, regardless of how the theory is put into

practice.

Bertrand Russell gives two examples of ideas which are decided *tout court* on the

pragmatic view.[52] Consider the anti-solipsist idea that other humans exist besides me.

On the pragmatic view this is straightforwardly true, since belief in it tends to maximize

utility. The same holds for belief in God's existence. But both of these ideas seem to be

things that can, and need to be investigated further: it is highly counterintutive to hold

that their truth can be established solely by the pragmatic thesis—especially in light of

James's rabble-rousing claim that pragmatism is a wholly empirical philosophy![53]

The fundamental error of pragmatism is to confuse our valuing a thing with that

thing itself. The following claim encapsulates this confusion: " '*The true', to put it very*

briefly, is only the expedient in the way of our thinking, just as 'the right' is only the expedient in

the way of our behaving."[54] Just as we found with the coherence theory, the pragmatic

---

[52] Bertrand Russell, "William James's Conception of Truth" in Blackburn and Simmons (1999) pp 69-82, at pp 76-79. "William James's Conception of Truth" is reprinted from Russell's *Philosophical Essays* (New York: Simon & Schuster, Inc., 1966) pp 112-130.

[53] "A pragmatist turns his back resolutely and once for all upon a lot of inveterate habits dear to professional philosophers. He turns away from abstraction and insufficiency, from verbal solutions, from bad *a priori* reasons, from fixed principles, closed systems, and pretended absolutes and origins. He turns toward concreteness and adequacy towards facts, towards action and towards power. That means the empiricist temper regnant and the rationalist temper sincerely given up." (*Pragmatism: A New Name for Some Old Ways of Thinking, op. cit.*, p 51. This is quoted in Bertrand Russell, "William James's Conception of Truth" in his *Philosophical Essays*, *op. cit.*, at pp 114. "William James's Conception of Truth" is reprinted in Blackburn and Simmons (1999) pp 69-82; the quoted passage appears on pp 70-71.)

[54] William James, "Pragmatism's Conception of Truth", *op. cit.*, p 62; italics are James's.

theory may hold some interest in psychology as reflecting at least part of how we make decisions. But intuitively, neither my failing to value a thing, because I have not considered it, nor my valuing it not at all, because I find no utility in it, entail that the thing is not true, or not right. This consequence can be put more pointedly: intuitively, it is possible that a certain principle be useful, and that I believe it is, but still not believe that it is true; but on the pragmatic theory, a description of such a case will include a contradiction. Perhaps I come to realize before the end of 1997 that Bill Clinton is the then-current president of the United States, despite my great gains in popularity from expressing my previous belief that he is not. Here the proposition is useful, I can believe that it is useful, and nevertheless believe that it is not true. On the pragmatic theory, this is contradictory; nay, on the pragmatic theory, we do not have the conceptual resources to say what I just said.

James gives two arguments to show that the pragmatic theory meets the correspondence intuition. He writes,

> Truth, as any dictionary will tell you, is a property of certain of our ideas. It means their 'agreement', as falsity means their disagreement, with 'reality'. Pragmatists and intellectualists both accept this definition as a matter of course. They begin to quarrel only after the question is raised as to what may precisely be meant by the term 'agreement', and what by the term 'reality', when reality is taken as something for our ideas to agree with.[55]

James asserts that a pragmatist can accept the claim that true ideas correspond to reality as well as any other truth theorist. Of course, if the question of what this claim commits its espousers to is a further question, then acceptance of the claim 'all and only the ideas

---

[55] *ibid.*, p 53.

which agree with reality are true' as a criteria for advancing in the debate would eliminate no view. If the meaning of terms may be left an open question when accepting a claim, then it is a simple matter to meet Wittgenstein's challenge to utter the sentence 'it's hot here' under any ambient conditions whatsoever, and mean, it's cold here. Despite the vacuity of his argument, this measure shows James's intent to meet the correspondence intuition, rather than dismiss it.

James's other argument emphasizes the importance of true judgments, which he does with great rhetorical force: "Our ideas must agree with realities, be such realities concrete or abstract, be they facts or be they principles, under penalty of endless inconsistency and frustration,"[56] and, "Woe to him whose beliefs play fast and loose with the order which realities follow in his experience; they will lead him nowhere or else make false connexions."[57] What James points out is that if our ideas agree with reality, we will avoid inconsistency and frustration, and if they do not, we will either go nowhere or find falsity. But from the standpoint of the pragmatist, this gets things the wrong way around: what James points out is that these benefits follow from the correspondence of our beliefs to reality; to claim on the basis of these passages that correspondence follows from the pragmatic theory is to commit the fallacy of affirming the consequent. Further, notice that James cannot make these points without appealing to a correspondence notion of truth. His points depend on the notion of ideas agreeing with reality, which draws on the correspondence thesis. If "our ideas must agree with realities" is read as "our ideas must tend to maximize utility," the point he makes is a tautology in a rhetorical cloak.

---

[56] *ibid.*, p 58.

[57] *ibid.*, p 56.

In another passage, where James anticipates the case of useless truths, his own reply makes an unmistakable use of a correspondence notion of truth: "If you ask me what o'clock it is and I tell you that I live at 95 Irving Street, my answer may indeed be true, but you don't see why it is my duty to give it. A false address would be as much to the purpose."[58] On the pragmatic theory, there is no distinction to be made here between the truth and falsity of 'I live at 95 Irving Street', since both it and its negation are useless. To claim that the reply is true but without purpose is a contradiction according to the pragmatic theory. To make sense of his claim, James must admit that truth and purpose (utility) are distinct concepts, which is to abandon the pragmatic theory of truth. Thus, the pragmatic theory of truth is devastated by several types of puzzle case; and despite James's rhetoric, does not support the correspondence intuition.

Section 6: Epistemic Theories of Truth

The pragmatic notion of truth is closely related to an epistemic notion of truth, since putting an idea into practice potentially produces not only utility, but justification too. Michael Dummett has argued that truth is justification.[59] However, this theory is a non-starter. According to this theory, a proposition *becomes* true when belief in it becomes

---

[58] *ibid.*, p 66.

[59] Dummett's arguments stem from considerations about theories of meaning. T-sentences do not by themselves give us a theory of meaning; they only give a pair of sentences which are equally assertable under the same circumstances. To give a theory of meaning, T-sentences must be supplemented with a principle specifying when either may be asserted. Dummett rejects a correspondence principle as problematic and adopts instead a justification principle. See "Truth" and "The Philosophical Basis of Intuitionistic Logic" both in *Truth and Other Enigmas* (Cambridge, Massachusetts: Harvard University Press, 1978) pp 1-24 and pp 215-247, respectively, and "What Is a Theory of Meaning? (II)" in *Truth and Meaning: Essays in Semantics*, Gareth Evans and John McDowell, editors (Oxford: Clarendon Press, 1976) pp 67-137.

justified. Intuitively, though, the proposition was true before belief in it became justified, and would remain true should the justification vanish, or be defeated.[60] Also, since justification may be had in degrees, this theory is committed to there being degrees of truth. Although resorting to degrees of truth is helpful in answering vagueness paradoxes, it is highly unintuitive for normal cases. Finally, cases such as those devised by Edmund Gettier can be modified to give examples of propositions belief in which is justified but untrue.[61] For example, if the president of the company sincerely told Smith that Jones would get a promotion, but on later reflection decided to promote the inquisitive and alert Smith instead, Smith would have justification for believing that Jones will be promoted, yet this belief is false. Similarly, Smith has justification for believing that either Jones owns a Ford, or Brown is in Boston, since Jones gives Smith a ride to work each weekday in a Ford. Yet by the parameters of Gettier's example, this proposition is false, despite Smith's justified belief in it. It is also clear from such examples that justification is simply a different notion than truth.[62]

According to Hilary Putnam's Internal Realism, a proposition is true "if it would be justified under epistemically ideal conditions."[63] Idealized conditions allow us to

---

[60] Indeed, in many cases, justification consists in the likelihood that a proposition is *true*; if so, epistemic theories of truth are circular. Since other accounts of justification are available, and the presented objections devastating, I do not pursue this issue further.

[61] Edmund L. Gettier, "Is Justified True Belief Knowledge?" *Analysis* **23.6** (1963) pp 121-123.

[62] *pace* the attempt to incorporate it as part of a theory of meaning.

[63] Hilary Putnam, "Reference and Truth" in *Realism and Reason: Philosophical Papers, Volume 3* (Cambridge: Cambridge University Press, 1983) pp 69-86 at p 84. See also "Realism and Reason" in *Meaning and the Moral Sciences* (London: Routledge and Kegan Paul, 1978), "Reference and Understanding" in *Meaning and Use*, Avishai Margalit, editor (Dordrecht, Holland: D. Reidel Publishing Company, 1979) pp 199-217, *Reason, Truth, and History* (Cambridge: Cambridge University Press, 1981), and *The Many Faces of Realism* (LaSalle, Illinois: Open Court Publishing Company, 1987).

transcend our human limitations: to consider an infinitely long proposition, or travel in time and space where we are unable to, in order to obtain the sought justification. Putnam does not detail exactly which conditions may be transcended under the idealization license, although it is clear that it is intended to minimize or eliminate the shortfallings of justification. But the view faces a dilemma: although idealizing the epistemic conditions may reduce the number of counterexamples, unless it eliminates all of them, the uneliminated counterexamples remain to vitiate the theory. Putnam cannot simply stipulate that the idealized conditions eliminate all errant justification. A characterization of the remaining counterexamples in terms of error, or a like term, will ultimately involve an appeal to truth, and so be circular. The same problem faces a characterization in terms of warrant, since it is what, in addition to belief and *truth*, constitutes knowledge.[64]

There is room between the horns of this dilemma to specify all of the idealized conditions, which eliminate all of the counterexamples. This appears to be quite challenging.[65] As an analysis of what is expressed by the truth predicate, the more challenging and intricate the specification, the less plausible the theory. This objection gets at a more fundamental point: even if a warrantlike theory were not circular, what we would have is a material equivalence between true propositions and ideally warranted propositions. Even if every true proposition is ideally warranted, and even if

[64] In a later paper Putnam writes, "All I ask is that what is supposed to be 'true' be *warrantable* on the basis of experience and intelligence for creatures with 'a rational and a sensible nature.' " (Hilary Putnam "A Defense of Internal Realism" in *Realism with a Human Face* (Cambridge, Massachusetts: Harvard University Press, 1990) pp 30-42 at p 41. If he has modified his earlier view that truth is idealized justification, he does not call attention to it; it faces the dilemma nevertheless.

[65] For example, Putnam writes, "I don't think we can even sketch a theory of actual warrant (a theory of the "nature" of warrant), let alone a theory of idealized warrant." *ibid*., p 42.

truth and idealized warrant are related, it does not follow that they are identical notions.

Whether idealized or not, the evidence for a proposition and the truth of the proposition

are different notions: truth is a property of propositions, warrant and justification are

not. Warrant and justification are simply different notions than truth.

Section 7: The Simple Theory of Truth

On the correspondence, coherence, and pragmatic theories, truth is a property expressed

by the truth predicate, and is characterized, or analyzed in the relevant way. If it is

maintained that truth is a property, but one which is simple and unanalyzable, the result

is the simple theory of truth. G. E. Moore held this view for a short time;[66] he describes

it retrospectively in *Some Main Problems of Philosophy* as follows:

> It is a theory which I myself formerly held, and which certainly has the
> advantage that it is very simple. It is simply this. It adopts the
> supposition that in the case of every belief, true or false, there is a
> proposition which is what is believed, and which certainly is. But the
> difference between a true and a false belief it says, consists simply in this,
> that where the belief is true the proposition, which is believed, besides
> the fact that it *is* or 'has being' also has another simple unanalysable
> property which may be called 'truth'. 'Truth', therefore, would, on this
> view, be a simple unanalysable property which is possessed by some
> propositions and not by others. The propositions which don't possess it,
> and which therefore we call false, *are* or 'have being' —just as much as
> those which *do*; only they just have *not* got this additional property of
> being 'true'.[67]

---

[66] Moore's earlier writings on this view are limited to "The Nature of Judgment" (*Mind* n. **5**.8, 1899) pp 176-193 and his entry on 'truth' in *Dictionary of Philosophy and Psychology*, J. Baldwin, editor (London: Macmillan, 1901-2) volume 2, pp 716-718. Both are reprinted in *G. E. Moore: Selected Writings*, Thomas Baldwin, editor (New York: Routledge, 1993) pp 1-19 and pp 20-22, respectively.

[67] G. E. Moore, *Some Main Problems of Philosophy* (New York: The Macmillan Company, 1953) p 261; Moore's italics. This is Moore's clearest characterization of the simple theory of truth. This view, held also by Russell for a short time, is discussed by Richard Cartwright in "A Neglected Theory of Truth" in his *Philosophical Essays* (Cambridge, Massachusetts: The MIT Press, 1987) pp 71-93.

Bertrand Russell also held this view, but, like Moore, only for a short time:

> True and false propositions alike are in some sense entities, and are in some sense capable of being logical subjects; but when a proposition happens to be true, it has a further quality, over and above that which it shares with false propositions, and it is this further quality which is what I mean by assertion [i.e., truth] in a logical as opposed to a psychological sense.[68]

One consequence of Moore's method of analysis is that not all (concepts designating)[69] properties can be analyzed; otherwise, complete analysis would be impossible. Thus, a point of plausibility to Moore's method is that there are simple, unanalyzable properties. The question is whether truth is one of them.

The case of truth may be compared with moral goodness, which Moore held to be a simple, unanalyzable property:

> If I am asked "What is good?" my answer is that good is good, and that is the end of the matter. Or if I am asked "How is good to be defined?" my answer is that it cannot be defined, and that is all I have to say about it…. My point is that "good" is a simple notion, just as "yellow" is a simple notion; that, just as you cannot, by any manner of means, explain to anyone who does not already know it, what yellow is, so you cannot explain what good is. Definitions…which describe the real nature of the object or notion denoted by a word…are only possible when the object or notion denoted is something complex…. But yellow and good, we say, are not complex: they are notions of that simple kind, out of which

---

[68] Bertrand Russell, *The Principles of Mathematics*, second edition (London: George Allen and Unwin, Ltd., 1937) p 49. (The first edition was published in 1903.) Although Russell's use of 'assertion' here is unusual, it is explained by the sentence immediately preceding the quoted passage: "But there is another sense of assertion, very difficult to bring before the mind, and yet quite undeniable, in which only true propositions are asserted." (p 49)

[69] Although strictly speaking, the method of analysis applies to concepts, we can speak without difficulty, as Moore does, of simple and complex properties, with the understanding that a complex property is one designated by a concept which is analyzable.

definitions are composed and with which the power of further defining ceases.[70]

According to the simple theory, truth is much like moral goodness in being a simple, unanalyzable, and indefinable property. The simple theory of truth was part of Moore's and Russell's view at the time which rejected the coherence, pragmatic, and correspondence theories of truth due to objections along the lines discussed above which they found insurmountable, and because they found the commitments made by these broad theories regarding the nature of propositions to be problematic. According to the simple theory, certain propositions just have an extra property, truth; that is, there is no explanation to be provided as to why certain propositions bear truth and not others. But if truth is just a bell or a whistle, a deluxe but epiphenomenal feature of certain propositions, then the truth of a proposition gives us by itself no reason to prefer true propositions to false propositions. Since the simple property truth is not the property of correspondence to a fact, nor even the property of coherence or of utility, the truth of a proposition on this view gives us no reason to believe it or to utter a sentence expressing it.[71]

Underlying and implicit in Moore's and Russell's discussions is the claim that true propositions have this extra property because they correspond to a fact, though

---

[70] G. E. Moore, *Principia Ethica* (Cambridge: Cambridge University Press, 1903) pp 6-8.

[71] It might be held that truth is a simple property, and is inherently valuable, much like beauty. If truth is inherently valuable, its inherent value, we can suppose, provides a reason to believe propositions having it. However, this view may be tested by considering a proposition which is true, but corresponds to a way which the world is not, is pragmatically detrimental, and is inconsistent with other important propositions we accept. In such a case, it is difficult to see how a proposition could be intrinsically valuable. To be clear, it is not that its intrinsic value is outweighed by these other values, but that if a proposition lacks correspondence, coherence, and utility, it seems to have no value, and there seems to be no reason to believe it. (Thanks to Jason Kawall for raising this point.)

truth is not the property of corresponding to a fact. If so, then truth is just an indicator

property: the property that interests us is the substantive property that it indicates,

namely, that its bearer corresponds to a fact. Indeed, we could dispense with the simple

property, truth, and pay attention only to the more substantive property. While this

substantive property would not be called 'truth', it is a correspondence property which

Moore and Russell were hoping to abandon by adopting the simple theory. As a result,

there is no motivation for holding the simple theory, since the difficulties which led to

its espousal have manifested under another name. Although it is plausible to suppose

that there are simple properties, it is implausible to maintain that truth is one of them.[72]

Section 8: The Redundancy Theory of Truth

If the simple theory of truth is taken one step further—that is, if the thesis that truth is a

property is given up—the result is the redundancy theory of truth. The redundancy

theory sometimes goes by "the 'no-truth' theory," "the disappearance theory," or "the

nihilistic theory." It is commonly credited to Frank P. Ramsey, who argues as follows:

> Truth and falsity are ascribed primarily to propositions. The proposition
> to which they are ascribed may be either explicitly given or described.
> Suppose first that it is explicitly given; then it is evident "it is true that
> Caesar was murdered" means no more than that Caesar was murdered,
> and "it is false that Caesar was murdered" means that Caesar was not
> murdered. They are phrases which we sometimes use for emphasis or
> for stylistic reasons, or to indicate the position occupied by the statement

---

[72] Hilary Putnam verges on a simple theory of truth in "Reference and Understanding", *op. cit.*, p
209 f. Recently, Ernest Sosa has suggested revising Horwich's minimalism in a way which
renders it a version of the simple theory of truth; Sosa's view is considered in section 12. Donald
Davidson suggests a version of the simple theory of truth along similar lines in "The Folly of
Trying to Define Truth" in Blackburn and Simmons (1999) pp 308-322. Frege's view of truth in
"On Sense and Nominatum", where he writes of the True and the False, may be read as a version
of the simple theory of truth; see section 9.

in our argument. [73]

Although Ramsey's argument is rather seductive, its fault is anticipated by Russell in his

1904 paper, "Meinong's Theory of Complexes and Assumptions":

> Consider, again, what it is we mean when we judge. At first sight, we
> seem to mean that a certain proposition is true; but "p is true" is not the
> same proposition as p, and therefore cannot be what we mean. And the
> complex "p's truth" may be assumed just as p may: as assumed, it is not
> a judgment. Thus, when we affirm p, we are concerned only with p, and
> in no way with truth. [74]

Russell's main reason for thinking that $\ulcorner p$ is true$\urcorner$ and $\ulcorner p \urcorner$ are different propositions seems

to be that, given $\ulcorner p \urcorner$, it is a further question whether $\ulcorner p$ is true$\urcorner$, or equivalently, $\ulcorner$it is true

that $p \urcorner$.[75] For example, suppose that I judge that snow is white. If asked whether it is

true that snow is white, I will answer yes, provided that I am rational, sincere, and

thinking clearly; but it will take me a certain amount of time to arrive at the latter

---

[73] See F. P. Ramsey, "Facts and Propositions" *Proceedings of the Aristotelian Society*, *supplement* **7** (1927) pp 153-171 at p 157. This essay is reprinted in Frank Plumpton Ramsey, *The Foundations of Mathematics and other Logical Essays* (New York: Harcourt Brace and Company, 1931) pp 138-155. A selection is reprinted in Blackburn and Simmons (1999) pp 106-107. This theory is given a more developed defense by Arthur Prior in *Objects of Thought*, P. T. Geach and A. J. P. Kenny, editors (Oxford: The Clarendon Press, 1971). P. F. Strawson argues for a performative version of the redundancy theory in "Truth" *Analysis* **9** (1949) pp 83-97, and "Truth" *Proceedings of the Aristotelian Society*, *supplement* **24** (1950) pp 129-156, reprinted in Blackburn and Simmons (1999) pp 162-182. The earliest appearance of a redundancy theory may be traced to Denton L. Geyer, "The Relation of Truth to Tests" *The Journal of Philosophy, Psychology and Scientific Methods* **13** (1917) pp 626-633. Frege makes some of the same observations in his 1918 paper "The Thought: A Logical Inquiry", *op. cit.*; see section 9.

[74] Bertrand Russell, "Meinong's Theory of Complexes and Assumptions (III)" *Mind* **13** (1904) pp 509-524 at p 511.

[75] While Russell concerns himself only with the locution $\ulcorner p$ is true$\urcorner$, his argument applies equally to the locution $\ulcorner$it is true that $p \urcorner$. Ramsey considers the two locutions separately; his discussion of $\ulcorner p$ is true$\urcorner$ is presented below.

judgment, especially if it is one I haven't considered before. Granted, the inference from ⌜p⌝ to ⌜p is true⌝ or to ⌜it is true that p⌝ is a simple one; however, the move to affirm ⌜p is true⌝ or ⌜it is true that p⌝ does require an inference. Therefore, the two propositions are different.[76]

The difference Russell notices can also be put in terms of truth conditions. The truth conditions for ⌜p⌝ are just p, while the truth conditions for ⌜it is true that p⌝ are both that p, and that p is true. Similarly, the truth conditions for ⌜p is true⌝ are that 'p' denotes[77] p, that p, and that p is true. The difference in truth conditions points up a distinction among the propositions expressed among ⌜p⌝, ⌜it is true that p⌝, and ⌜p is true⌝.

What Russell notices in the passage quoted above is what has become known as semantic ascent. When we utter 'snow is white' we express something about snow. When we utter " 'snow is white' is true" or "it is true that snow is white" what we express is the truth of a certain sentence or proposition, namely, the truth of the (sentence which expresses the) proposition that snow is white.[78] Considered from the

---

[76] It may be replied that the same reasoning can be used to show that the proposition expressed by 'all lawyers practice law' is different from that expressed by 'all attourneys practice law'. However, even if time is required to arrive at the latter from the former, the time is spent realizing that the same proposition is expressed; that is, strictly speaking, there is no inference.
    In the end, this appeal to intuition is not conclusive, since a redundancy theorist can reply with his intuition that the time spent arriving at ⌜p is true⌝ from ⌜p⌝ is spent realizing that they are the same proposition. The standoff of intuitions may be decided by appeal to a stronger case; see ff.

[77] If ⌜p⌝ is a quoted sentence, ⌜ 'S' ⌝, then the truth condition is instead that 'p' expresses S. I overlook this variation in grammatical form for the sake of simplicity in discussion. These variations are examined in section 11.

[78] Semantic ascent is perhaps more obvious in the ⌜p is true⌝ locution where the sentence is quoted than in the operator locution ⌜it is true that p⌝. Prior, in fact, holds that sentences with operators are about the same thing as the embedded sentence. Problems arising from the ⌜p is true⌝ locution render further debate on this point moot.

pragmatic standpoint, these two propositions are likely to be equally useful. However,

the difference between the two is apparent, even if unimportant to a pragmatist.

The second case that Ramsey considers is more difficult for the redundancy

theory:

> In the second case in which the proposition is described and not
> given explicitly, we have perhaps more of a problem, for we get
> statements from which we cannot in ordinary language eliminate the
> words "true" and "false." Thus if I say "he is always right" I mean that
> the propositions he asserts are always true, and there does not seem to be
> any way of expressing this without using the word "true." But
> suppose we put it thus "For all p, if he asserts p, p is true," then we see
> that the propositional function p is true is simply the same as p, as *e.g.* its
> value "Caesar was murdered is true," is the same as "Caesar was
> murdered."[79]

It must be pointed out that while 'he is always right' is a sentence, because 'p' in

Ramsey's formula 'for all p, if he asserts p, p is true' is a placeholder for a sentence or

proposition, the formula is not a sentence until it is replaced by a sentence or the name

of a sentence. Thus, a necessary condition for the correctness of Ramsey's claim is that

the utterer of "he is always right" be able to supply sentences or propositions for p.

Suppose that "he is always right" is asserted about a living person named 'Clint'. Part

of what is asserted is that everything Clint asserts, past, present, and future, is right. But

since his future assertions presumably cannot be supplied, there are in principle

instances of p which cannot be replaced with sentences or propositions. As a result,

Ramsey's formula cannot be taken as being synonymous with, or logically equivalent to,

'he is always right.'

---

[79] F. P. Ramsey, "Facts and Propositions", *op. cit.*, p 158.

Another serious challenge to the redundancy theory stems from considering a case where a particular proposition is named, rather than quantified over. Suppose that after taking a high school physics course, Nina has come to believe that Einstein's theory of general relativity is true. This is probably a fairly common belief. Yet unless she is one of the brightest students in her class, Nina probably cannot state Einstein's theory of general relativity. Therefore, the inference from $\ulcorner p$ is true$\urcorner$ to $\ulcorner p \urcorner$ is not trivial, where p names a proposition.[80]

A similar but more pointed case arises where the speaker cannot in principle supply *any* sentence or proposition to replace p. Suppose that in a dispute over the integrity of a movie critic, I concede to my opponent, 'some of the things Gene Siskel said are true'. Ramsey would analyze my assertion as, 'for some p, Gene Siskel said that p, and p'. However, it is possible, and even likely, that I am unable to supply any sentence or proposition to replace p. Thus, it is plain that I can believe the proposition expressed by 'some of the things Gene Siskel says are true' without believing what Ramsey's analysis claims as its meaning. Therefore, neither Ramsey's analysis nor the redundancy theory of truth is correct.

Ramsey's mistake can be set out in terms of the *de re* − *de dicto* distinction. For Ramsey's view to be correct, he is committed to reading sentences such as 'some of the things Gene Siskel said are true' *de re*, though it admits of a *de dicto* reading. The analysis given by the redundancy theory succeeds only on the *de re* reading of such sentences, since specific sentences or propositions are required to fill in the place held

---

[80] even ignoring the obvious ungrammaticality of instantiating the sentence forms for a named sentence. Cases of named, described, and demonstrated sentences are discussed in more detail in section 11.

by '*p*' in Ramsey's formula. However, since these sentences admit of *de dicto* readings, as in the example above, the redundancy theory fails.

Actually, taking the redundancy theory seriously leads to absurdity, for if 'is true' does not express a property, and 'is false' is understood as the negation of 'is true', then 'is false' does not express a property either. Hence, we can eliminate any occurrence of 'is true' and 'it is true that' as well as any occurrence of 'is false' and 'is false that' without a loss in meaning. But then from the consistent pair of sentences " 'snow is white' is true" and " 'snow is not white' is false" we derive easily the contradictory pair of sentences "snow is white" and "snow is not white"; likewise for "it is true that snow is white" and "it is false that snow is not white."

The likely response is that 'is true' and 'is false' should be understood independently. After all, the theory will want to capture what Ramsey notices about falsity, that " 'it is false that Caesar was murdered' means that Caesar was not murdered."[81] However, if the truth predicate and operator are eliminable in the way given by the redundancy theory, and falsity is understood this way, then truth is not related to falsehood — a highly counterintuitive result. In other words, the redundancy theory faces a dilemma on how to understand falsity: if it is the negation of the truth predicate, then it is not a property either, and contradictions can be derived as in the previous paragraph.[82] If falsity is understood independently of truth, then these

---

[81] *ibid.*, p 157.

[82] It is no more plausible to hold that falsity is the complement of truth, since it follows that all objects bear falsity.

consequences may be avoided, but the highly intuitive notion that truth and falsity are

related must be rejected.[83]

Since the redundancy theory denies that truth is a property, *a fortiori* truth is not

a correspondence property, a coherence property, or a pragmatic property. The

redundancy theory must reject the pragmatic intuition, though there is room for the

concession that certain beliefs are useful; it is just that 'is true' does not capture or

express this utility. Ramsey writes, "It is useful to believe *aRb* would mean that it is

useful to do things which are useful if, and only if, *aRb*; which is evidently equivalent to

aRb."[84] Similarly, the redundancy theory must say that the correspondence intuition is

mere appearance, and is to be rejected. On this Ramsey writes, "We can, if we like, say

that it [the judgment that *aRb*] is true if there exists a corresponding fact that *a* has *R* to *b*,

but this is essentially not an analysis but a periphrasis, for 'The fact that *a* has *R* to *b*

exists' is no different from '*a* has *R* to *b*'."[85] Obviously, this does not satisfy the

correspondence intuition, since both truth and correspondence disappear on Ramsey's

de-periphrasis.[86]

---

[83] These same objections may be made to Strawson's performative version of the redundancy theory, *mutatis mutandis*.

[84] *ibid*., p 159, footnote. The tension in the redundancy theory here is very awkward: the theory's commitment to reject the pragmatic intuition leads to the view that the operator 'it is useful to believe' is meaningless.

[85] *ibid*., pp 158-159.

[86] This passage is troublesome for several reasons. For Ramsey, a judgment is a mental act having a content, which Ramsey calls a "mental factor". Ramsey writes, "the truth or falsity of this [i.e., "the mental factor in a judgement"] depends only on what proposition it is that is judged." (*ibid*., p 158.) It seems that Ramsey identifies propositions and facts, and distinguishes them from mental factors. Thus, it seems to follow that the correspondence Ramsey mentions in this passage is a relation between a mental factor and a fact. However, if Ramsey accepts this ontology, then his periphrasis is far from equivalent to the claim that a judgment is true if there is a corresponding fact, since no mental factor is mentioned in the periphrasis. While the claim that correspondence is a redundant notion is certainly in the spirit of the redundancy theory, it is

Section 9: Frege's Theory of Truth

In a famous passage opening his seminal article "The Thought: A Logical Inquiry" Frege writes,

> The word 'true' indicates the aim of logic as does 'beautiful' that of aesthetics or 'good' that of ethics…. Rules for asserting, thinking, judging, inferring follow from the laws of truth…. In order…to prevent the blurring of the boundary between psychology and logic, I assign to logic the task of discovering the laws of truth, not of assertion or thought. The meaning of the word 'true' is explained by the laws of truth.[87]

Frege recognizes the importance of distinguishing psychology, an empirical science concerned with what we do think, from logic, a special science concerned with the laws of truth. Thus, Frege draws a distinction between "(1) the apprehension of a thought—thinking, [and] (2) the recognition of the truth of a thought—judgement."[88] It seems plain that for Frege thinking—the apprehension of a thought—is the mere entertaining of a thought. For Frege, I can think the thought that it is sunny every day; whether I go on to accept this thought, reject it, or simply pass on to another thought, my entertaining this thought constitutes thinking.

There is some question, though, as to what is captured by the formulation of judgment, "the recognition of the truth of a thought."[89] Given this notion of thinking, it seems that recognition of the truth *or falsity* of the thought constitutes judgment for

---

indeterminate whether Ramsey is granting the correspondence intuition or dismissing it. Whatever his intentions, it is clear that he has presented no good reason for rejecting the correspondence intuition.

[87] Gottlob Frege, "The Thought: A Logical Inquiry", *op. cit.*, pp 85-86.

[88] *ibid.*, p 89.

[89] *ibid.*

Frege. This notion of judgment may be characterized as truth evaluation; call it 'judgment$_{TE}$'. For example, my recognition of the falsity of the thought that it is sunny every day is an example of judgment. Judgment$_{TE}$ cooperates with the aim Frege declares for logic: truth-evaluated thoughts are subject to the laws of truth. Judgment$_{TE}$ is committed to there being some notion of truth which is preserved in valid inferences, but not to any particular notion of truth.

There is also a more literal way to read Frege's gloss on judgment as "the recognition of the truth of a thought." Namely, it may be read so that judgment is the recognition of the correspondence of a thought to a fact.[90] While one of Frege's purposes in this paper is to criticize the correspondence theory,[91] the intuition that true thoughts are those corresponding to a fact is manifest in several passages: "What is a fact? A fact is a thought that is true."[92] "If the thought I express in the Pythagorean theorem can be recognized by others just as much as by me then it does not belong to the content of my consciousness, I am not its bearer; yet I can, nevertheless, recognize it to be true."[93] Also, it is clear that, for Frege, the truth of a thought is independent of its being grasped by any thinker at all: "They [thoughts] can be true without being

---

[90] It is possible to read it as the recognition of the coherence or utility of a thought, though these readings are implausible for several reasons. First, there is textual evidence supporting the claim that Frege was working with a correspondence notion, but none supporting the claim that he was working with a coherence or pragmatic notion. Second, the claims Frege makes about the mind-independence of truth (see text below) are incompatible with a coherence or pragmatic notion of truth. Third, the distinction Frege draws in the opening passage of his paper clearly separates the tasks of logic from those of the idealist and pragmatist, who maintain the coherence and pragmatic notions of truth, respectively.

[91] See section 3.

[92] *ibid.*, p 101.

[93] *ibid.*, p 95.

apprehended by a thinker…."[94] "A true thought was true before it was grasped by anyone."[95] "Thus the thought, for example, which we expressed in the Pythagorean theorem is timelessly true, true independently of whether anyone takes it to be true."[96] These passages suggest that Frege is working with a correspondence notion of truth, and that "the recognition of the truth of a thought" is the recognition that a thought corresponds to a fact. Call this notion of judgment which is committed to truth being a correspondence property 'judgment$_C$'.

There is a still more literal reading of "the recognition of the truth of a thought" which suggests that judgment is an inference which makes use of a redundancy notion of truth. Having accepted (as true) the thought that grass is green, I might reflect further on my judgment, and apprehend, and even judge, the thought that it is true that grass is green. In a key passage Frege writes: "It may nevertheless be thought that we cannot recognize a property of a thing without at the same time realizing the thought that this thing has this property to be true. So with every property of a thing is joined a property of a thought, namely, that of truth."[97] Here Frege marks the apparently trivial inference from a thought judged to be true, to the judgment that that thought is true. In fact, this passage indicates that Frege views this inference as being so trivial as to be inevitable; it follows that it can recur *ad infinitum.* For Frege to avoid what would

---

[94] *ibid.*, p 105.

[95] Gottlob Frege, "My Basic Logical Insights" in *Gottlob Frege: Posthumous Writings* (Chicago: The University of Chicago Press, 1979) pp 251-252, at p 251.

[96] Gottlob Frege, "The Thought: A Logical Inquiry", *op. cit.*, p 96.

[97] *ibid.*, p 88. This is essentially the same fallacy Frege commits in the second horn of the dilemma he poses for the correspondence theory; see section 3.

otherwise be a regress, it seems he must be working with the redundancy notion of truth. Call the attendant notion of judgment 'judgment$_R$'.

Further evidence that Frege was working with a redundancy notion of truth appears in his discussion of utterances by stage actors. Frege argues that such utterances are not to be taken as expressing thoughts, since "the requisite seriousness is lacking. It is irrelevant whether the word 'true' is used here. This explains why it is that nothing seems to be added to a thought by attributing to it the property of truth."[98]

Nevertheless, if logic is to be a discipline with the task of discovering the laws of truth, truth cannot be redundant, else logic is vacuous. In "My Basic Logical Insights" Frege writes,

> The word 'true' is not an adjective in the ordinary sense…. If I attach this [the word 'true'] to the words 'that sea-water is salt' as a predicate, I likewise form a sentence that expresses a thought. For the same reason as before I put this also in the dependent form 'that it is true that sea-water is salt'. The thought expressed in these words coincides with the sense of the sentence 'that sea-water is salt'. So the sense of the word 'true' is such that it does not make any essential contribution to the thought. If I assert 'it is true that sea-water is salt', I assert the same thing as if I assert 'sea-water is salt'. This enables us to recognize that the assertion is not to be found in the word 'true', but in the assertoric force with which the sentence is uttered. This may lead us to think that the word 'true' has no sense at all. But in that case a sentence in which 'true' occurred as a predicate would have no sense either. All one can say is: the word 'true' has a sense that contributes nothing to the sense of the whole sentence in which it occurs as predicate.[99]

The final sentence here is mysterious, and reveals Frege's awareness of a tension in his view of truth. Frege holds that 'true' has a sense, but that this sense is not contributed to

---

[98] *ibid.*, p 90. It is this sort of consideration which leads Frege to draw a three-way distinction between thinking, judgment, and "(3) the manifestation of this judgement—assertion." (p 89)

[99] Gottlob Frege, "My Basic Logical Insights", *op. cit.*, at p 251.

the content of the thought. Where 'true' occurs as part of an operator, this is not

problematic, since the operand is a grammatical sentence. But where 'true' occurs as a

predicate, "[a]ll one can say is: the word 'true' has a sense that contributes nothing to the

sense of the whole sentence in which it occurs as predicate."[100] Frege's position on the

truth predicate must be consistent with his view of the truth operator, yet if 'true' does

not contribute its sense to the thought, then truth predications do not express thoughts.

It is bizarre, anyway, to hold that 'true' has a sense but does not contribute it to the

content of a thought. Yet Frege is committed to 'true' having a sense on pain of

abandoning his view that the task of logic is to discover the laws of truth. Again, if

'true' does not have a sense, this enterprise is vacuous.

While judgment$_1$ is neutral with respect to a theory of truth, there is a tension in

Frege's view between a correspondence theory and a redundancy theory. His bizarre

claim that 'true' has a sense which it does not contribute to the content of a thought,

though *ad hoc*, is an attempt to give up neither of these theories. Another option is

available to Frege, which he discusses more than 20 years earlier than the two papers

already cited, that "[e]very declarative sentence, in which what matters are the

nominata of the words, is therefore to be considered as a proper name; and its

nominatum, if there is any, is either the True or the False."[101] Thus 'grass is green' refers

to the True, and 'grass is pink' refers to the False. On this view,[102] truth is the property

---

[100] *ibid*.

[101] Gottlob Frege, "On Sense and Nominatum" in *The Philosophy of Language*, fourth edition, A. P. Martinich, editor (New York: Oxford University Press, 2001) pp 199-211, at p 203. This article was originally published (in German) as "Uber Sinn und Bedeutung" in *Zeitschrift fur Philosophie und philosophische Kritik* **100** (1892) pp 25-50.

[102] I do not especially wish to maintain that this is Frege's view of truth at the time of writing "On Sense and Nominatum," only that this view is available to him.

of referring to the True, and falsity is the property of referring to the False; therefore, truth is a property, but is not a correspondence property. On this view, truth is given an uncomplicated analysis; yet since the True is a simple, unanalyzable abstract object, it is appropriate to assimilate this view to the simple theory of truth.[103] However, if the True is a simple, unanalyzable abstract object, then there is no more reason to believe or assert sentences whose nominatum is the True than sentences whose nominatum is the False. If it is emphasized that a sentence refers to the True because it corresponds to a fact, then Frege's simplesque theory of truth has been abandoned.[104] Although this notion casts truth as a trivial or uninteresting property, because it is a property, it is not redundant; yet it is too uninteresting for its laws to befit the aim of logic.

Section 10: Tarski's Theory of Truth

Alfred Tarski's work on truth differs significantly from that of other philosophers, in that he is explicitly concerned with the truth predicate of formalized languages, and not with the truth predicate of natural languages:

> A thorough analysis of the meaning current in everyday life of the term
> 'true' is not intended here…. In the further course of this discussion I
> shall consider exclusively the scientifically constructed languages known
> at the present day; i.e. the formalized languages of the deductive
> sciences.[105]

---

[103] It is appropriate not because the true is simple and unanalyzable (note that it is not a property, but an object), but because the analysis of 'true' on this view is so uncomplicated.

[104] Essentially this same point is made by Michael Dummett in "Truth" in *Truth and Other Enigmas* (Cambridge: Harvard University Press, 1978) pp 1-24, at p 2.

[105] Alfred Tarski, "The Concept of Truth in Formalized Languages" in *Logic, Semantics, Metamathematics: Papers from 1923 to 1938,* second edition (Indianapolis: Hackett Publishing Company, Inc., 1983) pp 152-278, at p 153.

Formalized languages are those whose structure is exactly specified. To exactly specify a formalized language, a list of the signs of the language is given in structural terms, as well as rules in structural terms for the formation of sentences. All signs and sentences of a formalized language have meaning, by stipulation. Strictly speaking, a formalized language is part of a formalized deductive science, such that sentences of the language are subject to the axioms and rules of inference of the deductive science to which it belongs. Most formalized languages are those belonging to systems of deductive logic, though in principle they may be developed for mathematics and theoretical physics.[106]

Tarski distinguishes two categories of formalized languages: semantically open formalized languages, and semantically closed formalized languages. A semantically open formalized language lacks the semantic resources to study itself. In particular, semantically open formalized languages lack semantic predicates which apply to its own expressions, and lack the means of explicitly referring to or quantifying over its own expressions. Semantically closed formalized languages have these resources. Tarski shows that truth is definable for semantically open formalized languages, but only for these languages. The definition of truth for semantically closed formalized languages cannot be given consistently, since the antinomy of the liar may be formulated in these languages. Semantically open formalized languages are not vulnerable to the antinomy of the liar, because they lack the expressive power to formulate it.[107]

---

[106] See Alfred Tarski, "The Semantic Conception of Truth and the Foundations of Semantics" *Philosophy and Phenomenological Research* **4** (1944) pp 341-375, at p 347.

[107] Tarski's solution to the Liar Paradox is discussed in chapter 2.
    In the remainder of this section I abbreviate 'semantically open formalized languages' to 'open formalized languages' and 'semantically closed formalized languages' to 'closed formalized languages'.

It is reasonable to expect that natural languages have the semantic resources of

closed formalized languages, though for Tarski natural languages are too inexact for this

to be more than an expectation:

> Our everyday language is certainly not one with an exactly specified
> structure. We do not know precisely which expressions are sentences,
> and we know even to a smaller degree which sentences are to be taken as
> assertible. Thus the problem of consistency has no exact meaning with
> respect to this language. We may at best only risk the guess that a
> language whose structure has been exactly specified and which resembles
> our everyday language as closely as possible would be inconsistent.[108]

Tarski works with a notion of sentence truth, not because of a conviction that

truth is borne primarily by sentences, but because the notions of other candidate truth-

bearers has not yet been made clear:

> By "sentence" we understand here what is usually meant in grammar by
> "declarative sentence"; as regards the term "proposition," its meaning is
> notoriously a subject of lengthy disputations by various philosophers and
> logicians, and it seems never to have been made quite clear and
> unambiguous. For several reasons it appears most convenient to *apply the
> term "true" to sentences*, and we shall follow this course.[109]

In a footnote to this section, Tarski makes it clear that by 'sentence' he means sentence

type.[110]

---

[108] *ibid.*, p 349.

[109] *ibid.*, p 342. The italics are Tarski's. In this paper Tarski "attempt[s] to outline the main ideas
and achievements of this paper ["The Concept of Truth in Formalized Languages"] in a non-
technical way." (Alfred Tarski, "The Concept of Truth in Formalized Languages", *op. cit.*, p 152,
footnote †.) Although this paper is non-technical, his discussion there of the motivations and
development of his work should be taken no less seriously than that in his technical papers.

[110] The footnote reads, "For our present purposes it is somewhat more convenient to understand
by 'expressions,' 'sentences,' *etc.*, not individual inscriptions, but classes of inscriptions of similar
form (thus, not individual things, but classes of such things)." *ibid.*, p 370, fn 5.

To construct a definition of a truth predicate for an open formalized language, L, Tarski constructs a distinct open formalized language containing semantic predicates applying to terms of L, and terms which refer to sentences and terms of L. Following Tarski, call the language for which truth is being given a definition the object language (L), and call the language in which truth is being defined the metalanguage (ML). Since the purpose of the metalanguage is to talk about the object language, the metalanguage is constructed such that every word and sentence belonging to the object language belongs also to the metalanguage. The metalanguage also contains names of every word and sentence of the object language. Should the need arise, for example, to define a truth predicate in ML, a metalanguage can be constructed for it; ML would be an object language with respect to this metalanguage, MML. Further metalanguages can be constructed *ad infinitum*.

It is clear that on Tarski's construction, the truth predicate is defined for a particular language. That is, the aim of his construction, strictly speaking, is to define the truth predicate, rather than truth. As a result, the truth predicate is defined relative to a language. Tarski observes that "[t]he same expression can, in one language, be a true statement, in another a false one or a meaningless expression."[111] Thus, "[t]here will be no question at all here of giving a single general definition of the term. The problem which interests us will be split into a series of separate problems each relating to a single language."[112] That is, for sentence truth, it is appropriate to define a truth predicate relative to the language of the sentence of which truth is predicated.

---

[111] Alfred Tarski, "The Concept of Truth in Formalized Languages", *op. cit.*, p 153.

[112] *ibid*.

Tarski argues that a satisfactory definition of truth must be both materially adequate and formally correct. A materially adequate definition of truth is one which logically implies all instances of the following schema; that is, an instance for every sentence of the language L under consideration:[113]

T $x \in Tr$ if and only if p

Schema T is instantiated by replacing 'x' with a structurally descriptive name of a sentence of the language in question, and replacing 'p' with a translation of 'x' into the metalanguage, ML. Thus, instances of T belong to the metalanguage. A formally correct definition of truth is one which conforms to the formal rules of a definition, including being specified by well-defined words and concepts.[114] Since a formally correct definition is one given in terms of other, well-defined notions, it follows that such definitions, including that of truth, may be regarded as eliminative.

Thus, a truth definition for an open formalized language consists in an explicit definition in the well-defined terms of the metalanguage specifying the object language; specifically, its non-logical and logical vocabulary, its terms, formulas, and sentences. For example, truth for the language of arithmetic (L_A) is defined below:[115]

---

[113] The biconditional schema is part of Tarski's Convention T; see Alfred Tarski, "The Concept of Truth in Formalized Languages", *op. cit.*, pp 187-188.

[114] See Alfred Tarski, "The Semantic Conception of Truth and the Foundations of Semantics", *op. cit.*, § 1.

[115] This definition of truth is taken from Scott Soames, *Understanding Truth* (New York: Oxford University Press, 1999) pp 71-75. I refer the reader there for a very clear and detailed discussion of Tarski's work on truth.

Non-logical vocabulary
1. the two-place predicate '=', standing for the identity relation
2. the name '0', which names the number zero
3. a one-place function symbol 'S', standing for the function which assigns to each number its successor
4. a two-place function symbol '+', standing for the addition function on natural numbers
5. a two-place function symbol '*', standing for the multiplication function on natural numbers

Logical vocabulary
1. & (and)
2. ~ (not)
3. ∃
4. infinitely many variables: x_1, x_2, *etc.*
   for any variable v_i, $\ulcorner \exists v_i \urcorner$ is a quantifier, meaning: there is at least one

Terms
1. Names and variables are terms
2. if $t_1, \ldots, t_n$ are terms and f is an n-place function symbol, then the result of combining f with $t_1, \ldots, t_n$ is a term
3. Nothing else is a term

Formulas
1. The combination of an n-place predicate with n terms is an atomic formula
2. If A and B are formulas, then so are $\ulcorner \sim A \urcorner$ and $\ulcorner A \ \& \ B \urcorner$
3. If A is any formula and v_i is any variable, then $\ulcorner (\exists v_i \ A) \urcorner$ is a formula
4. Nothing else is a formula

Sentences
1. A sentence is a formula containing no free occurrences of any variable
   (i) an occurrence of a variable v_i in a formula A is free in A if and only if it is not within the scope of any occurrence in A of a quantifier using v_i
   (ii) the scope of an occurrence of a quantifier is the quantifier itself plus the smallest complete

Inductive Definition of Truth for L
1. An atomic sentence $\ulcorner \alpha = \beta \urcorner$ is true if and only if '=' applies to the pair of numbers <n,m> denoted by α and β, respectively.
2. A sentence $\ulcorner (\sim A) \urcorner$ is true if and only if A is not true
3. A sentence $\ulcorner (A \ \& \ B) \urcorner$ is true if and only if A is true and B is true
4. A sentence $\ulcorner \exists v_i \ A \urcorner$ is true if and only if there is some true sentence A(α) that arises from $\ulcorner \exists v_i \ A \urcorner$ by erasing $\ulcorner \exists v_i \urcorner$ and replacing all free occurrences of v_i in A with occurrences of some variable-free term α

Since the inductive definition makes use of the semantic notions of denoting and applying to, these notions should be defined explicitly in non-semantic terms. Also, to have the proper form, the inductive definition of truth should be converted to an explicit definition:

Explicit Definition of the Denotation of a Variable-Free Term
1. For all variable-free terms α of the language of arithmetic L_A, and natural numbers n, α denotes n in L_A if and only if there is a set D_{LA} of which $\langle\alpha,n\rangle$ is a member and for all x and y $\langle x,y\rangle$ is a member of D_{LA} if and only if (i) x is the symbol '0' and y is the number 0; (ii) x is the variable-free term $\ulcorner S(\beta)\urcorner$ for some term β and y is the successor of a number m such that $\langle\beta,m\rangle$ is a member of D_{LA}; (iii) x is the variable-free term $\ulcorner(\gamma + \delta)\urcorner$ for some terms γ and δ and y is the sum of numbers m and o such that $\langle\gamma,m\rangle$ and $\langle\delta,o\rangle$ are members of D_{LA}; or (iv) x is the variable-free term $\ulcorner\gamma * \delta\urcorner$ for some terms γ and δ and y is the product of numbers m and o such that $\langle\gamma,m\rangle$ and $\langle\delta,o\rangle$ are members of D_{LA}.

Explicit Definition of the Application of a Predicate
1. A two-place predicate P applies to a pair of numbers $\langle n,m\rangle$ if and only if P is the symbol '=' and n is the same number as m

Explicit Definition of Truth for the Language of Arithmetic (L_A)
1. For all sentences s of the language of arithmetic, L_A, s is true in L_A if and only if there is a set T_{LA} such that s is a member of T_{LA} and for all sentences z of L_A, z is a member of T_{LA} if and only if (i) z is an atomic sentence $\ulcorner\alpha= \beta\urcorner$ and '=' applies to the pair of numbers $\langle n,m\rangle$ denoted by α and β, respectively; (ii) z is the sentence $\ulcorner(\sim A)\urcorner$ for some sentence A of L_A, and A is not a member of T_{LA}; (iii) z is the sentence $\ulcorner A \& B\urcorner$ for some sentences A and B of L_A, both of which are members of T_{LA}; or (iv) z is the sentence $\ulcorner\exists v_i A\urcorner$ for some variable v_i and formula A of L_A and there is some sentence $A(\alpha)$ of L_A that is a member of T_{LA} and that arises from $\ulcorner\exists v_i A\urcorner$ by erasing $\ulcorner\exists v_i\urcorner$ and replacing all free occurrences of v_i in A with occurrences of a variable-free term α.

On Tarski's construction, the truth predicate has an extension for any language for which it is defined, consisting of a set of sentences. For L_A, the extension of the truth predicate is the set of sentences T_{LA}. While the extension of a predicate is constituted by

objects in the world, namely, sentences, it is has been a matter of great controversy

whether the extension of the truth predicate for a formalized language captures the

correspondence notion of truth.

Because formalized languages may be developed for scientific applications,

Tarski is concerned to capture "the so-called *classical* conception of truth ('true—

corresponding with reality')…."[116] Tarski emphasizes this concern throughout his

writings on truth:

> 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')….[117]

> We should like our definition to do justice to the intuitions which adhere
> to the *classical Aristotelian conception of truth*—intuitions which find their
> expression in the well-known words of Aristotle's *Metaphysics*:
>
> *To say of what is that it is not, or of what is not that it is, is false, while to say of
> what is that it is, or of what is not that it is not, is true.*
>
> If we wished to adapt ourselves to modern philosophical terminology,
> we could perhaps express this conception by means of the familiar
> formula:
>
> *The truth of a sentence consists in its agreement with (or correspondence to)
> reality.[118]*

> Our understanding of the notion of truth seems to agree essentially with
> explanations of this notion that have been given in philosophical
> literature. What may be the earliest explanation can be found in
> Aristotle's *Metaphysics*:
>
> **To say of what is that it is not, or to say of what is not that it is, is false,
> while to say of what is that it is, or of what is not that it is not, is true.**[119]

---

[116] Alfred Tarski, "The Concept of Truth in Formalized Languages", *op. cit.*, p 153. See also p 152.

[117] Alfred Tarski, "The Concept of Truth in Formalized Languages", *op. cit.*, p 153. See also p 152.

[118] Alfred Tarski, "The Semantic Conception of Truth and the Foundations of Semantics", *op. cit.*,
pp 342-343.

> One speaks sometimes of the correspondence theory of truth as the theory based on the classical conception….
>
> We shall attempt to obtain here a more precise explanation of the classical conception of truth, one that could supercede the Aristotelian formulation while preserving its basic intentions.[120]

> We regard the truth of a sentence as its 'correspondence with reality'.[121]

However, there are a number of problems besetting Tarski's attempt "to do justice to the intuitions which adhere to the *classical Aristotelian conception of truth*."[122] One problem stems from a feature of Tarski's truth predicate. Specifically, the corollary to the correspondence thesis claims that the property truth is expressed by the truth predicate, where for Tarski the truth predicate expresses no property; in fact, Tarski's definition of truth is eliminative. At most, the property of having a certain extension is a property *had* by the truth predicate, not one expressed by it.

There are two features of Tarski's construction which may be thought to capture the correspondence intuition: set membership in the extension of the truth predicate, and the notion of satisfaction. On Tarski's construction, certain sentences belong to the extension of the truth predicate; call this set of sentences 'Tr'. This gives rise to a Euthyphro-type question: are sentences members of Tr because they are true, or are they true because they are members of Tr?

---

[119] Alfred Tarski, "Truth and Proof" *Scientific American* **220** (6) June 1969, pp 63-77, at p 63; Tarski's boldface print.

[120] *ibid.*, p 64.

[121] Alfred Tarski, "The Establishment of Scientific Semantics" in Alfred Tarski, *Logic, Semantics, Metamathematics: Papers from 1923 to 1938*, second edition, *op. cit.*, pp 401-408, at p 404.

[122] Alfred Tarski, "The Semantic Conception of Truth and the Foundations of Semantics", *op. cit.*, p 342.

Obviously, the latter answer is absurd, since membership in Tr does not render a sentence true. The former answer exposes a very serious problem: a sentence must be evaluated for truth in order to be assigned to Tr. If this amounts to comparing the sentence to reality, then schema T requires an appeal to a supplementary principle. In fact, a user of schema T is free to evaluate sentences according to a principle capturing the coherence, pragmatic, or the correspondence notion of truth. Thus, it is plain that schema T does not capture any notion of truth, and *a fortiori* it does not capture the correspondence notion of truth.

It may be pointed out that Tarski's Convention T appeals not only to schema T, but also to the notion of satisfaction.[123] For Tarski, an object(s) satisfies a sentential function if and only if that object(s) is in the extension of the sentential function.[124] It must be pointed out that even if satisfaction succeeds in capturing some notion of correspondence, this notion of correspondence can hold only indirectly between sentences and reality; that is, since Tr contains only formalized sentences, these sentences do not correspond directly to reality, but only via membership in Tr.

As to whether satisfaction succeeds in capturing a notion of correspondence, two points need to be raised. The first is that the extension of a predicate in the object

---

[123] Tarski's Convention T includes schema T (as clause α); and because there are an infinite number of sentences for the language L, also includes clause (β):

(β) for any x, if $x \in Tr$, then $x \in S$

Tarski notes that (β) is not essential to Convention T, since if there were a finite number of sentences, the following schema would suffice in lieu: $x \in Tr$ iff either $x=x_1$ and p_1, or $x=x_2$ and p_2, *etc*.

Donald Davidson is a philosopher who has made this point: "The semantic concept of truth as developed by Tarski deserves to be called a correspondence theory because of the part played by the concept of satisfaction" ("True to the Facts" in Donald Davidson, *Inquiries into Truth and Interpretation* (Oxford: Oxford University Press, 1984) p 48.)

[124] Tarski's further developments of the notion of satisfaction do not affect the present point.

language is not determined by the way that the world is, but by the assignments of objects to its extension. Since the object language is a formalized language, their extensions may be assigned on any basis whatsoever; to wit, they need not correspond to reality. It may be that the assignments reflect reality, but if so, it is so either by chance, or by appeal to an independent principle. It is obvious that in the former case no notion of correspondence is captured. In the latter case, it is not satisfaction which captures a notion of correspondence, but the independent principle. Therefore, although schema T is compatible with a correspondence notion of truth, it does not capture a correspondence notion of truth.

Tarski recognizes two shortcomings to the formalized method for defining truth. One shortcoming stems from true sentences of a foreign language, L*, which are either type-identical with untrue sentences of L or are not type-identical with any sentence of L. According to schema T, these sentences are evaluated as untrue. There is also the converse problem stemming from untrue sentences of L* which are type-identical with true sentences of L. According to schema T, these sentences are evaluated as true. Since schema T defines truth for a particular formalized language, strictly speaking, such sentences are defined as untrue-in-L and true-in-L, respectively. Although this feature of Tarski's construction obviates problems stemming from type-identical sentences of a foreign language, it is has the result that what is being defined is truth-in-L, not truth. While restricting truth definitions to a particular language may be palatable for formalized languages, this result makes it very implausible that Tarski's work on truth illuminates a philosophically interesting notion.

Another shortcoming stems from sentences containing context-sensitive terms. For example, according to schema T, a sentence such as 'Jean-Paul is hungry now' is

true only when Jean-Paul is hungry at the time of evaluation, not at all of the times he is hungry.[125] Similarly, schema T cannot handle ambiguous sentences. It yields contradictory results for sentences such as 'Humans are flying planes' since this sentence has two readings, one true and one false. Tarski worked with formalized languages because they operate according to special rules of inference and sentence formation, and so are immune to difficulties arising from ambiguity and context sensitivity. However, this restriction on the languages investigated evokes another very serious doubt as to whether truth-in-L illuminates a philosophically interesting notion of truth. Since English is a very rich language with many context-sensitive and ambiguous expressions, it is very doubtful whether truth-in-English captures the notion of truth employed by English speakers.

Section 11: The Disquotational Theory of Truth

The disquotational theory of truth shares ties to both the redundancy theory of truth and Tarski's theory of truth. The primary intuition leading to the disquotational schema is Ramsey's claim that "it is evident that 'it is true that Caesar was murdered' means no more than that Caesar was murdered".[126] In general, the intuition is that the sentence formed by prefixing a sentence with the truth operator 'it is true that', or by attaching 'is true' to a quoted sentence, expresses the same proposition as the bald unprefixed or unquoted sentence. Ignoring the case of the truth operator for simplicity, this intuition is captured by the disquotational schema:

---

[125] unless, coincidentally, the sentence is evaluated every time Jean-Paul is hungry.

[126] F. P. Ramsey, "Facts and Propositions", *op. cit.*, p 157.

D   'S' is true if and only if S

Note that the variable 'S' is a substitutional variable, not an objectual variable. Also note that because the disquotational schema is a biconditional, it licenses not only the elimination of the predicate 'is true' by means of the left-to-right conditional, but also the introduction of 'is true' by means of the right-to-left conditional. According to the redundancy theory, running the right-to-left conditional redundifies a sentence with a predicate which does not express a property. This is so even where we have rhetorical purposes for redundifying a sentence. Of course, this is not so much a problem for the disquotational theory as a peculiarity.

Quine, the most prominent exponent of the disquotational theory,[127] takes the redundancy theory as captured by the disquotational schema to be "the perfect theory of truth" for cases where truth is predicated of a quoted sentence:

> In speaking of the truth of a given sentence there is only indirection; we
> do better simply to say the sentence and so to speak not about language
> but about the world. So long as we are speaking only of the truth of
> singly given sentences, the perfect theory of truth is what Wilfrid Sellars
> has called the disappearance theory of truth.[128]

---

[127] Other prominent disquotationalists include Hartry Field, Stephen Leeds, and Michael Williams. See Hartry Field, "The Deflationary Conception of Truth" in *Fact, Science and Morality: Essays on A. J. Ayer's* Language, Truth and Logic, Graham Macdonald and Crispin Wright, editors (New York: Basil Blackwell Inc., 1986) pp 55-117; Stephen Leeds, "Theories of Reference and Truth" *Erkenntnis* **13** (1978) pp 111-129, and "Truth, Correspondence, and Success" *Philosophical Studies* **79** (1995) pp 1-36; and Michael Williams, "Do We (Epistemologists) Need a Theory of Truth?" *Philosophical Topics* **14** (1986) pp 223-242, and "Epistemological Realism and the Basis of Scepticism" *Mind* **97** (1988) pp 415-439.

[128] W. V. Quine, *Philosophy of Logic*, second edition (Cambridge, Massachusetts: Harvard University Press, 1986) p 11. "The disappearance theory" is Sellars' name for the redundancy theory. Quine's section on "Truth and semantic ascent" in the first edition (1970) pp 10-13, is reprinted in Blackburn and Simmons (1999) pp 144-146. (No changes were made to this section for the second edition.)

Both Ramsey's first case of truth predication, where the quoted or operated-on sentence appears explicitly, and his second case, where it does not, involve what Quine calls semantic ascent. The notion of semantic ascent is taken from Tarski's hierarchy of formalized languages. A sentence in which truth is predicated of another sentence belongs to the metalanguage with respect to the object language of the sentence of which truth is predicated. Thus, predication of truth raises the language of the sentence from object language to metalanguage; hence the term 'semantic ascent'.

Like Ramsey, Quine recognizes that the truth predicate has a more important application in the second case, where the object language sentence does not appear explicitly.

> Where the truth predicate has its utility is in just those places where…we are impelled by certain technical complications to mention sentences…. The important places of this kind are places where we are seeking generality, and seeking it along certain oblique planes that we cannot sweep out by generalizing over objects.
>
> We can generalize on 'Tom is mortal', 'Dick is mortal', and so on, without talking of truth or of sentences; we can say 'All men are mortal'. We can generalize similarly on 'Tom is Tom', 'Dick is Dick', '0 is 0', and so on, saying 'Everything is itself'. When on the other hand we want to generalize on 'Tom is mortal or Tom is not mortal', 'Snow is white or snow is not white', and so on, we ascend to talk of truth and of sentences, saying 'Every sentence of the form p or not p is true', or 'Every alternation of a sentence with its negation is true'. What prompts this semantic ascent is not that 'Tom is mortal or Tom is not mortal' is somehow about sentences while 'Tom is mortal' and 'Tom is Tom' are about Tom. All three are about Tom. We ascend only because of the oblique way in which the instances over which we are generalizing are related to one another. [129]

---

[129] *ibid*. Cf. also the following passage in W. V. Quine, *Quiddities: An Intermittently Philosophical Dictionary* (Cambridge, Massachusetts: The Belknap Press of the Harvard University Press, 1987) p 214:

> The attribution of truth to a statement is equated to the statement itself. This has been called the disappearance theory of truth, but unjustly; the quotation marks are

Thus, for example, the sentence 'Everything Tolstoy says is true' is a generalization over all of the things Tolstoy says. According to Quine, it is also an abbreviation, since it allows us to say in five words what would otherwise require us to say the very long sentence which is the conjunction of every sentence Tolstoy says. The abbreviated generalization is formed by quoting every sentence Tolstoy said, attaching to each the predicate 'is true', conjoining these redundified sentences, and forming the universal generalization, recognizing that there is quantification over sentences. In the reverse direction, 'Everything Tolstoy says is true' is unabridged as $\ulcorner$'s$_1$' is true and 's$_2$' is true and ... and 's$_n$' is true $\urcorner$ where s$_1$ ... s$_n$ are the sentences said by Tolstoy.[130] The disquotational schema may be used on each conjunct to yield each sentence said by Tolstoy. Here "the utility of the truth predicate is precisely the cancellation of linguistic reference".[131] Thus, even where sentences are quantified over, truth is redundant, even if in a roundabout way.

Notice that Quine offers this abbreviatory algorithm as an *argument for* the disquotational theory's claim that the truth predicate is redundant; therefore, it is

---

> not to be taken lightly. What can justly be said is that the adjective 'true' is dispensable when attributed to sentences that are explicitly before us. Where it is not thus dispensable is in saying that all or some sentences of such and such a specified form are or are not true, or that someone's statement unavailable for quotation was or was not true, or that the libel laws do not apply to true statements, or that you will tell the truth, the whole truth, and nothing but the truth, so help you God. ... It is there that the truth predicate is not to be lightly dismissed.

If 'dispensable' is read as 'eliminable', then Quine is making quite a concession regarding the second case. It is charitable to read 'dispensable' as 'dispensable as a metalinguistic abbreviatory device'; that is, some such device is useful and even pragmatically required in ordinary discourse. As before, it is redundant to quote a single sentence and attach to it 'is true', since the bare sentence works just as well.

[130] s$_1$ ... s$_n$ are substitutional variables.

[131] *ibid*., p 12.

circular to appeal to this claim to justify a move in the algorithm, *sc.*, redundantly predicating truth of each s_i. If the disquotational theory is not antecedently accepted, there is no reason to adopt it as a theory of truth ascriptions to universally quantified subjects. Nor is it plausible to accept Quine's point as an appeal to intuition, since it is far more intuitive to understand 'Everything Tolstoy said is true' as a *single* ascription of truth to *everything Tolstoy said*. Notice also that the step of forming quotation names of each s_i is necessary in order to understand 's' as a substitutional variable. If 's' were an objectual variable, a quantified truth predication such as 'Everything Tolstoy said is true' may be understood as a predication of those objects. In this case, the quotation-naming step and the entire algorithm are otiose.[132]

Notice further that what is to be preserved in every step of the algorithm is not merely truth value, but meaning.[133] It is obvious that what is required to understand 'Everything Tolstoy said is true' is much different than what is required to understand the very long conjunction. An even clearer illustration is the sentence 'Every sentence of the form $\ulcorner p \supset p \urcorner$ is true'. As Anil Gupta has pointed out,[134] this sentence is maximally conceptual on the disquotational theory, since it is by hypothesis equivalent to the infinite conjunction of every sentence of the form $\ulcorner p \supset p \urcorner$, which includes every concept.

---

[132] Quine's loyalty to Okham's razor is tested here!

[133] In places it may appear as though Quine argues only for the weaker claim that sentences and their truth predications are logically equivalent; for example, that ' 'Snow is white' is true' and 'Snow is white' are logically equivalent, which is to say that ' 'Snow is white' is true if and only if snow is white' is a tautology. (See W. V. Quine, *Philosophy of Logic*, second edition, *op. cit.*, p 12.) However, sentences obviously different in meaning can be logically equivalent in extensional contexts: 'Triangles have three sides' and 'Squares have four sides' are logically equivalent in extensional contexts; and, 'Shakespeare wrote *Othello*' and 'Shakespeare wrote *King Lear*' are also logically equivalent in extensional contexts. Therefore, Quine should not be read as arguing for the weaker thesis, since logical equivalence is insufficiently relevant to Quine's analysis of the truth predicate.

[134] Anil Gupta, "A Critique of Deflationism" *Philosophical Topics* **21** (1993) pp 57-81.

Therefore, it is obvious that someone may have the quantified belief and not the conjunctive belief; indeed, it seems much more likely for someone to believe 'Everything Tolstoy said is true' than the long conjunction. By Quine's own lights, the stimulus meaning of the two will differ greatly. It is doubtful that the stimulus meaning for the long conjunction is, has been, or will be actual. Similarly, though many people understand and believe that every sentence of the form $\ulcorner p \supset p \urcorner$ is true, it seems nearly impossible, due both to the length and to the conceptual resources required, for someone to believe the infinite conjunction of sentences of the form $\ulcorner p \supset p \urcorner$.[135]

Although Quine treats sentences such as 'Every sentence of the form $\ulcorner p \supset p \urcorner$ is true' and 'Everything Tolstoy said is true' as representative of Ramsey's second case, we should distinguish among several sub-cases where 'is true' is predicated of a subject other than a quoted sentence. In the second case, the subject may be universally quantified, existentially quantified, it may name a proposition, it may describe a proposition, or it may demonstrate a proposition. It is not clear that even the case of a universally quantified subject is as unproblematic as Quine presents it to be. The case of 'everything Tolstoy said' does not challenge Quine's theory so much as a case where the universally quantified subject genuinely has an infinite number of instances. Quine is committed to analyzing 'Every sentence of the form $\ulcorner p \supset p \urcorner$ is true' as an infinite conjunction, since there are an infinity of instances of p.[136] This motivates a distinction

---

[135] This point may be made in terms of sentences or propositions. Of course, one of Quine's aims in the very passages quoted above is to argue that the notion of a proposition is eliminable; *pace* Quine, I continue to take propositions to be truth-bearers. Arguments for this position are given in section 2, above.

[136] There are an infinity of sentence types, even of English. If it is replied that 'every sentence of the form *p* or not *p* is true' is about sentence tokens, then consider instead the sentence 'every sentence type of the form *p* or not *p* is true'. Even Quine, who understands meaning as stimulus meaning, will need to draw the distinction between sentence types and sentence tokens, since a

which Quine himself draws between reference and meaning.[137] Although the term

'every sentence of the form ⌈p ⊃ p⌉' refers to an infinity of sentences, its meaning cannot

be equivalent to an infinity of sentences, since someone can believe that all such

sentences are true, but cannot even entertain every such sentence. Even where the

quantifier refers to a finite number of objects, e.g., 'everything said by Tolstoy', I can

believe 'everything Tolstoy said is true' without considering explicitly everything

Tolstoy said. Hence, Quine's analysis does not give the meaning of sentences in which

truth is predicated of a universally quantified subject, without which his argument for

the redundancy of 'is true' in these cases fails.

An even more problematic case arises where the universally quantified subject

refers not to an infinity of sentences but to no sentence at all. Consider the case, 'Every

sentence I have said to Quine is true'. It is wholly implausible to analyze this sentence

as being elliptical for a predication of truth to a quoted sentence, since there are no such

quoted sentences, and hence no unabridged sentence. Nevertheless, this sentence

expresses a proposition, and might even be something I could convince someone of. I

could even do this without deceit, since it is trivially true. According to the

disquotational theory, this sentence is meaningless; however, it is clear that it is not

meaningless, since it is true, and the proposition expressed by it can be believed.

As pointed out above concerning the redundancy theory, this analysis is also

unsuited to the case of predicating truth of an existentially quantified subject. Consider

a speaker who believes the proposition expressed by 'some of the things Gene Siskel

---

sentence token will generally be used only once, and so can be given a stimulus meaning only if it tokens a particular sentence type.

[137] Willard Van Orman Quine, "Two Dogmas of Empiricism" in *From A Logical Point of View* (Cambridge, Massachusetts: Harvard University Press, 1953) pp 20-46, at p 21 ff.

says are true'. The speaker may form this belief simply as a result of apparent

reputation of a famous and frequently consulted movie critic, without ever having heard

anything said by him. In such a case, it is implausible to analyze the meaning of this

sentence as a disjunction of sentences, even if the subject term refers to at least one of the

things said by Gene Siskel. The case is even sharper where the disjunction is infinite, as

in 'Some sentence of Old Norse is true'. This sentence cannot be analyzed as equivalent

in meaning to an infinite disjunction, since the quoted sentence is graspable, but the

infinite disjunction is not. Without this analysis of existentially quantified sentences,

Quine cannot claim that 'is true' is redundant.

As in the case of a universally quantified subject, a non-referring existentially

quantified subject term presents a greater difficulty to the disquotational theory. The

sentence 'Some sentence I have said to Quine is true' is not correctly analyzed as

predicating truth of one or more quoted sentences, since there are no such quoted

sentences. Thus, on the disquotational theory, 'Some sentence I have said to Quine is

true' is meaningless, whereas it is plainly false, and expresses a proposition which

someone might believe, or doubt.

Cases where the grammatical subject names, describes, or demonstrates a

sentence are similar. Suppose Jean-Paul believes that McTaggart's Thesis on the

Unreality of Time is true, based on the reports of a respected scientist who claims to

have time-traveled using a machine whose design was based in part on it. Here, Jean-

Paul believes (for short) 'McTaggart's Thesis is true', but has no belief whatsoever about

the A-series, the B-series, or their compatibility. Similarly, and more straightforwardly,

Jean-Paul can utter 'McTaggart's Thesis on the Unreality of Time is true' but cannot

assert McTaggart's Thesis on the Unreality of Time. Therefore, sentences in which truth

is predicated of a named sentence cannot be taken as equivalent in meaning[138] to the named sentence.

As above, where the subject term is a non-referring name of what looks to be a sentence, Quine's analysis fares even worse. On Quine's view, to assert 'Leon Lett's Thesis on the Unreality of Time is true' is equivalent to asserting Leon Lett's Thesis on the Unreality of Time. Yet it makes sense to talk only of making the former assertion, since Leon Lett has produced no theses on the unreality of time; that is, there is no such thesis to assert. Therefore, Quine's analysis that a sentence in which truth is predicated of a named sentence is equivalent to the named sentence is incorrect.

As an example of predicating truth of a described sentence or proposition, consider the sentence, 'The first sentence said by Quine on his tenth birthday is true'. If Donald is a fan of Quine, he might believe the proposition expressed by this sentence without having any idea of what Quine first said on his tenth birthday. If Quine happened to be silent on his tenth birthday, then it is plain that the sentence 'The first sentence said by Quine on his tenth birthday is true' is not equivalent in meaning to the first sentence said by Quine on his tenth birthday, since the former exists and the latter does not.[139]

---

[138] For Quine, equivalence of meaning is equivalence of stimulus meaning; for those who countenance propositions, it is identity of proposition expressed. On neither view of sentence meaning are the two sentences equivalent in meaning.

[139] Since it might be argued that the sentence 'The first sentence said by Quine on his tenth birthday is true' does not express a proposition if Quine is silent on that day, it should be pointed out that the case is sharpened by considering instead the sentence 'The first sentence said by Quine on his tenth birthday, if there is such a sentence, is true'. Again, this sentence plainly has meaning, but on Quine's analysis it does not. Nevertheless, it should be clear that if sentences do express propositions, the former quoted sentence does, even if the description it contains is non-referring.

Similarly, suppose Jean-Paul walks into a classroom where the time-traveled scientist has just finished lecturing. On the board is written McTaggart's Thesis, which Jean-Paul would be unable to recognize without its name, written above it. Pointing to the inscription of the Thesis, he says, "That is true." It is clear that Jean-Paul has asserted the truth of McTaggart's Thesis; but he has not asserted McTaggart's Thesis itself, since he is not capable of asserting McTaggart's Thesis. He is capable of referring to it, but not expressing it. Therefore, the predication of the truth of McTaggart's Thesis made by means of the demonstration is not equivalent in meaning to McTaggart's Thesis.

Alternatively, were the lights in the classroom too dim for Jean-Paul to notice that the board had been erased, his utterance "That is true", even accompanied by a pointing to the board, is clearly not equivalent in meaning to truth predicated of a demonstrated sentence, since there is no demonstrated sentence. Therefore, Quine's analysis of a sentence in which truth is predicated of a demonstrated sentence as equivalent in meaning to the demonstrated sentence is incorrect.

It is clear that according to the disquotational theory, 'is true' when attached to a quoted sentence is eliminable and does not express a property. It is tempting, then, to identify the useful role of 'is true' in quantified sentences as the property, truth. However, even if it is accurate to attribute this useful role to the truth predicate, the property of playing this useful role is a property *had* by the truth predicate, it is not *expressed* by it.[140] In other words, on the disquotational theory the truth predicate is

---

[140] This point is made by Matthew McGrath, *Between Deflationism & Correspondence Theory* (New York: Garland Publishing, Inc., 2000) p 26, fn 1 and in "Weak Deflationism" *Mind* **106** (1997) pp 69-98, at p 71, fn 1; and also by Michael Devitt, "Minimalist Truth: A Critical Notice of Paul Horwich's *Truth*", *Mind & Language* **6** (1991) pp 273-283 at p 276. Hartry Field seems to have this

syncategorematic; it does not *express* the property, serving in, or to remind of, semantic

ascent, even if Quine is right that it *has* it.

One point of departure between the redundancy theory and the disquotational

theory is that Quine maintains throughout much of his career specifically that the

disquotational schema captures the correspondence intuition.[141]

> …truth should hinge on reality, and it does. No sentence is true but
> reality makes it so. The sentence 'Snow is white' is true, Tarski has
> taught us, if and only if real snow is really white….
>   Truth hinges on reality; but to object, on this score, to calling
> sentences true, is a confusion. Where the truth predicate has its utility is
> in just those places where, though still concerned with reality, we are
> impelled by certain technical complications to mention sentences. Here
> the truth predicate serves, as it were, to point through the sentence to the
> reality; it serves as a reminder that though sentences are mentioned,
> reality is still the whole point.[142]

> The true sentence 'Snow is white' corresponds to the fact that snow is
> white. The sentence 'Snow is white' is true if and only if it is a fact that
> snow is white. Now we have worked the fact, factitious fiction that it is,
> into a corner where we can deal it the coup de grace. The combination 'it
> is a fact that' is vacuous and can be dropped; 'It is a fact that snow is
> white' reduces to 'Snow is white'. Our account of the truth of 'Snow is
> white' in terms of facts has now come down to this: 'Snow is white' is
> true if and only if snow is white….
>   We saw the correspondence theory dwindle to disquotation. The

point in mind when he suggests that truth for Horwich is a logical predicate; see Hartry Field, "Critical Notice: Paul Horwich's *Truth*" *Philosophy of Science* **59** (1992) pp 321-330. This point also underlies Anil Gupta's discussion in §IV of "A Critique of Deflationism" *Philosophical Topics* **21**.2 (1993) pp 57-81, though he does not make it.

[141] Although Ramsey's remarks on the correspondence intuition are troublesome to interpret (see section 8 above, especially footnote 86), it is clear that he is either rejecting it outright, or explaining away talk of correspondence. Quine, on the other hand, consistently maintains that the disquotational schema captures the correspondence intuition. A germinal form of this view can be traced back as far as "Notes on the Theory of Reference" (in *From A Logical Point of View, op. cit.*, pp 130-138): "Attribution of truth in particular to 'Snow is white', for example, is every bit as clear to us as attribution of whiteness to snow." (p 138)

[142] W. V. Quine, *Philosophy of Logic*, second edition, *op. cit.*, pp 10-11.

attribution of truth to a statement is equated to the statement itself. This has been called the disappearance theory of truth, but unjustly; the quotation marks are not to be taken lightly. What can justly be said is that the adjective 'true' is dispensable when attributed to sentences that are explicitly before us. Where it is not thus dispensable is in saying that all or some sentences of such and such a specified form are or are not true, or that someone's statement unavailable for quotation was or was not true, or that the libel laws do not apply to true statements, or that you will tell the truth, the whole truth, and nothing but the truth, so help you God…. It is there that the truth predicate is not to be lightly dismissed.[143]

> Yet there is some underlying validity to the correspondence theory of truth, as Tarski has taught us. Instead of saying that
>
> > 'Snow is white' is true if and only if it is a fact that snow is white
>
> we can simply delete 'it is a fact that' as vacuous, and therewith facts themselves:
>
> > 'Snow is white' is true if and only if snow is white.[144]

It is peculiar for Quine to claim that the disquotational schema captures the correspondence intuition since there is a potential tension with the disquotational theory's commitment to rejecting any substantive analysis of the truth predicate. This is one constraint on explicating the "underlying validity" which the disquotational theory grants to the correspondence theory.

Due to its form, there is a significant temptation to take the disquotational schema, D, as providing an eliminative definition of 'is true'.

D 'S' is true if and only if S

[143] W. V. Quine, *Quiddities: An Intermittently Philosophical Dictionary* (Cambridge, Massachusetts: The Belknap Press of the Harvard University Press, 1987) pp 213-214.

[144] W. V. Quine, *Pursuit of Truth*, revised edition(Cambridge, Massachusetts: Harvard University Press, 1992) p 80.

Though reading 'if and only if' as a material conditional permits elimination of the truth predicate by application of the left-to-right conditional, this reading does not constitute a *definition* of the truth predicate.[145] Alternatively, 'if and only if' may be read as mutual entailment. Notice that if this reading of D is to capture a correspondence between a sentence and a fact, the right side of D must refer to a fact. However, if this is so, neither side can entail the other unless 'is true' is given a substantive analysis. A sentence referring to a fact cannot entail the truth of a sentence of a certain language, unless the truth predicate expresses a correspondence property. Neither can a metalinguistic sentence in which truth is predicated of an object language sentence entail an object language sentence referring to a fact, again, unless 'is true' expresses a correspondence property. Therefore, understanding D as an eliminative definition of truth is an error, and so also is taking D to capture the correspondence intuition, or its "underlying validity." It should be as plain that 'if and only if' in D cannot plausibly be read as mutual entailment.

D may instead be read as a material biconditional representing causation, as in 'If a human being ingests five ounces of cyanide with a meal, it will die'. A suggestion for this reading may be taken from Quine's remark that "No sentence is true but reality *makes* it so."[146] Where a material conditional represents causation, its converse is not plausible as a causal relation, since causation is not symmetric. But since Quine is primarily interested in eliminating the truth predicate, and it has been shown that D

---

[145] Tarski's observation that instances of schema T are "partial definitions of truth" is evidence that he was clear about reading schema T as a material biconditional.

[146] W. V. Quine, *Philosophy of Logic*, second edition, *op. cit.*, p 10; my italics.

cannot plausibly be taken as a definition, the disquotational theory could make do with

a conditional disquotational schema,

D→   if 'S' is true, then S

However, D→ cannot be understood as a causal material conditional, since a sentences'

being true cannot cause anything, strictly speaking, especially if truth is not a property.

Furthermore, according to Quine it is reality which makes a sentence true, which

supports the converse of D→. The converse, of course, does not help Quine eliminate

the truth predicate.

The usual reading of 'if and only if' is as material equivalence; e.g., a creature has

a heart if and only if that creature has a kidney. If D is given this reading, D captures a

correlation between a true sentence and a fact.[147] Here Quine faces a dilemma. If he

does not give an account as to why the correlation obtains, he must give up pretending

to have captured the correspondence intuition or its underlying validity. If he does give

an account as to why the correlation obtains, he runs the risk of describing a property

expressed by the truth predicate.

Quine attempts to run between the horns by claiming that the material

equivalence between a true sentence and a sentence referring to a fact is a mere

correlation not in need of this sort of account, just as the material equivalence between 'a

creature has a heart' and 'a creature has a kidney' is a mere correlation, or a biological

coincidence, not in need of an account. This allows Quine to claim that D captures the

---

[147] Although Quine does not countenance facts, 'fact' can be read in a way acceptable to Quine;
e.g., the fact that snow is white may be understood instead as real snow really being white.

underlying validity of the correspondence intuition, without committing himself to truth's being a correspondence property expressed by the truth predicate. Quite simply, the dilemma may be pressed: is there an explanation as to why the correlation obtains, or is there only a coincidence in lieu of an explanation?

We should not expect Quine to be so easy to pin down. One feature of the disquotational view—which is the main difference between D and schema T—allows Quine to be elusive on this matter.

T $x \in Tr$ if and only if p

D   'S' is true if and only if S

Notice that schema T has two variables, while D has just one: S. It is critical to the plausibility of the disquotational theory that S be a substitutional variable; if S were an objectual variable, then the right side of D would not be well-formed.[148,149] It is also

---

[148] The left side would also not be well-formed. The right side could be made well-formed by adding a predicate, and the left side by dropping the quotation marks, most likely yielding the tautology 'S is true iff S is true'. If S is taken as an objectual variable, the quotation marks must be dropped to make the left side well-formed, whereupon the disquotational theory loses its disquotational feature.

[149] Although substitutional quantification has had its skeptics, including Tarski, its legitimacy has been demonstrated. See Alfred Tarski, *Introduction to Logic and to the Methodology of the Deductive Sciences, op. cit.*; J. Wallace, "Convention T and Substitutional Quantification" *Nous* **5** (1971) pp 199-212; L. H. Tharp, "Truth, Quantification, and Abstract Objects" *Nous* **5** (1971) pp 363-372. Early supporters of substitutional quantification include Ruth Barcan Marcus, "Interpreting Quantification" *Inquiry* **5** (1962) pp 252-259 and J. Michael Dunn and Nuel D. Belnap Jr., "The Substitutional Interpretation of the Quantifiers" *Nous* **2** (1968) pp 177-185. Saul Kripke vindicates substitutional quantification in "Is There a Problem about Substitutional Quantification?", *op. cit.* Kripke argues that substitutional quantification is not a special case of objectual quantification, in which variables range over expressions, broadly construed to include sentences, terms, and symbols, instead of objects, by pointing out that the claim that substitutionally quantified formulas may be read as having a meaning, just as objectually quantified sentences, must be

critical to the plausibility of the disquotational schema that the name of the sentence of which truth is predicated non-semantically encode its referent; unless it does, D must be formulated with two variables.[150]

As a theory of truth, the disquotational theory is neutral as to whether sentences are named by forming quotation names, or are named by some other method. Therefore, D may be reformulated using an alternate method for naming sentences without altering what it captures. Consider an alternate method of naming sentences which indexes each sentence type with its Gödel number, g, according to a particular system of gödel numbering, and assigns each sentence type a unique name, $\ulcorner S_g \urcorner$. Suppose that this method of naming sentences is added to standard English; call it the gödel method. Suppose that the disquotational schema made use of the gödel method instead of the quotation method of naming sentences. Then 'S_g' replaces ' 'S' ' on the left side of D, yielding D_g.

D_g S_g is true if and only if S

Note that 'g' is a substitutional variable, such that S_g names English sentences. This means that the right side of D cannot use the same substitutional variable, unless it is reformulated by adding a predicate. The choice of predicate, though, will render D_g either tautologous ('is true'), false ('is a sentence of English'), or substantive

---

withdrawn. This issue remains controversial. Peter van Inwagen fixes on this feature of substitutional quantification to argue against its intelligibility in "Why I Don't Understand Substitutional Quantification" *Philosophical Studies* **39** (1981) pp 281-285.

[150] What is required for the disquotational schema to be formulated using a single substitutional variable is for the information to be encoded non-semantically; it need not occur as a proper part of the name.

('corresponds to a fact'). The most plausible move is to retain 'S' as a sentential

substitutional variable; however, there is no longer any plausibility to the claim that the

disquotational schema captures the underlying validity of the correspondence

intuition.[151]

Considering the case where English incorporates the gödel method of sentence

naming exposes a significant flaw in Quine's argument for the disquotational theory.

For instance, Quine's argument that the truth predicate functions as an abbreviatory aid

in quantificational contexts is much less plausible. If the gödel method is used to name

sentences, Quine's claim becomes: 'Everything Tolstoy said is true' is equivalent in

meaning to 'S_{3457} is true and S_{11997} is true and … S_{20583} is true'. To obtain the sentences

Tolstoy said, the conjunction is simplified into its conjuncts, and D_g is applied repeatedly

to yield the sentences each S_g names. Where the quotation names are used, this last step

appears trivial, since finding the referent of the sentence name requires only erasing

quotation marks. However, finding the referents of S_g is not a trivial matter. While it

appears semantically innocent to efface an allegedly redundant predicate when the

referent is so easy to find from the quotation name, this step in Quine's algorithm is

much less plausible when finding the referent of the sentence name is not trivial.

In other words, the disquotational schema capitalizes on the grammatical

coincidence, or accident, that, in English, quotation names of sentences contain their

---

[151] The attempt might be made to reformulate the right side of D_g with an objectual variable.
However, a predicate will need to be added as part of the formulation so that D_g is well-formed.
Once again, the predicates will render D_g either tautologous, false, or committed to a substantive
notion of truth.

referents as a proper part.[152] While quotation naming is of course a perfectly legitimate

method for naming sentences, the disquotational theory mistakes its significance. It is

an accident of the quotation naming method which allows Quine to formulate the

disquotational schema using a single substitutional variable.

Also, the disquotational schema should not be mistaken as capturing the

correspondence intuition, or its underlying validity. While the disquotational schema

does capture a material equivalence, contra Quine, it is due to a grammatical accident,

rather than somehow capturing an underlying notion of correspondence. In particular,

the disquotational schema is **not** the result of "the correspondence theory dwindl[ing] to

disquotation"[153] as Quine blurts. The disquotational schema is not so much the result of

"work[ing] the fact…into a corner where we can deal it the coup de grace"[154] as it is

legerdemain.[155,156]

---

[152] To be clear, the referent of a quotation name of a sentence is a sentence type; what appears as a proper part of the quotation name is a token of that sentence type. The referents of descriptions, demonstrations, and proper names of sentences may be either sentence types or sentence tokens.

[153] W. V. Quine, *Quiddities: An Intermittently Philosophical Dictionary, op. cit.*, p 214.

[154] *ibid*.

[155] The tension in Quine's view both to reject the correspondence theory and capture the correspondence intuition shows up in this passage as well. His derivation proceeds as follows:

> The true sentence 'Snow is white' corresponds to the fact that snow is
> white. The sentence 'Snow is white' is true if and only if it is a fact that
> snow is white. (*Quiddities, op. cit.*, p 214)

The transformation of the first sentence into the second involves replacing 'corresponds' with 'if and only if'. However, since 'if and only if' is plainly a material biconditional, the transformation preserves meaning only if the sense of 'corresponds' in the first sentence is the weak reading of 'correspond'. (See section 3.1.) Quine's decision to excise facts turns on a similar equivocation: he manages to rid the locution of the word 'fact' but if he is to capture the correspondence intuition, then facts need to be referred to. In both cases, he cannot claim to capture the correspondence theory, and also to reject it.

As it stands, D_g cannot accommodate truth attributions to the proper names of

sentences, nor to described or demonstrated sentences. To broaden the application of

D_g, the variable S_g may be replaced with a substitutional variable, N, ranging over

expressions denoting sentences, to include quotation names, gödel names, proper

names, descriptions, and demonstratives; and S is the denoted sentence. This yields

D_N N is true if and only if S

This seems to be the most plausible version of the disquotational schema.[157] It is clear

from this formulation that quotation naming is just a special case of denoting a sentence,

---

[156] I should add that though the significance of the grammatical accident to the disquotational theory has not been widely recognized, it has not entirely escaped notice. In a discussion of Tarski, Max Black writes:

> We might arrange for each undefined term in L_E [the object language] to have a number correlated with it; or "catcat" might be the name of "cat," "manman" of "man," and so on; or the familiar device of quotation marks might be used. But although the names might be regularly formed in some such fashion, M_E [the metalanguage] could not contain a rule to determine that they *be* so formed. It must, for instance, be a kind of logical accident that the name of a word in L_E is obtained by inserting it between commas. No official notice could be taken of the structural relations between a word of L_E and its name in M_E. (Max Black, *Language and Philosophy: Studies in Method* (Ithaca, New York: Cornell University Press, 1949) p 100, fn 17)

[157] Marian David considers the following version of the disquotational schema to be "the deflationist's main attempt" at a deflationary theory of truth:

> D′   *x* is a true sentence if and only if for some p, *x* is identical to 'p' and p

D′ has several advantages over D. First, *x* is to range over descriptions and proper names of sentences, as well as quotation names. Second, *x* may be universally and existentially quantified over. Third, David points out that D′ is in the form of an explicit definition from which the property of truth may be specified. However, unless D′ is read as a mutual entailment, it is not strictly speaking in the form of an explicit definition. Also, the property truth cannot be specified from D′, since '*x*' and 'p' are substitutional variables (see footnote 149) and because '*x*' appears in the definiens as well as the definiendum. Tarski considers and rejects D′ on the grounds that the definiens is of questionable significance; David, who reports Tarski's verdict, concludes that the semi-technical apparatus is essential to D′. As a development of the redundancy theory, a

and for the disquotational theory to be completely general, it must use a variable having a broader range, and must therefore pass over the coincidence in quotation naming which permits the use of a single substitutional variable.

Nevertheless, D_N is not an adequate schema. Once the grammatical accident is revealed and the disquotational schema is broadened, a number of difficulties becomes manifest: where the variable N denotes a sentence type which contains one or more context-sensitive terms, or is ambiguous, S does not provide correct necessary and sufficient truth conditions for N, since the sentence type has no context. Even where N denotes a sentence token, D_N does not provide the correct truth conditions unless the context in which D_N is instantiated happens to be like the context in which the referent of N was produced in the appropriate respects: either providing the same semantic content to indexical terms or disambiguating ambiguous terms the same way.[158] These difficulties arise even if the quotation naming method is used. For example, instantiating D_N for a lexically ambiguous sentence yields ambiguous truth conditions; e.g., 'Josephine is sitting on the bank' is true if and only if Josephine is sitting on the bank. It is simply undetermined whether the sentence is true if and only if both truth conditions are met, or one of the two. All of the available options are problematic: it cannot be that both truth conditions need to be met, since the proposition may be true without her sitting in two places at once. If a disjunction of the two truth condition

---

disquotationalist should not be bothered by these problems. For David's discussion, see *Correspondence and Disquotation: An Essay on the Nature of Truth, op. cit.*, chapter 4, section 3. For Tarski's discussion, see "The Concept of Truth in Formalized Languages", *op. cit.*, p 159 ff.

The difference between D' and D_N is slight: D' relates 'x' and 'p' through the clause "x is identical to 'p' ", whereas D_N is supplemented with the clause that N denotes S.

[158] Of course, the context in which D_N is instantiated may coincidentally provide the same semantic content to context-sensitive terms or disambiguate ambiguous terms in the same way, but such coincidences do not help the disquotationalist.

needs to be met, then one of the conditions might be met on an occasion where the other truth condition is the correct one to apply, based on what was meant or intended. If one of the truth conditions is prioritized outright, then the other cannot serve as a truth condition, though there may be occasions where it is correct to. The same sort of difficulty arises for syntactically ambiguous sentences, such as 'he didn't leave Davenport because of the flood'.

Sentences containing indexical terms raise similar difficulties. Instantiating the disquotational schema for a sentence containing an indexical term yields context-dependent truth conditions, but without a specification of the context of evaluation. For example, 'The concert is beginning now' is true if and only if the concert is beginning now. As a default, we may take the context of evaluation to be the context in which D_N is instantiated; but this will very frequently lead to an incorrect truth evaluation.[159] The problem is that the truth conditions need to take into account the context dependence of certain terms, but do not. Moreover, there seems to be no way for the disquotational schema to accommodate context-sensitive terms.

Another pair of difficulties affecting D_N (as well as D_g, D, and David's D') stems from an inability to handle true sentences of languages other than the language in which the disquotational schema is formulated. Consider a language L* distinct from the language in which the disquotational schema is formulated, L_D, but having a syntax according to which certain well-formed sentences of L* are type-identical to sentences of L_D. The disquotational schema automatically establishes the same sufficient truth conditions for these sentences of L* which it establishes for the type-identical sentences

---

[159] Strictly speaking, in the absence of a default context, the context-sensitive term lacks semantic content, with the result that the instantiation of the schema is semantically deficient.

of L_D. For example, according to the disquotational schema, the sentence of L* 'Snow is white' is true, since snow is white, even if it translates into English as 'Hamsters are birds'.

Conversely, the disquotational schema provides incorrect necessary and sufficient truth conditions for any sentence of L* type-identical but non-synonymous with a sentence of L_D. For example, the sentence of L* 'The New York Knicks are the 2000-2001 NFL champions' is evaluated as untrue, even if it translates into L_D as 'The Los Angeles Lakers are the 1999-2000 NBA champions'. Similarly, the disquotational schema is unable to provide necessary and sufficient truth conditions for the remaining sentences of L*, since they are not type-identical with any sentence of L_D. For example, the sentence 'uhrjee peepa noolop' will fail to be true, even if it translates into English as 'Dennis Miller has been seen wearing a beard'.[160]

An effective response is to relativize the truth predicate to a language: e.g., 'snow is white' is true-in-English if and only if snow is white. This move gives up on capturing a notion of truth applying across languages. At best, a sentence of a foreign language which is type-identical to a sentence true-in-L_D will be true-in-L_D, but only because the necessary and sufficient truth conditions already established for the sentence as a sentence of L_D are met. That is, a sentence of L* which happens to be type-identical with a sentence of L_D is true-in-L_D, but not based on the appropriate necessary and sufficient conditions.

---

[160] Problems arising from context-sensitive terms, ambiguous terms, and sentences of foreign languages are discussed extensively by Marian David, *Correspondence and Disquotation: An Essay on the Nature of Truth, op. cit.*, chapter 5, section 6, and ff. David's preference is to put the problem in terms of idiolects, but like considerations give rise to analogous problems of truth relativized to an idiolect, or to a language.

This move could be bolstered by adopting D_N together with translations of D_N into every language containing true sentences. Aside from the cumbersomeness of such a theory, this move flaunts the intuition that there is a unified notion of truth. As a result, the English sentence 'snow is white' cannot be said to share a truth property with 'la neige est blanche': the first is true-in-English, the second vrai-en-Français.[161] It might be suggested that a notion of unrelativized truth could be formulated as the disjunction of truth-in-L for all languages, L. However, since all sentences are true in some language or other, this disjunctive notion of truth is too inclusive by anyone's lights.

As discussed in section 10, Tarski was aware of the difficulties stemming from sentences of foreign languages, as well as those stemming from sentences containing context-sensitive terms. Also, Tarski explicitly derives the result that schema T cannot be applied to semantically open languages, such as natural languages, to obtain a definition of the truth predicate. Although Quine frequently cites Tarski's work and rarely Ramsey's, the disquotational theory is closer kin to the redundancy theory than to Tarski's. The important difference between D and schema T is that D has one variable while schema T has two. D captures disquotation, whereas schema T does not.[162] Although it is a clever attempt, and worth working through, Quine's disquotational theory cannot be seen as an improvement on Tarski's work; it is best understood simply as a development of the redundancy theory of truth. [163]

---

[161] To evaluate the French sentence, language-relativized D_N must be translated into French: N est vrai-en-Français si et seulement si S.

[162] Note that while 'x' is a structurally-descriptive name, the value of the variable 'p' is not obtained from information non-semantically encoded in 'x', but through a translation into the metalanguage of the sentence 'x' names.

[163] Quine's mistake in thinking that the disquotational schema captures the correspondence intuition is to mistake the information non-semantically encoded by a sentence name for information semantically expressed by it. The same confusion has led philosophers to think that

Section 12: The Minimalist Theory of Truth

The disquotational schema may be formulated for propositions in lieu of sentences. One

hoped-for advantage of doing so is that to avoid problems stemming from sentences

containing context-sensitive terms and ambiguous sentences, since the schema is stated

directly in terms of propositions.

---

instances of the disquotational schema are *a priori*, and therefore, that the disquotational schema may be used as the foundation of a theory of meaning.

   The conclusion that instances of D are *a priori* is really only tempting where we use quotation names for sentences. The plausibility of the claim that instances of D are *a priori* stems from examples such as: 'Fugacity has the same dimensions as pressure' is true if and only if fugacity has the same dimensions as pressure. A minimally competent speaker can recognize that this instance of D is true, even if they do not fully grasp the meaning of the quoted sentence. If this instance *were* knowable *a priori*, then a speaker knowing what it means knows in particular what 'is true' means. If so, then there is apparently only one unknown in the schema, sc., the meaning of the quoted sentence, which is given by S. Thus, it would seem that instances of D could be used as part of a theory of sentence meaning. However, the gödel method of naming sentences may be used instead of the quotation method, without changing the meaning of the sentence; the resulting instance is not likely to aid a theory of meaning: S_{48667} is true if and only if fugacity has the same dimensions as pressure.

   This confusion is prevalent in discussions of analyticity and a priority, especially of the analyticity and a priority of instances of the disquotational schema. Should one hold the view that only linguistic competence and reflection determine whether a sentence or proposition is analytic or *a priori*, and that a sentence is *a priori* if it expresses a proposition which is knowable without empirical justification when expressed by this sentence, then certain sentences will be analytic and *a priori* for speakers of the language to which the sentence belongs, but will translate into sentences which are not analytic or *a priori*. For example, on these conceptions of analyticity and a priority, " 'snow is white' is true if and only if snow is white" is analytic and *a priori* for a competent speaker of English. However, translating this sentence to a language in which sentences are named only by the gödel method yields a sentence which is neither analytic nor *a priori*. This recommends that instances of the disquotational schema, at least, and probably all sentences expressing contingent linguistic information, not be counted as analytic or *a priori*.

   While the objection has been raised against Davidson, and against Tarski, that Tarski's notion of truth has nothing to do with meaning or understanding (citations below), it has not been satisfactorily explained what the plausibility of this idea stems from. For Davidson, as for Quine, it stems from the grammatical accident that a quotation name contains (a token of) its referent as a proper part. Davidson's and Quine's error may be traced to Tarski's construction, in which the names of object language sentences are terms of the metalanguage, though it is important to recall that Tarski himself was not confused about this.

   See Max Black, *Language and Philosophy: Studies in Method* (Ithaca, New York: Cornell University Press, 1949) chapter IV; Michael Dummett, "Preface" to *Truth and Other Enigmas* (Cambridge, Massachusetts: Harvard University Press, 1978), and "Truth" *ibid*.; Scott Soames, "What Is a Theory of Truth?" *The Journal of Philosophy* **81**.8 (1984) pp 411-429, and John Etchemendy, "Tarski on Truth and Logical Consequence" *The Journal of Symbolic Logic* **53**.1 (1988) pp 51-79. In places, Soames seems to be very close to this point, but his endorsement of Tarski's deflationist character (pp 416, 429) shows that he is not quite on to it.

The disquotational schema for propositions may be formulated using objectual variables ranging over propositions, substitutional variables ranging over sentences, substitutional variables ranging over expressions denoting sentences; or a combination of these. Various combinations are exhibited below; 'x' is an objectual variable ranging over propositions, and 'p' and 'q' are substitutional variables ranging over quotation names of sentences, proper names of sentences, demonstratives denoting sentences, and sentences, restricted as grammatically appropriate.

M_1 x is true if and only if x

M_2 x is true if and only if p

M_3 the proposition denoted by p is true if and only if q

M_4 the proposition expressed by 'p' is true if and only if p

Objections to M_1 are obvious: the right side of the biconditional is ill-formed, since it lacks a predicate. Yet it seems that the only predicate which can plausibly be supplied renders M_1 as the tautology: x is true if and only if x is true. M_2 is similar to D_N, with the objectual variable 'x' where D_N has the substitutional variable 'N'. Like D_N, M_2 must be supplemented with a principle ensuring that its instantiations are true.[164] M_3 is like M_2, except the objectual variable is replaced by a definite description containing a substitutional variable. While M_3 is well-suited for truth ascriptions to named, described, and demonstrated propositions, the range of 'p' must be limited to denoting

---

[164] For example, "x is identical to 'p' " (Marian David) or "p expresses x".

expressions; thus, M_3 is ill-suited for truth ascriptions to sentences.[165] Assuming that the description can take any value which can be assigned to 'x', M_3 offers no advantages over M_2. Like M_2, M_3 must be supplemented with a principle ensuring that its instantiations are true.[166]

M₄ has the advantage over M_2 and M_3 that it uses a single substitutional variable, and so does not require a supplementary principle.[167] However, it encounters problems where p is ambiguous or contains context-sensitive terms. For example, the instantiation "the proposition expressed by 'I am hungry now' is true if and only if I am hungry now" founders both because the definite description on the left side of the biconditional does not denote a proposition without additional contextual information, and because the context of instantiation from which the indexical terms on the right side of the biconditional take their content is inappropriate for providing the necessary and sufficient truth conditions for the proposition denoted by the description on the left side.[168] Similarly, where M_4 is instantiated for an ambiguous sentence, the truth or falsity of the instance is indeterminate. The instance "the proposition expressed by 'humans are flying planes' is true if and only if humans are flying planes" may be

---

[165] Provided every proposition can be named or described, this may not be a problem, since M_3 can be taken as establishing the truth conditions for every proposition; truth conditions for sentences may be given secondarily.

[166] For example, "q is a sentence expressing the proposition p denotes".

[167] While M_1 uses a single objectual variable, none of M_1, M_2, and M_3 are disquotational schemas, strictly speaking. However, this point by itself does not indicate an advantage of M_4 over M_1, M_2, and M_3.

[168] As discussed in section 11, the context of instantiation may coincidentally provide the correct semantic information for the context-sensitive terms, though such coincidences are expected to be rare, and because fortuitous, inappropriate.

evaluated as both true and false, since 'humans are flying planes' has both a true and a false reading.

M4 also encounters problems where 'p' is a non-English sentence. Consider the instantiation of M4 for sentence HS of the language Pittsburghese, 'hockey is a sport', which is synonymous with the English sentence 'broken noses are not injuries'. Though it is correct for the type-identical English sentence, this instance of M4 establishes incorrect necessary and sufficient truth conditions for 'p' as a sentence of Pittsburghese. The converse case also presents a problem. Suppose, coincidentally, that the Pittsburghese sentence BN, 'broken noses are injuries', is synonymous with the English sentence 'hockey is not a sport'. The resulting instantiation of M4 is false for the Pittsburghese sentence, though it is true for the type-identical English sentence. Thus, M4 is insensitive to expressions of propositions in languages other than that in which M4 is formulated. For non-English 'p' which are not type-identical with an English sentence, the attendant instances of M4 are ill-formed.

Finally, M4 encounters problems where 'p' denotes but does not express a proposition, *sc.*, expressions naming, describing, or demonstrating a proposition. Assigning values to 'p' such as 'McTaggart's Thesis', 'that proposition' (a demonstration), or 'the proposition expressed by the first sentence said by Quine on his tenth birthday' yield ill-formed instances of M4.

Section 12.1: Horwich's Minimalist Theory of Truth

Paul Horwich has developed the minimalist theory of truth in a spirit much akin to Ramsey's and Quine's, with the difference that on the minimalist theory truth-bearers are propositions.[169] Horwich writes,

> In fact, the truth predicate exists solely for the sake of a certain logical need. On occasion we wish to adopt some attitude towards a proposition...but find ourselves thwarted by ignorance of what exactly the proposition is. We might know it only as 'what Oscar thinks' or 'Einstein's principle'; perhaps it was expressed, but not clearly or loudly enough, or in a language we don't understand; or—and this is especially common in logical and philosophical contexts—we may wish to cover infinitely many propositions (in the course of generalizing) and simply can't have all of them in mind. In such situations the concept of truth is invaluable. For it enables the construction of another proposition, intimately related to the one we can't identify, which is perfectly appropriate as the alternative object of our attitude.[170]

The minimal theory (MT) makes use of a schema, E, similar to the disquotational schema, D, and Tarski's schema T:[171]

E $<p>$ is true iff p

Surrounding an expression, e, by brackets '$<e>$' produces an expression referring to the propositional constituent expressed by e.[172] It is clear that in order for E to be well-formed, 'p' is to be a substitutional variable ranging over sentences.[173]

---

[169] Paul Horwich, *Truth*, second edition (Oxford: Clarendon Press, 1998).

[170] *ibid.*, pp 2-3.

[171] *ibid.*, p 18. Also, see footnote 175.

Horwich writes that "the axioms of MT are given by the principle:

For any object x, x is an axiom of the minimal theory if and only if, for some y, when the function E* is applied to y, its value is x" [174]

E* is the result of enclosing schema E in angled brackets:[175]

E* $< <p>$ is true iff $p >$

In order to restrict truth-bearers to propositions, minimalism requires the

supplementary axiom: $(x)(x$ is true $\rightarrow x$ is a proposition).[176] Horwich is careful to

exclude paradoxical instances of E* from the axioms of the minimal theory;[177] therefore,

his considered claim is that all axioms of MT are instances of E*, not that *all* instances of

E* are axioms. In other words, the axioms of the minimal theory are the propositions

---

[172] *ibid*., p 18, fn 3.

[173] I discuss below whether it is necessary to restrict the domain of 'p' to sentences of English.

[174] *ibid*., p 19.

[175] Horwich presents E as: '$<p>$ is true iff p'. For Horwich, instances of E are expressions, and corresponding instances of E* (i.e., E* instantiated for the same value of p) are the propositions expressed by those instances of E. Thus, for E to be related to E* in this way, the quotation marks Horwich presents in schema E must be dropped.

[176] See Horwich, *ibid*., p 23, fn 7. This requirement was first noted by Anil Gupta; see his "Minimalism" *Philosophical Perspectives* **7**, James E. Tomberlin, editor (Atascadero, California: Ridgeview Publishing Company, 1993) pp 359-369. The requirement could be met by changing the principle to read, "For any proposition x...." However, a supplementary axiom needs to be added to properly restrict Horwich's formal statement of the axioms constituting MT: (p 20)
$(x) (x$ is an axiom of MT $\leftrightarrow (\exists y) (x = $ E*$(y))$)

[177] Horwich's treatment of the Liar Paradox is discussed in chapter 2.

resulting from the instantiation of E* for all sentences y which are non-paradoxical, plus

the supplementary axiom $(x)(x$ is true $\rightarrow x$ is a proposition).[178]

Since there are an infinite number of non-paradoxical English sentences, the

minimal theory has an infinite number of axioms. The axioms of MT also include

instances of E* for sentences of languages other than English containing concepts not

expressible in English, presumably infinite in number. Thus, the axioms of the minimal

theory come in a large package, despite its name.

Although it may be expected that MT's position that truth-bearers are

propositions avoids problems arising from instantiations of E* where 'p' is a non-English

expression, such instances of E* do present a problem. If the angled brackets are

understood as the functor 'the proposition expressed by 'p' ', then schema E is identical

to M_4, and subject to the same objections; *sc.*, E gives incorrect necessary and sufficient

truth conditions where 'p' is a sentence of a language other than English. Likewise, E

---

[178] It may be noticed that the angled brackets may be interpreted in one of two ways. The result of surrounding an expression, p, by '< >' might be taken to refer indirectly to the propositional constituent expressed by 'p', as in 'the propositional constituent expressed by 'p' ', a functor which takes an expression of English and returns a noun phrase referring indirectly to the proposition or propositional constituent expressed by 'p', if there is one. It is clear that on this interpretation of the brackets, 'p' is a substitutional variable ranging over expressions.

    Alternatively, the expression resulting from enclosing an expression 'p' in angled brackets might be taken to refer directly to the proposition or propositional constituent, as in David Kaplan's dthat(p) operator. (See David Kaplan, "Dthat" in *Syntax and Semantics, volume 9*, Peter Cole, editor (New York: Academic Press, 1978) pp 221-253. "Dthat" is reprinted in Martinich (2001) pp 325-338.) The dthat(p) operator takes an expression, p, as its argument and returns the object to which 'p' refers, if there is one. Thus, 'p' is a substitutional variable ranging over expressions. (Where 'x' is an objectual variable, 'dthat' cannot operate on 'x' since 'x' is not an expression. Therefore, 'p' is a substitutional variable.) Along similar lines, '<p>' may be taken as an operator returning the proposition or propositional constituent expressed by 'p'; thus, '<p>' refers directly to the proposition or propositional constituent expressed by 'p'.

    For the purpose of predicating truth, as in E, it does not matter whether the angled brackets are read as a functor or as an operator, since either permits proper predication of truth. Since the instances of E* are the axioms of MT, the outermost brackets also can be read either as a functor or as an operator, since both are expressions denoting the axiom. The choice between them is to be based on the ability to accommodate expressions of languages other than English. This matter is discussed below.

gives problematic truth conditions where 'p' is ambiguous or contains context-sensitive terms; and E is ill-formed where 'p' is a non-English sentence not type-identical with any English sentences, or is an expression naming, describing, or demonstrating a proposition. Note that using E* to formulate MT does not eliminate these problems, since the expression enclosed by the outermost angled brackets (understood as a functor) is nonetheless problematic or ill-formed, respectively.

The angled brackets '$<p>$' may be read instead as an operator returning the proposition expressed by 'p'.[179] However, enclosing instances of E in angled brackets understood as an operator does not eliminate the problems catalogued in the previous paragraph. Therefore, MT requires the restriction that p range only over sentences of the language in which E is stated. Consequently, MT must adopt a version of E and E* for every language, presumably infinite in number.[180] Since the minimal theory is explicitly not finitely stateable, the concession of incorporating an additional infinity of axioms seems to be palatable.

Section 12.2: Sosa's Finite Minimal Theory of Truth

This last problem may be eliminated by working with a carefully formulated schema using objectual variables ranging over propositions. Since an objectual variable ranging over propositions is assigned its value independently of whether it is expressed by a sentence, or denoted by a name, demonstrative, or description, it avoids the attendant

---

[179] See footnote 178.

[180] There will be an infinity of axioms for denoting expressions in each of an infinity of languages, for reasons discussed above.

It may be pointed out that Horwich does not accept as axioms any paradoxical instance of E*, and so may likewise not accept instances of E* where 'p' is ambiguous or contains context-sensitive terms. However, since such sentences are meaningful and well-formed, it is a shortcoming of MT if it contains no axiom establishing its truth conditions.

complications of the minimalist theory. Thus, Ernest Sosa proposes the finite minimal theory: "Every proposition is necessarily equivalent to (entails and is entailed by) the *de re* proposition that it is true."[181] Formally, the finite minimal theory is captured by:[182]

$$\text{FMT} \qquad\qquad (x) \, [x \Leftrightarrow \langle x \text{ is true} \rangle]$$

Wide arrows ($\Leftrightarrow$) represent mutual entailment; the objectual variable 'x' ranges over propositions. Let the obtuse angle brackets '$\langle\rangle$' be the functor 'the proposition that'; for example, '$\langle$snow is white$\rangle$' is to be read as: the proposition that snow is white.[183] Thus, instantiating FMT for $x = \langle$snow is white$\rangle$, yields:

$$\text{SW} \qquad \langle \text{snow is white} \rangle \Leftrightarrow \langle \, \langle \text{snow is white} \rangle \text{ is true} \rangle$$

Instances of FMT are combined with appropriate instantiations of PE to yield the axioms of the finite minimal theory.

$$\text{PE} \qquad\qquad (\, \langle p \rangle \Rightarrow \langle q \rangle \,) \; \rightarrow \; (p \rightarrow q)$$

---

[181] Ernest Sosa, "The Truth of Modest Realism" *Philosophical Issues* **3**: *Science and Knowledge*, Enrique Villanueva, editor (Atascadero, California: Ridgeview Publishing Company, 1993) pp 177-195, at p 188. See also Ernest Sosa, "Epistemology, Realism, and Truth" *Philosophical Perspectives* **7**: *Language and Logic*, James E. Tomberlin, editor (Atascadero, California: Ridgeview Publishing Company, 1993) pp 1-16.

[182] Ernest Sosa, "The Truth of Modest Realism", *op. cit.*, p 188.

[183] This is the reading of '$\langle\rangle$' which is needed for FMT to capture Sosa's statement of the finite minimal theory. Also, it accords with his use of '$\langle\rangle$' throughout his discussion of the finite minimal theory.

For instance, let $\langle p \rangle$ = $\langle$snow is white$\rangle$ and let $\langle q \rangle$ = $\langle$ $\langle$snow is white$\rangle$ is true$\rangle$. Instantiating

PE and running modus ponens on the left-to-right entailment of SW yields

$$\text{snow is white} \ \rightarrow \ \langle\text{snow is white}\rangle \text{ is true}$$

Reversing assignments of $\langle p \rangle$ and $\langle q \rangle$, instantiating PE, running modus ponens on the

right-to-left entailment of SW, and combining with the conditional just derived yields:

$$\text{snow is white} \ \leftrightarrow \ \langle\text{snow is white}\rangle \text{ is true}$$

FMT and PE are used together to derive all of the axioms of the minimal theory.

Because FMT is finitely stateable, it can be drawn on for understanding the property,

truth; this cannot be done with MT, since it is not finitely stateable.

     PE seems to be an unobjectionable principle. But comparing SW with SO

SO $\langle$snow is orange$\rangle$ $\Leftrightarrow$ $\langle$ $\langle$snow is orange$\rangle$ is true$\rangle$

raises an important question about FMT. The right-to-left entailment of FMT is

unproblematic: it is highly intuitive that the proposition that the proposition that snow

is white (orange) is true entails the proposition that snow is white (orange). However,

the left-to-right entailments are dubious, since it is dubious whether the proposition that

snow is white entails the proposition that the proposition that snow is white is true. The

left-to-right entailment is even somewhat alarming in SO. In general, it is dubious

whether a proposition entails its own truth.

A weaker reading of FMT may be given according to which it claims that, necessarily, every proposition and the *de re* proposition that it is true are alike in truth value. Formally, this may be rendered more explicitly as:

FMT′ $\qquad\qquad\qquad (x) \; \Box \; [\; x \leftrightarrow \langle x \text{ is true} \rangle \;]$

Notice, however, that to be well-formed, FMT′ must either add a predicate to both sides of the material biconditional, or use a substitutional variable. Neither option is appealing to a minimalist. Adding a predicate to the material biconditional prevents the derivation of the axioms of the minimal theory, which is the main purpose of FMT′. Replacing 'x' with a substitutional variable yields a schema open to exactly the same objections as E; indeed, this move undermines one of the principle motives for developing the finite minimal theory. [184]

Therefore, neither the strong nor the weak reading of FMT yield plausible theories.[185] Weakening FMT to a material biconditional yields M_1, objected to above.[186]

---

[184] Recall Sosa's statement of the finite minimal theory: "Every proposition is necessarily equivalent to (entails and is entailed by) the *de re* proposition that it is true." (*ibid.*, p 188) Interpreting Sosa on this point is difficult, since his informal statement of PE ("The proposition that-*p* entails the proposition that-*q* only if: *p* only if *q*." (*ibid.*, p 187)) suggests a strong reading, while the plausibility of the weaker reading suggests it instead.

[185] It is also worth noting that although FMT is formulated using a single objectual variable, the denoting expressions used to assign values to 'x' must have the form 'the proposition that p' in order that the attendant instances of PE and the resulting axiom be well-formed. For example, instantiating FMT for x = dprop(Goldbach's conjecture) requires an ill-formed instance of PE and results in an ill-formed axiom of MT.

[186] It does not help to suppose that the relation between x and $\langle x$ is true$\rangle$ is explanation, as Matthew McGrath does in *Between Deflationism & Correspondence Theory*, *op. cit.* Since explanation is in general not symmetric (even in McGrath's technical sense; see his *Between Deflationism & Correspondence Theory*, p 32 f. and his "Weak Deflationism", *op. cit.*, p 76), explanation cannot be used to derive the axioms of MT. Otherwise, McGrath's principle faces the same objections as M_1.

Weakening FMT to the right-to-left entailment prevents the derivation of the biconditional axioms of MT, which is the main purpose of FMT. Any attempt to restrict the application of FMT to *true* propositions will inevitably employ truth in the restricting principle which does the work FMT is expected to do. Therefore, FMT must be rejected.

Note that while FMT finitely captures the axioms of the minimalist theory, and so can be drawn on for understanding the property, truth, the finite minimal theory make no explicit claim about the property, truth, or what the truth predicate expresses. Three claims are available to supplement the finite minimal theory. If it is claimed that the truth predicate does not express a property, then FMT collapses to a tautology, and no longer deals with truth.[187] If a supplementary principle is adopted according to

---

McGrath's weak deflationism is a hybrid theory combining a deflationary theory of truth for propositions with an inflationary theory of non-propositional truth. That is, a sentence (belief, utterance, *etc*.) is true if and only if it corresponds to a true proposition. For example, a sentence is true if and only if it *expresses* a true proposition. It is clear that there is no correspondence here at all in any relevant sense of 'correspond'. Also, since the true proposition to which a true sentence corresponds is true only in the sense of 'true' endorsed by minimalism, which is to say, in no sense at all, a true sentence does not correspond to reality even indirectly on weak deflationism. Therefore, McGrath's claim that "Weak Deflationism is a version of the traditional correspondence theory" (*Between Deflationism & Correspondence Theory* p 42, and "Weak Deflationism" p 86) is simply false.

[187] There is one wrinkle to this option: FMT may be reformulated using the truth operator in lieu of the truth predicate, yielding the following schema: $x \Leftrightarrow$ it is true that x. Accordingly, it may be claimed that 'it is true that' has semantic features similar to 'it is not the case that'; *sc*., it operates on a sentence or proposition and returns a different sentence or proposition, though it does not express a property. Finally, it might be claimed that the truth predicate is a derivative form of the truth operator, such that the truth predicate, whether occurring as part of the truth operator or as a grammatical predicate, does not express a property. Note that the reformulated schema requires a substitutional variable ranging over sentences, since terms denoting propositions render the right side ill-formed (e.g., 'it is true that McTaggart's Thesis'). As a result, this formulation faces objections based on ambiguous sentences and sentences containing context-sensitive terms, and sentences of languages other than English. Also, it cannot be instantiated for named, described, or demonstrated propositions. Of course, this undermines much of the motivation and plausibility for reformulating FMT.

In addition, objections may be raised against the claim that 'is true' does not express a property. Although it is plausible to claim that operators do not express properties, 'is not the case' presumably does express a property. If so, then it is implausible, and counterintuitive, to

which truth expresses a substantive property, then the principle reneges on minimalism. Finally, if FMT is supplemented with the claim that the truth predicate expresses a simple, unanalyzable property, then both of these consequences are avoided.

This is the option Sosa takes. Given the claim that truth is a simple, unanalyzable property, one important feature to become clearer on is the role truth plays in the entailments schematized by FMT. Following Moore, suppose that 'is yellow' expresses a simple, unanalyzable property. Then, reflection on the proposition that daffodils are yellow shows that propositions containing simple, unanalyzable properties may entail other propositions, since the proposition that daffodils are yellow entails the proposition that daffodils are colored. Of course, the reverse entailment does not hold. Indeed, a mutual entailment is the general form of a definition; although Sosa does not conceive of FMT as a definition of truth,[188] there is some tension with Moore's famous position that simple, unanalyzable properties are indefinable in virtue of being simple and unanalyzable.

There are special cases of a proposition containing a simple property which entails and is entailed by another proposition, but is not thereby defined. Supposing they exist, haecceities are plausibly held to be simple properties. An haecceity is by hypothesis a property which is both necessary and sufficient for its bearer to be itself.[189] Let 'I' name some individual, and let 'H' name I's haecceity. Then the proposition that

claim that 'is true' does not express a property. Also, since truth may be predicated of quoted sentences or other denoting expressions, while the truth operator is well-formed only for sentences, it is *prima facie* implausible to claim that the truth operator is primitive and the truth predicate derivative.

[188] Indeed, he adopts additional principles giving necessary and sufficient conditions for the truth of an expression; see "The Truth of Modest Realism", *op. cit.*, p 190.

[189] This is not a definition of an haecceity; rather, it describes a property had by haecceities.

some object has H entails and is entailed by the proposition that that object is I. This mutual entailment holds just because haecceities themselves have these special properties, by hypothesis.

Compare the following three mutual entailments:

YC $\langle x \text{ is yellow} \rangle \Leftrightarrow \langle x \text{ is colored} \rangle$

HX $\langle x \text{ has H} \rangle \Leftrightarrow \langle x \text{ is I} \rangle$

FMT $x \Leftrightarrow \langle x \text{ is true} \rangle$

There is an apparent dissimilarity between FMT and YC or HX; that is, no property is ascribed to the object x on the left side of FMT. Another dissimilarity is that in YC and HX, 'x' ranges over objects, while in FMT 'x' ranges over propositions; in fact, this is what allows FMT to be well-formed despite its apparent lack of a predicate on the left side.

Note that this isolates a feature of FMT which does present a problem for the claim that truth is a simple, unanalyzable property; $sc.$, the individual entailments are dubious. Consider first the left-to-right entailment, $x \Rightarrow \langle x \text{ is true} \rangle$. It is very dubious whether any proposition entails its own truth, even the proposition expressed by 'the proposition expressed by this sentence is true'.[190] In fact, it is dubious whether any proposition entails anything about itself; for example, aside from propositions expressed by similar self-referential sentences,[191] it is doubtful whether propositions entail such

---

[190] assuming that this sentence expresses a proposition.

[191] again, assuming that these sentences express propositions.

basic features as their own expressibility, graspability, existence, *etc.*[192] Only if the truth

predicate does not contribute its semantic content to ⟨x is true⟩ does the entailment hold;

but then FMT is trivial, and truth plays no role in the entailment.[193]

Conversely, though the right-to-left entailment (FMT⇒), x is true $\Rightarrow x$, is highly

intuitive, if it is claimed that truth is a simple, unanalyzable property, more needs to be

said about truth in order to account for this entailment. By comparison, variations on

FMT⇒ such as:

$$⟨x \text{ is expressible}⟩ \Rightarrow x$$

$$⟨x \text{ is graspable}⟩ \Rightarrow x$$

and $$⟨x \text{ exists}⟩ \Rightarrow x$$

are to be rejected. Without an account of truth which licenses FMT⇒, of the type of

account which licenses HX, there is no reason to accept FMT⇒. In other words, the

supplementary claim about truth must justify the intuitiveness of the right-to-left

entailment; without further claims about the nature of truth, it does not.

The additional explanation cannot appeal to a substantive account of truth on

pain of reneging on the claim that truth is a simple, unanalyzable property. The

---

[192] It may be pointed out that every proposition entails each necessary truth, but this "Cambridge entailment" does not aid in defending the claim that truth is a simple, unanalyzable property, since these entailments are not about the propositions in question.

Similarly, it might even be allowed that every proposition entails its own existence, based on a specific ontology of propositions. The plausibility of such an ontology would rest on the extremely fundamental nature of existence. At bottom, the existence of the proposition, if entailed by anything, is entailed by the specific ontology of propositions, rather than by the proposition itself.

[193] Not to mention the *ad hoc*-ity of the move; cf. Frege's theory of truth, section 9.

additional explanation may appeal, though, to the primitive simplicity of truth, and

reply to this difficulty that the nature of truth just is such that these entailments hold,

and that there is no further account to give. Although this response accords with the

simple theory of truth, and with the primitive nature many philosophers are willing to

grant of truth, this response is inadequate. Comparing this response with a very similar

theory will expose its inadequacy.

Recall that FMT is used together with PE to derive the axioms of the minimalist

theory of truth. Suppose that, based on the first objection to FMT raised above, it is

suggested that the finite minimal theory be rescued by adopting the following two

principles:

FMT-U $\qquad\qquad x \Leftrightarrow \langle x \text{ is uggish} \rangle$

MEUT $\qquad\qquad x \text{ is uggish} \leftrightarrow x \text{ is true}$

In words, every proposition entails and is entailed by the proposition that it is uggish.

Also, it is claimed that uggishness is a simple, unanalyzable property which correlates

with truth; hence, material equivalence holds between uggishness and truth (MEUT).

Together with PE, FMT-U and MEUT capture the infinity of axioms of the minimalist

theory. However, without an account of uggishness, neither FMT-U nor MEUT should

be accepted. If the response is given that uggishness is a simple, unanalyzable property

for which no further account can be given, then so much the worse for the rescue

attempt. By parity of reasoning, the claim that truth is a simple, unanalyzable property

for which no further account can be given should not be accepted.

Section 12.3: Horwich's Minimalist Theory of Truth (slight return)

According to Horwich's version of the minimal theory, truth is a property:

> And it is not part of the minimalist conception to maintain that truth is
> not a property. On the contrary, 'is true' is a perfectly good English
> predicate—and (leaving aside nominalistic concerns about the very
> notion of 'property') one might well take this to be a conclusive criterion
> for standing for a property of *some* sort.[194]

This is a very loose argument, and open to the obvious counterexample that 'is a barber

who shaves all and only non-self-shavers' is a perfectly good English predicate which

does not express a property. Although the minimal theory makes use of schema E*,

because its axioms are not finitely stateable, no thesis about the nature of truth follows

from MT.

Horwich distinguishes between giving an account of the concept of truth from

giving an account of the nature of truth. For Horwich, the account of the concept of

truth is his thesis that the property expressed by the truth predicate is an abbreviatory

property. Recall his claim that

> the truth predicate exists solely for the sake of a certain logical need. On
> occasion we wish to adopt some attitude towards a proposition...but find
> ourselves thwarted by ignorance of what exactly the proposition is. We
> might know it only as 'what Oscar thinks' or 'Einstein's principle';
> perhaps it was expressed, but not clearly or loudly enough, or in a
> language we don't understand; or—and this is especially common in
> logical and philosophical contexts—we may wish to cover infinitely
> many propositions (in the course of generalizing) and simply can't have
> all of them in mind. In such situations the concept of truth is invaluable.
> For it enables the construction of another proposition, intimately related

---

[194] Paul Horwich, *Truth*, second edition, p 37.

to the one we can't identify, which is perfectly appropriate as the alternative object of our attitude.[195]

This property is very similar to that claimed for the truth predicate by the disquotational theory, of saving us the trouble of uttering very long (conjunctive or disjunctive) sentences by allowing us to generalize over propositions. But this property, supposing that it is one, is a property *had* by the truth predicate, not one that it expresses.[196]

Horwich's account of the nature of truth is "that truth has no underlying nature, and that the explanatorily basic facts about it are instances of the equivalence schema."[197] This part of minimalism gives rise to several other objections. One objection that has been raised is that because the minimalist theory is comprised of an infinite number of axioms but no general thesis about truth, it is too weak to explain any general facts about truth, such as that all propositions of the form $p \supset p$ are true.[198] Horwich replies that

it is plausible to suppose that there is a truth-preserving rule of inference that will take us from a set of premises attributing to each proposition some property, F [e.g., truth], to the conclusion that all propositions have F. No doubt this rule is not *logically* valid, for its reliability hinges not merely on the meanings of the logical constants, but also on the nature of propositions.[199]

[195] *ibid*., pp 2-3. See also Horwich's discussion, *ibid*., pp 122-123. ("There is a clear *raison d'être* for a concept having precisely the characteristics that the minimalist ascribes to truth." (p 123))

[196] See the discussion in Section 11: The Disquotational Theory of Truth.

[197] Horwich, *Truth*, *op. cit.*, p 145; see also p 23.

[198] Anil Gupta, "A Critique of Deflationism", *op. cit.*, and Scott Soames, "The Truth about Deflationism", *op. cit.*

[199] Paul Horwich, *Truth*, second edition, *op. cit.*, p 137; Horwich's emphasis.

Horwich's idea is that the axioms of the minimal theory can be viewed collectively, and that together with this truth-preserving rule of inference, general facts about truth may be derived. However, the point of the objection is that general facts about truth need to follow from the nature of truth, but because minimalism claims that it has none, it cannot give an adequate account of general facts about truth. It is not even clear that Horwich can make sense of the notion of truth-preservation used in his reply.

A related point can be raised about our general concern or interest in having true beliefs. Here the objection is that minimalism cannot explain this general interest, since according to it, truth does not have a nature which an explanation might appeal to. Horwich's response is that "in order for an account of truth to be adequate it suffices that it be able to *explain* the desirability of truth—it is not required that the desirability of truth be an integral *part* of the account.[200] Of course, a theory of truth is not expected to include a theory of desire. But what is required, by Horwich's own lights, is that a theory of truth offer some feature which a theory of desire can appeal to in explaining the general desire to have true beliefs, or the desire to have more beliefs that are true. Since one claim made by the minimalist theory of truth is "that truth has no underlying nature",[201] there is nothing it can offer a theory of desire to use in explaining these general desires.[202]

---

[200] Paul Horwich, *Truth*, second edition, *op. cit.*, p 139; Horwich's italics. Horwich's supplements his main response with an example of a belief we desire to have. However, this misses the point that in general we can desire simply to have true beliefs, or simply to acquire more beliefs which are true, and that in the absence of providing an account of the nature of truth, the minimal theory cannot explain these desires. See *ibid.*, pp 139-140.

[201] *ibid.*, p 145.

[202] For a good discussion of these objections, see Adam Kovach, "Deflationism and the Derivation Game" *Mind* **106** (1997) pp 575-579.

There is a still deeper objection to raise against the minimalist theory concerning

the status of instances of E* as axioms. Since an axiom is a proposition presumed *true* by

a theory, it is circular for minimalism to *have* axioms. By contrast, the correspondence,

coherence, and pragmatic theories do not have axioms, and their theses are not circular.

Horwich could demote the instances of E* to propositions presumed *simpliciter* by the

theory. However, this very nebulous status of propositions threatens to demote the

status of the minimalist theory to an infinite collection of propositions. Horwich's other

option is to nominalize the notion of an axiom, such that axioms need only be presumed

by a theory, not presumed true. It is clear that this move is the same as the first except

that these propositions are given the title of 'axiom'. In either case, the instances of E*,

including Horwich's account of the concept of truth and his claim about the nature of

truth, fail to constitute a theory.[203]

Section 13: The Prosentential Theory of Truth

The prosentential theory of truth presented by Dorothy Grover[204] is explicitly a

development of Ramsey's redundancy theory of truth. Like the redundancy theory, it

claims that the truth predicate does not express a property, and is in principle

eliminable. As a result of claiming that the truth predicate is redundant, the

---

[203] Presumably, Horwich grants instances of E* the status of axioms in order to avoid a commitment to all instances of E*, which would be vulnerable to instantiations of paradoxical biconditionals. A third option is to eliminate instances of E* as axioms and instead make a general claim about truth involving E*, similar to what Sosa does. However, this has paradoxical consequences.

[204] Dorothy Grover, *A Prosentential Theory of Truth* (Princeton, New Jersey: Princeton University Press, 1992). This book includes as chapter 3 the article in which this view originates, Dorothy L. Grover, Joseph L. Camp, and Nuel D. Belnap, "A Prosentential Theory of Truth" *Philosophical Studies* **27** (1975) pp 73-125.

prosentential theory is in large a theory of the truth predicate, and an account of how it is eliminable.

Grover writes, "[m]y main reason for skepticism regarding a purported substantive truth property is that we do not seem to *need* it….a prosentential truth predicate suffices for the tasks I envisioned."[205] This line of skepticism naturally extends to a vast number of properties: the property of happiness is not *needed*, strictly speaking. People can survive without experiencing happiness, or having knowledge of it. Concerning our explanations, if we are content to adopt behaviorism, then happiness is not needed for explanations, either. Of course, it is a *non sequitur* to conclude that a property does not exist because it is not needed. Many things exist but are not needed.[206]

If the prosentential truth predicate suffices for the tasks she envisions, then it may be charitable to read Grover as claiming that it is the truth predicate which is not needed. Even if she is right, this shows nothing about truth. For example, the predicate 'is a dog' may be eliminated from English by replacing its occurrences with a species-specific predicate. But this does not show that there is no concept expressed by 'is a dog'. Similarly, if predicates are available for each of the tasks Grover envisions, the truth predicate may not be needed; yet it does not follow that it does not express a property.

---

[205] Dorothy Grover, *A Prosentential Theory of Truth*, *op. cit.*, p 23; her italics.

[206] Moreover, Grover is likely wrong that we do not need truth: without truth, there is no difference between correct and incorrect reports, honesty and dishonesty, faithful testimony and perjury. Truth *is* needed. I set aside this difference in views in order to examine the operations of the prosentential theory.

The central claim of the prosentential theory is that all uses of 'is true' are replaceable by a prosentence. A prosentence is a species of the genus, proform, of which other species are pronouns, proverbs, proadjectives, and proadverbs. A proform is an indexical expression which has a non-constant character and takes its content from an anaphoric occurrence of a non-proform. For example, the anaphoric pronoun 'him' in 'John's hat really suits him' takes its content from the antecedent male-designating noun term, 'John'. Grover's proposal is that there are prosentences in English which are syntactically simple and whose content is taken from an antecedent occurrence of a sentence. Her paradigmatic example illustrating a prosentence is: 'I don't believe that Rachel is sick, but if *so*, she should stay home'.[207] It is claimed that, in this sentence, the syntactically simple expression 'so' takes its content from the preceding independent clause, specifically, the content of 'Rachel is sick'. Similarly, Grover claims that the expressions 'that is true' and 'it is true' are paradigmatic prosentences taking their content from anaphoric non-proform sentences. Witness the following dialogue:

> BILL: There are people on Mars.
>
> MARY: That is true.
>
> JOHN: Bill claims that there are people on Mars but I don't believe that it
>
> is true.[208]

According to the prosentential theory, 'That is true' and 'it is true' are prosentences standing in for the sentence 'There are people on Mars'.

---

[207] Dorothy Grover, *A Prosentential Theory of Truth, op. cit.*, p 85.

[208] *ibid.*, p 88.

Objections to the prosentential theory are abundant. First, although it is plain that the content of 'so' in the previous example is the same as 'Rachel is sick', and that 'Rachel is sick' is a sentence, it is also plain that 'Rachel is sick' is not a sentence as it occurs in the example. Although it is clear that there are anaphoric expressions other than pronouns, proverbs, proadjectives, and proadverbs, this allegedly paradigmatic example does not support the claim that there are proforms taking their content from anaphorically occurring *sentences*. In this example, it is implausible to claim that 'so' is a prosentence, as prosentences have been defined, since it does not take its content from a non-proform sentence.[209]

Second, the prosentential theory abandons the apparent compositionality of the prosentences 'that is true' and 'it is true', claiming instead that they are syntactically simple expressions. This flies in the face of the ordinary intuition that 'that' and 'it' as they occur in these expressions, function semantically as they would as the subject of any other simple sentence, such as 'that is heavy' or 'it is acrylic'. Therefore, the prosentential theory is precluded from giving the very intuitive and straightforward account of the semantics in the dialogue between Bill, Mary, and John.

Further, their account is highly unintuitive. If the prosentential theory were correct, then we would expect the syntactic unit to be a single word, just as other proforms are. In fact, there would be no need to have two forms of prosentence, since they are semantically identical. The prosentences 'that is true' and 'it is true' are not always interchangeable, though the prosentential theory seems to be committed to their

---

[209] In escaping this objection, Grover claims that prosentences are to be conceived as substitutional; see *ibid*., p 25. By contrast, 'him' in 'John's hat really suits him' takes as its content the *referent* of the male-designating singular noun term, 'John'. It might be argued that the other proforms are to be construed as substitutional terms; however, both positions involve egregiously *ad hoc* and radical claims which merely emphasize the implausibility of the prosentential theory.

interchangeability, given their syntactic simplicity. [210] For example, it is awkward, and

perhaps even puzzling or inappropriate, for Mary to respond 'It is true'.

This point can be pressed further by recalling that 'so' is also a prosentence, with

no relevant semantic features to distinguish it from 'that is true' and 'it is true',

according to the prosentential theory.[211] While these three prosentences seem

interchangeable in 'if *so*, she should stay home', substitution in the dialogue produces

nonsense.

BILL: There are people on Mars.

MARY: So.

JOHN: Bill claims that there are people on Mars but I don't believe that so.

Finally, as with other versions of the redundancy theory, the prosentential theory

founders where truth is predicated of a named, described, or demonstrated sentence

(proposition). Recall that a principal feature of prosentences is that, like other proforms,

prosentences are in principle eliminable. This forces the prosentential theory to some

very complicated analyses of what appear to be simple sentences. For example, a

sentence as simple as 'Goldbach's conjecture is true' is analyzed as:

---

[210] Of course, not all pronouns are interchangeable; but all pronouns indicating the same case, person, number, and gender are interchangeable (though English does not have synonymous pronouns). Perhaps not all prosentences are interchangeable, but reasonable restrictions, this pair ought to be.

[211] It may be pointed out that 'so' can occur as other proforms; those other uses are not relevant to this example.

'There is a proposition$_1$ such that Goldbach conjectured that it is true$_1$, and for every proposition$_2$ if Goldbach conjectured that it is true$_2$ then it is true$_1$ is-the-same-conjecture-as it is true$_2$, and it is true$_1$.[212]

Note that 'it is true$_i$' is to be read as a simple syntactic unit, just as 'so'. This analysis is even less intelligible when heeding this stricture. In fact, including the predicate 'is true' in both paradigmatic prosentences appears to be *ad hoc*, since only when the prosentences are read as having a compositional meaning with the contribution of 'is true' as part is the analysis intelligible.

In short, the prosentential theory does not give plausible analyses of sentences where truth is predicated of a named, described, or demonstrated sentence (proposition). As a whole, the prosentential theory's motivation is fallaciously conceived, and the plausibility of its aims is dim.[213]

Section 14: Deflationism

The term 'deflationism' has come to be used quite commonly to categorize philosophical theories of truth, including the redundancy, simple, disquotational, minimalist, and prosentential theories. While a number of philosophers have characterized

---

[212] *ibid.*, p 92.

[213] In chapter 1, Grover admits that she no longer thinks that 'that' never refers independently when occurring in the prosentence structure 'that is true'. (*ibid.*, p 19) This is to concede not only that the prosentences are compositional, at least sometimes, but also that 'is true' is not always eliminable. Since these are the two main commitments of the prosentential theory, this is to give it up entirely.

Nevertheless, the prosentential theory has found favor with Robert B. Brandom; see his *Making It Explicit: Reasoning, Representing, and Discursive Commitment* (Cambridge, Massachusetts: Harvard University Press, 1994). For other criticism of the prosentential theory, see Michael J. Zimmerman, "Propositional Quantification and the Prosentential Theory of Truth" *Philosophical Studies* **34** (1978) pp 253-268 and W. Kent Wilson, "Some Reflections on the Prosentential Theory of Truth" in *Truth or Consequences: Essays in Honor of Nuel Belnap*, J. Michael Dunn and Anil Gupta, editors (Dordrecht, The Netherlands: Kluwer Academic Publishers, 1990) pp 19-32.

deflationism, to my knowledge no one has given an explicit definition of a deflationary theory of truth.

Paul Horwich is perhaps the truth theorist most forward in self-ascribing the epithet 'deflationism'; in fact, he is also credited with introducing the term.[214] Recall that Horwich's view is that the truth predicate expresses "a property of *some* sort"[215] though it has no underlying nature. It may be wondered how a theory about a property might be deflationary. By contrast, it is easy to see how an ontology might be deflationary in comparison with other ontologies, simply by admitting fewer existents. But truth seems quantized: either it is a property, or it isn't. If the name 'deflationary' is appropriate, then deflationary theories are not those theories claiming that truth is not a property, for which the epithet 'nihilistic' would be more appropriate. Indeed, the simple theory of truth seems deflationary as well as minimalism, and the others listed above. What these theories have in common is that they are incompatible with a thesis claiming that the truth predicate expresses a substantive property, i.e., a property admitting analysis. This incompatibility separates traditionally substantive theories, such as the correspondence, coherence, and pragmatic theories, from the theories listed above as deflationary.

If deflationary theories are those incompatible with a thesis claiming that the truth predicate expresses a substantive property, then there is an explanation as to why

---

[214] Hartry Field ("The Deflationary Conception of Truth" in Macdonald and Wright (1986) pp 55-117 at p 106, fn 6) credits the term 'deflationary' to Paul Horwich ("Three Forms of Realism" *Synthese* **51** (1982) pp 181-201). Though Horwich uses the term there, he doesn't introduce it as a new term, which suggests that it may have been previously introduced to the literature. In personal communication, Horwich has suggested that he borrows the term from Hilary Putnam. Putnam uses it to describe Tarski's theory of truth; see Putnam's "Introduction" to *Meaning and the Moral Sciences* (London: Routledge & Kegan Paul, 1978) p 2.

[215] Paul Horwich *Truth*, second edition, p 37.

there are a family of deflationary theories: deflationism about truth is the negative thesis

that truth is not a substantive property.[216] This negative thesis may be supplemented by

a variety of positive theses. These theses may be of two varieties: those claiming that

truth is a property, but not a substantive one, and those claiming that truth is not a

property at all. Therefore, it is possible to distinguish between "narrow" deflationism,

for which the truth predicate expresses an unsubstantive property, and "nihilism" about

truth, for which the truth predicate expresses no property. The union of narrow

deflationism and nihilism is "broad" deflationism. Thus, all of the theories listed above

are broadly deflationary, while only the simple theory of truth is narrowly

deflationary.[217]

     Scott Soames characterizes deflationism as follows: "deflationism is not itself an

analysis of truth, nor a specific thesis about truth; rather it is a general approach

encompassing a variety of more specific proposals."[218] If I am right, then it is charitable

---

[216] Thus Richard Kirkham's statement that deflationary theories "all endorse the Deflationary
Thesis that there is no such property as truth and thus there is no room for, or sense to, a theory
of truth distinct from a theory of truth ascriptions" (Richard L. Kirkham, "Deflationary Theories
of Truth" in *Routledge Encyclopedia of Philosophy*, volume 9, Edward Craig, general editor (New
York: Routledge, 1998) pp 475-478 at p 475) presents a sufficient but not a necessary condition for
a theory of truth to be deflationary. In particular, it excludes the simple theory of truth, which is
otherwise uncontroversially to be classified as deflationary. Taken as a necessary condition, it
also does not respect Quine's and Horwich's attempts to offer a theory on which truth is similarly
a property deflated by comparison with substantive theories of truth.

[217] It is likely that Horwich sees his minimalism as narrowly deflationary, since he claims that "it
is not part of the minimalist conception to maintain that truth is not a property." (*ibid*.) However,
because the property he has in mind is one had by the truth predicate rather than one expressed
by it, it is more accurate to classify minimalism as broadly deflationary. The disquotational
theory is properly classified as broadly deflationary for homologous reasons.

[218] Scott Soames, "The Truth about Deflationism" in *Truth: Philosophical Issues 8, 1997*, Enrique
Villanueva, editor (Atascadero, California: Ridgeview Publishing Company, 1997) pp 1-44 at p 4.
Soames also implicitly classifies Kripke's theory of truth as deflationary. This is likely a result of
his own view that truth is a vague, deflationary predicate which is modeled by Kripke's
construction. While Kripke's construction may legitimately be used to model vague predicates,
no part of Kripke's construction commits him to a deflationary view. Kripke's construction is
purely formal, and so is strictly neutral as to the nature of truth.

to read Soames's characterization of deflationism as being that it is not a specific *positive* thesis about truth. A number of other philosophers have noticed that part of a deflationary theory of truth is the rider, "but nothing more about truth need be assumed."[219] This rider attached to a non-substantive positive characterization of truth captures the negative thesis common to deflationary theories.

Finally, there is a sense of 'deflationary' in which all but the correspondence theories of truth are deflationary. Since a theory of the nature of truth must account for our pre-philosophical intuitions about truth, and the correspondence intuition is the strongest of these intuitions,[220] any theory not meeting the correspondence intuition—*pace* its claims—is deflationary in this sense. Hartry Field adopts this notion of a deflationary theory of truth:

> I have argued that 'correspondence truth' (whatever exactly that is) is ill-suited to serve the purposes that disquotational truth serves. In that case, what purpose *does* it serve? I take it to be the core of Neurath's and Ayer's view—and more recently, Quine's and Leeds's—that the answer is that it serves no useful purpose at all, and hence that theorizing about correspondence truth is pointless at best. Any view that adheres to this

Some confusion on this point may result from the intentions behind the construction. For example, Tarski intended his construction to capture a correspondence theory of truth, but the construction itself is not committed to a correspondence thesis. Even if the construction was designed to suit a commitment to the correspondence thesis, the commitment itself requires the independent adoption of the correspondence thesis.

[219] This rider is quoted from Paul Horwich, *Truth*, second edition (Oxford: Oxford University Press, 1998) p 5. Other philosophers who recognize the need for this type of rider include Marian David, Michael Devitt, Hartry Field, Ernest Sosa, and Michael Williams. See Marian David, *Correspondence and Disquotation: An Essay On the Nature of Truth* (New York: Oxford University Press, 1994) p 67; Michael Devitt, "Minimalist Truth: A Critical Notice of Paul Horwich's *Truth*" *op. cit.*; Hartry Field, "The Deflationary Conception of Truth" in Macdonald and Wright (1986) pp 55-117; Ernest Sosa, "Epistemology, Realism, and Truth" in *Philosophical Perspectives* **7**: *Language and Logic*, James Tomberlin, editor (Atascadero, California: Ridgeview Publishing Company, 1993) pp 1-16, at section D; and Michael Williams, "Epistemological Realism and the Basis of Scepticism" *Mind* **97** (1988) pp 415-439 at p 424.

[220] See section 1.

position while at the same time (contrary to Neurath) preserving a use for the word 'true' will be called a *deflationary* conception of truth.[221]

Thus, the coherence and pragmatic theories may be considered deflationary with respect to the correspondence theory, since they do not meet the correspondence intuition, though they meet one pre-philosophical intuition and are compatible with the third. The coherence and pragmatic theories are mildly deflationary compared with the simple theory of truth, which is regularly deflationary, whereas the redundancy, disquotational, minimalist, and prosentential theories are extremely deflationary. However, given the course of the debate over the last decade, these distinctions among types of deflationism are not likely to help further it.

Section 15: Conclusions about Theories of Truth

Two sorts of considerations show that truth-bearers are propositions, rather than sentences. The first consideration is that when an English speaker says "snow is white" and a French speaker says "la neige est blanche", either both speakers have said something true, or they both have not. Since the sentence tokens and types differ, it must be that propositions are truth bearers. The second consideration is that sentence types or sentence tokens which are ambiguous or contain context-sensitive terms can be evaluated as both true and not true. Allowing propositions to be truth-bearers avoids this absurdity.

A correspondence theory of truth claims that a proposition is true if and only if it corresponds to a fact. Weak correspondence theories read 'correspond' as a material

---

[221] Hartry Field, "The Deflationary Conception of Truth", *op. cit.*, p 59.

equivalence between a proposition and a fact; however, this relation is too weak to be satisfactory. Strong correspondence theories read 'correspond' as 'represents'. Although strong correspondence theories face a number of traditional objections, several versions of the strong correspondence theory meet these objections, and so are at least *prima facie* viable.

The coherence theory claims that a proposition is true if and only if it is not inconsistent with propositions already accepted as true. The coherence theory faces several problems, including a failure to account for the correspondence intuition, a failure to prefer two equally consistent sets of propositions, and circularity in its thesis. The coherence theory is not promising.

The pragmatic theory claims that a proposition is true if and only if belief in it tends to maximize the believer's utility. The pragmatic theory faces several serious and subtle objections, in addition to the overarching objection that truth and a tendency to maximize utility are not materially equivalent; therefore, it is to be rejected.

The epistemic theory claims that truth is justification. However, since justification is mind-dependent, comes in degrees, and comes apart from truth in Gettier-type cases, it is clear that the epistemic theory is false. Appeals to ideal epistemic conditions do not improve the plausibility of the epistemic theory; therefore it is to be rejected.

According to the simple theory of truth, truth is a simple, unanalyzable, indefinable property. However, an unacceptable consequence of the simple theory is that truth is epiphenomenal. Thus, the simple theory of truth is not promising.

According to the redundancy theory, the truth predicate does not express a property; though it is a grammatical expedient when predicated of a quantified subject,

it is redundant when predicated of quoted sentences. However, predications of truth to named, described, and demonstrated propositions pose problems for the redundancy theory. There is also a problem arising from falsehood, on which the redundancy theory must claim that falsity is unrelated to truth, on pain of contradiction. Therefore, the redundancy theory is to be rejected.

Frege is torn between his intuitions motivating his program in logic and supporting a correspondence theory, and evidence supporting a redundancy theory. The tension leads him to posit that the truth predicate expresses a property which is not contributed to the thought (proposition) expressed by the sentence containing it. An alternative to this implausible view is his earlier view on which true sentences refer to The True, and false sentences refer to The False. On this view, truth is the property of referring to The True; although it is given a simple analysis, it is best understood as a version of the simple theory of truth, and is likewise criticized for the consequence that truth is epiphenomenal.

Tarski's work on truth is explicitly restricted to formalized languages. Although pioneering, an important difference between formal and natural languages disqualifies his theory as a theory of the property expressed by natural language truth predicates; specifically, the notion Tarski defines, strictly speaking, is truth in a language (truth-in-L). Tarski recognized that other differences limit the applicability of truth-in-L to truth, *sc.*, no sentence of a formalized language is ambiguous, and formalized languages do not contain context-sensitive terms.

The disquotational theory develops the redundancy theory by adding a modified form of Tarski's schema T, the disquotational schema, which is a biconditional schema for truth predications of quoted sentences. The disquotational theory is open to

objections on the same points on which Tarski recognized that his theory is limited: the disquotational schema encounters problems with ambiguous sentences, and sentences containing context-sensitive terms. Also, the disquotational theory is limited to a notion of truth in a single natural language, e.g., truth-in-English. Like the redundancy theory, the disquotational theory founders on sentences predicating truth of a named, described, or demonstrated sentence (proposition). Therefore, the disquotational theory is to be rejected.

The minimalist theory aims to sidestep some of these objections by working with a disquotational-style schema formulated for truth predicated of propositions. Minimalism is comprised of an infinite number of axioms, which are the non-paradoxical instances this schema. Because the minimal theory is not finitely stateable, it is unable to claim that the truth predicate expresses a property. The Minimalist theory is best understood as a development of the redundancy theory of truth, and a companion to the disquotational theory. The difference in schema formulation does not prevent the minimalist theory from suffering the same objections as the disquotational theory: it is limited to a notion of truth in a single natural language; it does not provide adequate truth conditions for propositions expressed by ambiguous sentences, or sentences containing context-sensitive terms; and its truth schema is ill-formed when instantiated for truth ascriptions to named, described, or demonstrated propositions. Therefore, the minimalist theory of truth is to be rejected.

The prosentential theory is explicitly a development of the redundancy theory. It claims that the truth predicate does not express a property, but is part of a syntactically simple grammatical device which is in principle eliminable. However,

motivation for the prosentential theory is fallaciously conceived, and the analyses it proposes are horribly implausible. The prosentential theory is to be rejected.

It is suggested here that deflationary theories are those claiming or entailing that truth is not a substantive property. The redundancy, simple, disquotational, minimalist, and prosentential theories are all deflationary theories of truth.[222]

In order to be successful, a theory of truth must not only meet specific criticisms raised against it, but it must also fulfill an obligation to account for the three pre-philosophical intuitions discussed in section 2. When the coherence and pragmatic theories were examined, it was discovered that coherence alone does not guarantee truth, nor does utility. Neither do coherence and utility together. The coherence and pragmatic intuitions are explained by the rough, general correlation between truth and coherence, and truth and utility. Distinguishing the notions of truth and coherence helps locate coherence as a feature of rationality, rather than truth. Similarly, distinguishing truth and utility helps locate utility as more relevant to practical reason than to truth. Thus, rival theories of truth may accept the coherence and pragmatic intuitions as mere intuitions.

Most of the rival theories of truth examined are silent on the relation between the coherence and pragmatic intuitions and their theory.[223] By contrast, *every* theory examined here is concerned to show how it meets the correspondence intuition, not as a

---

[222] The quasi-simple theory of truth for which Frege might have opted (see section 9) is a deflationary theory of truth. If Tarski is read strictly, his theory is not about truth, but about truth predicates in formalized languages, and so his theory is neither deflationary nor robust. However, it is common to include Tarski as a deflationist, given the influence of his schema T on theories which are deflationary — this in spite of his persistent, explicit attempts to capture a correspondence notion of truth; see section 10.

[223] An exception is Ramsey, who shows briefly how the redundancy theory is compatible with the pragmatic intuition; see F. P Ramsey, "Facts and Propositions", *op. cit.*, p 159.

mere intuition, but as a thesis.[224] Bradley incorporates the notion of ultimate truth into

his coherence theory. James pulls out rhetorical and semantic tricks in order to argue

that his pragmatic theory captures the correspondence intuition. Moore rejects the

simple theory of truth because it does not capture the correspondence intuition.[225] Frege

is torn between the correspondence theory and the redundancy theory. Tarski is

consistently and explicitly concerned to capture a correspondence notion of truth.

Quine argues that the disquotational schema captures the correspondence intuition.

Horwich devotes a section of his book to explaining how minimalism meets the

correspondence intuition.

 The correspondence intuition is not satisfied by claiming that a mere correlation

holds between true propositions and facts.[226] Therefore, the deflationary theories, the

coherence and pragmatic theories, and even the weak correspondence theories are too

---

[224] A possible exception is Ramsey, whose passage on the correspondence intuition is very
difficult to interpret; see footnote 86.

[225] This claim is somewhat contentious if left unexplained. Moore gives two reasons for rejecting
the simple theory of truth: one is that he no longer believes that propositions exist. The second is
"that the fact to which a true belief refers…does not, if you think of it, seem to consist merely in
the possession of some simple property by a proposition…. For instance, the fact that lions really
do exist does not seem to consist in the possession of some simple property by the proposition
which we believe, when we believe that they exist, even if we grant that there is such a thing as
this proposition." (G. E. Moore, "Beliefs and Propositions", *op. cit.*, pp 262-263.) Earlier in the
paper (p 255), Moore gives a correspondence definition of truth for beliefs; hence, though he does
not say so explicitly—most likely because for Moore the first reason dwarfs the second—it is fair
to conclude that the second reason is at bottom a reason for rejecting the simple theory of truth
because the simple theory fails to accommodate correspondence.

[226] Blackburn and Simmons write, "for a proposition to be true is for it to correspond with the
facts. It is important to realize that this is a platitude that nobody denies." (Blackburn and
Simmons, "Introduction" to Blackburn and Simmons (1999) p 7. They repeat the claim on p 6,
and on p 7.) This claim is simply confused. Their idea seems to be that everyone can agree to this
thesis, and decide later what correspondence consists in. But there is no genuine agreement if a
strong correspondence theorist understands correspondence as representation, and a deflationary
theorist (e.g., Horwich) understands it as a general correlation with exceptions for paradoxical
cases. Of course, every truth theorist *wants* to be able to endorse this claim, but it does not follow
that they are entitled to. Blackburn and Simmons suffer from the same confusion which affected
William James; see section 5.

weak to meet the correspondence intuition. Therefore, due to the promise it offers in meeting particular objections, and due to its ability to meet the correspondence intuition, only a strong correspondence theory stands a chance of being a satisfactory theory of truth. The next step to developing a correspondence theory is to study a puzzle which has long foiled theories of truth, the Liar Paradox. This is the topic of chapter 2. In chapter 3 I present the details of a strong correspondence theory of truth.

CHAPTER 2: TRUTH PARADOX

Section 16: The Liar Paradox & Truth Paradox

The Liar Paradox (for English) may be partially characterized by the following theses:[227]

      1. English contains sufficient resources for self-referring expressions.

      2. English sentences may be truth-evaluated.

      3. English contains standard logical operators, including negation.

      4. Reports of truth values may be expressed by English sentences.

      5. English permits (should permit) any instance of the schema P: x is true iff p
         (where 'x' denotes a sentence and 'p' is the sentence 'x' denotes)

Instantiating schema P for 'x' = 'L is not true', where 'L' denotes 'L is not true' leads to a contradiction between L and ~L. A solution to the Liar Paradox consists in a principled rejection of one of the theses, or otherwise exposing a hidden assumption as faulty.[228]

Saul Kripke has argued convincingly that self-referring expressions are neither sufficient nor necessary to the Liar Paradox.[229] The truth-telling sentence, TT: 'TT is true'

---

[227] These theses are adapted from Alfred Tarski, "The Semantic Conception of Truth and the Foundations of Semantics" *Philosophy and Phenomenological Research* **4** (1944) pp 341-375 at p 348. While the theses are written for English, I assume that they may be rewritten for natural and formal languages, *mutatis mutandis*. In this discussion I speak occasionally of the truth of a sentence for ease of exposition, rather than the truth of a proposition expressed by a sentence.

[228] Traditionally, the Liar Paradox results from considering the sentence L: 'L is false'. To counteract proposed solutions which reject the Principle of Bivalence, Bas van Fraassen offered the Strengthened Liar Paradox: "The Strengthened Liar says 'What I say is either false or neither true nor false.'" (Bas van Fraassen, "Presupposition, Implication, and Self-Reference" *The Journal of Philosophy* **65** (1968) pp 136-152.) This is equivalent to L*: 'L* is not true', where 'not' expresses exclusion negation. Where 'not' expresses choice negation, L* is likewise truth paradoxical. (See footnote 12.) Since the philosophical community has come to understand the significance of van Fraassen's Strengthened Liar Paradox, discussion of the traditional Liar Paradox is otiose, and I shall use the name 'Liar Paradox' to refer to van Fraassen's Strengthened Liar Paradox.

and V: 'V is short' are both self-referential, yet neither is paradoxical. Hence, self-reference is not sufficient to generate paradox.

Further, as Kripke points out, contradiction results from instantiating schema P for 'x' = 'B is true' and for 'x' = 'A is not true', where 'A' names the former sentence and 'B' the latter. Since neither A nor B is self-referential, self-reference is not necessary to the Liar Paradox. Contradiction can be produced for any finite number, n, of sentences of the form $\ulcorner x_{i+1}$ is true$\urcorner$, which are named by 'x_i', where i ranges from 1 to n-1, together with a sentence 'x_n' of the form $\ulcorner x_1$ is not true$\urcorner$.

It might be pointed out that self-reference is a special case of circular reference, and that contradiction in all of the above cases depends on circular reference. In fact, even circular reference is not necessary to the Liar Paradox. Consider an infinite sequence of sentences, s_n, each having the form $\ulcorner$for all k > n, s_k is not true$\urcorner$.

s_1 for all k>1, s_k is not true

s_2 for all k>2, s_k is not true

s_3 for all k>3, s_k is not true

.   .

.   .

.   .

Then, a particular sentence s_i is true if and only if for all n > i, s_n is not true, and s_{i+1} is true if and only if for all n > i+1, s_n is not true. However, if s_i is true, then s_{i+1} correctly

[229] Saul Kripke, "Outline of a Theory of Truth" in *Recent Essays on Truth and the Liar Paradox*, Robert L. Martin, editor (New York: Oxford University Press, 1984) pp 53-81 at pp 53-57. "Outline of a Theory of Truth" was originally published in *The Journal of Philosophy* **72** (1975) pp 690-716. All page references to Kripke are from Martin (1984).

reports that all s_n for n > i+1 are not true; hence, s_{i+1} is true and s_i is false (not true).

Similarly, if s_i is not true, then at least one s_n, n > i, is true. But by the previous

reasoning, no such s_n is true. Hence, all s_n, n > i, are not true, and s_i is true. Thus, all s_i

are such that s_i is true if and only if s_i is not true.[230]

Therefore, the Liar Paradox may not be solved by rejecting thesis 1.

In examining thesis 1, many versions of the Liar Paradox are mentioned. Since

the name 'Liar Paradox' is vestigial with respect to many of its variations, let me call a

paradox a "truth paradox" if and only if thesis 2 is essentially among the theses leading

to contradiction.[231] It is important to this definition that thesis 2 is not objectionable; and

it is not, since it is such a very weak thesis.

It must be pointed out that thesis 2 does not specify any principle according to

which sentences are to be truth evaluated. A naive view of truth evaluation adopts the

Law of Excluded Middle and the Principle of Bivalence. The Law of Excluded Middle

---

[230] This paradox is due to Stephen Yablo, "Paradox Without Self-Reference" *Analysis* **53** (1993) pp 251-252. It is discussed by Roy Sorensen, "Yablo's Paradox and Kindred Infinite Liars" *Mind* **107** (1998) pp 137-155. Graham Priest and J. C. Beall have protested that Yablo's Paradox involves circular reference; however, their argument flagrantly confuses circular reference with circular truth-ascription. Priest and Beall argue that each s_n in some sense involves circular reference; however, this point is barely related to the aim of showing that the truth ascription made by each s_n is circular. Showing that they have not even established that each s_n involves circular reference would take this discussion too far afield. See Graham Priest, "Yablo's Paradox" *Analysis* **57** (1997) pp 236-242; and J. C. Beall, "Is Yablo's Paradox Non-Circular?" *Analysis* **61** (2001) pp 176-187.

[231] Of course, contradiction is discovered by evaluating sentences (propositions) for truth, but only truth paradox results from evaluating sentences (propositions) for truth.

Also, since a thesis is inessential to a paradox if it may be removed from a set of paradoxical theses without resolving the paradox, the definition of 'truth paradox' must exclude trivially rendering any paradox a truth paradox simply by adding thesis 2; thus, a truth paradox must contain thesis 2 essentially.

This definition of truth paradox identifies what a number of semantical paradoxes have in common. Thus, Lob's Paradox, Berry's Paradox, Richard's Paradox, and the Preface Paradox are examples of truth paradox. Other paradoxes similar to the Liar Paradox, such as Grelling's Paradox, and Russell's Paradox emphasize other features of the Liar Paradox.

claims that every proposition is to be assigned exactly one truth value.[232] The Principle of Bivalence claims that there are exactly two truth values which may be assigned to a proposition, truth and falsity.[233]

Instantiating schema P for '*x*' = 'L is not true' as above shows that rejecting the Principle of Bivalence for a Principle of Trivalence or other principle claiming that there are more than two truth values which may be assigned to a sentence does not solve the Liar Paradox. Thus, given its intuitive appeal, and the difficulty in making sense of a third truth value, the Principle of Bivalence is to be accepted.

As Saul Kripke very convincingly points out, the truth value of a sentence may depend on the circumstances of its utterance. Kripke asks us to consider an ordinary sentence, J, uttered by Jones, in light of circumstances where Nixon's utterances concerning Watergate include N and are otherwise evenly balanced between truth and falsity.

J   Most of Nixon's assertions about Watergate are false.

N   Everything Jones says about Watergate is true.

---

[232] Formally, the Law of Excluded Middle reads: $(\forall P)\ (P \lor \sim P)$, where P ranges over propositions.

[233] The Principle of Bivalence is traditionally formulated as: every proposition is either true or false; formally, $(\forall P)\ [T(P) \lor F(P)]$. Since $T(P) \Rightarrow P$ and $F(P) \Rightarrow \sim P$, the Principle of Bivalence entails the Law of Excluded Middle. The additional work done by the Principle of Bivalence is logically isolated if it is formulated as the claim that there are exactly two truth values which may be assigned to a proposition, truth and falsity, since this Principle of Bivalence is logically independent of the Law of Excluded Middle. So as not to beg the question of how many truth values there are, the Law of Excluded Middle is reformulated as the claim that every proposition is to be assigned exactly one truth value.
The Principle of Bivalence is not committed to any particular notion of truth or falsity.

If it happens that J is the only utterance Jones makes about Watergate, then J is paradoxical: if J is true, it follows that N is false, whence J is false; and if J is false, it follows that N is true, whence J is true. Had Jones made other utterances about Watergate, it might not have been paradoxical. Under the circumstances, N is also paradoxical, though, similarly, it might not have been.[234]

Since both J and N are ordinary sentences, yet neither can be truth evaluated consistently under these circumstances, empirical cases of truth paradox show that the Law of Excluded Middle must be rejected. Since it is plain that no sentence is to be assigned more than one truth value, the Law of Excluded Middle is to be replaced with the Law of Truth Evaluation, which states that a sentence (proposition) is to be assigned at most one truth value.[235]

Thesis 3 is true by hypothesis. The single issue it raises is how to understand negation, which plays a critical role in the Liar Paradox. In a language which adopts the

---

[234] Empirical cases of truth paradox are first reported by John Buridan in his *Sophismata*; see G. E. Hughes, *John Buridan on Self-Reference: Chapter 8 of Buridan's* Sophismata, *with a Translation, an Introduction, and a philosophical Commentary* (Cambridge: Cambridge University Press, 1982) especially the eighth and ninth sophisms; and as recently, prior to Kripke, as 1957, by L. Jonathan Cohen, "Can the Logic of Indirect Discourse Be Formalized?" *Journal of Symbolic Logic* **22** (1957) pp 225-232.

[235] Note that sentences containing vague predicates independently require rejecting the Law of Excluded Middle.

Dialetheists will object that the Law of Truth Evaluation begs the question against dialetheism, the view that permits truth value "gluts," i.e., assignment of more than one truth value to a truth-bearer. Dialetheism embraces inconsistency. In order to avoid the usual consequences of inconsistency, dialetheism rejects forms of inference which are standardly valid, such as disjunctive syllogism and reductio ad absurdum. Nevertheless, these extremely counterintuitive moves fail to contain the effects of contradiction: if truth is a substantive notion, the contradictions dialetheism grants are problematic in spite of whatever other moves are made; if truth is deflationary, these moves are unnecessary, and so should not be accepted. The *locus classicus* for dialetheism is Graham Priest, *In Contradiction: A Study of the Transconsistent* (The Hague: Martinus Nijhoff, 1987). See also his "What Is So Bad about Contradictions" *The Journal of Philosophy* **95** pp 410-426. Dialetheism is also endorsed by J. C. Beall, "A Neglected Deflationist Approach to the Liar" *Analysis* **61** (2001) pp 126-129; Terence Parsons, "True Contradictions" *Canadian Journal of Philosophy* **20** (1990) pp 335-354 is sympathetic to the view.

Law of Excluded Middle, the notion of negation is uncontroversial; it is represented in

Table 1. Once it is recognized that some sentences may not consistently be assigned a

truth value, truth value gaps must be added to the truth table for negation.

classical negation	choice negation	exclusion negation

A	~A
T	F
F	T

A	~A
T	F
F	T
U	U

A	~A
T	F
F	T
U	T

Table 1: Forms of Negation

Choice negation is an operator returning a sentence (proposition) whose truth

value is opposite that of the operand, and undefined (U) if the operand has none (is

undefined). Exclusion negation is an operator returning a sentence (proposition) whose

truth value is opposite that of the operand, and true if the operand has none (is

undefined). Thus, choice and exclusion negation agree with classical negation where the

operand has a truth value. They extend the notion of classical negation where the

operand has a truth value, and differ on the evaluation of operands without a truth

value.

Since the empirical cases of truth paradox show that sentences of English can be

paradoxical as a result of unfavorable circumstances, the notion of negation standard in

English must be either choice or exclusion negation.[236] Because it is more expressive,

---

[236] There exists the logical possibility for a notion of negation according to which ~A is false
where A is undefined, but such a notion is intuitively very implausible.

choice negation is preferred to exclusion negation.[237] Although it is possible to argue

that negation be interpreted differently, the selection of a particular notion of negation

affects only its form; that is, no particular notion of negation gives a more promising

treatment to truth paradox than another.[238] Banning negation would eliminate truth

paradox, in an ostrich-headed way;[239] however, no ban on negation can alter the fact that

English and other languages contain negation, and hence can formulate truth paradox.

Also, a ban on negation, whether explicit or implicit, will make use of negation.

　　Similarly, it is *prima facie* implausible to object to thesis 4 that English sentences

cannot be used to report truth evaluations. However, it is possible to allow that reports

of truth value may be made using English sentences, and attempt to discern shifts in

---

[237] The decision procedure is to maximize expressibility while respecting intuitions about natural language. Expressibility is a function of truth values: fewer cases of truth result in greater expressibility. Comparing the last lines of tables 2 and 3, it is plain that choice negation is more expressive. Presumably, intuitions about truth values for truth functions of truth valueless propositions are not strong enough to decide between choice and exclusion negation, since the unfavorable circumstances leading to truth paradox are so rare.
　　Note that exclusion negation captures the metalinguistic notion of being assigned a truth value; that is, it is truth functionally equivalent to an operator returning a proposition whose truth value is the same as the proposition expressed by 'the operand lacks the truth value true'. See further discussion in sections 24.4 and 24.5. (To define exclusion negation thereby is circular, since the definiens contains negation in 'lacks'.)
　　It should be noted that expressibility is not always the deciding factor. For example, while exclusive disjunction is more expressive than inclusive disjunction, it is the latter which is standard. Both notions are found in natural language expressions, and each is definable in terms of the other. But because inclusive disjunction permits the inference rule of addition, it is more convenient to a logical system, and so is preferred to exclusive disjunction.

[238] Since the negation of an undefined sentence is also undefined, it may be wondered how L leads to truth paradox. Paradox results from considering whether L is defined or undefined. If L is undefined, then L is not true; but since that is what L says, L is true, and defined. If L is defined, then L is either true or not true. If L is true, then what it says is the case, therefore it is not true. If L is not true, then L correctly reports that it is not true, hence it is true. Thus, if L is defined, it is true if and only if it is not true. This contradiction can be avoided only by claiming that it is undefined; but then L is defined if and only if it is not defined.

[239] Löb's Paradox shows how to derive any sentence, A, from principles of propositional logic without negation. In order to derive a contradiction between A and ~A, the language must include negation. See section 22.7.

context to which these reports are sensitive. Thus, it may be plausible to reject thesis 4 on the grounds that it needs to be reformulated to acknowledge explicitly a shift in context between the evaluated sentence and the report of its truth value.[240] Context approaches to the Liar Paradox are examined in section 20.

Many philosophers, beginning with Tarski, have thought that thesis 5 is the core of a theory of truth. Tarski himself accepted all five theses, and concluded that a language cannot consistently contain its own truth predicate: "*the very possibility of a consistent use of the expression 'true sentence' which is in harmony with the laws of logic and the spirit of everyday language seems to be very questionable, and consequently the same doubt attaches to the possibility of constructing a correct definition of this expression*."[241] Thus, to say that a language cannot consistently contain its own truth predicate is to say that if theses 1-5 hold for a language (e.g., English), that language contains a sentence and its negation, specifically, a truth ascription and its negation, both of which are true in that language.[242] However, this argument may be turned on its head: this result permits the derivation of any sentence whatsoever using standard logical operations; but English is not this wild or chaotic. Hence, one of theses 1-5 must be rejected.

---

[240] For example: 4. Reports of truth values may be expressed by English sentences, but only with an attendant shift in context which alters the extension of the truth predicate.

[241] Alfred Tarski, "The Concept of Truth in Formalized Languages", *op. cit.*, p 165; Tarski's italics.

[242] This notion of an inconsistent language has been the source of some interpretive difficulty. The notion as explained here is due to Nathan Salmon and is discussed by Scott Soames, *Understanding Truth* (New York: Oxford University Press, 1999) pp 53-54.

Thesis 5 is an especially good candidate for rejection. Paradoxical instances of

schema P, such as that for 'x' = 'L', constitute counterexamples to thesis 5, and so

provide an independent reason for rejecting it.[243]

Thesis 5 may also be rejected on the grounds that L does not express a

proposition. Since truth bearers are propositions, thesis 5 is properly formulated with

schema M_4 rather than schema P:

M_4 the proposition expressed by 'p' is true if and only if p

where 'p' is a sentence of English. If L does not express a proposition, then the instance

of M_4 where 'p' = 'L is not true' does not express a proposition. Thus, not all instances of

M_4 are (should be) permitted, and thesis 5 is to be rejected. The claim that L and other

problematic sentences do not express a proposition is motivated by their paradoxicality.

The view that L does not express a proposition is fairly popular; in the twentieth

century it has been held by Russell, Bar-Hillel, Prior, Fitch, Garver, Skyrms, Pollock,

Kneale, Parsons, and Chisholm.[244] Nevertheless, it is a move which may strike some

philosophers as *ad hoc*. After all, a truth paradoxical sentence is generally declared not

---

[243] An alternative for those philosophers sympathetic to thesis 5 is to follow Paul Horwich in accepting all unproblematic instances of schema P; see section 12.1.

[244] Bertrand Russell, "Mathematical Logic as based on the Theory of Types" *American Journal of Mathematics* **30** (1908) pp 222-262; Y. Bar-Hillel, "New Light on the Liar" *Analysis* **18** (1957) pp 1-6; A. N. Prior, "Epimenides the Cretan" *The Journal of Symbolic Logic* **23** (1958) pp 261-266; Frederic B. Fitch, "Comments and a Suggestion" in Martin (1970) pp 75-77; Newton Garver, "The Range of Truth and Falsity" in Martin (1970) pp 121-126; Brian Skyrms, "Notes on Quantification and Self-Reference" in Martin (1970) pp 67-74; John L. Pollock, "The Truth about Truth: A Reply to Skyrms" in Martin (1970); William C. Kneale, "Russell's Paradox and Some Others" *British Journal of the Philosophy of Science* **22** (1971) pp 321-338; Charles Parsons, "The Liar Paradox" *Journal of Philosophical Logic* **3** (1974) pp 381-412 (reprinted in Martin (1984) pp 9-45); Roderick Chisholm, *Theory of Knowledge*, second edition (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1977) chapter 5, section 3.

to express a proposition only after it is discovered to be truth paradoxical. Further,

sentences such as L, J, and N pass other tests normally taken as sufficient for expressing

a proposition: first, L, J, and N are grammatically well-formed. Second, it is plausible to

suppose that someone may have attitudes toward the propositions expressed by L, J,

and N even under the unfavorable circumstances under which those propositions are

paradoxical; e.g., that the proposition expressed by L (J,N) is true, or is paradoxical. As

Scott Soames argues, "there is no compelling reason to think that such resistance [to

truth evaluation] on the part of Liar sentences...shows that they do not express

propositions."[245] "The point is that for such cases there is no independently motivated

semantic theory that characterizes them as not expressing propositions."[246] Of course, it

is a fallacy to draw the further conclusion that the claim that truth paradoxical sentences

do not express a proposition is false. While these arguments do not defeat the claim that

truth paradoxical sentences do not express propositions, they do raise an important

challenge for it. It is the aim of chapter 3 to meet this challenge.

Section 17: Responses to Truth Paradox: Substantive Theories

Section 17.1: The Correspondence Theory's Response

Recall that according to the correspondence theory, a proposition is true if and only if it

represents a fact.   Let '$\{p\}$' abbreviate 'the proposition expressed by p'; supposing that L_P

     L_P $\{L_P\}$ is not true

---

[245] Scott Soames, *Understanding Truth* (New York: Oxford University Press, 1999) p 194.

[246] *ibid*.

expresses a proposition, instantiating M_4 for 'p' = '{L_P} is not true' and substituting on

the left side 'L_P' for the quotation name of the sentence it denotes yields

M_4-L_P {L_P} is true if and only if {L_P} is not true

from which a contradiction is easily derived.

Three responses are available to the correspondence theory, as discussed in

section 16. The first is to reject thesis 4 on the grounds that it needs to be reformulated

to acknowledge explicitly a shift in context between the evaluated sentence and the

report of its truth value. The plausibility of this response depends on showing that L_P is

somehow context-sensitive. Context approaches to the Liar Paradox are examined in

section 20.

Another response to the Liar Paradox is to reject M_4, since it has paradoxical

instances. This move may be motivated independently by marshaling instances for

sentences containing vague predicates or sentences expressing value claims. However,

since the truth evaluability of vague and value claims is itself a controversial matter, the

move to reject M_4 remains tentative.

A third response is to claim that L_P does not express a proposition; hence, the

correspondence theory does not apply to it. One advantage of this response is that it

provides a reason for claiming that M_4-L_P does not lead to contradiction, since M_4-L_P

does not express a proposition where L_P does not. Of course, this move is

independently motivated only when a semantic theory is provided which explains why

L_P does not express a proposition.[247] One problem this move faces is a sharpened,

customized truth paradox posed by the sentence L_C = 'L_C does not represent a fact', and

by L_{np} = 'L_{np} does not express a true proposition'.

Again, context approaches to the Liar Paradox are examined in section 20; the

second and third responses as well as this sharpened truth paradox are addressed in

chapter 3.

Section 17.2: The Coherence Theory's Response

Recall that according to the coherence theory, a proposition is true if and only if it is not

inconsistent with the set of propositions already accepted as true. In general, the same

three moves are available to the coherence theory. One move is to discern shifts in

context to which truth value reports are sensitive, and on these grounds reject thesis 4.

However, because the ultimate context for the coherence theory is the set of already

cohering propositions, B, this move is less promising for it than for the correspondence

theory.

The coherence theory may also reject M_4 based on the instance where 'p' = 'L is

not true', as above. However, the Liar Paradox is especially troublesome for the

coherence theory, since, through its commitment to coherence, either L or ~L must

cohere with the set of already cohering propositions, B. If L coheres with B, then it is

true according to the coherence theory, yet it claims that it is not true; thus, L does not

cohere with B. If L does not cohere with B, then it correctly makes this report; hence it is

true, and so does cohere with B. Thus, L coheres with B iff it does not cohere with B.

Turning to ~L, suppose that it does not cohere with B. If so, then L coheres with B,

---

[247] This is undertaken in chapter 3.

which leads to contradiction as above. If ~L does cohere with B, L does not. This leads to contradiction, as above.

The coherence theory's best move is to claim that L does not express a proposition. However, a customized version of truth paradox may be posed which seems inescapable: L_{coh} = 'the propositional content of L_{coh} does not cohere with B'. Since it is plain that L_{coh} has propositional content, it does not help to claim that L_{coh} does not express a proposition; in fact, it is implausible. If L_{coh} has propositional content, it is true if and only if it is not true.

Section 17.3: The Pragmatic Theory's Response

Recall that according to the pragmatic theory, a proposition is true if and only if belief in it tends to maximize the believer's utility. The difficulties which the Liar Paradox presents to the pragmatic theory are very similar to those it presents to the coherence theory. In general, the same three moves are available, but do not succeed. For example, the move to discern shifts in context to which truth value reports are sensitive is not promising, since the ultimate context for the pragmatic theory is the context of the believer's utility, a context which includes both propositions and their truth evaluations.

The pragmatic theory may reject M_4 based on the instance where 'p' = 'L is not true', or it may claim that L does not express a proposition. However, if the grammatical well-formedness and attitude tests[248] are administered with pragmatic interests, both of these moves are implausible.

In any case, the pragmatic theory faces a sharpened, customized paradox from the sentence L_{prag} = 'Belief in the proposition expressed by L_{prag} does not tend to

---

[248] See section 16.

maximize the believers utility'. According to the pragmatic theory, if $\{L_{prag}\}$ is true,

belief in it tends to maximize the believer's utility, which may be expressed by the

negation of L_{prag}. If $\{L_{prag}\}$ is not true, then belief in it does not tend to maximize the

believer's utility; however, since this is what L_{prag} expresses, the pragmatic theory faces

the dilemma of granting its truth, which is to admit contradiction, or making the *ad hoc*

claim that though it expresses what by hypothesis is the case, it is not true.

Section 17.4: The Epistemic Theory's Response

Recall that according to the epistemic theory, truth is justification. In general, the same

three moves are available to the epistemic theory. However, like the coherence and

pragmatic theories, the epistemic theory is devastated by the Liar Sentence understood

according to its own analysis of truth. On the epistemic theory, L becomes L_{ep} = 'The

proposition expressed by L_{ep} is not justified'. To say that L_{ep} is true is to say that it is

justified; however, it follows that there is justification for the claim that $\{L_{ep}\}$ is not

justified, whereupon the justification is defeated. Therefore, if $\{L_{ep}\}$ is justified, it is not

justified. If $\{L_{ep}\}$ is not true, then according to the epistemic theory it is not justified,

though L_{ep} correctly makes this report. *Prima facie* it follows that L_{ep} is true, hence

justified, from which a contradiction is easily derived. The epistemic theory may insist,

though, that according to it, the truth of L_{ep} does not follow, and that strictly speaking,

L_{ep} is simply unjustified. Maintaining this view points out once again that justification

and truth are different notions.

Section 18: Responses to Truth Paradox: Deflationary Theories

Section 18.1: The Simple Theory's Response

None of Russell, Moore, Putnam, Cartwright, Davidson, or Sosa discuss how the simple

theory of truth responds to the Liar Paradox. The simple theory of truth cannot hold

that a paradoxical sentence does not express a proposition, since it gives a semantic

account of the truth predicate which precludes this claim.

While the simple theory cannot maintain that the truth predicate is context-

sensitive, it may be independently argued that certain changes in context occur with

certain reports of truth values, which affect the extension of the truth predicate. This

approach to the Liar Paradox is examined in section 20.

The most *prima facie* plausible move for the simple theory is to reject M_4, on the

grounds that it has paradoxical instances. Since the propositions giving rise to the

paradoxical instances are neither true nor false, the simple theory must allow for truth

value gaps; i.e., propositions which do not bear a truth value. In order to distinguish

false from gappy propositions, the simple theory must view falsity as a property distinct

from truth, rather than the absence of truth. Here the simple theory faces a dilemma as

to whether falsity, too, is simple and indefinable, or if it is complex and analyzable.[249] If

falsity is simple and indefinable, then it is a problem to distinguish it from truth. While

it may seem like an obvious and easy distinction to draw, the difference appealed to

may not be a substantive notion, on pain of abandoning the simple theory of truth. For

---

[249] In *Some Main Problems of Philosophy* (New York: The Macmillan Company, 1953) Moore
describes falsity as the lack of truth. (Cf. p 261.) In his entry on 'truth' in *Dictionary of Philosophy
and Psychology* (J. Baldwin, editor (London: Macmillan, 1901-2) volume 2, pp 716-718) Moore
writes that "'True' and 'false', as applied to propositions, denote properties attaching to
propositions which are related to one another in such a way that every proposition must be either
true or false...." (p 716) Russell held the latter view that falsity is a distinct simple, unanalyzable
property: "What is truth, and what falsehood, we must merely apprehend, for both seem
incapable of analysis." ("Meinong's Theory of Complexes and Assumptions", *op. cit.*, p 524)

example, the distinction must explain why we should prefer to believe propositions bearing truth to those bearing falsity, yet any such explanation is bound to draw on substantive properties which do the work which the simple theory claims is done by truth and falsity. If it is claimed instead that falsity is complex and analyzable, then there is an implausible asymmetry between truth and falsity.

Section 18.2: The Redundancy Theory's Response

Since the syntactic property had by the truth predicate according to the redundancy theory is not context-sensitive, individuating languages more finely according to context does not help the redundancy theory escape the Liar Paradox.

For the redundancy theory, the sentence " 'L is not true' is true" means the same as the quoted sentence, 'L is not true'. But since L names the sentence 'L is not true', it follows that on the redundancy theory, 'L is true' means the same as 'L is not true'. If truth-bearers are sentences, a contradiction follows immediately.

The redundancy theory may claim that truth-bearers are propositions, and emphasize the claim that the truth predicate does not express a property. If so, then neither L nor ~L express propositions, such that the apparent contradiction between them is merely apparent. The substantive problem is that if propositions are taken to be truth-bearers, then predications of truth do not express propositions, where intuitively they do. Thus, despite the redundancy theory's claim that 'Everything Tolstoy said is true' means the same as the conjunction of everything he said, only the conjunction expresses a proposition.

Further, if the truth predicate does not express a property, then the redundancy theory faces a dilemma regarding the falsity predicate. If the falsity predicate does not

expresses a property, then semantically " 'Snow is orange' is true" means the same as " 'Snow is orange' is false", since they make the same contribution of semantic content. The claim that the falsity predicate does express a property faces a couple of difficulties. One difficulty is simply to characterize falsity, since there is no property, truth, to appeal to in characterizing it. A second difficulty is that this claim results in an awkward asymmetry between the truth and falsity predicates.

Finally, truth-telling sentences present the redundancy theory with a very serious problem. According to the redundancy theory, the truth predicate is eliminable in principle, even where it is used as a syncategorematic abbreviatory device. However, the truth predicate is not eliminable from sentences such as TT: 'TT is true', or Nina's utterance of WN: 'What Nina is saying now is true'.[250] In these cases, the redundancy theory claims that {TT} and {WN} mean the same as the propositions referred to by their subject terms; obviously, though, both propositions are expressed by a sentence in which the truth predicate occurs. Successive applications of the redundancy theory to these sentences do not eliminate the truth predicate.

Section 18.3: The Disquotational Theory's Response

Quine's disquotational theory explicitly holds sentences to be truth-bearers. Contradiction results by instantiating the disquotational schema, D, for 'S' = 'L is not true'. Substituting L for the sentence it names yields:

L is true if and only if L is not true

---

[250] This objection is made against one version of the disquotational theory by Keith Simmons, "Deflationary Truth and the Liar" *Journal of Philosophical Logic* **28** (1999) pp 455-488.

from which an explicit contradiction is easily derived.

The move to individuate languages more finely according to context does not help the disquotational theory, since the abbreviatory property had by the truth predicate is not context-sensitive.[251] To reject the disquotational schema (or the more general schema P) is to abandon the theory; to accept only the instances which are not truth paradoxical is *ad hoc*, especially given the cases of empirical truth paradox. Since the disquotational theory takes sentences to be truth bearers, it does not help to claim that L does not express a proposition; nor is it plausible whatsoever to claim that L is not well-formed, again, especially in light of empirically paradoxical sentences.

As discussed in section 18.2, truth-telling sentences such as TT or WN foil the disquotational theory, since the occurrence of the truth predicate in these sentences is not eliminable. Instantiating the disquotational schema D for TT and substituting 'TT' for its quotation name yields 'TT is true iff TT is true'. Successive applications of the disquotational theory fail to yield a biconditional whose right side is free of the truth predicate.

Section 18.4: The Minimalist Theory's Response

The minimalist theory holds that truth-bearers are propositions. The move to individuate languages more finely according to context does not help the minimalist theory, since the abbreviatory property it posits is not context-sensitive. Horwich rejects

---

[251] The abbreviatory property is not even sensitive to the sentential context *per se*: the same property is had by the truth predicate in ' "Snow is white" is true' as in 'Everything Tolstoy said is true', though in the former sentence its abbreviatory property is not useful or operative.

the option of claiming that L does not express a proposition as both implausible and

vulnerable to customized Liar Sentences which he believes thwart this move.[252]

Instead, Horwich concedes that not all instances of E* are axioms of the minimal

theory; specifically, any instance of E* which is truth paradoxical is rejected as an axiom.

E* $< <p>$ is true iff $p >$

This has the result that the minimalist theory cannot be finitely stated. While the cost

may appear to be limited to elegance, this move faces at least two objections. The first is

that it is blatantly and severely *ad hoc*. The severity of this move is emphasized by

considering cases of empirical paradox. Recall sentences J and N:

J   Most of Nixon's assertions about Watergate are false.

N   Everything Jones says about Watergate is true.

Because neither {J} nor {N} may consistently be assigned a truth value where

circumstances are unfavorable, the attendant instances of E* cannot be admitted as

axioms of the minimalist theory. Since there are an infinite number of propositions

whose truth evaluations are susceptible to unfavorable empirical circumstances, it

---

[252] Paul Horwich, *Truth*, *op. cit.*, p 41 cites the belief test as evidence for the implausibility of denying that L expresses a proposition. He also gives a brief, general discussion of reformulated Liar Sentences in terms of the conditions, C, necessary and sufficient for a sentence to express a proposition. Horwich suggests that a Liar Sentence may be formulated which meets C by stipulation. This suggestion is misleading, since it cannot be stipulated of a particular sentence that it meets particular but unspecified conditions C. That is, it cannot be stipulated that a certain sentence meets C and is paradoxical; one or the other may be stipulated, but not both. Nonetheless, he is correct to note that a proposition such as that expressed by 'This sentence meets C and expresses a proposition which is not true' appears to supercede this move.

follows that an infinite number of instances of E* are excluded from the minimalist theory.

The second objection is that by giving up any general claims about the nature of truth, MT is too weak to account for important generalizations about truth. For example, though MT contains all non-paradoxical instances of $<$ $<'p$ and $q'>$ is true if and only if p and $q >$, and even the instance $<<$all instances of the schema 'p and q' are true$>$ is true if and only if all instances of the schema 'p and q' are true$>$, $<$ $<$all instances of the schema 'p and q' are true$>$ is true$>$ does not follow from MT, since it is no part of MT that all instances of the schema 'p and q' are true.[253]

As with the redundancy and disquotational theories, truth-telling sentences foil MT, because the occurrence of the truth predicate in sentences such as TT and WN is not eliminable. Instantiating schema E for 'p' = 'TT is true' yields an axiom of the minimal theory the right side from which the truth predicate is not eliminable.

Section 18.5: The Finite Minimal Theory's Response

Because FMT is a universal generalization over all propositions, {L} is as severe a problem for the finite minimal theory as L is for disquotationalism, unless it is claimed that L does not express a proposition. Recall that the finite minimal theory is not committed to any particular claims about the nature of truth; the plausibility of the claim that L does not express a proposition rests on the claim about the nature of truth

---

[253] The objection is raised by Anil Gupta, "A Critique of Deflationism" *Philosophical Topics* **21** (1993) pp 57-81, and by Scott Soames, "The Truth about Deflationism" in Villanueva (1997) pp 1-44 at p 31f.

    Scott Soames also points out that Horwich accepts the Law of Excluded Middle and rejects truth value gaps. This creates further difficulties for minimalism, but since minimalism is not committed to this view, the difficulties are superable. See Scott Soames, "The Truth about Deflationism" in Villanueva (1997) p 32, and Paul Horwich, *Truth*, *op. cit.*, pp 76-84.

supplementing the finite minimal theory. If the finite minimal theory is supplemented

with the claim that the truth predicate does not express a property, then instances of

FMT are tautologous, and the axioms derived from FMT and PE are ill-formed. If the

truth predicate expresses a simple, unanalyzable property, as Sosa suggests, then L

presents the same difficulties to the finite minimal theory as it does to the simple theory

of truth.

Section 19: Responses to Truth Paradox: Formal Theories

Section 19.1: Tarski's Theory of Truth

Tarski's response to the Liar Paradox is well-known. Tarski accepted all of theses 1-5,

and concluded that a language cannot consistently contain its own truth predicate.[254]

Tarski writes:

> *the very possibility of a consistent use of the expression 'true sentence' which is*
> *in harmony with the laws of logic and the spirit of everyday language seems to be*
> *very questionable, and consequently the same doubt attaches to the possibility of*
> *constructing a correct definition of this expression.*[255]

Tarski's response does not even purport to solve the Liar Paradox. Instead,

Tarski constructs a hierarchy of formalized languages for which (the analog of) thesis 4

is false. Tarski begins by constructing a language of level 0, L_0, which contains a finite

number of predicates and names, an infinite number of variables, and rules specifying

---

[254] Alfred Tarski, "The Concept of Truth in Formalized Languages", *op. cit.*, § 1.

[255] *ibid.*, p 165; Tarski's italics.

the sentences of the language, but does not contain a truth predicate.[256] A language of

level 1 is constructed from L_0 by adopting all predicates, names, variables, and rules of

L_0, and adding names of all of the terms and predicates (and thereby the sentences) of L_0,

and a truth predicate applying to sentences of L_0.[257] Languages of higher level are

developed *ad infinitum* by repeating the same constructive technique over the existing

languages, yielding metalanguages with respect to the lower level object languages.

Of course, Tarski's theory is open to many well known objections. Most

importantly, as above, it does not address and therefore does not solve the Liar Paradox

as it occurs in natural languages such as English. Indeed, Tarski's conclusion is that it

cannot be solved. Given his purpose to define a truth predicate for a formalized

language, the well known objections against Tarski's theory of a natural language truth

predicate are misplaced. For example, Tarski writes that a definition of the truth

predicate in a metalanguage, 'Tr', is adequate if all instances of T

T $x \in Tr$ if and only if p

are in the metalanguage. This requirement can be universal for Tarski's system of

formalized languages, since truth predications are permitted only of sentences

belonging to a language of a lower level. Regarding the application of schema T to

natural languages, Tarski writes that "a certain reservation is nonetheless necessary,"[258]

---

[256] See section 10 for an example of a language of level 0.

[257] For Tarski, truth is defined in terms of satisfaction, which is in turn defined in terms of physical and logico-mathematical terms, so that all semantic terms are defined ultimately in terms of non-semantic terms; see section 10.

[258] Alfred Tarski, "The Concept of Truth in Formalized Languages", *op. cit.*, p 157.

since certain instances of schema T "in combination with certain other not less intuitively clear premises, lead to obvious contradictions, for example the *antinomy of the liar*."[259] Thus, to object to Tarski that T or a related schema for natural languages permits the Liar Paradox is ill-founded.

Nevertheless, there are two features of Tarski's construction which warrant objections even granting his purpose. The first is that the truth predicate is assigned a level according to the level of the language it belongs to. As a result, the truth predicate of language L_i applies to a different set of sentences, and so differs from the truth predicate of language L_{i+1}. Thus, in order to formulate a sentence of the formalized language hierarchy predicating truth, the level of the sentences of which truth is predicated must be known. However, in a case such as J or N, it is possible and even likely that the level of the sentences of which truth is predicated is not known. An objection stemming from the same case is that while it is intuitive to regard both Jones and Nixon as successfully predicating truth of the other's uttered sentences, in Tarski's hierarchy, it is impossible for both to be successful, since the level of J needs to be higher than N, and *vice versa*. Since neither sentence can be assigned a level, strictly speaking there is no truth predicate in J or N on Tarski's theory. Yet sentences such as J and N are to be included in Tarski's formalized languages. These objections may be raised even where the empirical circumstances do not lead to paradox, for example, where Jones and Nixon utter, respectively,

> J*   Most of Nixon's assertions about Watergate are true.
>
> N   Everything Jones says about Watergate is true.

---

[259] *ibid*.; Tarski's italics.

Another objection to Tarski's theory is that it cannot accommodate languages of transfinite level. Were he the type to filibuster, Nixon might have uttered instead of N, " ' " 'Snow is white' is true" is true' is true..." Although such utterances are rare, there is a need to accommodate truth predications in a language of transfinite level, which Tarski's theory cannot meet.

Section 19.2: Kripke's Theory of Truth

Two conclusions for a theory of truth follow from the empirical cases, such as the Jones-Nixon case. One is that a theory of truth must allow sentences to risk being paradoxical as a result of unfavorable empirical circumstances. This means that a theory of truth must allow truth-bearers to be neither true nor false; i.e., it must allow truth value gaps. A second conclusion is that the level of the truth predicate cannot be an intrinsic feature of the predicate or the sentence. In the Jones-Nixon case, neither is in an epistemic position to specify the level of the truth predicate required for his utterance.[260] Indeed, one reason for using the truth predicate in a quantified sentence is because the speaker is not in such a position. Further, in order for both utterances to succeed in capturing the other, the truth predicate "should be allowed to seek its own level, high enough to say what it intends to say."[261]

The construction allows predicates to be undefined: each (monadic) predicate is true of the objects in its extension, false of objects in its anti-extension, and undefined

---

[260] Thus, it should not be supposed that there is a referential use of the truth predicate, whereby the level of the truth predicate on an occasion of use is determined by the speaker's intentions.

[261] Saul Kripke, "Outline of a Theory of Truth", *op. cit.*, p 60. Thus, neither should it be supposed that there is an attributive use of the truth predicate, whereby the level of the truth predicate on an occasion of use is determined by the subject of the sentence in which it occurs.

otherwise. Thus, a sentence containing a predicate undefined for the object of which it is predicated is neither true nor false; where a predicate is undefined, there is a truth value gap. A number of schemes are available for handling connectives. Kripke chooses Kleene's strong three-valued logic, which adopts choice negation, and according to which the characteristic disjunctive connective is true if any disjunct is true, false if all disjuncts are false, and undefined otherwise.[262,263]

The central development in Kripke's theory of truth is the construction of a language containing fixed points. First, consider an interpreted first-order language of the classical type having a finite number of predicates completely defined over the domain D. Call this language $\mathcal{L}$. Add to this language a predicate whose interpretation need only be partially defined, $T(x)$; namely, let $T(x)$ have extension S_1, anti-extension S_2, and be undefined for members of $D \notin S_1 \cup S_2$. Call this language $\mathcal{L}(S_1,S_2)$. Let S_1' be the set of all true sentences of $\mathcal{L}(S_1,S_2)$,[264] and S_2' be the set of all false sentences and the non-sentences of D.[265] Although the extension and the anti-extension of $T(x)$ may be chosen

---

[262] Another option is Kleene's weak three-valued logic, also known as the Bochvar three-valued logic. For Bochvar, a sentence is undefined if and only if it is meaningless, or nonsensical. The evaluation scheme adopts choice negation. All logical connectives are undefined where any part is undefined, since the meaningless part renders the whole sentence meaningless. The overwhelming tendency in the literature to this point has been to follow Kripke in adopting Kleene's strong three-valued logic.

[263] This raises the charge that 'undefined' or 'gappy' is a third truth value, which Kripke dismisses in a footnote. This point is discussed below; see footnote 51 and the paragraph it footnotes.

[264] Note that Kripke is not sneaking in a notion of truth, since he asks us only to consider the set of sentences which are (as a matter of fact) true, but does not construct the set based on any presupposed notion of truth. This presupposes only that there *is* a notion of truth, since it presupposes that such a set exists, but does not presuppose a *particular* notion of truth.

[265] Thus D is taxonomized into S_1', S_2', and the truth-valueless sentences.

arbitrarily, if $T(x)$ is to be interpreted in $\mathcal{L}$ as truth, then we must have it that $S_1=S_1'$ and

$S_2=S_2'$. A pair (S_1,S_2) which interprets $T(x)$ this way is called a fixed point.[266]

To construct a fixed point, consider an interpretation of $\mathcal{L}$ which has $T(x)$

completely undefined. As above, simply consider other interpretations of $\mathcal{L}$, that is, of

$\mathcal{L}(S_1,S_2)$ with $T(x)$ at least partially defined, which are no more difficult to construct. For

a given interpretation of the language $\mathcal{L}_\alpha = \mathcal{L}(S_1,S_2)$, consider $\mathcal{L}_{\alpha+1} = (S_1',S_2')$ where S_1'

and S_2' are given as above. This means that there is a hierarchy of (two) languages, with

$T(x)_{\alpha+1}$ the truth predicate for $\mathcal{L}_\alpha$.

In building a hierarchy of languages where $\mathcal{L}_{\alpha+1}$ extends $\mathcal{L}_\alpha$—that is, where

$(S_1,S_2)_{\alpha+1}$ agrees with $(S_1,S_2)_\alpha$ in all cases where $(S_1,S_2)_\alpha$ is defined—the interpretation of

$T(x)$ is extended by assigning truth values to previously undefined cases, though no

sentence changes truth value from $\mathcal{L}_\alpha$ to $\mathcal{L}_{\alpha+1}$. Considering this hierarchy of sets, a level

will eventually be reached where no undecided sentences will be able to be decided by

ascending to the next level.[267] Kripke notes that it can be proved through elementary

logic that this level will be ordinal.[268] Also, since no more sentences are able to be

---

[266] The term 'fixed point' is taken from the function $\Phi((S_1,S_2))$ which has fixed points on all $\Phi((S_1,S_2)) =^{df} (S_1,S_2) =(S_1',S_2')$. Strictly speaking, $\Phi(x)$ takes elements in the hierarchy as its arguments, i.e., languages; but since the only thing changing from level to level in Kripke's construction is the extension and anti-extension of '$T(x)$', (S_1,S_2) is suitable as an argument, and a more salient indication of the significance of fixed points, namely, a language containing its own truth predicate.

[267] For example, the infinitely long sentence " ' "Snow is white" is true'..." will not be decided for any finite α.

[268] Any finitely long, grounded sentence will be added at an ordinal level, because finitely long. No ungrounded or transfinitely long sentence will foil the construction's reaching a level where no new sentences are added to S_1 or S_2.

decided, the extension and anti-extension for $\mathscr{L}_{\alpha+1}$ and $\mathscr{L}_\alpha$ are the same. This means that this level is a fixed point. A fixed point thus represents two things, a language which contains its metalanguage, and a language which contains its own truth predicate. By means of a similar construction, a satisfaction predicate may be added to $\mathscr{L}$.

Transfinite levels may be constructed by taking the union of the extensions and anti-extensions of the previous levels, respectively, to form the extension and anti-extension of the transfinite level. This construction may be repeated at higher transfinite levels.

Because in cases like the Jones-Nixon example the truth paradoxical sentences depend on contingent, empirical circumstances for their paradoxicality, Kripke observes importantly that no formal feature of a sentence is necessary to paradoxicality. Kripke calls these formal features of a sentence its intrinsic features: "The example of [Jones and Nixon] points up an important lesson: it would be fruitless to look for an *intrinsic* criterion that will enable us to sieve out—as meaningless, or ill-formed—those sentences which lead to paradox."[269] The notion of an intrinsic feature of a sentence derives from the notion of an intrinsic fixed point. A fixed point is intrinsic if and only if "it assigns no sentence a truth value conflicting with its truth value in any other fixed point,"[270] that is, a fixed point on any interpretation. An intrinsically true (false, grounded, paradoxical) sentence is a sentence which is true (false, grounded, paradoxical) at every

---

[269] Saul Kripke, "Outline of a Theory of Truth", *op. cit.*, p 55. The italics are Kripke's.

[270] *ibid.*, p 74.

fixed point on any interpretation. Thus, an intrinsically true sentence of $\mathscr{L}$ models a

natural language sentence which is logically necessary in the narrow sense.[271,272]

Because L is truth paradoxical regardless of any empirical circumstances, it is

implausible to hold that extrinsic (i.e., empirical) features of a sentence are necessary to

truth paradox. Furthermore, as Kripke is quick to point out, Gödel-numbering may be

used to generate truth paradox entirely from the syntactic properties of the paradoxical

sentence. A sentence of the form $(x)[P(x) \supset Q(x)]$, where $P(x)$ is a Gödel-number

predicate satisfied only by this sentence, is paradoxical if $Q(x)$ is interpreted as 'is

untrue.' As Kripke notes, by showing that syntax can be interpreted in number theory,

Gödel showed that self-referential sentences "are as incontestably legitimate as

arithmetic itself."[273] While a Gödel number is not an intrinsic feature of a sentence, since

it supervenes on the syntactic properties of a sentence but is not itself a syntactic

property,[274] neither is it extrinsic (i.e., empirical) since it is not given by the empirical

---

[271] A logically necessary sentence, e.g., one of the form ⌜p or ~p⌝, is intrinsically true for any non-paradoxical p.

[272] The formal features which Kripke calls intrinsic are the syntactic and semantic properties of a sentence. In his discussion, Kripke interchanges the notion of a sentence's intrinsic features with the disjunction of its syntactic and semantic features: "The example of [Jones and Nixon] points up an important lesson: it would be fruitless to look for an *intrinsic* criterion that will enable us to sieve out—as meaningless, or ill-formed—those sentences which lead to paradox. ... Yet no syntactic or semantic feature of [the Jones—Nixon example] guarantees that it is unparadoxical." (*ibid.*, p 74; Kripke's italics.) In a formal language, syntax and semantics are formal features of a sentence which jointly determine whether it is intrinsically true. Elsewhere, Kripke writes as though to be intrinsic is to be "given independently of the empirical facts." (*ibid.*, p 75) However, the intrinsic—extrinsic distinction is not jointly exhaustive, as this suggests. Note that the Gödel number of a sentence supervenes on its syntactic properties, but is itself neither a syntactic nor a semantic property of the sentence. Nor is it an extrinsic property of the sentence, i.e., a property given by the empirical facts.

[273] Saul Kripke, "Outline of a Theory of Truth", *op. cit.*, p 56.

[274] The Gödel number of a sentence is a semantic feature of the predicate $P(x)$ where $P(x)$ is so interpreted.

facts. While this has the peculiar result that the distinction between the intrinsic and extrinsic features of a sentence is not jointly exhaustive, the more germane point is that truth paradox can arise independently of the intrinsic features of a sentence, and independently of the extrinsic features of a sentence. Hence, a theory of truth must be able to explain both types of truth paradox; and, insofar as they are two types of truth paradox, a theory of truth should preferably offer a unified explanation of both types.

The technical apparatus Kripke develops affords technical definitions of intuitive concepts. For example, a common reaction to the Liar Sentence and the Truth Teller

TT   TT is true

is that there are no truth conditions for L or TT. This sentiment is captured by Kripke's notion of a sentence's being ungrounded. A sentence is ungrounded if it lacks a truth value in the smallest fixed point of a given interpretation (and is grounded otherwise). Intuitively, the idea is that, the hierarchy having been built up from $S_1 = S_2 = \{ \}$, sentences not having truth conditions will be inserted into neither the extension nor the anti-extension of $\mathcal{L}$, and so are ungrounded. Neither L nor TT has a truth value in the smallest fixed point, and so are ungrounded. Strictly speaking, a sentence is grounded with respect to a given interpretation. The attendant non-relative notion is a sentence's being intrinsically ungrounded. A sentence is intrinsically ungrounded if it lacks a truth value in the smallest fixed point of any interpretation.[275]

---

[275] This section supplies definitions Kripke anticipates: "We could define notions of "intrinsically paradoxical", "intrinsically grounded", etc., but will not do so here." (Saul Kripke, "Outline of a Theory of Truth", *op. cit.*, p 73.)

As Kripke observes, a smallest fixed point can be extended to a fixed point which includes TT in its extension, or in its anti-extension. Given monotonicity, that is, that no sentence changes truth value as the interpretation is extended, TT will have a truth value in all subsequent fixed points. TT is still ungrounded, however, on the definition above.

A sentence that has no truth value in *any* fixed point of an interpretation Kripke terms 'paradoxical.'[276] L cannot have a truth value in any fixed point since any language-metalanguage pair will assign it opposite truth values, or will have it undefined in at least one of the languages. Hence, L is paradoxical, and TT is not.

Any sentence interpreted as expressing empirically unfavorable circumstances is paradoxical in a colloquial, non-technical sense, and is undefined on any such interpretation reaching a fixed point. However, since there will also be interpretations on which these sentences do not reflect empirically unfavorable circumstances, they will *not* be paradoxical on those interpretations. Hence, these sentences are not intrinsically paradoxical. Since L is paradoxical on any interpretation, it is intrinsically paradoxical. Thus, Kripke's theory draws an important distinction between empirically paradoxical sentences and the Liar Sentence.

It should be clear from Kripke's technical developments that paradoxical sentences are not being assigned a third truth value; it is that they are included in neither the extension nor the anti-extension of the truth predicate, because they *cannot be*

---

[276] Sentences which are paradoxical on any interpretation are intrinsically paradoxical; see *supra*.
  Also, note that a sentence which is paradoxical in Kripke's sense has no truth value in any fixed point because assigning it a truth value leads to contradiction. Thus, what Kripke calls a 'paradoxical' sentence is clearly what I am calling a truth paradoxical sentence: a sentence assignment of a truth value to which leads to contradiction.

assigned a truth value in a fixed point. As Kripke writes, "[t]he term 'three-valued logic',

occasionally used here, should not mislead."[277]

There are two important objections which may be raised against Kripke's theory

of truth. Although Kripke's theory does offer as one of its features a technical definition

of a (truth) paradoxical sentence, and even though it does an excellent job of modeling

truth and capturing many intuitions regarding both truth and the Liar Paradox, it may

strike some philosophers as not *explaining why* the Liar sentence paradoxical. There is an

explanation in the terms of the theory as to what it is for L to be paradoxical—namely,

that it cannot be assigned a truth value in any fixed point—but it does not give a

satisfying answer as to *why* it cannot be assigned a truth value.

Second, despite the converging of object language and metalanguage at a fixed

point, Kripke's theory apparently fails to capture all of the ways of ascending from an

object language to a metalanguage. Kripke acknowledges that his claim that 'Liar

sentences are not true' must be regarded as ascending to a metalanguage. Because L is

in neither the extension nor the anti-extension of 'true' in a fixed point but is

formulatable in this language, it forces a renewed ascent, not merely to a language of the

next highest level, but to the next fixed point. The need to ascend to a language of still

higher level can recur likewise at this fixed point. Even if Kripke's theory were

amended so that fixed points were merged into supersets, i.e., superfixed points, the

need to ascend to a language of higher level would resurface, not to the next fixed point,

but to the next superfixed point. This result, which "may be one of the weaknesses of

---

[277] Kripke, *op. cit.*, p 65, footnote 18. It is not unlikely that this charge stems from a scope
confusion. 'L is neither true nor false' is correctly understood as 'it is not the case that L is either
true or false' (wide scope), while it is misunderstood as 'L is neither-true-nor-false' (narrow
scope).

the present theory,"[278] Kripke calls "the ghost of the Tarski hierarchy."[279] If the theory

genuinely has this weakness, it is devastating: it means that the promising features of

Kripke's theory are nonetheless entirely ineffective against truth paradox.[280] Although

philosophers responding to Kripke's theory of truth have uniformly attempted to

circumvent this result, I believe that the ghost may be dispelled by direct confrontation.

My response is given in chapter 3.

Section 19.3: Vagueness Theories of Truth

Several philosophers have observed that since Kripke's formal theory models predicates

which are only partially defined, it can be used to model vague predicates of natural

language. For example, if Andrew is a borderline case of being bald, then

     AB   Andrew is bald

is neither true nor false, since the baldness predicate is undefined for Andrew. If a

formal predicate which is only partially defined models a vague natural language

predicate, then Kripke's theory may be understood as modeling the truth predicate as a

vague predicate. It remains to be argued on what grounds truth is properly understood

to be a vague predicate.

---

[278] Saul Kripke, "Outline of a Theory of Truth", *op. cit.*, p 80.

[279] *ibid*.

[280] Tyler Burge cites Kripke's as an example of a theory "fail[ing] to account for the basic
phenomenon" of the Liar Paradox. (Tyler Burge, "Semantical Paradox" in Martin (1984) pp 83-
117 at p 87.) There are in fact a number of phenomena to the Liar Paradox; though Burge does
not indicate which is the basic one, I believe he is committed to identifying the (intractable) ascent
to a metalanguage.

There are three possibilities.[281] If a concept such as baldness or truth is

metaphysically vague, there is no fact of the matter as to whether Andrew is bald, or

whether AB is true, and it is metaphysically impossible for there to be a fact of the

matter. For example, if Andrew is a borderline case of being bald, and baldness is

metaphysically vague, then AB is neither true nor false, ungrounded, and paradoxical.

If a concept such as baldness or truth is conceptually vague, then there is no fact

of the matter as to whether Andrew is bald, or whether AB is true, but it is

metaphysically possible to make the concept of baldness more precise so that there is a

fact of the matter as to whether Andrew is bald and whether AB is true.

If a concept such as baldness or truth is epistemically vague, then there is a fact

of the matter as to whether Andrew is bald, and whether AB is true, though that fact is

not known. If baldness and truth are epistemically vague, there are no borderline cases

of being bald, Andrew either is bald or he isn't, and AB is either true or false, though it is

not known which. Until it is known, AB is described as being unsettled. Unsettled

sentences such as AB are either true or false; they do not have a third truth value, nor are

they neither true nor false.

The most developed work to date on the theory that truth is a vague predicate

has been done by Vann McGee.[282] McGee thinks that the problem with natural language

truth predicates is that "our linguistic rules overdetermine the applicability of the word

---

[281] These three possibilities are sketched by Andrew P. Mills, "Unsettled Problems with Vague Truth" *Canadian Journal of Philosophy* **25** (1995) pp 103-117.

[282] See Vann McGee "Applying Kripke's Theory of Truth" *The Journal of Philosophy* **86** (1989) pp 530-539 and Vann McGee, *Truth, Vagueness, and Paradox: An Essay on the Logic of Truth* (Indianapolis: Hackett Publishing Company, 1991).

'true' in conflicting ways."[283] He proposes to "adopt a reformed usage of 'true' which treats all the problematic cases as unsettled."[284] There are passages where McGee seems to have a notion of conceptual vagueness in mind for his proposed theory of truth: "if the linguistic conventions that govern the use of the vague term 'bald' leave it unsettled whether or not Harry is bald, the linguistic conventions that govern the use of the term 'true' likewise leave it unsettled whether or not 'Harry is bald' is true."[285] But McGee also writes that if "we attempted to eliminate vagueness as well as contradiction, replacing our traditional way of using 'true' by a reformed usage that was perfectly precise as well as perfectly consistent, the logical structure of our everyday usage of "true" would, I claim, be damaged beyond repair."[286] Here it seems that there are limits to the conceptual changes which may be made, and that without such changes, there cannot be a fact of the matter to be known; in other words, McGee seems to be working with a metaphysically vague notion of truth.

Still elsewhere, McGee seems to have a notion of epistemic vagueness in mind for his proposed theory of truth: "Sentences, I want to propose, fall into three categories: sentences that the rules of our language, together with the empirical facts, determine to be definitely true; sentences that the rules of our language, together with the empirical facts, determine to be definitely not true, and sentences that are left unsettled."[287] This tripartite division is explicitly designed to follow Carnap's empiricism: "Although

---

[283] Vann McGee, *Truth, Vagueness, and Paradox, op. cit.*, p 8.

[284] *ibid*.

[285] *ibid*., pp 216-217.

[286] *ibid*., p 8.

[287] *ibid*., p 6.

Carnap does not give a formal semantics for partially interpreted languages, we may do so. A partial interpretation of a language should partition the sentences into three classes: those which are definitely true, those which are definitely untrue, and those whose truth values remain undetermined."[288]

The ordinary notion of definite truth is an epistemic notion: a proposition is definitely true if and only if it is known to be true.[289] McGee is "proposing a coordinated change in the language we use to talk about semantics, so that as we exchange our ordinary notion of truth for a scientifically reconstructed notion of truth, we simultaneously replace our ordinary notion of definite truth with a scientifically reconstructed notion."[290] On the face of it, McGee's proposal does not attempt to solve truth paradox so much as it attempts to replace the problematic notions with unproblematic notions. Thus, it may be objected against McGee that the Liar Paradox is left unaddressed and unsolved, since introducing new notions does not eliminate the notions of truth already had, nor truth paradox already had.[291]

Further, both scientifically reconstructed notions are truth paradoxical. While McGee aims to follow Carnap, and makes room for the role of linguistic conventions in language use, he concedes that his scientifically reconstructed notion of truth is

---

[288] *ibid.*, p 149. Cf. also, "although Carnap does not talk about either notion of definite truth [i.e., proof-theoretic or model-theoretic], the proof-theoretic notion of definite truth is perhaps closer in spirit to what Carnap was doing." (*ibid.*, p 152) McGee opts for a proof-theoretic notion of truth for this reason and because it is mathematically better behaved.

[289] As McGee notes (p 208), there may be other epistemic elements to the ordinary notion of definite truth. For example, it may be that a proposition is definitely true if and only if it is known and is (believed to be) free of defeaters, where defeaters include propositions about the definitely true proposition being a case of the borderline application of a concept.

[290] *ibid.*, p 206.

[291] While a concept may fall into desuetude, it does not fall into nonexistence. Hence, McGee's strategy cannot solve the Liar Paradox.

metaphysically vague: "[i]f our notion of truth, either our naive notion or our scientifically reconstructed notion, were precise, rules (R1) through (R4) would not be valid. Thus the vagueness of the notion of truth is essential to its unique logical usefulness."[292] Because his scientifically reconstructed notion of truth, truth$_{SR}$, is gappy, it is vulnerable to the Liar Paradox, as formulated in L.

     L$_{SR}$ L$_{SR}$ is not true$_{SR}$

L is true$_{SR}$ if and only if L is not true$_{SR}$. If L$_{SR}$ is gappy, then it is not true$_{SR}$, which leads likewise to contradiction.

The notion of definite truth is constructed with the aim of being free of truth paradox. McGee's strategy is to argue that the reasoning for the definite liar sentence,

     DL   DL is not definitely true

does not lead to paradox. Suppose that DL is definitely true. If DL is definitely true, it is true *a fortiori*. Therefore, what it says is the case; but what it says is that DL is not definitely true, which contradicts the supposition. Suppose instead that DL is not definitely true. Then DL correctly makes this report, and so is true, and definitely true.[293] Finally, suppose that DL is unsettled. If DL is unsettled, then it is not definitely true; but since DL correctly makes this report, it must be true, and definitely true. Thus, DL is

---

[292] *ibid.*, p 218. (R1) is the rule: from '⌜Φ⌝ is true' you may infer ⌜Φ⌝. (R2) is the converse of (R1). (R3) is the rule: from '⌜Φ⌝ is not true' you may infer '⌜¬Φ⌝'. (R4) is the converse of (R3).

[293] It is definitely true according to the definition McGee gives on p. 184.

truth paradoxical. McGee anticipates: "from the hypothesis that a sentence is unsettled, it by no means follows that it has been settled that the sentence is unsettled. Quite the contrary, if a sentence is unsettled, then we are free to adopt linguistic conventions that settle it."[294] This claim is severally confused. The claim that it is not settled that DL is unsettled is properly drawn on a conception of epistemic vagueness; yet, McGee's explanation plainly draws on a notion of conceptual vagueness. However, both notions are misplaced. As McGee recognizes, it *must* be settled that DL is unsettled, on pain of damaging our logical system beyond repair.[295] Further, because contradiction arises not just from the biconditional 'DL is definitely true iff DL is not definitely true' but also from 'DL is true iff DL is not true', the issue of whether DL is definitely true, definitely not true, or unsettled is superfluous.

In general, appealing to an auxiliary notion of truth such as definite truth falls prey to truth paradox just as McGee's notion of definite truth. Also, there is a general problem to distinguish the auxiliary notion of truth from truth. McGee and Bradley face this problem equally.[296]

Finally, the claim that truth is a vague predicate is truth paradoxical, regardless of which of the three varieties of vagueness it is held to be. If truth is epistemically vague, then there is a fact of the matter as to L's truth or falsity, and L is truth paradoxical by reasoning which is familiar. Further, the cases of empirical paradox

---

[294] *ibid.*, p 7. Note that contradiction results not only from the biconditional 'DL is definitely true iff DL is not definitely true' but also from 'DL is true iff DL is not true'. Contradiction is multiplied, not avoided.

[295] One weakness in McGee's construction of definite truth is that it is defined extensionally; see *ibid.*, p 184. While this way of defining definite truth makes the construction very easy, the notion of definite truth which the formal notion of definite truth is modeling is left.....unsettled.

[296] Scott Soames holds the same view, and likewise vacillates between the three notions of vagueness; see *Understanding Truth, op. cit.*, chapter 6.

show that truth cannot be epistemically vague. If truth is conceptually vague, then the concept of truth may be made more precise. Making the concept more precise yields a concept which either is not vague or is epistemically vague. Each case leads to truth paradox. If truth is metaphysically vague, familiar reasoning about L leads to contradiction.

There is a tension over holding that truth is metaphysically vague, since the empirical cases of truth paradox seem to show that certain propositions, e.g., {J} and {N}, are neither true nor false, which means that the truth predicate in English is metaphysically vague, while the claim that truth is metaphysically vague does not prevent truth paradox resulting from {L}. One way to relieve this tension is to argue that a truth paradoxical sentence does not express a proposition. Note that if propositions are truth bearers, and truth paradoxical sentences do not express propositions, then the English truth predicate is not vague. This discussion is pursued in chapter 3.

Section 19.4: The Revision Theory of Truth

The main idea behind the revision theory of truth is that truth is a circular concept. Anil Gupta and Nuel Belnap[297] argue that the Tarski biconditionals jointly define truth; however, since they lead to contradiction together with theses 1-4, Gupta and Belnap suggest that 'iff' be read as a definitional equivalence rather than a material equivalence. Thus, they reject thesis 5 and replace it with thesis 5_R:

> 5_R. English permits any instance of the schema P_{df}: x is true $=^{df} p$
>   (where 'x' denotes a sentence and 'p' is the sentence 'x' denotes)

---

[297] Anil Gupta and Nuel Belnap, *The Revision Theory of Truth* (Cambridge, Massachusetts: The MIT Press, 1993).

The connective in schema P_{df} is definitional equivalence: the definiens fixes the intension of the definiendum. Since the revision theory grants all instances of schema P_{df}, and there are sentences 'p' denoted by 'x' which contain the truth predicate, it follows from thesis 5_R that truth is circular. Gupta and Belnap explicitly declare that their project "attempt[s] to solve the *descriptive* problem posed by the paradoxes — the problem of giving an account of truth and paradox that is adequate to the language in actual use."[298] Thus, 5_R must be read as a descriptive claim.

According to the revision theory, a definition is a rule giving the extension of the predicate (definiendum) in all possible situations. Where the predicate is not circular, the extensions of all predicates in the definiens are known. However, where the predicate is circular, the extension of the definiens is not known, since it mentions the definiendum, whose extension is not known. To overcome the circularity, the authors develop a calculus whereon an initial assumption is made about the extension of the circular predicate in the definiens, so that the extension of the definiendum may be calculated. This process is then iterated, resulting in successively revised extensions of the predicate. Hence, a definition of a circular predicate is a rule of revision. For some circular predicates, the iterations converge on a stable extension; for some circular predicates, each initial assumption leads to a different extension, each of which is stable; and for some circular predicates, the extension remains unstable regardless of the number of iterations or initial assumptions. It should also be noted that repeated iterations in calculating the extension of a predicate do not affect the language level of

---

[298] *ibid*., p 11; authors' italics. Cf. also p 97: "Our concern is exclusively with the *descriptive* problem posed by the paradoxes."

the predicate; in other words, the revision theory does not adopt the notion of language level for circular predicates.

According to the revision theory, truth is defined (i.e., has its extension fixed) by the disjunction of all of the right sides of schema P_{df}. Because the definiens contains the truth predicate, the definition of the truth predicate is circular, which means that its extension is determined by a rule of revision. Gupta and Belnap argue that because every iteration of the rule of revision takes place at a higher level, contradiction may not be derived from the biconditional 'L is true iff L is not true', since the truth predicate on the left side has a different level and extension than the truth predicate on the right side.[299] They claim that this solves the Liar Paradox; however, this solution is inadequate. Because the calculus operates within a single language level, the successive revision stages are an artifact of the calculus which do not model a semantic feature of natural language predicates. Although the stage of revision may mark a different extension within the calculus, by hypothesis, the extension being calculated is for the *same* predicate. Therefore, familiar reasoning leads to paradox from the easily derived biconditional 'L is true iff L is not true', from which the revision theory has no means for escape.[300]

This objection may also be cast as a dilemma for the revision theory. If the authors maintain their claim that the revision theory is descriptive of ordinary language use, then the calculus it adopts renders the revision theory wildly implausible. If the

---

[299] *ibid.*, p 254, fn 3.

[300] To be fair, it should be noted that Gupta and Belnap also claim that the biconditional is false, since they reject the instances of schema P. However, because it is not argued for, and, moreover, because it is dubious that a project with a descriptive aim can provide grounds for such an argument, this move is *ad hoc*.

aim of the revision theory is instead prescriptive, then it simply ignores the Liar Paradox as it occurs in natural languages such as English. In either case the revision theory faces a gross failure.

Gupta and Belnap draw a tripartite metalinguistic distinction among sentences which are stably true, stably false, and unstable. Paradox revisits the revision theory in the form of metalinguistic sentences such as L_U:[301]

L_U L_U is either unstable or false

If it is initially assumed that L_U is false, then L_U is truth-functionally true, and is in the extension of the truth predicate after the first iteration. On the next iteration of calculating the extension of the truth predicate, it must be that one of the disjuncts is true; but since L_U is not false, it must be that L_U is unstable, which dictates that L_U is false, and that it be taken out of the extension of the truth predicate. The succession of iterations has L_U being added and removed from the extension of the truth predicate, with the result that L_U is unstable. Hence, the extension of 'unstable' is unstable, which means that their metalinguistic notion for describing truth paradox is problematic. In order to resolve this problem, the authors adopt an infinite hierarchy of metalinguistic notions, which they eschew for truth. Although this move may be justified on the grounds that these metalinguistic notions are not ordinary while truth is, it is

---

[301] This is one of several objections explicitly addressed by Gupta and Belnap in chapter 7. The authors draw on their solution to the Liar Paradox to argue that L_U does not lead to contradiction (though they work with a different example). I argue here that they are not successful in blocking the customized form of truth paradox.

nevertheless a disappointing feature of the revision theory that it can introduce these

notions only by a drastic move.[302]

Three final points in closing. First, it should be noted that the philosophical

motivation underlying the revision theory is question-begging: the authors proffer thesis

5_R on the grounds that truth is circular, yet the only reason given for holding that truth is

circular is thesis 5_R. Second, it is implausible to claim that thesis 5_R, which includes the

alternative reading of the T-biconditionals, is part of our ordinary notion of truth. This

flies in the face of the explicitly descriptive aim of the theory. Third, even if it is granted

that the truth predicate has a circular intension, it is a *non sequitur* to conclude that the

concept of truth is circular. The intension of a predicate is a logico-semantic feature,

whereas the concept is what the predicate semantically expresses, if anything. The

suggestion that a concept is circular is nonsensical, strictly speaking. Although Gupta

and Belnap have shown how to construct a circular intension for formal predicates, it is

questionable whether a predicate expressing a concept can have a circular intension.

Therefore, while it is a very interesting formal development, its philosophical

significance is limited.[303]

---

[302] Gupta and Belnap discuss (but do not so much as deflect) this objection on pp 256-258. As they acknowledge, there is no barrier in principle to these metalinguistic notions becoming part of ordinary language use, which would render the distinction untenable. This objection is also pursued by Robert Koons, "Review of *The Revision Theory of Truth*" *Notre Dame Journal of Formal Logic* **35** (1994) pp 606-631.

[303] The objections discussed here are limited to those concerning the Liar Paradox. The authors address several objections in chapter 7. Vann McGee and Robert Koons raise a number of objections respectively in "Revision" in Villanueva (1997) pp 387-406 and "Review of *The Revision Theory of Truth*" *Notre Dame Journal of Formal Logic* **35** (1994) pp 606-631. The revision theory of truth is also the topic of a collection of essays, *Circularity, Definition and Truth*, André Chapuis and Anil Gupta, editors (New Delhi: Indian Council of Philosophical Research, 2000).

Also, it should be noted that the revision theory may be adopted to model an inconsistent predicate, with very minor modifications to its calculus for circular predicates. Although Gupta and Belnap reject the view that the truth predicate is inconsistent (see *The Revision Theory of Truth*,

Section 20: Context Theories of Truth and Their Responses

A number of philosophers have developed theories according to which truth is a context-sensitive predicate whose extension shifts in response to shifts in context during the reasoning which leads to truth paradox. This view originates with a sketch by Charles Parsons; Tyler Burge, Jon Barwise and John Etchemendy, and Keith Simmons have each developed a version of the context theory.[304] All of these philosophers are explicitly guided by what Anil Gupta calls the Chrysippus intuition.[305] Suppose that Zeno says at time t:

        Z   What Zeno says at time t is not true

Suppose also that Chrysippus overhears Zeno's remark, reflects that it is paradoxical, and hence not true. Chrysippus then (later than t) utters:

        C   What Zeno says at time t is not true

---

op. cit., chapter 1, section 3), there are some philosophers who embrace it. Dialetheists are one strain; please see footnote 9 for references. Sarah Stebbins follows Charles Chihara in acquiescing to inconsistency; see Sarah Stebbins, "A Minimal Theory of Truth" *Philosophical Studies* **66** (1992) pp 109-137, and Charles Chihara, "The Semantic Paradoxes: A Diagnostic Investigation" *The Philosophical Review* **88** (1979) pp 590-618.

[304] Charles Parsons, "The Liar Paradox" *Journal of Philosophical Logic* **3** (1974) pp 381-412, reprinted in Martin (1984) pp 9-45; Tyler Burge, "Semantical Paradox" *The Journal of Philosophy* **76** (1979) pp 169-198, reprinted in Martin (1984) pp 83-117; Jon Barwise and John Etchemendy, *The Liar: An Essay on Truth and Circularity* (New York: Oxford University Press, 1987); Keith Simmons, *Universality and the Liar* (Cambridge: Cambridge University Press, 1993).

[305] Anil Gupta, "Truth" in *The Blackwell Guide to Philosophical Logic*, Lou Goble, editor (Malden, Massachusetts: Blackwell, 2001) pp 90-114. Gupta observes that the Chrysippus intuition "is shared, as far as I know, by all advocates of contextual theories." (p 110) See Charles Parsons, "The Liar Paradox", *op. cit.*, § V; Tyler Burge, "Semantical Paradox", *op. cit.*, pp 90, 92; Jon Barwise and John Etchemendy, *The Liar: An Essay on Truth and Circularity*, *op. cit.*, pp 101, 137-138; Keith Simmons, *Universality and the Liar*, *op. cit.*, § 6.1.

According to the Chrysippus intuition, Chrysippus is correct in his conclusion; i.e., C is true.[306] The argument is more perspicuous if given in terms of L: 'L is not true'. First, Chrysippus realizes that L is paradoxical. Second, he concludes that L is not true, since L is paradoxical, and reports this by uttering 'L is not true'. Third, Chrysippus notices on a final reflection that since L says this of itself, it is true, and reports this by uttering R:

R   L is true

Likewise, we may reflect finally that C is true, and report this by uttering R*: 'C is true'. Following Simmons, the argument for the context-sensitivity of the truth predicate proceeds: "The occurrence of 'true' in (L) does not have (L) in its extension because (L) is not true in its context of utterance. But the occurrence of 'true' in our final evaluation (R) *does* include (L) in its extension, since (L) is true in the context of (R). So, according to our analysis of Strengthened Liar reasoning, there is a shift in the extension of 'true' according to context: 'true' is a context-sensitive term."[307]

Notice that a context theorist must argue for three distinct claims: 1. that truth is a context-sensitive predicate; 2. that the context shifts during truth paradoxical reasoning; 3. that the truth predicate is sensitive to the context shifts during truth paradoxical reasoning. The third claim is required in addition to the first two, because it

---

[306] Ironically, Chrysippus viewed such vacillations in judgment as occur in truth paradox as an oscillation in the mind too rapid to be perceived; thus, his view is in fact much closer to Gupta's revision theory than the context theory. (Although according to I. M. Bocheński, Chrysippus's view is that the Liar sentence is meaningless. See I. M. Bocheński, *A History of Formal Logic* (Notre Dame, Indiana: University of Notre Dame Press, 1961) p 133; cited by Simmons, *op. cit.*, p 83.)

[307] Keith Simmons, *Universality and the Liar*, *op. cit.*, p 106; italics are Simmons's.

may be that the truth predicate is sensitive to certain elements of the context, but not the elements which shift during truth paradoxical reasoning. Various versions of the context theory stem from different accounts of the truth predicate's sensitivity to contextual elements. Thus, Parsons cites the expanding universe of discourse, Burge cites changing pragmatic implicatures, Barwise and Etchemendy cite shifting situations which change the proposition expressed, and Simmons cites changes in available information at each stage in the truth paradoxical reasoning.[308]

If contexts are distinguished finely enough, claim 2 is uncontroversial. For example, Z, C, and R* are uttered at different times, and by different speakers, which may be sufficient grounds for distinguishing contexts. However, neither is sufficient to shift the extension of the truth predicate. Note that in the example of the Chrysippus intuition for the Liar sentence, all three of L, L, and R are uttered by a single speaker. Also, note that an ambidextrous writer may utter any two of these simultaneously, or perhaps even all three. A disjunctive sufficient condition for a change in context is far too weak, while a conjunctive sufficient condition for a change in context is too strong to capture the Chrysippus intuition for L. Further, if changes in time are sufficient to change the context to which the truth predicate is sensitive, then no conclusion involving truth can be drawn validly, since it will be drawn at a time later than the premises.[309]

---

[308] The notion of a situation used by Barwise and Etchemendy is close kin to the notion of a context. Simmons cites six different elements of context which vary during truth paradoxical reasoning. (*ibid.*, pp 101-104) However, the element most germane to his account is the information available.

[309] These considerations yield arguments against the claim that a change in place is sufficient for a change in context, *mutatis mutandis*.

Contexts may also be distinguished on the basis of the speaker's intentions.[310] For example, Chrysippus's intentions in uttering C may give rise to a referential use of the truth predicate, to coordinate with a referential use of the noun phrase 'what Zeno says at time t'; or, his intentions may give rise to an attribute use, to coordinate with an attributive use of the noun phrase. However, beyond the need for arguments establishing the significance of speaker intentions to the semantics of the truth predicate, neither use can account for the semantics of the truth predicate in cases like the Jones-Nixon example, which points up the inadequacy of this condition for context-sensitivity.[311]

The most plausible feature to appeal to seems to be changes in available information.[312] The idea is that the information that what Zeno says at time t is not true is not available in the context in which Z occurs, but is available in the context in which C is uttered. Similarly, the information that L is true is not available in the context of L, but it is available in the context of R; as Simmons argues, "the occurrence of 'true' in our final evaluation (R) *does* include (L) in its extension, since (L) is true in the context of (R)."[313] However, it is simply erroneous to conclude that Z may be finally evaluated as true, since Z is true if and only if it is not true.

The error here may be exposed by pointing out a sophism in the context theory's argument from the Chrysippus intuition. A context theorist is likely to respond that this

---

[310] Robert C. Koons develops Burge's view, emphasizing changes in speaker intentions, in *Paradoxes of Belief and Strategic Rationality* (Cambridge: Cambridge University Press, 1992).

[311] Cf. footnotes 34 & 35. It is possible to develop alternative individuation conditions for a context based on speaker intentions. An argument below shows that in general this approach is flawed.

[312] I believe this is the same idea Parsons describes as changes in the universe of discourse.

[313] Keith Simmons, *Universality and the Liar*, *op. cit.*, p 106; italics are Simmons's.

accusation of error begs the question against the context theory. Specifically, the context

theorist may reply that while the biconditional 'Z is true iff Z is not true' does lead to

paradox, if truth is a context-sensitive predicate, then there is no paradox. Consider the

conditional claim made by the context theorist:

CT   if truth is a context-sensitive predicate, then there is no paradox

CT may be granted for the sake of this discussion. Notice that in order to show that

there is no paradox, the context theorist must establish the antecedent of CT, which is

claim 1, above. But the context theorist argues from the Chrysippus intuition, using CT,

in support of claim 1. Therefore, the context theorist commits a fallacy by giving a

circular argument for claim 1.

One apparent advantage of the context theory is that it is better able to handle

truth paradox from other Liar sentences, since there is likely a change in context to

provide an escape from paradox. Despite explicit awareness of the algorithm for

customized Liar sentences,[314] the context theory is beleaguered by its own customized

form. No version of the context theory can dissolve the paradox resulting from

L$_{CT}$ L$_{CT}$ is not true in any context

A few context theorists have anticipated this move, and claimed that the universal

quantifier in L$_{CT}$ is itself context-sensitive; specifically, it is restricted to contexts other

---

[314] Burge discusses customized truth paradoxical sentences in "Semantical Paradox", *op. cit.*, p 89.

than the one in which L_{CT} is uttered. Beyond any *ad hoc*-ity, this move does little to dissolve truth paradox,[315] since it results instead from

L_{CT}* L_{CT}* is not true in any context in the range of its quantifier

Avoiding customized paradox leads Burge to posit a schematic use of the truth predicate in addition to the context-sensitive use.[316] Faced with a customized Liar sentence, Simmons writes, "The Superliar indicates in a specially dramatic way that, as ordinary speakers, we can evaluate the sentences of our language in a context-independent way."[317] Thus, Simmons undermines his own view that "[a]ccording to the singularity proposal, there is in English a single, context-sensitive truth predicate."[318] Positing a second use of the truth predicate flies in the face of the widely held intuition about the English truth predicate Simmons mentions. Obviously, it abandons claim 1 of the context theory. Further, since it is made in response to a customized Liar sentence, it is plainly *ad hoc*.

Therefore, the principal argument given in support of the context theory is a sophism, because it is circular, which leaves its first claim unsupported. There is no

---

[315] This move is discussed by Cory Juhl, "A context-sensitive liar" *Analysis* **57** (1997) pp 202-204.

[316] See the postscript in Tyler Burge, "Semantical Paradox", *op. cit.* Burge distinguishes between a schematic and an indexical use of a predicate just five paragraphs after criticizing moves which "ignore specific, widely shared judgments" and "theories whose distinctions are *ad hoc*." (p 114) Burge's distinction flies in the face of the specific, widely shared notion that there is a single truth predicate in English, with a single standard use. (The qualifier 'standard' excludes idiomatic uses, such as in 'a true blue friend'.) Without independent motivation, Burge's distinction is *ad hoc* as well.

[317] Keith Simmons, *Universality and the Liar*, *op. cit.*, p 173.

[318] *ibid*., p x. The contradiction is first noticed by Patrick Grim, "Review of *Universality and the Liar: An Essay on Truth and the Diagonal Argument*" *The Philosophical Review* **104** (1995) pp 467-469.

plausible basis for claiming that the truth predicate is sensitive to elements of context

which change during paradoxical reasoning. Also, customized Liar sentences

undermine the success of this move, regardless of the support for it.[319]

Section 21: Conclusions about Truth Paradox

In section 16 it was argued that three moves are available to solve truth paradox. The

move to reject thesis 4 on the grounds that it needs to be reformulated to acknowledge

explicitly a shift in context between the evaluated sentence and the report of its truth

value was examined in section 20. There it is argued that there is no plausible basis for

claiming that the truth predicate is sensitive to elements of context which change during

paradoxical reasoning, that the argument motivating context theories are circular, and

that context theories are vulnerable to truth paradox from customized Liar sentences,

despite promise otherwise.

The claim that a truth paradoxical sentence does not express a proposition faces

the objection of *ad hoc*-ity unless a semantic theory for the truth predicate independently

---

[319] Haim Gaifman is frequently included among philosophers offering a context-sensitive theory of truth in his "Pointers to Truth" *The Journal of Philosophy* **89** (1992) pp 223-261. Although he does draw on the Chrysippus intuition (cf. pp 246-247), the most central feature of his theory is supervaluation. Gaifman introduces the notion of pointers to truth in order to construct a three-valued supervaluation scheme. Generally, a pointer is any object which points to another object—a very broad notion! For his purposes, pointers are sentence tokens which point to their types. Gaifman stipulates that the extension of a predicate cannot include its own pointer, but truth is not a context-sensitive predicate on his view.

For Gaifman, "[t]he third value, *GAP*, signifies more than mere absence of a standard value. It signifies *recognized failure*." (p 225; Gaifman's italics) Thus, "*GAP* is...an active value, not a mere 'undefined'." (p 226) Because *GAP* signifies a recognized failure, Gaifman adopts the principles: $\ulcorner$S is false iff ¬S is true$\urcorner$ and $\ulcorner$S is true iff ¬S is false$\urcorner$. As a result, the formula $\ulcorner$¬Tr(p) $\wedge$ ¬Fa(p)$\urcorner$ follows from the fact that p is *GAP*, yet it is a problem for Gaifman's view, since this formula is logically equivalent to $\ulcorner$Fa(p) $\wedge$ Tr(p)$\urcorner$ by these two principles. Thus, any sentence which is *GAP* is not only *GAP* but also true and false as well. Retracting the claim that *GAP* is an active truth value collapses his view to Bas van Fraassen's supervaluation. See Bas van Fraassen, "Presupposition, Implication, and Self-Reference" *The Journal of Philosophy* **65** (1968) pp 136-152.

motivating this claim is given. Such a semantics is offered in chapter 3. The viability of

schema P is re-examined in light of this theory, as well as the claim that truth is a

metaphysically vague predicate. To be persuasive, the semantics for the truth predicate

needs to be given a formal model. By enforcing the distinction between truth and truth

value, it will be argued that Kripke's fixed point theory is a suitable model for the truth

predicate, and that the ghost of the Tarski hierarchy is phantom.

CHAPTER 3: A CORRESPONDENCE THEORY OF TRUTH

Section 22: The Semantics of the Truth Predicate

Section 22.1: Simple versus Complex Correspondence Theory of Truth

In section 3 it was argued that the correspondence relation may plausibly be held to be a

semantic representation relation between a proposition and a fact. If facts are held to be

either simple or unified, the representation relation is simple, whereas if facts are held to

be complex entities, the representation relation is complex. Both versions of the

correspondence theory are *prima facie* viable, since they are not vitiated by traditional

objections to the correspondence theory.

　　　　Bertrand Russell is the original proponent of the complex correspondence theory,

standardly called the multiple relation theory. Russell explains,

> When we judge that Charles I died on the scaffold, we have before us,
> not one object, but several objects, namely, Charles I and dying and the
> scaffold. Similarly, when we judge that Charles I died in his bed, we
> have before us the objects Charles I, dying, and his bed.... Thus in this
> view judgment is a relation of the mind to several other terms: when
> these other terms have *inter se* a 'corresponding' relation, the judgment
> is true; when not, it is false.[320]

On Russell's multiple relation theory, an object of judgment is either relational or non-

relational. In this example, there are three objects of judgment: there is one relational

object, is dying (on), and there are two non-relational objects, Charles I and the scaffold.

---

[320] Bertrand Russell, "On the Nature of Truth and Falsehood", *op. cit.*, p 153. Strictly speaking, the
multiple relation view is primarily a theory of judgment, though as the passage shows, it is
developed together with a correspondence theory of truth. See also Bertrand Russell, *The
Problems of Philosophy*, *op. cit.*, pp 195-202.

The object terms "have *inter se* a 'corresponding' relation" if (and only if) the non-relational objects are related according to the relational object among them; and if so, the judgment is true. Here, the judgment that Charles I died on the scaffold is true if (and only if) Charles I and the scaffold are related by dying (on). Whether this judgment is made truly or falsely, the judger is related to all three objects of judgment. If, and only if, the judgment is made falsely, the relational object does not relate the non-relational objects. Generalizing, on the multiple relation theory, a proposition is true if and only if the denotations of its denoting terms are related by the relation denoted by its relational term.

Call this biconditional "the complex correspondence thesis". As a theory of judgment, it is appropriate to think of the multiple relation theory as complemented by the complex correspondence thesis. As developed by Russell, the complex correspondence thesis is a proper part of the multiple relation theory. Russell realized that asymmetric relations pose a problem for the complex correspondence thesis. For example, according to the complex correspondence thesis, the proposition that Desdemona loves Cassio is true if and only if Desdemona and Cassio are related by the relation of loving. Therefore, this proposition is true according to the complex correspondence thesis if Cassio loves Desdemona unrequitedly, since the two non-relational objects are related by loving, yet obviously the proposition is false if Cassio's love is unrequited. To quell this problem, Russell adds that "the relation as it enters into the judgment must have a 'sense', and in the corresponding complex it must have the same 'sense'."[321] However, this is merely to recognize the problem, not to solve it. The

---

[321] Bertrand Russell, "On the Nature of Truth and Falsehood", *op. cit.*, p 158.

problem is that truth is sensitive to the order of the propositional constituents, while the complex correspondence theory is not.

It is possible and tempting to appeal to sentential syntax in order to give a sense to the objects of judgment. Let 'd' name Desdemona, 'c' Cassio, and let 'L' express the relation of loving. Then the syntax may specify any order of the terms 'd', 'c', and 'L' as constituting a well-formed sentence which expresses the same proposition as the English sentence 'Desdemona loves Cassio.' That is, any of 'dLc', 'dcL', 'Ldc', 'cdL', 'cLd', and 'Lcd' may be syntactically proper expressions which express the proposition that Desdemona loves Cassio. Since proper syntax of a language is arranged independent of the relations holding between objects of judgment, syntax does not provide a general basis for a theory of judgment or truth.

Russell's appeal to a sense among the propositional constituents is a move to unify the object of judgment. For example, if the object of judgment is taken to be the unified object Desdemona's loving Cassio, the asymmetry problem does not arise. In order for the simple correspondence theory to be plausible, the unified object must be appropriately related to the proposition. However, it does not face the asymmetry problem. Since the simple correspondence theory does not face the asymmetry problem, it is clear that it is preferable to the complex correspondence theory.

Russell was led to the multiple relation theory over a dilemma posed by the notion of falsity. If correspondence between a proposition and a fact is a simple relation, it may seem that either a false proposition does represent something, and so does not differ from true propositions, or that a false proposition does not represent anything, and so is meaningless.   In section 3.2, it is argued that the second horn of the dilemma is

based on a confusion, since propositions are semantic meanings. In section 22.3, truth

and falsity are defined such that both worries are assuaged.

Section 22.2: Propositions, States of Affairs, and Facts

Associated with a proposition is a condition necessary and sufficient for that proposition

to be true, i.e., its truth condition. Consider the sentence LI: 'I bought my table lamp in

Iowa.' Let '<LI>' designate the proposition expressed by LI. Then the truth condition

for <LI> is my having bought my table lamp in Iowa.

To say that a proposition has a certain truth condition is to say that there is a

certain *condition* of the world wherein that proposition is true; in other words, it is to say

that things need to be a certain way for that proposition to be true. A truth condition is a

condition of the world, or, a way for things to be; or, synonymously, a state of affairs. In

what follows, I shall largely use the term 'state of affairs'.

There are two reasons why it cannot be that the truth condition for a proposition

is itself a proposition. First, if it were, a truth condition would itself have as a truth

condition another proposition, which leads to an infinite regress. The infinite regress is

vicious, since it prevents any truth condition from being met, hence it prevents any

proposition from being true.

A more significant problem is that if a truth condition is a proposition, a truth

condition plays no role in the truth of a proposition. For example, my having bought

my table lamp in Iowa is not a proposition, but a condition of the world. It is this

condition which makes <LI> true, if it is. A proposition is not the right sort of thing to make <LI> true.[322]

Because a way for things to be is a *way*, a state of affairs is an abstract object. For David Armstrong, "[s]tates of affairs have as constituents particulars, properties and relations."[323] Thus, for Armstrong, a state of affairs need not be an abstract object. However, Armstrong forthrightly acknowledges that he uses the term 'state of affairs' where it would follow the recent philosophical tradition to use 'fact'.[324]

Traditionally, states of affairs differ from facts in that only some states of affairs are facts: "Some states of affairs *obtain*; such states of affairs are *facts*."[325] Obtaining is normally taken as an undefined, primitive notion. A fact is a mereological part of the actual world.[326] The notion of actuality here is the indexical notion of actuality, which always picks out a world relative to the context of utterance, rather than the demonstrative notion of actuality, which always picks out *this* world, the "actually

---

[322] A proposition is the right sort of thing to make <*x*> true where <*x*> is about propositions.

[323] D. M. Armstrong, "A World of States of Affairs" in *Philosophical Perspectives* **7**: *Language and Logic*, James E. Tomberlin, editor (Atascadero, California: Ridgeview Publishing Company, 1993) pp 429-440, at p 430. This paper is a "trailer," as Armstrong calls it, for his book, *A World of States of Affairs* (Cambridge: Cambridge University Press, 1997).

[324] "The hypothesis of this work is that the world, all that there is, is a world of states of affairs. Others, Wittgenstein in particular, have said that the world is a world of facts and not a world of things. These theses are substantially the same, though differently expressed." (D. M. Armstrong, *A World of States of Affairs*, *op. cit.*, p 1.) See also "A World of States of Affairs", *op. cit.*, § 1, where Armstrong defends his choice of terms.

[325] Barry Taylor, "States of Affairs" in *Truth and Meaning: Essays in Semantics*, Gareth Evans and John McDowell, editors (Oxford: Clarendon Press, 1976) pp 263-284, at p 263.

[326] Characterizing facts in terms of mereology may raise worries that problems known to trouble mereological systems will trouble this notion of a fact as well. These worries are addressed in section 23.2.

actual" world.[327] Let superscripts indicate which notion of actuality is being employed.

Then, 'the actual^d world' is a rigid designator which designates *this* world, while 'the

actual^i world' is a non-rigid designator which designates a world relative to the context

of utterance.[328]

The notion of actuality^i is taken as primitive. The notion of obtaining may then

be defined in terms of actuality^i, as follows: a state of affairs A obtains (with respect to a

world, w) if and only if A is actual^i_w. Thus, a state of affairs obtains relative to, or in, a

world. This is an elaboration of common philosophical parlance, where to say that a

state of affairs obtains is normally to say that that state of affairs is actual^d, though there

are occasions where philosophers speak of a state of affairs obtaining in a merely

possible world. For example, it makes sense to suppose that a certain state of affairs had

obtained, e.g., Jimi Hendrix's being alive in 2002.

Because a state of affairs is a way for things to be, and a possible world is a total

maximal way for things to be, a state of affairs is a mereological part of a possible

world.[329] If a state of affairs obtains, it is a fact; if a possible world obtains, then that

world is the actual^i world.

---

[327] David Lewis first distinguished these two notions of actuality in "Anselm and Actuality" *Nous* **4** (1970) pp 175-188. This article is reprinted in David Lewis, *Philosophical Papers: Volume I* (New York: Oxford University Press, 1983) pp 10-20 together with Postscripts (pp 21-25) where he addresses this topic further. The names given to them here are mine, not Lewis's, but I believe them to be clear and helpful. The quotation marks around 'actually actual' indicate the insistence required to demonstrate an abstract object such as the actual world.

[328] The semantics of actuality^i is an involved but not intractable problem in the philosophy of language which I cannot pursue here.

[329] A possible world is *maximal* because its states of affairs include every object which exists in that world. This is sometimes put as follows: a possible world answers every question about what is. A possible world is *total* because it includes states of affairs throughout all of history (past, present, and future).

Notice that this notion of a fact is relativised to a world.[330] Although this may

not be the standard notion of a fact, it is a sensible notion, since in normal contexts, facts

are relativised to the actual[d] world, which is the standard notion of a fact. Therefore,

this notion of a fact expands the standard notion of a fact.

Notice also that on this notion, a fact is a unified entity which has parts, as

contrasted to a simple entity. This raises the question of what unifies the parts of a fact;

this question is addressed in section 22.4.

The relation between a proposition and its state of affairs (truth condition) must

also be defined. As used by me, LI expresses a proposition which is singular with

respect to me and to Iowa, and descriptive with respect to my table lamp. Notice that

<LI> is true if and only if I bought *my table lamp* in Iowa. That is, the truth condition for

<LI> involves the denotations of any denoting terms in LI.[331] Although a sentence does

not denote its truth condition in the usual sense of 'denote', call the relation between a

sentence, S, and the truth condition of the proposition S expresses, A_S, denotation. <S>

and A_S are related semantically, in the (extended) sense that their constituents are

semantic contents of the same expressions. Call the semantic relation between a

proposition and its truth condition advertance; i.e., say that <S> adverts A_S.

Both <S> and A_S are abstract objects, though they may have concrete parts. A_S

has a concrete part where S has a denoting term, whether the term contributes

---

[330] Also, recall that obtaining is defined in terms of actuality[i].

[331] As another example, notice that {Ben Franklin founded the University of Pennsylvania} has the same truth conditions as the distinct proposition {The inventor of bifocals founded the University of Pennsylvania}, at least in every world where 'Ben Franklin' and 'the inventor of bifocals' *co-denote*. If a denoting term has no denotation, then the proposition expressed by the sentence containing it (if it expresses a proposition) has no truth condition. A proposition's truth condition is at the level of denotation, regardless of the success of denoting terms to denote. In the remaining discussion in this section, I ignore the complication of non-denoting terms. It is discussed further in section 24.5.

descriptive content to <S>, or refers directly to its denotation. Since the denotation

(where there is one) is semantically related to the descriptive content, <S> and A_S are

semantically related.

A few words are in order about other terms making semantic contributions to a

proposition. A complete discussion of this quite vast topic is beyond the scope of this

work. Sentential connectives are discussed in section 24.3. The following predicate

semantics is assumed: the semantic content of a predicate, i.e., what the predicate

expresses, is a concept, sc., the concept of the attribute (property or relation) it denotes.

The attribute semantically associated with a predicate is at the level of denotation. The

extension of a predicate is the class of objects bearing the property it denotes; or, in

general, it is the class of n-tuples bearing the relation denoted by the predicate. The

theory of truth offered in this chapter is committed to this semantics. Though there are

other viable views on the semantics of predicates, this view is very plausible and

perfectly general.

Section 22.3: Truth and Falsity

The correspondence relation holding between a true proposition and a fact must also be

characterized. In section 3, it is argued that the notion of correspondence is a relation of

semantic representation. In section 22.1, it is argued that correspondence is a simple

relation between a proposition and a fact; in section 22.2, a fact is a defined as a

mereological part of the actual[i] world.

The correspondence intuition is the fundamental intuition guiding the

correspondence theory of truth. Another important guiding intuition is the intuition

that logically distinct propositions are true in virtue of ontologically distinct facts. Call

this intuition "the truthmaker intuition".[332] For example, although the proposition that

grass is green and the proposition that snow is white are both true, what makes the first

true has no effect on making the second true, and *vice versa*. In other words, if

chlorophyll's physical properties were such that grass is orange, the proposition that

snow is white would still be true. In order to meet the truthmaker intuition, the analysis

of the simple semantic representation relation must be sensitive to this feature of the

relation between a proposition and the fact in virtue of which it is true.

The relations of expression, denotation, correspondence, and advertance are

mapped in Figure 1.

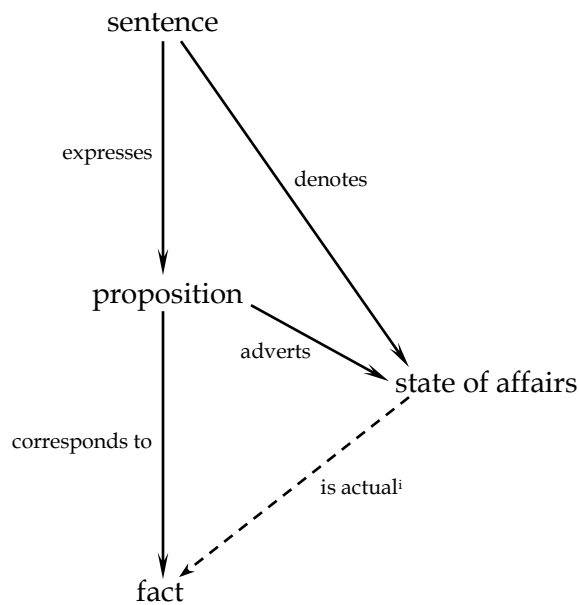Figure 1: Expression, Denotation, Correspondence, and Advertance

---

[332] What is here called "the truthmaker intuition" must not be confused with the truthmaker
thesis, common in literature on truthmakers, that every true proposition has a truthmaker.

Every proposition, whether true or false, adverts a state of affairs to which it is semantically related. If the state of affairs adverted by a proposition is actual[i], the proposition is true; if the state of affairs adverted by a proposition is not actual[i], the proposition is false. Any object which is not a proposition does not advert a state of affairs, and so is neither true nor false. A proposition, p, is true if and only if the state of affairs p adverts is actual[i]. Being actual[i] is depicted with a dashed arrow in Figure 1, since it is a property, rather than a relation.

A general notion of truth may be defined as follows: truth is the property of adverting an actual[i] state of affairs. Similarly, falsity is the property of adverting a non-actual[i] state of affairs. The definitions of these general notions answer the general questions as to what truth is, and what falsity is. Note that the general definition of truth captures the correspondence intuition, since it may be expressed equivalently as the property of corresponding to a fact.

There is a peculiar feature of the truth predicate which must be captured by a semantic theory of truth, specifically, that the truth predicate interacts semantically with the denotation of a denoting term, rather than with any descriptive semantic content it has. This is to say that the truth forms a proposition with the denotation of the denoting term of which truth is predicated, if that term denotes. Consider the proposition expressed by SW:

SW   The proposition that snow is white is true.

The semantic content of the subject term is descriptive, but the proposition expressed by SW seems to be the *de re* proposition that <snow is white> is true. This accords with the

notion of a truth condition, which is semantically related to a proposition at the level of denotation. To emphasize this feature of the truth predicate, introduce a new notational device, denotation marks. Surrounding an expression 'x' with superscript d's yields an expression '^{d}x^d' whose semantic content is the same as 'x', but whose denotation, rather than its descriptive semantic content (if any) interacts with the semantic contents of other expressions. The expression '^{d}x^d' may be contrasted to a denotation operator 'D(x)'. Define a denotation operator, 'D(x)', as an operator which, together with its operand, forms an expression referring directly to the denotation of its operand, 'x', if 'x' denotes. David Kaplan's dthat operator is an example of a denotation operator. The semantics of ^{d}x^d differ importantly from D(x), since the semantic content of 'D(x)' is only the denotation of 'x', while '^{d}x^d' retains the descriptive semantic content of 'x' (if any), though it is only the denotation of 'x' which interacts with the semantic contents of other terms.

In order to meet the truthmaker intuition, it must be that truth is sensitive to the semantic context. Where 'p' is a denoting term, 'p is true' expresses the same proposition as '^{d}p^{d} adverts actually^i'; 'p is false' expresses the same proposition as '^{d}p^{d} adverts non-actually^i'; and 'p is not true' expresses the same proposition as '^{d}p^{d} does not advert actually^i'.[333]

The context sensitivity of the truth predicate is more perspicuous in the truth condition of 'p is true': D(the state of affairs adverted by C[D(p)])'s being actual^i. The embedded operator 'C(x)' restores the context of the original occurrence of 'x'. This context-restoring operator is needed to handle cases where p contains context-sensitive terms, as in 'the proposition I am thinking of' and 'that proposition'.

---

[333] An object such as a chair which is not true does not advert actually^i.

The truth condition of '*p* is true' may be defined more elegantly by introducing an advertance functor, α(x). α(x) takes as its argument a term denoting a proposition, and forms a term denoting the state of affairs adverted by the proposition which its argument denotes. Then the truth condition of '*p* is true' is α(*p*)'s being actual[i]. The sensitivity to semantic context which is perspicuous in a proposition's truth condition is captured in the concept of truth by advertance, since *p* adverts a state of affairs to which it is semantically related.

Correspondence is a relation which holds between all and only true propositions and a fact. A true proposition, *p*, adverts a state of affairs, A_p, which is actual[i]. However, since an actual[i] state of affairs is not identical to a fact, correspondence is a representation relation only in a very weak sense of 'representation'. There is a unique fact to which every true proposition corresponds: if a state of affairs is actual[i], there is a fact in virtue of which it is actual[i], and the correspondence relation holds between the proposition adverting the actual[i] state of affairs and the fact in virtue of which it is actual[i]. Yet the proposition does not represent that fact, strictly speaking.

This is not a bad result, for if correspondence were a standard representation relation, truth would be vulnerable to well-known regresses. Further, there would be no room to distinguish between propositions and non-propositional objects which fail to correspond to a fact. The proper distinctions are provided through the notions of adverting and actuality[i]. Because actuality[i] is a primitive notion, rather than a representation relation, there is no circularity in the notion of actuality[i]; nor is there circularity in the notion of obtaining, which is defined in terms of actuality[i]. Truth may be loosely or informally understood as correspondence to a fact, but strictly and properly as adverting an actual[i] state of affairs.

As an illustration of the theory, consider the proposition expressed by GG:

GG   Grass is green.

According to this theory, {GG} is true if and only if the state of affairs adverted by {GG} is actual[i]. The state of affairs adverted by {GG} is grass's being green. Since the world of the context of utterance is the actual[d] world, and A_{GG} obtains in the actual[d] world, {GG} is true.

Now consider GT:

GT   The proposition that grass is green is true.

GT predicates truth of the proposition that grass is green. According to this theory, GT expresses the same proposition as that expressed by '[d]the proposition that grass is green[d] adverts actually[i]'. The truth condition of {GT} is D(the state of affairs adverted by C(D[the proposition that grass is green]))'s being actual[i]'. As above, since the world of the context of utterance is the actual[d] world, and the state of affairs wherein grass is green is actual[d], the proposition that grass is green is true, and by iterated reasoning, {GT} is true.

The semantics of the truth operator are very similar. Consider GT_{op}:

GT_{op} It is true that grass is green.

The phrase 'that grass is green' denotes a proposition to which 'it' refers anaphorically. The explanation of the semantics of GT applies to GT_{op}, *mutatis mutandis*.

It is appropriate to predicate truth of a quoted sentence only secondarily, since propositions are the primary bearers of truth.[334] Truth for a sentence may be defined by exchanging the notion of a sentence's denoting a state of affairs for a proposition's adverting a state of affairs: a sentence, s, is true if and only if the state of affairs s denotes is actual^i.

A few points of plausibility of this view should be noted. As above, the general notion of truth is defined as the property of adverting an actual^i state of affairs. Since an actual^i state of affairs is actual^i in virtue of a fact, the general notion of truth defined here meets the common and firm correspondence intuition, which every theory of truth attempts to meet.[335] The general notion of truth also meets the intuition that truth is a property. Also, it allows for talk of truth in a world, since it is defined in terms of the indexical notion of actuality.[336]

Because a false proposition adverts a state of affairs which does not obtain, there is a salient difference between a true and a false proposition. Since a proposition is the meaning of a sentence, a sentence expressing a false proposition is not meaningless. Thus, this theory faces neither horn of the dilemma Russell faced.[337]

The notion of truth for a proposition characterizes truth as a *relational* property, and in particular a semantically representational relational property. Because on this

---

[334] See section 2.

[335] See section 15.

[336] The truth of counterfactual claims is discussed in section 24.2.

[337] See sections 3.2 and 22.1.

theory a proposition, p, is true if and only if it adverts an actual[i] state of affairs, this theory of truth accounts for a proposition's corresponding to a certain fact, and no other, including the Great Fact.

As a result of sensitivity to the semantic context, truth, on this theory, meets two strong and fundamental intuitions about truth which otherwise are in tension. One is the truthmaker intuition, that logically distinct propositions are true in virtue of ontologically distinct facts.[338] There is also a very strong intuition that the proposition that grass is green and the proposition that snow is white have something very important in common; sc., both propositions are true. Call this "the truth intuition". The truth intuition is in tension with the truthmaker intuition, since it is difficult to account for <grass is green> and <snow is white> having a property in common if the truthmaker intuition is correct, and it is difficult to account for these two propositions being made true by the relevant facts if the truth intuition is correct. Because on this theory the relevant state of affairs is the one adverted by the proposition to which truth is ascribed, this theory meets the truthmaker intuition. The truth intuition is met by the general notion of truth; that is, despite this context-sensitivity, both propositions advert an actual[i] state of affairs, which is to say that both propositions are true.

One other intuition which a theory of truth needs to meet is the redundancy intuition. This is the intuition that the truth predicate is redundant—really, otiose—in sentences such as GT and GT$_{op}$. Most natural language speakers wishing to describe grass would do better to utter GG than GT or GT$_{op}$, since GT and GT$_{op}$ have words and semantic content extraneous to the speaker's purpose. These considerations are plainly

---

[338] It is plausible to suppose that the truthmaker intuition is slightly less strong than the correspondence intuition, since there is also the conceptual possibility that true propositions correspond to the entire actual world; see section 3.1.

pragmatic. The propositions expressed by GT and GT$_{op}$ do have semantic content which {GG} does not. This is the case even for the redundancy theory. To be consistent, the redundancy theory must maintain that the truth predicate has the same abbreviatory property in GT and GT$_{op}$ as it does in quantified predications, such as 'Everything said by Tolstoy is true.' On the redundancy theory, this abbreviatory property is otiose for truth predications of a single sentence. On this correspondence theory, truth predications such as those in GT and GT$_{op}$ are otiose for pragmatic reasons, though the truth predicate makes its normal semantic contribution to the proposition expressed by GT and GT$_{op}$.

Finally, a semantic theory of truth must not violate the intuition that <p is true> entails <p>. Note that {GT} entails the proposition that grass is green, and in general that this theory of truth respects this important intuition.

Section 22.4: Truth and Indexicality

It is well known that the semantic content of certain expressions of English and other natural languages is a function of context. Any such expression is termed an indexical expression. David Kaplan has developed a theory of indexical expressions based on the notion of character.[339] The character of an expression is a function (or meaning rule) from contexts to semantic content. The character of 'the inventor of bifocals' is a constant

[339] David Kaplan, "Demonstratives" in Joseph Almog, John Perry, and Howard Wettstein, *Themes from Kaplan* (New York: Oxford University Press, 1989) pp 481-563; and David Kaplan, "Afterthoughts" in Almog, Perry, and Wettstein (1989) pp 565-614. The notion of character is fruitfully explored by Felicia Ackerman, "Content, Character, and Nondescriptive Meaning" in Almog, Perry, and Wettstein (1989) pp 5-21; David Braun, "What is Character?" *Journal of Philosophical Logic* **24** (1995) pp 227-240; and, Nathan Salmon, *Frege's Puzzle* (Atascadero, California: Ridgeview Publishing Company, 1986) chapter 2, "Tense and Singular Propositions" in Almog, Perry, and Wettstein (1989) pp 331-392, and "Tense and Intension", unpublished manuscript (1997).

function, since the semantic content of the expression is the same in any context.[340] The

character of 'I' is a non-constant function, since its semantic content varies with context.

If the character of an expression is a constant function, the expression is non-indexical.

An expression is indexical if and only if its character is not a constant function.

According to Kaplan, 'I' is associated with the following meaning rule: 'I' refers

to the speaker or writer.[341] This rule is not part of the semantic content of 'I'. The

semantic content of 'I' varies with context; it is always a speaker, and is always non-

descriptive.

Notice that on the correspondence theory developed in section 22.3, the property

expressed by the truth predicate is a function of the semantic context. The definition in

section 22.3 gives the *character* of truth, which is a non-constant function. Thus,

according to this theory, the semantic content of the truth predicate varies with context.

Thus, let this correspondence theory of truth according to which the truth predicate is an

indexical expression be called "the indexical correspondence theory of truth", or "the IC

theory of truth", for short.[342] Unlike 'I', the semantic content of the truth predicate has

descriptive content, which includes the semantic content of 'is actual^{i}'.

---

[340] The referent of this expression is a function of possible world, which belongs to the context, but the referent is not part of the semantic content of a descriptive term (in the strict sense of 'semantic').

Strictly speaking, the character of an expression is relative to a language, since, for example, there are languages for which the character of 'the inventor of bifocals' is a non-constant function, and there are languages for which the character of 'I' is a constant function. If the language to which an expression belongs is part of the context, then the character of most or all expressions are sensitive to context. This feature of character is ignored in the definition of an indexical expression in the definition of an indexical expression below.

[341] David Kaplan, "Demonstratives" *op. cit.*, p 505.

[342] It is possible to develop other theories of truth according to which the truth predicate is an indexical expression, though to my knowledge this is the first such theory.

I expect that the most counterintuitive feature of the IC theory is that the truth predicate is an indexical expression. The strangeness of a predicate's being indexical is one counterintuitive feature; that the truth predicate in particular is indexical flies in the face of the common intuition that truth is a simple and fundamental property, and that on many occasions the truth predicate is otiose and eliminable. However, as argued in section 22.3, the IC theory of truth meets the redundancy intuition, through pragmatic considerations. Further, despite the *prima facie* strangeness of the view that the truth predicate is an indexical expression, it is this very feature which allows the IC theory to accommodate both the truth intuition and the truthmaker intuition, both of which are very strong intuitions about truth. The IC theory not only quells the tension between these intuitions, it also explains them.[343]

Finally, the IC theory reconciles another pair of contravening intuitions about the truth predicate: that "[g]rammatically, the word 'true' looks like a word for a property"[344] i.e., rather than a relation; and that truth is a correspondence to the world, i.e., a relation. These intuitions are reconciled straightforwardly if truth is a relational property. If the truth predicate is not sensitive to the semantic context, this claim entails that the second relatum is the same fact for all propositions, most plausibly the Great Fact; however, this conflicts with the truthmaker intuition. According to the IC theory, the general notion of truth grants that truth is a relational property, while the notion of truth for a proposition is a relational property sensitive to the semantic context, which meets the truthmaker intuition.

---

[343] See section 22.3.

[344] Gottlob Frege, "Thoughts" in Salmon and Soames (1988) pp 33-55 at p 34.

Section 22.5: States of Affairs and Facts (slight return)

There are a few important questions about states of affairs and facts as defined in this chapter which need to be addressed. One question which arises concerns the ontological status of a state of affairs which obtains. A state of affairs is a *way* for things to be, regardless of whether it obtains. Hence, a state of affairs is an abstract object. Nevertheless, a state of affairs may have concrete parts. There is a state of affairs wherein Plymouth Rock is in Massachusetts. Since it is a way for things to be, this state of affairs is an abstract object. Nevertheless, it is partly concrete, since a proper part of this way for things to be is Plymouth Rock, which is a concrete object. A fact is a mereological part of the actual[i] world, and may be either concrete or abstract, depending on whether the part of the actual[i] world is concrete or abstract.

Probably the most serious worry about this view arises over the relation between a state of affairs which obtains and a fact. It is clear that the state of affairs wherein Plymouth Rock is in Massachusetts (A_{PR}) is abstract while the fact that Plymouth Rock is in Massachusetts (F_{PR}) is concrete. Although A_{PR} and F_{PR} are different entities, and are different kinds of entity, it also seems clear that some relation between them holds. If this relation is the relation of obtaining, then the worry is that obtaining is a representation relation, for it seems that the representation relation must itself obtain in order for the relation of obtaining to hold between A_{PR} and F_{PR}. If so, positing the relation of obtaining as holding between a state of affairs and a fact leads to regress.

The threat of regress here is homologous to the regress in the notion of correspondence which alarmed Frege:

But yet? Can it not be laid down that truth exists when there is
correspondence in a certain respect? But in which? For what would we
then have to do to decide whether something were true? We should have
to inquire whether it were true that an idea and a reality, perhaps,
corresponded in the laid-down respect. And then we should be
confronted by a question of the same kind and the game could begin
again.[345]

Frege argues similarly in a passage from which the argument has taken the name "the

treadmill argument":

if we wanted to know whether a thought was true, we should have to ask
whether the relation in question obtained and thus whether the thought
that this relation obtained was true. And so we should be in the position
of a man on a treadmill who makes a step forwards and upwards, but the
step he treads on keeps giving way and he falls back to where he was
before.[346]

The first argument was considered in section 3.2 as a general objection to the relation of

correspondence. There it was pointed out that while it is fair to raise the question as to

whether it is true that a proposition and a fact correspond in the laid-down respect, this

question need not be answered in order for a proposition to correspond to a fact.

Provided that the proposition and fact correspond in the laid-down respect, then there is

correspondence.

The threat of a regress in the notion of obtaining may seem more pernicious. It

may be pointed out that no respect has been laid down in virtue of which a state of

---

[345] Gottlob Frege, "The Thought: A Logical Inquiry" in Blackburn and Simmons (1999) pp 85-105,
at p 87.

[346] Gottlob Frege, "Logic" in *The Frege Reader*, Michael Beaney, editor (Oxford: Blackwell
Publishers, Ltd., 1997) p 234. Quoted by Thomas Baldwin, "Frege, Moore, Davidson: The
Indefinability of Truth" *Philosophical Topics* **25** (1997) pp 1-18 at p 9.

affairs obtains. Whatever respect is laid down in virtue of which a state of affairs

obtains, it may seem that the matter will arise as to whether this respect obtains, which

leads to a regress. For instance, if it is laid down that obtaining is a representation

relation, then the respect in virtue of which the representation obtains must be laid

down, whereupon the respect in virtue of which this respect obtains must be laid down,

and so on *ad infinitum*.

Recall that a sentence denotes a state of affairs.[347] A state of affairs does not

denote and is not the sort of object which represents another object; states of affairs are

objects of denotation, and are semantically represented by sentences. For a state of

affairs to obtain is for it to be actual^i; thus, obtaining is defined in terms of actuality^i.

Further, it is claimed that actuality^i is a property, not a relation, and that it is a primitive

notion.

Because F_{PR} might not have been actual^i, it is tempting to say that F_{PR} exemplifies

(alternatively, instantiates) A_{PR}. It may be likewise tempting to take exemplification as a

representation relation, which leads to the treadmill regress. To say that A_{PR} is

exemplified (instantiated) is to say the same thing as that A_{PR} is actual^i; and to say that

F_{PR} exemplifies (instantiates) A_{PR} is to say the same thing as to say that F_{PR} actualizes^i

A_{PR}. It is fair to say that a fact actualizes^i or exemplifies a state of affairs if and only if the

state of affairs is actual^i; but the conceptually prior notion here is actuality^i.

This raises the question as to whether actuality^i is a primitive notion, in order to

ensure that it does not disguise a representation relation. Since the notion of actuality^d is

insensitive to context, actuality^i cannot be defined in terms of actuality^d. *Vice versa*, it

seems that actuality^d can be defined in terms of actuality^i, provided that a demonstrative

---

[347] See section 22.2.

is permitted as part of the definition; if not, then the notion of actuality^d must also be taken as primitive. Although the notion of actuality^i is clearly related to the notions of a possible world and a context, it is likely that all three notions are primitive. More importantly, none of these notions are representation relations, so that there is no threat of regress. There is no other notion forthcoming in terms of which actuality^i may be defined; if so, the treadmill is idle.

Another important question arises from the nature of a fact. In section 22.1 it is argued that the correspondence relation is simple, and that a fact is either a simple or unified entity. In section 22.2, it is claimed that a fact is a mereological part of the actual^i world. Plainly, it follows that facts themselves have parts. This gives rise to the question of what unifies the parts of a fact.[348] For example, merely positing Plymouth Rock and the property of being in Massachusetts does not yield the fact that Plymouth Rock is in Massachusetts (F_{PR}). Thus, it seems that an additional entity is needed to unite the two items as a fact.

Three options are available. The additional entity may be internal to the state of affairs, it may be the state of affairs itself, or it may be external to the state of affairs. Rather than examine the comparative merits of these proposals, I should like to forestall the issue by pointing out that if F_{PR} has Plymouth Rock and the property of being in Massachusetts as constituents, then there need be no additional entity which unites them. It is possible for them to exist as a fact; it is possible for them to exist independently (suppose that Plymouth Rock is in Arkansas, upstream from the Little Rock and downstream from the Big Rock, and Steven Wright bears the property of being

---

[348] This question is explored by William F. Vallicella, "Three Conceptions of States of Affairs" *Nous* **34** (2000) pp 237-259. Vallicella follows Armstrong in using the term 'state of affairs' where traditional philosophical discussions use 'fact'.

in Massachusetts); and it is possible for one or both to not exist. Should they exist as a fact, there need be no third thing uniting them. To posit them as constituents of F_{PR} is not to set ingredients on a table to search for a third thing, an adhesive. Indeed, the property of being in Massachusetts is discovered by abstracting it from facts in which it is instantiated. While it is fair to ask the question as to what unites an object and a property, it does not show that there is a third entity uniting them.[349]

Section 22.6: Truth, Truth-Value, and Extension Assignments

In order to account for important semantic phenomena and to solve truth paradox, it is critical to enforce distinctions among three properties which are commonly interchanged. Let '⦃x⦄' abbreviate 'the property denoted by 'x' '. One important distinction is to be drawn between ⦃is true⦄ and ⦃has the truth value true⦄. ⦃is true⦄ is, of course, truth. Philosophers often speak of the truth value of a proposition: for example, <snow is orange> has the same truth value as <grass is orange>. To claim that these two propositions have the same truth value is of course not to claim that they are both true; it is to claim that either both are true or that both are false, without committing to their truth or to their falsity.

In a formal system, a truth value is a surd assigned to a sentence. Boolos and Jeffrey use the truth values '1' and '0'; Kalish, Montague, and Mar use 'T' and 'F'.[350] Formal systems may be constructed incorporating three, or four, truth values, or even

---

[349] Mereological worries about facts are addressed in section 23.2.

[350] George S. Boolos and Richard C. Jeffrey, *Computability and Logic*, third edition (Cambridge: Cambridge University Press, 1989); Donald Kalish, Richard Montague, and Gary Mar, *Logic: Techniques of Formal Reason*, second edition (New York: Harcourt Brace Jovanovich, Publishers, 1980).

infinitely many. Philosophical interest in these systems depends on philosophical theses about truth. For example, a philosopher who holds that truth comes in degrees will be interested in a formal system with infinitely many truth values.

The term 'truth value' is useful, since it can be used to discuss *in general* the assignment of '1' or '0' ('T' or 'F') to sentences of the formal language without discussing which surd has been assigned to any particular sentence. A truth value is used to mark a category of sentences in which one has an interest. The truth value '1' could be used in a formal system to mark all of the sentences having 7 or more words, and '0' to mark all of the sentences having fewer than 7. If so, the truth values '7' and '0' would be more convenient reminders of this purpose. Boolos and Jeffrey use '1' and '0' to mark truth and falsity; there is something obviously intuitive about this symbolism which makes it convenient. Kalish, Montague, and Mar use 'T' and 'F', surds whose convenience is more obvious. A truth value need not be alphabetical or numeric. The symbols '♤' and '❀' may be used just as well for a system with two truth values. Though there may be a loss of convenience, '♤' and '❀' serve the very same function as '1' and '0', or 'T' and 'F'.

In a formal system, truth values are assigned to sentences of the formal language. This is normally taken to model the truth or falsity of a natural language sentence. A truth value in the formal language—1, T, or ♤—is assigned to a formal sentence modeling a sentence which *outside of the language* expresses a true proposition. Similarly, a different truth value—0, F, or ❀—is assigned to a formal sentence modeling a sentence which *outside the language* expresses a false proposition.

The truth value itself does not express truth or falsehood, though it is taken to model that property, had by a sentence. Without the interpretation of a truth value as truth or falsity, there is no reason to prefer to believe propositions (expressed by natural

language sentences and) modeled by formal sentences which have been assigned ⌂ (1, T) than those which have been assigned ✿ (0, F). This point is brought out by Michael Dummett in a criticism of Frege. In "Über Sinn und Bedeutung" Frege argues that there are two truth values, the True and the False.[351] Dummett points out that although the True and the False are the nominata of sentences, there is no reason to want to assert, or believe the proposition expressed by, a sentence whose nominatum is the True, unless we also know that the sentence is *true*.[352]

The term 'truth value' is foremost a formal term, though plainly the general idea can be exported to apply to natural languages. The notion of truth value is an expedient where there is no commitment to a particular sentence's truth or falsity. For example, 'The negation of a sentence is opposite in truth value of the negated sentence' is a briefer and less cumbersome paraphrase of 'The negation of a sentence is true if the negated sentence is false, and false if the negated sentence is true.' The notion of truth value also allows talk of truth-or-falsity where the truth value is not known. One example is the second occurrence of the expression in the previous sentence. As another example, consider a lawyer who explains to a judge that she plans to examine the truth value of every statement made by a certain witness.

Although the expression 'truth value' has a useful application in (semi-technical) natural language, ⸨having the truth value true⸩ must not be confused with truth. The truth value itself is normally intended to model the truth (falsity) of a proposition.

---

[351] Gottlob Frege, "On Sense and Nominatum" in Martinich (2001) pp 199-211; see especially p 203.

[352] Michael Dummett, "Truth" in Dummett (1978) pp 1-24. Dummett's point comes out in his comparison of truth with winning a game of chess, p 2. On page 4 he confuses truth and truth value: "Suppose that *P* contains a singular term which has a sense but no reference: then, according to Frege, *P* expresses a proposition which has no truth-value. This proposition is therefore not true, and hence the statement ⌐It is true that P⌐ will be *false*." (Dummett's italics)

Having a certain truth value, or *being assigned* a certain truth value, most naturally

models being *called* "true" ("false"), which is not philosophically interesting. Blurring

the distinction is rarely deleterious, since rephrasing from "S is true" to the more

accurate "Call S true" is usually a simple matter.

However, the difference is critical, and very evident, in the case of the truth-

telling sentence, TT.

TT   TT is true

Familiar reasoning shows that TT is not paradoxical. Supposing TT to be true leads to

the conclusion that TT is true, while supposing TT to be false leads to the conclusion that

TT is false. This is a *very* peculiar result. Intuitively, it may seem that there is nothing

for TT to be true or false about; i.e., it may seem not to express a proposition. On

Kripke's theory of truth, TT is ungrounded, because it is in neither the extension nor the

anti-extension of the truth predicate at the smallest fixed point. However, it may be

stably placed in either the extension or the anti-extension of the truth predicate at a level

higher than the smallest fixed point, including other fixed points. It may seem that

Kripke's theory is showing us that TT can be *made* true or false by placing it in either the

extension or the anti-extension of the truth predicate beyond the smallest fixed point. A

more sensitive interpretation shows instead that Kripke's theory models the peculiar

feature of TT whereon it can be *called* true or *called* false innocuously. Indeed, it would

be highly counterintuitive if calling TT true (false) made it true (false), since it could be

called true and false alternatingly, or even called both simultaneously, by different

speakers.

Evaluation schemes are available which reflect a strict adherence to modeling truth, as are schemes which confuse truth and truth value. Kripke compares two approaches to three-valued evaluation schemes:

> The approach adopted here has presupposed the following version of Tarski's "Convention T", adapted to the three-valued approach: If 'k' abbreviates a name of the sentence A, T(k) is to be true, or false, respectively iff A is true, or false. This captures the intuition that T(k) is to have the same truth conditions as A itself; it follows that T(k) suffers a truth-value gap if A does. An alternate intuition[353] would assert that, if A is either false or undefined, then A is *not true* and T(k) should be *false*, and its negation *true*. On this view, T(x) will be a totally defined predicate and there are no truth-value gaps.[354]

On the first approach, the assignment of truth values to T(k) preserves k's truth conditions, and so truth value models truth strictly. On the second approach, the assignment of truth values to T(k) is based on the *truth value* assigned to k: the assignments are captured by the claim that k has been assigned the truth value T. That is, T(k) is assigned the same truth value as this claim. Therefore, the second approach captures an intuition which confuses truth and truth value. It should also be noted that the decision between the two approaches may be taken as resting on intuition; however, the distinction between truth and truth value provides a philosophical and more rigorous basis for deciding between them.

---

[353] Kripke's footnote: "I think the primacy of the first intuition can be defended philosophically, and for this reason I have emphasized the approach based on this intuition. The alternate intuition arises only after we have reflected on the process of embodying the first intuition. See above."

[354] Kripke (1984) p 80.

The distinction between truth and truth value provides a philosophical reason to prefer choice negation to exclusion negation, in addition to the logical reason that it is more expressive.[355] Consider an undefined sentence, S. The choice negation of S, '~^{c}S', is likewise undefined, whereas the exclusion negation of S, '~^{e}S', is true. For '~^{e}S' to be true, negation must be understood as an operator with the semantics of 'S has not been assigned the truth value true' or 'S does not bear truth', since it is true that an undefined sentence does not bear truth (has not been assigned the truth value T). Yet plainly the second order property ⟨bears truth⟩ differs from truth. Because it is easy to read 'is true' as 'bears truth', perhaps due in part to their grammatical similarity, ⟨bears truth⟩ is easily confused with truth. ⟨bears truth⟩ is modeled well by *assigning the truth value true*. If these properties are not confused, it is clear that the truth conditions for the negation of an undefined sentence are also undefined. These truth conditions are captured by choice negation. Therefore, understood strictly, negation is properly taken to be choice negation. Further, the distinction between truth and truth value (and bearing truth) provides a philosophical reason to decide between two forms of negation, where there is otherwise only a logical reason.

A third property which must be distinguished from ⟨is true⟩ and ⟨has the truth value true⟩ is ⟨being in the extension of the truth predicate⟩. Like ⟨has the truth value true⟩, ⟨being in the extension of the truth predicate⟩ is foremost a formal term. A sentence of a formal language is added to the extension of the truth predicate if and only if that formal sentence models a sentence which *outside the language* expresses a true proposition. Equivalently, a sentence of a formal language is added to the extension of the truth predicate if and only if that formal sentence has been assigned the truth value

---

[355] See section 16.

which is taken to model truth. In either case, {being in the extension of the truth predicate} is a property of formal sentences. It is distinct from {is true} and {has the truth value true}, even if the result of these two biconditional principles is that the predicates expressing these properties are co-extensive.[356] Because the notion of being in the extension of the truth predicate is not usefully exported to natural language, there is little temptation to confuse {being in the extension of the truth predicate} with {is true} or {has the truth value true}. Nevertheless, there is some aptness for confusion when discussing formal languages, due to the biconditionals, and because being assigned to the extension of the truth predicate, like being assigned the truth value '1' ('T' or '☺'), is taken to model the truth of the sentence so assigned.

Section 22.7: Löb's Paradox

Löb's Paradox results from considering sentence B.[357]

      B   If {B} is true, then {A} is true.

If {B} is true, then the antecedent in {B} is plainly true, whence {A} is true. If {B} is false, then its antecedent is true and its consequent is false; but if its antecedent is true, then {B} is true, whence it follows that {A} is true. Thus, {A} is true, for any A, even truth

---

[356] Gödel sentences complicate the extensions of these predicates; see sections 22.9 and 23.4.

[357] M. H. Löb, "Solution to a Problem of Leon Henkin" *Journal of Symbolic Logic* **20** (1955) pp 115-118. I have formulated the paradox in terms of propositions rather than sentences, as it is formulated by Löb. Löb's Paradox is also known as Curry's Paradox; see Haskell B. Curry, "The Inconsistency of Certain Formal Logics" *Journal of Symbolic Logic* **7** (1942) pp 115-117.

paradoxical and self-contradictory A. Löb concludes, "We have thus shown that every

sentence is true."[358]

Deriving paradox or contradiction depends on the principle of propositional

logic according to which a conditional is false only if its antecedent is true and its

consequent is false. Strictly speaking, according to this principle a conditional is *declared*

false, which is to say, assigned the truth value false, if its antecedent is assigned the truth

value true, and its consequent is assigned the truth value false. Assigning a truth value

to a proposition in a system of propositional logic is a formal method for modeling the

truth or falsity of propositions. Even if a rule of the formal system licenses assignments

of truth values, it does not follow that the truth value assignments correctly model the

truth or falsity of the propositions to which they are assigned.

This is especially important for propositions which are gappy: it does not follow

from the truth of the consequent that a conditional is true, since the antecedent may not

express a proposition. This is the case for {B}. In section 16, it is argued that under

empirically unfavorable circumstances, certain propositions are neither true nor false.

According to the IC theory, B does not express a proposition, and so is neither true nor

false. The semantic content of B is a function of the antecedent and the consequent. The

semantic content of the antecedent is expressed by 'the proposition expressed by B is

true', which according to the IC theory is the same as that expressed by 'dthe proposition

expressed by Bd adverts actuallyi'. The denotation of 'the proposition expressed by B' is

the semantic content of B, part of which is the semantic content of 'the proposition

expressed by B is true'. Plainly, this analysis leads to a regress. This shows that the

---

[358] M. H. Löb (1955) p 117. Löb continues, "It is worth noticing, perhaps, that this paradox is derived without using the word "not". It is therefore available as a test of inconsistency of formal systems which do not contain a symbol for negation." (*ibid*.)

semantic content of the antecedent in B is defective, such that B does not express a proposition, strictly speaking.

The solution to Lob's paradox depends on acknowledging a limit to the principle assigning truth values to conditionals, where either the antecedent or the consequent does not express a proposition; it also depends on acknowledging the distinction between ⦃is true⦄ and ⦃has the truth value true⦄, and on showing that B does not express a proposition. As a result B is neither true nor false, and there is neither contradiction nor paradox.

Section 22.8: Grelling's Paradox

Grelling's Paradox is generated from the predicates 'is autological' and 'is heterological'.[359] A predicate is autological if and only if it bears the property it denotes. For example, 'is polysyllabic' is autological, since 'is polysyllabic' has more than one syllable. Similarly, 'is spellable' is autological, since it is spellable. A predicate is heterological if and only if it does not bear the property it denotes. For example, 'is a chair' is not a chair; hence, 'is a chair' is heterological.[360]

The paradox results from considering the sentence

H   'Is heterological' is heterological.

---

[359] Kurt Grelling, "The Logical Paradoxes" *Mind* **45** (1936) pp 481-486.

[360] Occasionally, 'esoteric' is given as an example of a predicate which is autological, since it is understood only by a small group of people. However, it is the concept expressed by 'esoteric' which is understood only by a small group of people, strictly speaking. Since the predicate 'esoteric' does not bear the property it denotes, it is not autological, but heterological.

If H is true, then 'is heterological' does not bear the property it denotes. But the property had by a predicate of not bearing the property it denotes is heterologicality, whence 'is heterological' is not heterological, and H not true. But if 'is heterological' is not heterological, then it does not bear the property it denotes, whence 'is heterological' is heterological, and H true. Thus, H is true if and only if H is not true. Therefore, contradiction and paradox result from H and the semantics of 'is heterological', together with theses 1-4 from which the Liar Paradox is derived.[361]

In section 16 it is argued that theses 1-3 are impeccable; thesis 4 is challenged unsuccessfully in section 20. Although the predicate 'is heterological' is plainly artificial, there seems to be nothing improper about H or the semantics of 'is heterological'; after all, most predicates are heterological, and there is nothing paradoxical about sentences other than H in which heterologicality is predicated of other English predicates.

Yet the solution to Grelling's Paradox is straightforward. Notice that the properties denoted by 'is autological' and 'is heterological' are relational and context-sensitive: by stipulation, the relata are a predicate and the property *denoted by that predicate*. Thus, ⟨is autological⟩ may be represented as D(has D(π)) where 'π' is the predicate of which autologicality is predicated. Likewise, ⟨is heterological⟩ may be represented as D(does not have D(π)). Both 'is autological' and 'is heterological' are sensitive to the linguistic context as a result of the stipulation through which Grelling introduces them; the term 'D(π)' in the representations of ⟨is autological⟩ and ⟨is heterological⟩ captures this feature.[362] Predications of autologicality and heterologicality

---

[361] Theses 1-4 are listed in section 16.

[362] It may be objected that formulating ⟨is heterological⟩ as context-sensitive fails to capture the hypothesis that 'is heterological' denotes a single property, the property of not bearing the

are not problematic so long as π denotes a property. Notice that in H, D(π) is D(does not

have D(π)). Consequently, there is a regress in the property denoted by 'is

heterological'. Of course, strictly speaking, there cannot be a regress in a property.

What the regress in its representation shows is that no property is denoted by 'is

heterological' *as it occurs in H*. The same holds whenever one of these two predicates is

predicated of itself or of the other predicate.

It is tempting to suppose that H expresses a proposition, since a sentence in

which heterologicality is predicated of virtually any other predicate expresses a

proposition. However, the stipulated semantics of the predicate clearly show that no

property is denoted by 'is heterological' as it occurs in H. It does not follow that 'is

heterological' does not bear the property it denotes, since this falsely presumes that it

denotes a property. Hence, there is no contradiction, and no paradox.

---

property it denotes, had only by predicates. However, it cannot be that there is such a property. If there is a single property which 'is heterological' denotes, then the following formal sentence is true: $(\exists P^*) \mid (\forall x) [P^*(x) \leftrightarrow (\forall P)(D(x,P) \rightarrow \sim P(x))]$. Here, '∃P' is a second order existential quantifier; the range of '∀x' is restricted to predicates; and 'D(a,b)' is the denotation predicate, a denotes b. A counterexample can be constructed by instantiating h = 'is heterological' for x, and H = ⟨is heterological⟩ for P, and noting that h denotes H by hypothesis.

This case may be contrasted with ⟨is taller than one's own mother⟩. If there is a single property denoted by this predicate, then the following formal sentence is true: $(\exists P) \mid (\forall x) [P(x) \leftrightarrow (\forall y)(M(y,x) \rightarrow T(x,y))]$, where '∃P' is a second order existential quantifier; 'M(a,b)' is the mothering predicate, a is the mother of b; and 'T(a,b)' is the taller-than predicate, a is taller than b. This sentence has no counterexamples, and so is true.

Note that Russell's paradox cast in the form of the Russell's barber predicate, 'is a barber who shaves all and only those who do not shave themselves', may be given a similar analysis. If there is a single property denoted by this predicate, the following formal sentence is true: $(\exists B) \mid (\forall x) [B(x) \leftrightarrow (\forall y)(P(y) \rightarrow (\sim S(y,y) \leftrightarrow S(x,y)))]$, where '∃B' is a second order existential quantifier; 'P(a)' is the personhood predicate, a is a person; and 'S(a,b)' is the shaving predicate, a shaves b. This sentence has a counterexample where both first order objectual variables are instantiated for the same person. Hence, there is no single property denoted by the Russell's barber predicate.

Autologicality and heterologicality may be represented as properties by (λx) (x has D(x)) and (λx) (x does not have D(x)), respectively, or as relations by (λx) (λy) (Dxy $\wedge$ Hxy) and (λx) (λy) (Dxy $\wedge$ ~Hxy), respectively. (Again, it is supposed for simplicity that the domain of x is restricted to predicates.) The second pair of representations is more plausibly read as "has (lacks) the property it denotes" than the first pair. Nevertheless, because autologicality and heterologicality are properties by hypothesis, it is inaccurate to represent them as relations.

It may be pointed out that 'is heterological' is not autological. However, it does

not follow that it is heterological. If 'is heterological' is given this broader definition, it

will be heterological, but no contradiction results: on the broader definition, the

heterological predicates include those which do not bear the property they denote, and

those which do not denote a property. Hence, it does not follow from a predicate's

heterologicality that it does not bear the property it denotes.

The first lesson of Grelling's paradox is that it is possible for a predicate to be

context-sensitive. While the semantics of 'is heterological' and 'is autological' are

sensitive to the predicate of which it is predicated, and the property denoted by that

predicate, the semantics of the truth predicate is sensitive to the denotation of the term

of which it is predicated. The second lesson of Grelling's paradox is that the semantics

of a context-sensitive predicate can just go wonky under certain circumstances. Gödel

envisions a solution along these lines: "It might even turn out that it is possible to

assume every concept to be significant everywhere except for certain "singular points"

or "limiting points," so that the paradoxes would appear as something analogous to

dividing by zero."[363] It is along these same lines that the IC theory handles the Liar

Paradox.

Section 22.9: The Liar Paradox and the Truth-Teller

The correspondence intuition, the truthmaker intuition, and the truth intuition motivate

a notion of truth which is sensitive to the semantic context, such as the IC notion of truth

---

[363] Kurt Gödel, "Russell's Mathematical Logic" in *The Philosophy of Bertrand Russell*, third edition
(New York: Tudor Publishing Company, 1951) pp 125-153, at p 150.

defined in section 22.3. In this section it is argued that the IC notion of truth is immune

to the Liar Paradox.

Let '{S}' abbreviate 'the proposition expressed by 'S' ', and consider sentence L*:

L*   {L*} is not true

L°   d{L*}d does not advert actuallyi

According to the IC theory, the proposition expressed by L* is given by L°. Regarding

the term 'd{L*}d', the denotation of '{L*}' is the denotation of 'the proposition expressed

by L*', which (obviously) is the proposition expressed by L*. As above, the proposition

expressed by L* is given by L°. Plainly, there is a regress in the proposition expressed by

L*. Though it does not lack semantic content, the proposition expressed by L* is

defective, such that L* does not express a proposition, strictly speaking. Following

Nathan Salmon, what L* expresses may be called a "defective proposition."[364]

This is an extremely plausible result, for it explains two common but conflicting

reactions to Liar sentences. Intuitively, it seems that there is nothing for L* to be true or

false about, which suggests that it does not express a proposition. However, it may be

observed that Liar sentences pass tests normally taken as sufficient for expressing a

proposition. For instance, L* is grammatically well-formed, and grammatical well-

formedness is often taken as a sufficient condition for expressing a proposition. Also, it

seems plausible to suppose that someone may have attitudes toward what L*

---

[364] Nathan Salmon, "Nonexistence" *Nous* **32** (1998) pp 277-319.

expresses.[365] By explaining how {L*} is defective despite having semantic content, the IC

theory meets both of these intuitions. Further, because the IC theory is motivated by the

truth and truthmaker intuitions, it meets Scott Soames's challenge that "there is no

independently motivated semantic theory that characterizes them as not expressing

propositions."[366] Finally, the IC theory justifies formally modeling L* as ungrounded on

Kripke's theory, since it *explains* why L* is ungrounded.[367]

       Notice that 'not' plays no critical role in the analysis of {L*}. According to the IC

theory, a very similar semantic analysis of TT shows that it too expresses a defective

proposition.

       TT   {TT} is true

       TT° ^{d}{TT}^{d} adverts actually[i]

According to the IC theory, the proposition expressed by TT is given by TT°. Regarding

the term '^{d}{TT}^{d}', the denotation of '{TT}' is the denotation of 'the proposition expressed

by TT', which (obviously) is the proposition expressed by TT. As above, the proposition

expressed by TT is given by TT°. Plainly, there is a regress in the proposition expressed

by TT. Though it does not lack semantic content, the proposition expressed by TT is

defective, such that TT does not express a proposition, strictly speaking. TT expresses a

defective proposition. Therefore, the IC theory explains why TT is ungrounded, in a

---

[365] See section 16.

[366] Scott Soames (1999) p 194.

[367] The formal modeling of the IC theory's notion of truth by Kripke's theory is discussed in more detail in section 22.10.

way which shows why it shares this feature with L*, and justifies Kripke's formal theory

on which TT is ungrounded.[368]

The IC theory handles Yablo's paradox in a similar way. Consider the sentences

in the infinite sequence of sentences, s_n, each having the form $\ulcorner$for all k > n, s_k is not true$\urcorner$.

s_1	for all k>1, $\{s_k\}$ is not true
s_2	for all k>2, $\{s_k\}$ is not true
s_3	for all k>3, $\{s_k\}$ is not true
.	.
.	.
.	.

According to the IC theory, the proposition expressed by s_2, for example, consists in part

of the propositions expressed by the remaining sentences in the sequence. Because each

sentence in the sequence predicates truth of an infinite number of propositions, the

proposition expressed by each sentence in the sequence is incomplete; or, in other

words, each proposition in the sequence is defective.

The IC theory's claim that the truth predicate interacts with the denotation of the

term of which truth is predicated, if any, is based on the thesis that propositions are the

primary bearers of truth as well as the notion of a truth condition. It does have the

following counterintuitive result, however, which is illustrated by the propositions

expressed by sentences F1—F3.

---

[368] Again, the formal modeling of the IC theory's notion of truth by Kripke's theory is discussed in more detail in section 22.10.

F1	What Frank says at t_2 is true.

F2	What Florence says at t_3 is true.

F3	Flowers are plants.

Suppose that Florence utters F3 at t_3, and that Frank utters F2 at t_2. Then according to the IC theory, the proposition expressed by F1 is given by F1°, which in turn is given by F1°°.

F1°	^{d}What Frank says at t_2^{d} adverts actually^i

F1°°	^{d}{What Florence says at t_3 is true}^{d} adverts actually^i

According to the IC theory, the proposition expressed by F2 is given by F2°, and in turn by F2°°.

F2°	^{d}What Florence says at t_3^{d} adverts actually^i

F2°°	^{d}{Flowers are plants}^{d} adverts actually^i

Thus, according to the IC theory, the proposition expressed by F1 is given ultimately by F1$^\lozenge$.

F1$^\lozenge$	^{d}{^{d}{flowers are plants}^{d} adverts actually^i}^{d} adverts actually^i

The result that the proposition expressed by F1 includes as a part the proposition that flowers are plants is counterintuitive, since F1 does not include English words which

ordinarily make this semantic contribution to propositions expressed by sentences containing them.

This is a counterintuitive result, since F1 seems to be about Frank, not flowers. According to the IC theory, there is a sense in which F1 is about Frank, since 'what Frank says at t_2' expresses its ordinary descriptive content. On the IC theory, F1 may be paraphrased using the general notion of truth as 'What Frank says at t_2 adverts an actual[i] state of affairs'. Nevertheless, it has been argued that the truth predicate interacts semantically with the denotation of the denoting term of which truth is predicated in accord with the notion of a truth condition.

It must be emphasized that the IC theory does not claim that a denoting term is stifled from expressing its semantic content when syntactically combined with the truth predicate. According to the IC theory, the denoting term of which truth is predicated expresses its descriptive semantic content, if any; however, the proposition expressed forms between the denotation of the denoting term, and the content of the truth predicate. Thus, strictly speaking, the semantic content of a sentence in which truth is predicated differs from the proposition expressed by that sentence. The descriptive semantic content of the denoting term is not part of the proposition formed, though it is semantically expressed.

An interesting feature of the IC theory's notion of truth may be highlighted by considering a sentence in which the truth predicate is iterated, such as SWT.

SWT   The proposition that the proposition that snow is white is true is true.

SWT°   [d]<[d]<snow is white> adverts actually[i]>[d] adverts actually[i]

According to the IC theory, the proposition expressed by SWT is given by SWT°. Note that the iterations of truth do not collapse upon analysis. Although the redundancy intuition suggests that one does better to utter 'snow is white' than SWT, two distinct propositions are expressed. This is a necessary result for any theory holding that the truth predicate has semantic content. Further, it is a desirable result, since in cases where the context is complex due to a number of shifts, the iterated predicate tracks the shifts in context.[369] Nonetheless, it is clear that 'snow is white' and SWT have the same truth condition on the IC theory, which is a fair understanding of the redundancy intuition in this case.

Truth's semantic interaction with the denotation of the denoting term of which it is predicated is an extremely important feature to notice, for it is this feature through which truth seeks its own level. In the example of F1—F3, it is plain that the truth predicate as it occurs in F1 seeks out the proposition expressed by F3, and that on the IC theory, this happens because the truth predicate forms a proposition with the denotation of the denoting term of which it is predicated. Where the denoted proposition itself contains truth, the denoted proposition is part of the proposition expressed. Where these iterations form a loop or a regress, the proposition expressed is defective; i.e., no proposition is expressed, strictly speaking.

This feature perfectly captures the semantics of truth paradox due to empirically unfavorable circumstances. Consider an innocuous case, where Nixon utters N, and about Watergate Jones says only J_1.

---

[369] Strictly, 'actually^i' should appear with as 'actually^i_c' to indicate that the relevant proposition adverts actually^i with respect to a particular context.

N　　　　　　　Everything Jones says about Watergate is true.

J₁　　There were secret recordings made at the Watergate apartments.

According to the IC theory, the proposition expressed by N is given by N°, which is not truth paradoxical.

N°　　　　　　　　　$^d\{J_1\}^d$ adverts actually^i

If instead Jones says only J* about Watergate, and Nixon's other assertions about Watergate are evenly balanced between truth and falsity, then J* and N are both truth paradoxical.

J*　　Most of Nixon's assertions about Watergate are not true.

Because {N} is among the propositions denoted by 'most of Nixon's assertions about Watergate', neither N nor J* express a proposition; both express defective propositions. This is how the IC theory solves empirical cases of truth paradox.[370]

Finally, consider sentence SWL.

SWL　　　　　　Either snow is white or {L*} is not true.

It may be argued that {SWL} is true, since the first disjunct is plainly true. It may also be argued that {SWL} is neither true nor false on the grounds that the second disjunct is

---

[370] Truth paradox customized for the IC theory is examined in section 23.4.

truth paradoxical. A theory of truth may plausibly take either position regarding a proposition such as {SWL}. On the IC theory, SWL does not express a proposition, due to the second disjunct, as analyzed above. Therefore, {SWL} is neither true nor false.[371] It is a plausibility of the IC theory that it gives a principled reason for deciding between the two plausible positions.

It is a further plausibility of the IC theory that it takes the correct position. The first position is based on the principle of classical logic according to which a disjunction *is assigned the truth value T* if any of its conjuncts is true; or, better, if any of its conjuncts represents a proposition which outside of the formal language is true. Such a principle does not invoke truth, but only truth value. Neither calling {SWL} true, nor assigning it the truth value T makes it true. Where the second disjunct does not express a proposition, or is neither true nor false because vague, emotive, etc., it is an error to conclude that the disjunction is true because a disjunct is true. Such a position confuses truth with truth value.

Section 22.10: A Formal Model of the Truth Predicate

To be complete, a theory of truth must provide a formal model of the truth predicate. While Kripke's construction is by far the most viable formal model, there are two objections preventing its endorsement.[372] One objection is that while the formal theory properly models L as intrinsically paradoxical, it provides no explanation as to why it

---

[371] The same reasoning applies to the apparent tautology 'if {L*} is not true, then {L*} is not true', which according to the IC theory does not express a proposition.

[372] Kripke (1984); originally published in *The Journal of Philosophy* **72** (1975) pp 690-716. All page references are to the 1984 reprint. The objections to Kripke's theory are presented in section 19.2.

cannot be assigned a truth value in a fixed point. The second objection is reported by

Kripke in a famous passage:

> Nevertheless, the present approach certainly does not claim to give a universal language, and I doubt that such a goal can be achieved. ...[T]here are assertions we can make about the object language which we cannot make in the object language. For example, Liar sentences are *not true* in the object language, **in the sense that the inductive process never makes them true**; but we are precluded from saying this in the object language by our interpretation of negation and the truth predicate. ... The necessity to ascend to a metalanguage may be one of the weaknesses of the present theory. The ghost of the Tarski hierarchy is still with us.[373]

Enforcing the distinction between truth, having the truth value true, and being in the

extension of the truth predicate is an important measure in answering both objections.

Formulate the formal Liar sentence as '~T(L)', where '~' is choice negation, 'L'

names '~T(L)', and 'T(x)' is interpreted as the truth predicate. According to the IC

theory, '~T(L)' does not express a proposition. Therefore, '~T(L)' is neither true nor

false; it is assigned to the anti-extension of T(x), though it is not assigned a truth value.

Interpreted according to the IC theory, '~T(L)' is not truth paradoxical.

'~T(L)' *is* paradoxical (and intrinsically paradoxical) if 'T(x)' is interpreted as the

truth *value* predicate, 'is assigned the truth value T'. Formulate this liar sentence as

'~$T_v(L_{tv})$', which is named by 'L_{tv}'; the subscript 'v' indicates that 'T(x)' is interpreted as

the truth value predicate. Since assigning the truth value T is taken to model being true,

it must be that a sentence, S, is assigned T if and only if S is true. This principle of truth

value assignments is captured by TVA.

---

[373] Kripke (1984) pp 79-80; boldface italics added.

TVA   A formal sentence is to be assigned the truth value T
if and only if the proposition it models is true.

If L_{tv} is assigned T, it follows that L_{tv} is true; but since L_{tv} is interpreted as saying that it

is not assigned T, it cannot be that it is. If L_{tv} is not assigned T, then intuitively, it is true,

and is to be assigned T. Therefore, L_{tv} is truth paradoxical.

Similarly, '~T(L)' is paradoxical (and intrinsically paradoxical) if 'T(x)' is

interpreted as the truth *extension* predicate, 'is assigned to the extension of the truth

predicate'. Since the truth extension predicate needs to be distinct from the truth

predicate in terms of which it is defined, formulate this liar sentence as '~TE(L_{te})', which

is named by 'L_{te}'. Since assigning a sentence S to the extension of the truth predicate is

taken to model that sentence's being true, it must be that S is assigned to the extension of

T(x) if and only if S is true. This principle of assignments to the extension of the truth

predicate is captured by TEA.

TEA   A formal sentence is to be assigned to the extension of the truth predicate
if and only if the proposition it models is true.

If L_{te} is assigned to the extension of T(x), it follows that L_{te} is true; but since L_{te} is

interpreted as saying that it is not assigned to the extension of T(x), it cannot be that it is.

If L_{te} is not assigned to the extension of T(x), then intuitively, it is true, and is to be

assigned to the extension of T(x). Therefore, L_{te} is truth paradoxical.

First, and to repeat, L is not truth paradoxical, since L is neither true nor false,

and may be stably assigned to the anti-extension of T(x). Although L_{tv} and L_{te} are truth

paradoxical, these truth paradoxes reveal no logical problems with the truth predicate,

nor metaphysical problems with truth. Whatever difficulties plague the predicates 'is

assigned the truth value T' and 'is assigned to the extension of the truth predicate' do

not affect 'is true'.

The solution to the truth value and truth extension paradoxes lies in the

principles TVA and TEA. '$T_v(x)$' and 'TE(x)' are provability predicates as a result of

adding TVA and TEA to the formal construction.[374] This gives rise to the suspicion that

Gödel-like sentences will force the restriction of TVA and TEA. L_{tv} and L_{te} are Gödel-

like sentences, since their predicates are provability predicates. The truth paradox

which results from evaluating L_{tv} may be resolved by not assigning it the truth value T,

whence it is true, though not assigned T. This means that truth value assignments are

incomplete, in the sense that not every true sentence is assigned the truth value which is

taken to model being true. It also requires amending TVA. I am only able to suggest

weakening TVA to the conditional that a formal sentence is to be assigned the truth

value T only if the proposition it models is true.

Similarly, the truth paradox which results from evaluating L_{te} may be resolved

by not assigning it to the extension of the truth predicate, whence it is true, though not

assigned to the extension of the truth predicate. This means that the extension of the

---

[374] A predicate P(x) is a provability predicate if, for all sentences, S and S', of language, K:
    (i)   if $\vdash_K$ S, then $\vdash_K$ P($\ulcorner$S$\urcorner$)
    (ii) $\vdash_K$ P($\ulcorner$S⊃S'$\urcorner$) ⊃ [P($\ulcorner$S$\urcorner$) ⊃ P($\ulcorner$S'$\urcorner$)]
    (iii) $\vdash_K$ P($\ulcorner$S$\urcorner$) ⊃ $\vdash_K$ P($\ulcorner$P($\ulcorner$S$\urcorner$)$\urcorner$)
Cf. Boolos and Jeffrey (1989) p 185, and Raymond M. Smullyan, *Gödel's Incompleteness Theorems*
(New York: Oxford University Press, 1992) pp 106-108. A more direct way to verify that '$T_v(x)$'
and 'TE(x)' are provability predicates is to note that both are *truth* predicates, and that all truth
predicates are provability predicates. "A formula Tr(x) is called a *truth predicate for T* [T is a
system, or language] if for every sentence A of the language of T, $\vdash_K$ A ↔ Tr($\ulcorner$A$\urcorner$)." (Boolos and
Jeffrey (1989) p 188; cf. p 188 f.)
    Strictly speaking, a predicate is a provability predicate for a proof system. Although
Kripke does not specify a proof system in his outline, his construction presumes a proof system
with standard features, given which '$T_v(x)$' and 'TE(x)' are provability predicates, and truth
predicates.

truth predicate is incomplete, in the sense that not every true sentence is assigned to the extension of the truth predicate. It also requires amending TEA. I am only able to suggest weakening TEA to the conditional that a formal sentence is to be assigned to the extension of the truth predicate only if the proposition it models is true.

These are somewhat disappointing results for the aim of modeling the truth predicate, but not devastating, and not unfamiliar. It must be emphasized that a natural language truth predicate *can* be formally modeled without truth paradox by omitting the sentence '~T(L)'. Although the sentence is syntactically well-formed, the natural language sentence it models does not express a proposition. When care is paid to the distinction between truth, truth value, and being assigned to the extension of the truth predicate, there is no ascent to a metalanguage: "Liar sentences are *not true* in the object language, ***in the sense that the inductive process never makes them true***"[375]; but this is only to say that Liar sentences are not assigned T, and are not assigned to the extension of the truth predicate. The ghost of the Tarski hierarchy is dispelled.

The main disappointment regards the aim of modeling the predicates 'is assigned the truth value T' and 'is in the extension of the truth predicate'. Again, any disappointment accrues to these predicates, and not the truth predicate. Also, although these predicates are of interest to philosophers and logicians, their interest is probably limited thereto. Finally, given that '$T_v(x)$' and 'TE(x)' are provability predicates, these results follow from Gödel's first incompleteness theorem. Therefore, no disappointment is to be charged to the IC theory.

A remark is in order regarding Kripke's selection of Kleene's strong three-valued evaluation scheme, for which the characteristic disjunctive connective is true if any

---

[375] Kripke (1984) p 80; boldface italics added.

disjunct is true, false if all disjuncts are false, and undefined otherwise. Kripke writes

that "[j]ust about any scheme for handling truth-value gaps is usable, provided that the

basic property of the monotonicity of Φ is preserved".[376] Another option is Kleene's

weak three-valued logic, also known as the Bochvar three-valued logic. For Bochvar, a

sentence is undefined if and only if it is meaningless, or nonsensical. The evaluation

scheme adopts choice negation, and respects monotonicity. All logical connectives are

undefined where any part is undefined, since the meaningless part renders the whole

sentence meaningless. Clearly, this last feature recommends Kleene's weak three-valued

logic for the IC theory.[377]

Note also that the distinction between truth and truth value independently

recommends the weak over the strong Kleene evaluation system, since a disjunction

with a true disjunct is not sufficient for the truth of the disjunction. It is an additional

plausibility of the IC theory that the evaluation scheme recommended for it is vindicated

by independent philosophical considerations.

Kripke's remarks on his choice of three-valued evaluation schemes are somewhat

puzzling. He seems to recognize the distinction between truth and truth value in the

following passage, yet opts for the strong Kleene scheme, which conflates truth and

truth value.

> The approach adopted here has presupposed the following version of
> Tarski's "Convention T", adapted to the three-valued approach: If 'k'

---

[376] Kripke (1984) p 76.

[377] Certain varieties of supervaluation are also options, though the distinction between truth and truth value vitiates many supervaluation schemes (if not all). The overwhelming tendency in the literature to this point has been to follow Kripke in adopting Kleene's strong three-valued logic, perhaps because Kleene's weak three-valued logic is, as Kripke writes, "excessively cumbersome". (Kripke (1984) p 77)

abbreviates a name of the sentence A, T(k) is to be true, or false, respectively iff A is true, or false. This captures the intuition that T(k) is to have the same truth conditions as A itself; it follows that T(k) suffers a truth-value gap if A does. An alternate intuition[378] would assert that, if A is either false or undefined, then A is *not true* and T(k) should be *false*, and its negation *true*. On this view, T(x) will be a totally defined predicate and there are no truth-value gaps.[379]

The boldfaced italicized passage above (p 215) may be read as showing an awareness of the distinction, yet it is part of the discussion which reports the ghost of the Tarski hierarchy. Perhaps the choice is made because the weak Kleene scheme is, as Kripke writes, "excessively cumbersome".[380] Thus, there is reason to expect that in the longer, more rigorous version of the paper Kripke alludes to in the titular footnote, the weak Kleene scheme would be adopted.[381]

Section 23: Objections

Section 23.1: Admitting States of Affairs and Facts Multiplies Entities Beyond Necessity

Granting that propositions exist, that propositions are the primary bearers of truth, and that truth is a correspondence property, it follows that there is a relatum to which true propositions correspond. It may seem that there is no philosophical motivation stemming from a correspondence theory to admit entities other than the second relatum,

---

[378] Kripke's footnote: "I think the primacy of the first intuition can be defended philosophically, and for this reason I have emphasized the approach based on this intuition. The alternate intuition arises only after we have reflected on the process of embodying the first intuition. See above."

[379] Kripke (1984) p 80. This passage is discussed in section 22.6.

[380] Kripke (1984) p 77.

[381] "I hope to publish another more detailed version elsewhere. Such a longer version should contain technical claims made here without proof, and much technical and philosophical material unmentioned or condensed in this outline." (Kripke (1984) p 53, fn *)

which are traditionally taken to be facts. Thus, there is a further philosophical burden on the IC theory to justify admitting the existence of states of affairs.

One motivation for admitting the existence of states of affairs is to avoid philosophical difficulties. If states of affairs are not admitted, then it must be that facts play the roles played separately in the IC theory by facts and states of affairs. Call a correspondence theory which admits only propositions, truth, and facts a "lean" correspondence theory. One particular difficulty faced by a lean correspondence theory arises in the notion of falsity. If the necessary and sufficient condition for the truth of a proposition is that it corresponds to a fact, then the only plausible necessary and sufficient condition for the falsity of a proposition is that it does not correspond to a fact. However, since all non-propositional objects meet this necessary and sufficient condition, it follows that all non-propositional objects are likewise false. Although a lean correspondence theorist may insist that only propositions are eligible for bearing falsity, this is to insist on a distinction without a difference. The difficulty is that the lean correspondence theorist cannot account for the claim that only propositions are false, even granting the claim. Admitting states of affairs as well as facts affords the distinction between false propositions and untrue non-propositions.

Admitting states of affairs for this purpose deserves the charge of *ad hoc*-ity. This charge may be discharged by characterizing states of affairs in a way which is independently motivated. In section 22.2, a state of affairs is characterized as a way for things to be, a condition of the world; this is the same notion as a truth condition. Since this notion is independently motivated and accepted, the *ad hoc*-ity charge may be considered discharged.

Section 23.2: Mereological Worries about Facts

In section 22.2 it is claimed that a fact is a mereological part of the actual[i] world, and that

a state of affairs is a mereological part of a possible world. There are two features of

facts and states of affairs which these claims are meant to capture. One feature is that

facts and states of affairs, respectively, may be mereologically summed to yield a

possible world, whether actual[d] or non-actual[d]. A second feature is that a constituent of

a fact or state of affairs may be a constituent of numerically distinct facts and states of

affairs. For the purposes of this dissertation, the IC theory is neutral among theories on

the composition of facts and states of affairs, provided that such a theory does not

undermine these two features. Further investigation into mereological theories and their

merits, though extremely important and interesting, are unfortunately beyond the scope

of this dissertation.

Nevertheless, there are a few general objections which must be addressed. If

Cassio loves Desdemona unrequitedly, then the proposition that Cassio loves

Desdemona, <cLd>, is true, and adverts the actual[i] state of affairs wherein Cassio loves

Desdemona (A_{CD}). The proposition that Desdemona loves Cassio, <dLc>, is false, and

adverts the state of affairs wherein Desdemona loves Casio (A_{DC}). However, if A_{CD} is the

mereological sum of Cassio, Desdemona, and loving, then A_{CD} is identical to A_{DC}. Thus,

it may be objected that while <dLc> is false by hypothesis, it is true on the IC theory.

This is an important objection, but it is raised most directly against classical

(extensional) mereology. The impact of this case on the IC theory is to show that the IC

theory is incompatible with classical mereology. The principles and axioms of

mereology adopted by the IC theory must be non-classical; but non-classical mereologies

are generally more plausible than classical mereology as a result of this sort of

objection.[382] I am unable here to pursue further which mereological system best suits the IC theory.

There is also a worry that the second feature, that a constituent of a fact or state of affairs may be a constituent of numerically distinct facts and states of affairs, entails an objectionable mereology. That is, if the constituents of facts or states of affairs are themselves parts, in a classical mereological sense of 'part', then the IC theory is vulnerable to counterexamples, to which classical mereology is also vulnerable. A person and that person's body are different objects, yet they share all of the same parts, and, it may be supposed for some cases, exist during exactly the same span of time. Over a span of time, Sonny Bono and Cher were both an entertainment group and a family (married couple). In both examples, there is a pair of distinct objects having exactly the same parts.[383]

These counterexamples may be refuted individually. For instance, the person—body counterexample presumes that the person has no non-physical parts. It might be argued that biological processes, mental contents, or a soul are parts of the person but not the person's body, any of which are grounds for rejecting the counterexample. Similarly, it might be argued that Sonny Bono and Cher the entertainers have musical talent essentially, while Sonny Bono and Cher the family do not. This second order modal property grounds a distinction between the two objects. The counterexamples are too varied to offer a general solution within the scope of this dissertation. The purpose of this discussion is not to settle the issue, but to establish that the objection does not point up a flaw in the IC theory.

---

[382] See Peter Simons, *Parts: A Study in Ontology* (Oxford: Oxford University Press, 1987).

[383] For discussion of this objection, see Peter Simons (1987) §3.2.4.

Two other worries are also to be noted. There is a worry about what unifies the parts of a fact; this question is addressed in section 22.5. Another worry stems from the facts corresponding to, and the states of affairs adverted by, logically complex propositions, e.g., conjunctions and disjunctions. This issue is addressed in section 24.3.

Section 23.3: A Partially Defined Predicate Does Not Express a Property

A characteristic feature of Kripke's theory of truth is that the truth predicate is only partially defined. If the formal truth predicate accurately models this feature of a natural language truth predicate, then the objection can be raised that the truth predicate does not denote a property. Suppose that 'T(x)' is a partially defined predicate, and consider an object a for which 'T(x)' is undefined. Either a has the property denoted by 'T(x)', or it does not. In neither case is a undefined for the predicate, contra the hypothesis. Therefore, if 'T(x)' is genuinely undefined for a—that is, if 'T(x)' is a metaphysically vague predicate—then 'T(x)' does not express a property.[384]

Two cases must be distinguished: predicates which are not context-sensitive, and predicates which are. This argument is conclusive against context-insensitive predicates. It must be that a predicate either does or does not denote a property, if it is not context-sensitive. An object, a, either has or lacks the property denoted by a context-insensitive predicate, if it denotes a property. Therefore, if a context-insensitive predicate is metaphysically vague, it does not denote a property, and is undefined for all objects. It is not helpful to claim that the predicate is epistemically vague, since by hypothesis, there is a fact of the matter as to whether an epistemically vague predicate

---

[384] Thanks to Nathan Salmon for raising this objection.

applies to any object *a*. Similarly, the argument pressures the refinement of a

conceptually vague predicate so that it is not undefined for any *a*.

The argument is not conclusive against context-sensitive predicates. As

illustrated by 'is autological' and 'is heterological', it is possible for a predicate to fail to

denote a property in some but not all occurrences. Strictly speaking, the property

denoted by 'is autological' and 'is heterological' varies with the predicate of which it is

predicated. Nevertheless, these predicates are metaphysically vague as a result of their

sensitivity to sentential context.[385]

According to the IC theory, the truth predicate is *not* partially defined. Kripke's

theory is modified slightly to accommodate the claims of the IC theory, as described in

section 22.10.[386] It is important to note that the truth predicate in Kripke's construction

"need only be partially defined."[387] This is essential in constructing language levels, but

does not require that the truth predicate is undefined. As discussed in section 22.10,

'T(x)' is undefined for L_{tv} and L_{te}; but the truth predicate is fully defined.

It may nevertheless be worried that 'is assigned the truth value true' and 'is in

the extension of the truth predicate' are partially defined, i.e., are metaphysically vague.

Since these predicates are not context-sensitive, it follows that they do not denote a

---

[385] It might be thought that it is not correct to identify 'is autological' and 'is heterological' as
metaphysically vague predicates, since the properties they denote are not metaphysically vague.
However, if a predicate is metaphysically vague iff it metaphysically cannot be defined for at
least one object in its domain, then 'is autological' and 'is heterological' are metaphysically vague.
Since the properties denoted by 'is autological' and 'is heterological' vary with sentential context,
it does not follow that the properties denoted are metaphysically vague. The predicates are
metaphysically vague, though the properties are not. See section 22.8, especially footnote 43.

[386] Most importantly, the formal sentence '~T(L)' is excluded from the domain, since the
proposition it models is defective according to the IC theory. This modification does not affect
the construction of fixed points; see section 22.10.

[387] Kripke (1984) p 66.

property. If so, then these predicates cannot be successfully introduced to English,

though it seems plain that they may be, and have been. L_{tv} and L_{te} are true, but L_{tv} is not

assigned the truth value T, and L_{te} is not assigned to the extension of the truth predicate,

on pain of inconsistency. It seems that the principle to give up is not that these

predicates may be successfully introduced to natural languages, but the reverse

conditional in TVA and TEA. Recognizing that these two principles need to be

weakened forestalls concluding that these two predicates are partially defined, and

metaphysically vague.

Section 23.4: Customized Truth Paradoxical Sentences

The Liar Paradox has been an especially difficult problem for theories of truth, because

Liar sentences can usually be reformulated in the terms used by the theory to analyze

truth. The resilience of the Liar Paradox is evident in the theories discussed in chapter 2.

As a result, the claim that a Liar sentence does not express a proposition has been quite

popular. However, as Scott Soames argues, "there is no compelling reason to think that

such resistance [to truth evaluation] on the part of Liar sentences...shows that they do

not express propositions."[388] "The point is that for such cases there is no independently

motivated semantic theory that characterizes them as not expressing propositions."[389]

The IC theory is a semantic theory of truth motivated by the truth and truthmaker

intuitions, which are strong, independent, pre-philosophical intuitions, as well as the

notion of a truth condition, which is also independent, and quite general.

---

[388] Scott Soames, *Understanding Truth* (New York: Oxford University Press, 1999) p 194.

[389] *ibid*.

Nevertheless, a Liar sentence, L_{np}, may be formulated to foil the claim that a Liar sentence does not express a proposition.

L_{np} L_{np} does not express a true proposition.

Suppose L_{np} is true. L_{np} may be true either because it expresses a proposition which is not true, or because it does not express a proposition *simpliciter*. Only the second option is viable on the view that a Liar sentence does not express a proposition. But if L_{np} does not express a proposition, then it cannot be that L_{np} is true, since expressing a proposition is a necessary condition for L_{np} to be true. Therefore, this view is committed to the claims that L_{np} does not express a proposition, and that L_{np} is not true. If L_{np} does not express a proposition, then L_{np} does not express a true proposition. Yet since L_{np} correctly reports this, it must be that L_{np} is true according to any reasonable theory of truth, even one holding that a Liar sentence does not express a proposition. Therefore, the claim that a Liar sentence does not express a proposition seems ineffective against truth paradox.

L_{np} may be rephrased with 'is true' occurring as a predicate adjective without changing the proposition it expresses, yielding a sentence which may be given a wide scope or a narrow scope reading.

$L_{np}(n)$ $L_{np}(n)$ expresses a proposition which is not true.

$L_{np}(w)$ $\sim L_{np}(w)$ expresses a proposition which is true.

The semantic content of $L_{np}(n)$ has the following logical form: $(\exists x)[P(x) \wedge E(L_{np}, x) \wedge \sim T(x)]$. According to the IC theory, the third conjunct is defective, and $L_{np}(n)$ fails to express a proposition. The semantic content of $L_{np}(w)$ has the following logical form: $\sim(\exists x)[P(x) \wedge E(L_{np}, x) \wedge T(x)]$. Likewise, the third conjunct is defective according to the IC theory, such that $L_{np}(w)$ does not express a proposition.

Therefore, L_{np} does not express a proposition according to the IC theory. L_{np} may seem to follow from this result; it does not. What does follow is that the semantic content of L_{np} does not *bear truth*. The second order property ⦃bears truth⦄ must not be confused with truth. 'The semantic content of L_{np} does not bear truth' does express a proposition, indeed a true proposition.

Reformulating the Liar sentence in terms of the theory is also a delicate case.

L_a {L_a} does not advert actually[i].

According to the IC theory, 'adverts actually[i]' is semantically equivalent to 'is true'; therefore, L_a is treated exactly as L*. Specifically, the semantic content of 'adverts actually[i]' interacts with the denotation of the denoting term of which it is predicated. For L_a as for L*, semantic analysis of the denotation of the denoting term leads to a regress, with the result that L_a does not express a proposition.

The objection may be pressed by attempting to construct a proposition from the descriptive semantic content of '{L_a}' and the semantic content of 'adverts actually[i]'. While most simple sentences may be taken to express propositions consisting of the semantic contents of the subject and predicate terms, the unusual feature of the truth predicate whereby it interacts with the denotation of the denoting term of which it is

predicated must be noted. The attempt to press this objection fails, then, since no such

proposition can be formed.

Occasionally a theory of truth offers a solution to the Liar Paradox in which

negation plays a critical role, and as a result, the theory is embarrassed by TT or L_f.

TT   {TT} is true.

L_f {L_f} is false.

According to the IC theory, TT is analyzed as having the same semantic content as

'^{d}{TT}^{d} adverts actually^i'; thus, TT expresses a defective proposition for the same reason

L* does. The IC theory analyzes L_f as having the same semantic content as '$^dL_f{}^d$ adverts

non-actually^i', which likewise fails to express a proposition.

Also, notice that although the truth predicate is context-sensitive according to the

IC theory of truth, it is an indexical expression, and so does not change its extension

according to the context, as it does according to the context theories of truth examined in

section 20. Hence, it is not vulnerable to the objections raised there against context

theories.[390]

Finally, there may be some worry that a reformulated Liar sentence undermines

Kripke's theory of truth.

L_{ug} L_{ug} is ungrounded.

---

[390] On the IC theory, the truth predicate is sensitive to the semantic context, while on the context
theories, it is sensitive to other elements of the context. Other than the claim that the truth
predicate is context-sensitive, the IC theory shares nothing characteristic with context theories of
truth. They should not be confused.

Nothing in the inductive process of the construction leads to assigning L_{ug} either to the extension or the anti-extension of the truth predicate before the smallest fixed point. If the truth predicate is undefined for L_{ug} initially, then L_{ug} is ungrounded, and true. Consequently, it is to be added to the extension of the truth predicate at the next level, and remains in the extension of the truth predicate at all levels beyond the smallest fixed point. If instead L_{ug} is assigned to the anti-extension of the truth predicate as an initial condition, it will be there at the smallest fixed point, whence it is grounded and false. This is a peculiar result, but it does not undermine the ungroundedness predicate.

Introduce the notion of maxgroundedness in order to raise the objection at all language levels. A sentence is maxgrounded iff it is in either the extension or the anti-extension of the truth predicate at any fixed point; a sentence is unmaxgrounded iff it is in neither the extension nor the anti-extension of the truth predicate at any fixed point.

L_{mug} L_{mug} is unmaxgrounded.

Nothing in the inductive process of the construction leads to assigning L_{mug} either to the extension or to the anti-extension of the truth predicate at any level. If L_{mug} is not assigned either to the extension or to the anti-extension of the truth predicate, then intuitively it is true. Since it cannot stably be assigned to the extension of the truth predicate, it must be assigned to the anti-extension. This is a somewhat peculiar result as well, but it does not result in paradox, and does not undermine Kripke's theory of truth.

Section 24: Further Challenging Cases

Section 23 discusses several objections to the IC theory of truth. There are other

important but less direct questions which may be posed to the IC theory; some of these

are discussed in section 24. While each of these questions demands a sophisticated

philosophical exposition, the scope of the discussions in section 24 is limited to a

preliminary exploration. Their aim is modest: to show that for each question, there is a

plausible answer with which the IC theory is not incompatible, and for some to show

what commitments are entailed by the IC theory.

Section 24.1: Analyticity

Since according to the IC theory, a true proposition is one adverting an actual[i] state of

affairs, it is fair to ask what state of affairs is adverted by the proposition expressed by

an analytic sentence, and what fact it corresponds to. The notion of analyticity is

somewhat nebulous, and has been the subject of sustained philosophical debate. The

aim of this section is to elucidate a plausible notion of analyticity, and to show that the

IC theory is compatible with it by roughly characterizing the state of affairs adverted by,

and the fact corresponding to, the (true) proposition expressed by an analytic sentence.

According to Kant, a statement or judgment is analytic if the concept expressed

by the predicate is contained in (is part of) the concept expressed by the subject term.

Ayer refines Kant's definition as follows: "a proposition is analytic when its validity

depends solely on the definitions of the symbols it contains."[391] The recent standard

notion of analyticity is roughly Ayer's, but is stated in terms neutral with respect to

---

[391] Alfred Jules Ayer, *Language, Truth and Logic*, second edition (New York: Dover Publications, Inc., 1952) p 78.

Ayer's logical positivism. According to the recent standard formulation, a sentence is analytic if and only if it is true solely in virtue of the meaning of its terms.[392] Alternative notions of analyticity are available. For Kripke, "something which is analytically true will be both necessary and *a priori*. (That's sort of stipulative.)"[393] Salmon proposes "that we call a sentence 'analytic' if its truth is...a fact of pure rather than applied semantics."[394] The difference between pure and applied semantic facts is illustrated by the following example: "whereas it is a purely semantic fact about English that 'Snow is white' is true if and only if snow is white, it is an applied semantic fact that 'Snow is white' is true."[395]

One source of controversy is over what things are analytic. Since propositions are the meanings of sentences, it must be that it is sentences rather than propositions which are analytic. Despite Ayer's use of the term 'proposition', it is clear that he has in mind that sentences are analytic. Kripke's stipulative definition of the conjunctive notion is permissible, and philosophically significant; yet since he is not especially trying to capture the notion of being true in virtue of the meaning of its terms, it is misleading to give the term 'analytic' to this notion. Since it is propositions which are necessary and *a priori*, Kripke's stipulative definition also misidentifies what things are analytic.

---

[392] The discussion in this section addresses only the notion of analytic truth; it overlooks the notion of analytic falsity.

[393] Saul Kripke, *Naming and Necessity* (Cambridge, Massachusetts: Harvard University Press, 1980) p 39.

[394] Nathan Salmon, "Analyticity and Apriority" in Tomberlin (1993) pp 125-133, at p 129. Salmon notes that "[t]his notion of analyticity differs from that given in *Frege's Puzzle*...[which] is roughly the notion of a sentence whose propositional content is a logical truth." (p 132, fn 13)

[395] *ibid*., p 129. Still other notions are available; see, for example, Paul Artin Boghossian, "Analyticity Reconsidered" *Nous* **30** (1996) pp 360-391. No other notions of analyticity are discussed here, as they do not elucidate further the modest point to be made.

Nevertheless, analyticity seems to be closely tied to one or both modalities. Supposing that meaning plays a role in analyticity, as well as at least one modality, then AN1—AN5 are elementary candidate analyses for the analyticity of a sentence, S.

AN1   S is analytic iff □(S expresses P ∧ P is true)

AN2   S is analytic iff <S expresses P ∧ P is true> is *a priori*

AN3   S is analytic iff [S expresses P ∧ □(P is true)]

AN4   S is analytic iff [S expresses P ∧ <P is true> is *a priori*]

AN5   S is analytic iff [S expresses P ∧ □(P is true) ∧ <P is true> is *a priori*]

AN1 and AN2 are plainly false, since it is neither necessary nor *a priori* that S expresses P. AN3 and AN4 capture the notion that S expresses a necessarily true proposition, and an *a priori* true proposition, respectively. While these are philosophically significant notions, they do not capture the notion of a sentence being true solely in virtue of the meaning of its terms. AN5 is roughly the notion which Kripke stipulatively introduces, adapted for a sentence. It is philosophically significant, but again, it does not capture the notion of a sentence being true solely in virtue of the meaning of its terms.

Salmon writes that "[c]ertain sentences are special in that their truth value is settled entirely by pure semantics."[396] For example, the sentence 'all married men are

---

[396] *ibid*. Presumably, the truth of any sentence depends at least in part on the pure semantic fact that it has the semantic meaning it does in the language of which it is a sentence. Since for an analytic sentence to be settled by a pure semantic fact is for it to be settled entirely by a pure semantic fact, and since this discussion is limited to analytic sentences, the qualifier 'entirely' is dropped for simplicity of discussion.

The three readings given to the quoted claim in the next several paragraphs may also be given to Salmon's proposal for calling a sentence 'analytic'. I focus on this claim rather than the definition because the readings may be distinguished more perspicuously thereby.

married' is analytic. Its truth is a logical consequence of, and its truth value is settled by, the purely semantic fact (F_{MM}) that 'all married men are married' is true if and only if all married men are married. The truth of an analytic sentence is a logical consequence of a purely semantic fact in the same way that p is a logical consequence of $p \Leftrightarrow (q \vee \sim q)$, since <all married men are married> is a truth of logic, just as $(q \vee \sim q)$ is a truth of logic. For F_{MM} to entail the truth of 'all married men are married', it must be that F_{MM} is a mutual entailment. However, as a mutual entailment, F_{MM} is false. As a material biconditional, F_{MM} is true. Thus, the truth of 'all married men are married' follows from the purely semantic fact F_{MM} together with the truth of logic, i.e., its right side, by modus ponens. Similarly, as a material biconditional, F_{OC} is true, but since its right side is not a truth of logic, it does not settle the truth of 'all oranges are cubes'. Since the truth value of 'all oranges are cubes' is not settled by F_{OC}, it is not analytic.

There is a tension between this notion of analyticity and the IC theory if the truth of certain sentences is *metaphysically* settled entirely by a purely semantic fact. According to the IC theory, {all married men are married} adverts a state of affairs, and is true if that state of affairs is actual[i]. Generally, on the IC theory, the proposition expressed by an analytic sentence does not correspond to a purely semantic fact. If the truth of 'all married men are married' or the proposition it expresses is metaphysically settled by F_{MM}, then either there is a conflict between the two theses over what makes {all married men are married} true, or it is overdetermined what makes {all married men are married} true, or 'all married men are married' is ambiguous. But if F_{MM} metaphysically settles the truth of {all married men are married}, then F_{OC} metaphysically settles the truth of {all oranges are cubes}. Since this is absurd, it cannot

be that the truth of an analytic sentence is metaphysically settled by a purely semantic fact.

Alternatively, since the truth of 'all married men are married' is settled by F_{MM} together with a truth of logic, then these two propositions jointly entail the truth of an analytic sentence. By contrast, the truth of 'all oranges are cubes' is not logically settled by a purely semantic fact together with a truth of logic. If a purely semantic fact has as a logical consequence the proposition that a certain analytic sentence is true, then the purely semantic fact *logically* settles the truth of an analytic sentence, without metaphysically settling its truth; i.e., the purely semantic fact settles *that* a certain analytic sentence is true. This notion of analyticity, call it "logical analyticity", is captured by AN6, where 'PSF(x)' is the predicate 'is a pure semantic fact.'

AN6   S is analytic iff $[\text{S expresses P} \wedge \text{P is true} \wedge (\exists x) [\text{PSF}(x) \wedge x \Rightarrow \text{<P is true>}]]$

AN6 captures the notion of a sentence's being true solely in virtue of the meaning of its terms through the entailment by a pure semantic fact.

Salmon notes that

> The notion of truth-as-a-consequence-of-semantics-alone does have an epistemological dimension: for any sentence whose truth value is a logical consequence of pure semantics, anyone competent in the language is *ipso facto* in possession of sufficient information to determine that truth value by logic—never mind that knowledge of pure semantics for a natural language, and hence competence in the language, is gained only by means of experience.[397]

---

[397] *ibid.*, p 130.

For example, because the truth of 'all married men are married' is a logical consequence of F_{MM}, anyone competent in the language can deduce the proposition that 'all married men are married' is true. Hence, 'all married men are married' is analytic.

It is also possible to formulate a notion of analyticity emphasizing its epistemological dimension. On this notion, the truth of an analytic sentence is *epistemically* settled by a pure semantic fact. Call a proposition "semantically *a priori*" if and only if it is knowable without appeal to experience other than a pure semantic fact, of which it is a logical consequence, and call this notion of analyticity "epistemic analyticity".[398] Then the notion of epistemic analyticity is captured by AN7.

    AN7   S is analytic iff [S expresses P ∧ P is true ∧ <P is true> is semantically *a priori*]

AN7 captures the notion of a sentence's being true in virtue of the meaning of its terms through the notion of semantical *a priority*. Semantic *a priority*, though not strictly a notion of *a priority*, includes the notion of knowability, which is not included in AN6. The notions of logical and epistemic analyticity are logically equivalent, since <P is true> is semantically *a priori* if and only if $(\exists x)$ [PSF(x) ∧ x $\Rightarrow$ <P is true>].

Notice that neither the notion of logical analyticity nor epistemic analyticity is committed to what metaphysically settles the truth of S or P; i.e., neither is committed to what makes an analytic sentence or the proposition it expresses true. Therefore, either notion of analyticity is compatible with the IC theory.

---

[398] Since some purely semantic facts are *a posteriori*, the semantically *a priori* propositions are not a subset of the *a priori* propositions.

    If the purely semantic facts are restricted to facts of synonymy, semantical *a priority* is Boghossian's notion of Frege-analyticity: S is analytic iff it is transformable into a logical truth by the substitutions of synonyms for synonyms. Cf. Boghossian (1996) p 366f.

Salmon distinguishes his notion of analyticity from "the traditional sense, which rules out that the sentence in question describes an extralinguistic fact and is in that sense true partly by virtue of a feature of the world"[399] and disclaims the traditional thesis that analytic sentences are "devoid of extralinguistic, factual content."[400] Salmon writes,

> I think it is obvious that even logical validities like 'All married men are married', since they are contentful and true, describe facts—typically extralinguistic (albeit particularly unexciting) facts that are both necessary and knowable *a priori*.[401]

In terms of the IC theory, the fact described by an analytic sentence, S, is the fact to which the proposition expressed by S corresponds. For 'all married men are married', it is the indeed unexciting fact that all married men are married.

The state of affairs adverted by {all married men are married} is a way for things to be. It is a way wherein a thing is married if it is a married man. This may be taken to suggest a conditional form for the state of affairs adverted by, as well as the fact corresponding to, {all married men are married}. This fact is an unusual entity. It is not the empirical fact consisting of all married men, since the fact corresponding to {all married men are married} is actual[d] even if there are no married men. If so, the IC theory is committed to some form of platonism about facts. I am not as wary of this result as a metaphysician might be, though I cannot defend such a view in this

---

[399] *ibid.*, p 133, fn 16.

[400] *ibid.*

[401] *ibid.*

discussion. The aim of this section is to elucidate at least one plausible notion of

analyticity with which the IC theory is not incompatible, and to characterize roughly the

state of affairs adverted by, and the fact corresponding to, the proposition expressed by

an analytic sentence.

Section 24.2: Counterfactuals and Modalities

There are three main issues for the IC theory regarding counterfactuals and modalities.

One issue is whether the IC theory is capable of handling truth predications for

counterfactual circumstances and within the scope of modal operators. A second issue

is the question as to what states of affairs are adverted by counterfactual and modal

propositions. A third issue is the question as to what facts correspond to true

counterfactual and modal propositions.

Because on the IC theory truth is sensitive to the world of the context of

utterance, it handles counterfactuals quite naturally. To see this, first consider the truth

conditions for a counterfactual proposition such as that expressed by BS:

    BS   If Barry Sanders had played another season,
                          he would be the NFL's all-time leading rusher.

Call the embedded sentence 'he would be the NFL's all-time leading rusher' "LR".

While the context of BS is the actual[d] world, the antecedent dependent clause shifts the

context of LR to a possible world. For simplicity, let the context of LR be the nearest

possible world where the antecedent condition is met, whichever world that is. Call this

world "w_{BS}". Then {LR} is true if and only if Barry Sanders is the NFL's all-time leading

rusher in w_{BS}, as is {BS}.

Consider next BST, where truth is predicated of LR after the context shift to w_{BS}.

BST   If Barry Sanders had played another season,
                        it is true that he would be the NFL's all-time leading rusher.

Since the general notion of truth according to the IC theory is adverting an actual[i] state

of affairs, the truth predicate as it occurs in BST is sensitive to the shift in context to w_{BS}

induced by the antecedent dependent clause.

Likewise, truth is predicated relative to the actual[d] world, $w_{@}$, by the first

occurrence of 'is true' in BSTT, since the world of the context of utterance of BSTT is $w_{@}$.

BSTT   It is true that if Barry Sanders had played another season,
            it is true that he would be the NFL's all-time leading rusher.

BSTP   It is true that Barry Sanders might have become
                    the NFL's all-time leading rusher.

BSPT   It is possibly true that Barry Sanders would have become
                    the NFL's all-time leading rusher.

The context for the truth predicate in BSTP is the actual[d] world. BSTP is

semantically equivalent to 'It is true that it is possible that Barry Sanders would have

become the NFL's all-time leading rusher'. Possibility is given its standard semantics:

$\Diamond$P is true iff there is a possible world where P is true.[402] In terms of the IC theory, the

---

[402] In this semantics, 'P' denotes a proposition. Where 'S' is a formal sentence, possibility is
defined without invoking truth: $\Diamond S \equiv (\exists w)(S_w)$.

semantics is: $\lozenge$P adverts actually^i_c iff there is a possible world, w, where P adverts

actually^i_w. For BSTP, the world of the context of utterance is $w_@$. Thus, the truth

predicate as it occurs is BSTP is pragmatically redundant. The truth predicate occurs as

part of the truth operator, which may be eliminated with semantic loss, though without

pragmatic loss.

The scope of the truth predicate and the possibility operator are reversed in

BSPT. Because actuality^i is a semantic component of truth on the IC theory, it accounts

for the sensitivity of the truth predicate as it occurs in BSPT (i.e., within the scope of a

possibility operator) to the world of the context of evaluation. The IC theory handles

predications of truth within the scope of modal operators through the context-sensitivity

of the truth predicate.

The same context-sensitivity handles the truth of necessary propositions, such as

that expressed by BSN.

BSN   Necessarily, Barry Sanders is the NFL's all-time leading rusher.

BSNT   It is necessarily true that Barry Sanders is the NFL's all-time leading rusher.

According to the standard semantics for necessity, $\square$P is true iff in every possible world,

w, P is true in w. In terms of the IC theory, the semantics is: $\square$P adverts actually^i_c iff for

every possible world, w, P adverts actually^i_w. The context-sensitivity of actuality^i

accommodates the evaluations at each possible world of {Barry Sanders is the NFL's all-

time leading rusher}. As above, where the truth predicate occurs within the scope of a

modal operator, such as the necessity operator in BSNT, the context-sensitivity of the

truth predicate permits the proper semantics for the sentence. Again, the IC theory

handles predications of truth within the scope of modal operators through the context-sensitivity of the truth predicate.

Just as for propositions expressed by analytic sentences, the states of affairs adverted by, and the facts corresponding to, true counterfactual and modal propositions are unusual entities. The states of affairs are perhaps easiest to posit, since they are ways. In each of {BSTP}, {BSPT}, {BSN}, and {BSNT}, the way for things to be is complex: the proposition that Barry Sanders becomes the NFL's all-time leading rusher in at least one possible world's adverting actually$^i_@$; there being at least one possible world where the proposition that Barry Sanders becomes the NFL's all-time leading rusher adverts actually^i_w; Barry Sanders' being the NFL's all-time leading rusher in every possible world; and, every possible world's being such that the proposition that Barry Sanders becomes the NFL's all-time leading rusher adverts actually^i_w, respectively. These four cases, too, suggest that the facts corresponding to counterfactual and modal propositions are abstract objects, and that the IC theory is committed to some form of platonism about facts. Again, I am not as wary of this result as a metaphysician might be, though I cannot defend such a view in this discussion. The aims of this section are to show that the IC theory is capable of handling truth predications for counterfactual circumstances and within the scope of modal operators, and to characterize roughly the states of affairs adverted by, and the facts corresponding to, counterfactual and modal propositions.

Section 24.3: Logically Complex Propositions

Questions similar to those addressed in sections 24.1 and 24.2 may be asked regarding logically complex propositions: how does the IC theory handle truth predications of logically complex propositions; what states of affairs are adverted by logically complex

propositions; and, what is the nature of a fact to which a true logically complex

proposition corresponds?

The answers to these questions depend on the semantics ascribed to sentential

connectives which form sentences expressing logically complex propositions; e.g., 'not',

'and', 'or', and 'if...then...'. For Frege, a sentential connective expresses an unsaturated

or unfulfilled function, and forms a compound thought when it is fulfilled with a

thought or thoughts.[403] A sentential connective is part of the compound thought, though

it has no sense *per se*. Thus, for example, " "A and A" has the same sense as "A"."[404]

Alternatively, a sentential connective may be viewed as denoting an n-ary property or

relation of truth values; e.g. the property of being a falsehood ('not'), the relation: either

a is a falsehood, or *c* is a truth ('if *a*, then *c*').[405] On this view, as well as Frege's, a

sentential connective is a truth functional, or extensional, operator.

If Frege's view of sentential connectives is adopted, then it seems that the only

plausible view for the state of affairs adverted by a logically complex proposition is that

it is a function from the class of states of affairs adverted by the propositions fulfilling

the connective to truth and to falsity. For example, the state of affairs adverted by {snow

is white and grass is orange} is the function from the class consisting of snow's being

white and grass's being orange to truth if both states of affairs are actual[i] and to falsity if

either is non-actual[i]. By contrast, the state of affairs adverted by {snow is white or grass

---

[403] Gottlob Frege, "Compound Thoughts" *Mind* **72** (1963) pp 1-17. On Frege's view, the negation of a thought is not a compound thought. Nevertheless, the notion of a complex logical proposition is extended from Frege's notion of a compound thought easily enough.

[404] *ibid.*, p 5, fn 1.

[405] See Salmon (1986) chapter 2.

is orange} is the function from this same class to truth if either or both is actual[i] and to falsity if both are non-actual[i].

This view for the state of affairs adverted by a logically complex proposition is also available for the alternative view of connectives, though it is more natural to adopt a view on which the state of affairs adverted by a logically complex proposition is a unified complex.[406] For example, on this view, the state of affairs adverted by {snow is white and grass is orange} is: snow's being white and grass's being orange. By contrast, the state of affairs adverted by {snow is white or grass is orange} is: snow's being white or grass's being orange.

Both views posit somewhat unusual entities as states of affairs. If a state of affairs is understood strictly as a way for things to be, then it is not plausible to hold that a state of affairs is a function. A disjunctive state of affairs has an obtrusive mysteriousness; keeping in mind that a state of affairs is a *way* for things to be may eliminate some or all of its mystery. There is some plausibility to understanding a state of affairs adverted by a logically complex proposition as a mereological sum of its constituent state of affairs, though such a mereological system must be non-standard, and perhaps even controversial.

It is more plausible to take the facts corresponding to true propositions expressed by logically complex sentences to be mereological sums of the facts corresponding to the propositions expressed by their constituent sentences. Obviously, the mereological conjunction $F_A \wedge F_B$ must differ from the mereological disjunction $F_A \vee F_B$. Where only one disjunct is true, the fact corresponding to $F_A \vee F_B$ is either F_A or F_B. Where both

---

[406] This is to say that there is no incompatibility to adopting both the alternative view of the semantics of connectives and the view that states of affairs are functions; but if one adopts the latter, one might as well adopt Frege's view of the semantics of connectives.

disjuncts are true, it must be admitted that the mereological disjunction is an especially

strange entity.   The facts corresponding to true negations must be treated differently;

this case is discussed in section 24.4.

Section 24.4: Negative Facts

A long standing challenge to correspondence theories of truth is to account for the facts

which correspond to true negations, such as {grass is not orange}. This challenge is

sharp for the IC theory, since it cannot identify the absence of an object or property as a

fact, given the notion of fact posited in section 22.2 as a mereological part of the actual[i]

world. There is a further challenge stemming from the issue of uniqueness: *prima facie*,

the fact to which {grass is not orange} corresponds must differ from the fact to which

{grass is not red} corresponds.

Any semantics for sentential connectives according to which negation makes no

semantic contribution to a proposition is incompatible with the IC theory, since on any

such semantics, a sentence and its negation express the same proposition. Therefore,

only a view such as the alternative view for negation mentioned in section 24.3 is

available for the IC theory. On this view, 'not' denotes a property of truth values, e.g.,

the property of being a falsehood ('not').

Two refinements must be made to this view in order for it to be viable for the IC

theory. The first refinement is based on a distinction between complementary and

supplementary properties. Two properties are complementary if and only if (a) they

have the same domain of exemplification; and (b) every object in the domain of

exemplification has one or the other property, but not both; i.e., a property is a

complementary property if and only if there is exactly one other property which,

together with it, are exemplified jointly exhaustively and mutually exclusively by the objects in their shared domain of exemplification. Two predicates are complementary if and only if the properties they denote are complementary. For example, {being numbered} and {being unnumbered} are complementary properties over the domain of book pages. Three or more properties are supplementary if and only if (a) they have the same domain of exemplification; and (b) every object in the domain of exemplification has exactly one of the properties; i.e., a property is a supplementary property if and only if there are at least two other properties which, together with it, are exemplified jointly exhaustively and mutually exclusively by the objects in their shared domain of exemplification. Two predicates are supplementary if and only if the properties they denote are supplementary. For example, {being a freshman}, {being a sophomore}, {being a junior}, and {being a senior} are supplementary properties over the domain of (matriculated) undergraduate students.

The first refinement is the claim that 'not' expresses choice negation when it modifies a complementary predicate, and expresses exclusion negation when it modifies a supplementary predicate.[407]

The second refinement is the claim that 'not' combines with the predicate it modifies to denote a new property. Call the alternative view of negation which adopts these two refinements the refined alternative (RA) view.

---

[407]An alternate version of this claim which is less *ad hoc* is that 'not' expresses choice negation primarily, and exclusion negation secondarily. This claim can be further defended by showing that exclusion negation is metalinguistic. For example, exclusion negation is best captured in English by the operator 'it is not the case that'. Although the operator is standard parlance in philosophy, 'the case' is not. Elucidating this operator seems to require reading 'the case' as 'true' or 'the state of affairs'. Logically, this is represented by placing the negation symbol in the position of widest scope; semantically, there is a subtle shift in semantic content.

A very similar alternative view, proposed by Nathan Salmon, is that 'not' is ambiguous between choice and exclusion negation; see his "Nonexistence" *Nous* **32** (1998) pp 277-319 at section VII.

In general, on the RA view, the predicate formed by 'not' and a complementary predicate 'p_c' denotes a property, $\{$is un-$p_c\}$, or un-p_c-ness; while the predicate formed by 'not' and a supplementary predicate 'p_s' denotes a property, $\{$is non-$p_s\}$, or non-p_s-ness. The exclusionary nature of the property denoted by 'is not p_s' may be emphasized by naming $\{$is non-$p_s\}$ 'otherthan-p_s-ness'.

As a simple example, consider the sentence 'The pages of *Principia Mathematica* are not numbered.' Since 'is numbered' is a complementary predicate, 'not' combines with it to denote $\{$is unnumbered$\}$.

In 'Fen is not a sophomore', 'not' forms a predicate with 'is a sophomore' which denotes non-sophomoreness (otherthansophomore-ness). Similarly, in 'grass is not orange', 'not' forms a predicate with 'is orange' which denotes non-orangeness (otherthanorange-ness).

At least in these simple examples, it is plausible to suppose that the negated predicate denotes a property. For example, unnumbered pages bear unnumberedness, and grass bears otherthanorange-ness, in addition to greenness.[408] If so, then there is a unique fact corresponding to both true propositions {grass is not orange} and {grass is not red}. The states of affairs adverted by these propositions are grass's being otherthanorange and otherthanred, respectively. Though the RA view is only sketched in this section, it is a plausible view which posits a unique state of affairs adverted by a

---

[408] I leave open the questions as to what sort of property otherthanorange-ness is, and how greenness and otherthanorange-ness are related.

negative proposition, and a unique fact corresponding to each true negative proposition for the cases considered. A related group of problems is considered in section 24.5.[409]

Section 24.5: True Negative Singular Existentials

The failure of a noun term to denote is a source of philosophical problems. One important subset of problems stems from true predications of non-existence, or true denials of existence, to non-denoting singular terms. Where the non-denoting singular term has descriptive content, one problem for the IC theory is how there can be a fact corresponding to the proposition expressed; another is to identify the fact corresponding to it. Where the non-denoting singular term is a Millian term (i.e., has as semantic content only its referent), there is a problem for Millianism to explain how a Millian singular term makes a semantic contribution to the proposition expressed when by hypothesis it is non-denoting; the problem for the IC theory is to explain how the proposition expressed is true.

Consider Russell's famous example of the present king of France.

---

[409] It may be noted that on the RA view, 'is true' is a complementary property, which combines with 'not' to denote falsity. If it is supposed that there are propositions which are neither true nor false, then 'is true' is a supplementary predicate, with the result that it combines with 'not' to denote 'otherthantrue-ness'.

One objection to the RA view is that 'existence' seems like a counterexample, since it is a complementary predicate, yet intuitively it seems that 'not' expresses exclusion negation when it modifies 'exist'. (A syntactic clue is the word form: 'nonexistence'.) Several options are available. These include the alternate views described in footnote 88, or making an exception for the existence predicate on the grounds held by many philosophers that existence is a special predicate.

Another objection to the RA view is that there is no room to express the exclusion negation of a sentence containing a complementary predicate. However, the exclusion negation of 'the pages of *Principia Mathematica* are numbered' is expressed by 'it is not the case that the pages of *Principia Mathematica* are numbered'. Care must be taken not to read 'it is not the case that' metalinguistically.

KF   The present king of France does not exist.

According to Russell's theory of descriptions, KF is false, since the definite description is analyzed in part as making an existence claim, which is false.[410] For Frege, a sentence containing a non-denoting subject term is neither true nor false, because such a sentence logically presupposes that there is a present king of France.[411] Where S is a true sentence denying the existence of its subject term, α, premises 1-4 below lead to a contradiction.[412]

   1. S is true

   2. S is about α

   3. if S is about α, there is such a thing as α

   4. if there is such a thing as α, then S is false

 ∴ 5. S is false

   Cartwright characterizes two solutions to the paradox. An ontologically inflated solution maintains two ontological statuses, being and existence. "*Being* is that which belongs to every conceivable term, to every possible object of thought" while "*existence*

---

[410] Bertrand Russell, "On Denoting" in Martinich (2000) pp 212-220, and "Descriptions" in Martinich (2000) pp 221-227.

[411] Gottlob Frege, "On Sense and Nominatum" in Martinich (2000) pp 199-211. This notion of presupposition, also called "evaluative presupposition", may be contrasted with expressive presupposition and pragmatic presupposition. A proposition is expressively presupposed by a sentence if the sentence fails to express a proposition if the proposition is false. Pragmatic presupposition is aptly characterized by Robert Stalnaker: "Presuppositions, on this account, are something like the background beliefs of the speaker—propositions whose truth he takes for granted, or seems to take for granted, in making his statement." (Robert C. Stalnaker, "Pragmatic Presuppositions" in his *Context and Content* (New York: Oxford University Press, 1999) pp 47-62, at p 48.)

[412] This argument is adapted from Richard Cartwright, "Negative Existentials" in Richard Cartwright, *Philosophical Essays* (Cambridge, Massachusetts: MIT Press, 1987) pp 21-31 at p 22. The contradiction is between premise 1 and an implicit premise which follows from 5: ~ S is true.

is the prerogative of some only amongst beings."[413] According to the ontologically

inflated solution, premise 3 is false, since α can have being without existence.

An ontologically conservative solution maintains that, despite appearances, S is

not about α. For example, though 'the present king of France' is a properly formed

definite description—and even a comparatively rare case of a complete definite

description—KF is not about the present king of France, since there is no present king of

France. Both Russell and Frege hold ontologically conservative views.

Apart from the specific objections which may be raised against Russell's and

Frege's semantic theories for definite descriptions, two general considerations press the

problem of true negative singular existentials. One consideration is that it is hard to

deny that in some sense S is about α; if so, then premise 2 is not objectionable. A second

consideration is that although Russell and Frege argue that common proper names have

descriptive content, it seems plausible for such terms nevertheless to occur in a natural

language, e.g., as argued about proper names by Millians.[414]

Nathan Salmon distinguishes and canvasses a number of cases of true negative

singular existentials, and argues convincingly that "the so-called problem of non-

referring names, on closer examination, frequently vanishes."[415] For Salmon, a term, α,

is weakly non-referring if α is non-referring and there might have existed something to

---

[413] Bertrand Russell, *The Principles of Mathematics*, second edition (London: George Allen and
Unwin, Ltd., 1937) p 449; italics in original; quoted by Cartwright, "Negative Existentials", *op. cit.*,
p 22.

[414] Russell's logically proper names lack descriptive content. Epistemic conditions for their
introduction prevents a logically proper name from being non-denoting.

[415] Nathan Salmon, "Nonexistence" *Nous* **32** (1998) pp 277-319 at p 286. Throughout this
discussion, 'denote' and 'refer', as well as their cognates, are used as synonyms.

which the term actually refers.[416] For example, dub the merely possible person who would have sprung from the union of two gametes, γ_m and γ_f, which did not actually unite 'Noman'; then 'Noman' is a weakly non-referring term. A term, α, is strongly non-referring if α is non-referring and there could not have existed something to which the term actually refers.[417] Call the person who would have sprung from γ_f and the male gamete from which Napoleon actually sprang 'Naman'. Then 'the set consisting of Naman and Noman' is a strongly referring term, since Naman and Noman are incompossible.

For Salmon, a term, α, is very weakly non-referring (at a time τ) if (at τ) there has existed or will exist something to which α refers at τ but which does not exist at τ.[418] Strictly speaking, 'very weakly non-referring' is a misnomer, since very weakly non-referring terms refer. For example, 'Socrates' denotes Socrates in 'Socrates does not exist', yet the proposition expressed is true.[419] Similarly, the name introduced by David Kaplan for the first person to be born in the 22nd century, 'Newman-1' is very weakly

---

[416] *ibid.*, p 287.

[417] *ibid.*

[418] *ibid.* I have augmented the definition Salmon gives there to emphasize that the referent of α does not exist at τ.

[419] Roderick Chisholm shares the view that terms such as 'Socrates' and 'George Washington' refer, though their referents no longer exist: "Relating ourselves to things that no longer exist and even acting upon such things would seem, then, to be familiar phenomena. And our question is, not *whether* such things occur, but just *how* it is that they occur." (Roderick M. Chisholm, "Referring to Things That No Longer Exist" in *Philosophical Perspectives* **4***: Action Theory and Philosophy of Mind*, James Tomberlin, editor (Atascadero, California: Ridgeview Publishing Company, 1990) pp 545-556 at p 545.

non-referring.[420] Since very weakly non-referring terms denote despite the non-existence of their denotation, existence (at τ) is not a condition for reference (at τ). In other words, a sentence can be about Socrates, or Newman-1, at times when Socrates or Newman-1 do not exist. Therefore, premise 3 is false.

Consider several challenging cases for the IC theory. One challenge is to account for the truth of propositions expressed by sentences containing weakly non-referring terms, such as {Socrates does not exist}. Salmon writes:

> Socrates is long gone. Consequently, singular propositions about him, which once existed, also no longer exist. Let us call the no-longer-existing proposition that Socrates does not now exist, 'Soc'. Soc is a definite proposition. Its present lack of existence does not prevent it from being true. Nor does its nonexistence prevent it from being semantically expressible in English.[421]

If expression is understood as a semantic relation closely related to reference, and weakly non-referring terms denote despite the non-existence of their referents, then it may be argued homologously that sentences containing weakly non-referring terms express propositions despite the non-existence of their referents. Existence is not a necessary condition for either reference or expression.

Salmon also argues that Socrates bears properties, such as being studied by philosophers, despite his non-existence. Likewise, Soc bears properties, such as truth, despite its non-existence. For the IC theory, supplemented by the RA view of negation,

---

[420] David Kaplan, "Bob and Carol and Ted and Alice" in *Approaches to Natural Language*, K. J. J. Hintikka, J. M. E. Moravcsik, and P. Suppes, editors (Dordrecht, The Netherlands: D. Reidel Publishing Company, 1973) pp 490-518.

[421] Salmon, "Nonexistence", *op. cit.*, pp 286-287.

the fact corresponding to Soc is Socrates' bearing unexistence; unexistence may be called 'nonexistence' to conform with grammatical standards. It does not follow that Socrates exists, since this fact *is* a mereological part of the actual[d] world.

A second challenging case occurs where α is weakly non-referring. Let 'Nay' name the person sitting in my car right now, and nothing otherwise. If as I suspect, no one is sitting in my car, then 'Nay' is a weakly non-referring term. Then {Nay does not exist} is a candidate true negative existential proposition. For Salmon, {Nay does not exist} is a defective proposition. Thus, on the IC theory, it is neither true nor false., and premises 1 and 3 are both false. The temptation to evaluate {Nay does not exist} as true stems from confusing the name with its (failed) reference-fixing description.

Finally, consider a case where α is strongly non-referring, such as 'the set consisting of Naman and Noman'. Then {the set consisting of Naman and Noman does not exist} is a candidate true negative existential proposition. Although the set consisting of Naman and Noman cannot exist in any possible world, it can be denoted. The sentence 'the set consisting of Naman and Noman does not exist' expresses a proposition which does not exist, and is true.

This very peculiar result raises very interesting philosophical questions, among them the ontological nature of propositions containing strongly non-referring terms. Though these questions cannot be pursued here, it is hoped that the foregoing discussion mollifies any terrible worries about such cases.[422]

---

[422] My present hypothesis is that the set consisting of Naman and Noman is an impossible object, which exists in an impossible world. Thus, { the set consisting of Naman and Noman does not exist} is true with respect to any possible world, and the set consisting of Naman and Noman may be referred to from any possible world in virtue of its existence in an impossible world.

As for the facts corresponding to propositions expressed by sentences containing descriptive non-referring terms, consider again KF.

KF   The present king of France does not exist.

Notice that 'the present king of France' is a weakly non-referring term, since there might have existed something to which the term actually refers. Like Noman, the present king of France is a merely possible individual. I submit that these merely possible individuals can be referred to, even though they do not exist, for reasons Salmon gives, presented above.[423]

Section 25: Conclusions

In chapter 1 it is argued that several versions of the strong correspondence theory meet traditional objections, and so are at least *prima facie* viable. Fifteen other theories of truth

---

[423] Here I believe I depart slightly from Salmon's view. Salmon writes: "Noman...is a definite possible individual who might have been a bald man standing in Quine's doorway. Noman does not exist." (*ibid.*, p 286) Salmon also writes that "there exists no proposition expressed by 'Noman does not exist', but there might have been a proposition that *actually is* expressed, and it is actually true." (*ibid.*, p 287; italics in original) If Noman is a merely possible individual, then 'Noman does not exist' expresses a merely possible proposition, for a Millian. However, assuming that 'does not exist' expresses its usual semantic content in the usual way, then 'Noman does not exist' expresses something which has actual[d] existence. If existence is not a necessary condition for reference, and Noman is referred to in 'Noman does not exist', then it follows that 'Noman does not exist' expresses a proposition, which is true. The pivotal issue here is how to understand Noman's ontological status as a merely possible person. As used to argue that 'Noman does not exist', this position requires maintaining that possible existence is a distinct ontological status, a position which appears threatened by ontological inflation. The threat of inflation may be quelled by noting that possible existence is a mode of existence, such that it is not a fully fledged ontological status. Recognizing possible existence as a mode of existence also silences the charge of equivocation on 'exists'. There remains the worry that there is a difference in ontological status without a distinction, or even a distinction in ontological status without a difference; but this is simply a feature of a mode. It is important to note that invoking modes is not *ad hoc*, since possibility is widely and standardly accepted as a modality. I cannot pursue this issue further here.

are examined in chapter 1, each of which faces one or more serious objections. In addition, none of these theories is able to meet the correspondence intuition, despite explicit attempts by each to meet the correspondence intuition, not as a mere intuition, but as a thesis.[424] The deflationary theories, the coherence and pragmatic theories, and even the weak correspondence theories are too weak to meet the correspondence intuition. Due to the promise it offers in meeting particular objections, and to its ability to meet the correspondence intuition, only a strong correspondence theory stands a chance of being a satisfactory theory of truth.

In chapter 3, the details of a strong correspondence theory of truth are presented and defended. In section 22.1, it is argued that correspondence is a simple semantic representation relation between a proposition and a fact. In section 22.2, it is argued that a truth condition for a proposition is a way for things to be, or, synonymously, a state of affairs. The relation between a proposition and a state of affairs to which it is semantically related (in a broad sense of 'semantically') is called "advertance". A fact is posited as a mereological part of the actual[i] world. In section 22.3, a general notion of truth is characterized as the advertance of an actual[i] state of affairs. A proposition, p, is true if and only if $^dp^d$ adverts actually[i], where '$^dx^d$' is an expression having the same semantic content as 'x' but whose denotation (if any), rather than its descriptive semantic content (if any), interacts with the semantic contents of other expressions. In other words, the semantic content of the truth predicate forms a proposition with the denotation of the denoting term of which truth is predicated. This observation is based on the like feature of a proposition's truth condition.

---

[424] Again, a possible exception is Ramsey, whose passage on the correspondence intuition is very difficult to interpret; see chapter 1, footnote 86.

Falsity is defined as follows: a proposition, *p*, is false if and only if $^{d}p^{d}$ adverts non-actually^{i}. These definitions of truth and falsity allow for non-propositions to lack truth: an object, *o*, is not true if and only if $^{d}o^{d}$ does not advert actually^{i}.

Three fundamental intuitions about truth motivate these definitions. Since an actual$^{i}_{w}$ state of affairs simply is a fact (in *w*), this definition captures the correspondence intuition. Two other fundamental intuitions about truth are the truth intuition, that distinct true propositions share a property, sc., truth; and the truthmaker intuition, that logically distinct propositions are true in virtue of ontologically distinct facts. The theory of truth defended here reconciles the tension between these two intuitions by incorporating two elements of context-sensitivity. The first element of context-sensitivity is that advertance is sensitive to the proposition adverting a state of affairs. The second element of context-sensitivity is that truth interacts with the denotation of the denoting term of which truth is predicated. These two elements of context-sensitivity together allow this notion of truth to meet the truthmaker intuition. The truth intuition is met by the general notion of truth; in other words, any two true propositions share the property of adverting an actual^{i} state of affairs. This notion of truth is also compatible with the redundancy intuition, that the truth predicate occurs otiosely in many sentences. Since the truth predicate has semantic content on this theory, it is not eliminable without loss of semantic content, though it is eliminable without negative pragmatic consequences.

Because truth is a correspondence relation sensitive to semantic context, this theory is aptly called the indexical correspondence theory of truth, or the IC theory. It is important to note that because truth is sensitive to the semantic context, it is not vulnerable to the objections raised in section 20 against context theories of truth,

according to which the speaker's intentions or the universe of discourse changes during truth paradoxical reasoning. The similarity in name does not indicate more than a superficial philosophical affinity.

It is expected that the claim that the truth predicate is an indexical expression is the most counterintuitive claim of the IC theory. Despite its *prima facie* strangeness, it is this very feature which allows the IC theory to accommodate both the truth intuition and the truthmaker intuition, both of which are very strong intuitions about truth. The IC theory not only quells the tension between these intuitions, it also explains them.

The truth predicate's context-sensitivity is also central in demonstrating its immunity to truth paradox. According to this theory, the propositions expressed by the Liar and Truth-Teller sentences are defective; i.e., neither expresses a proposition, strictly speaking, though each has semantic content. The same result is obtained for empirically truth paradoxical sentences. These defective propositions are not proper truth-bearers, and so are neither true nor false. Because a truth paradoxical sentence does not express a proposition, instances of schema P[425] where 'x' denotes a truth paradoxical sentence are likewise defective, such that premise 5 is principly rejected.

The features leading to this result are independently motivated by fundamental intuitions about truth. The usual relapse into truth paradox is avoided by strict adherence to the distinction between the properties truth, having the truth value true, and being assigned to the extension of the truth predicate. Distinguishing these properties also provides a philosophical reason to prefer the weak Kleene evaluation scheme to its alternatives. Solutions to Löb's Paradox and Grelling's Paradox based on

---

[425] Cf. section 16.

the distinction between these properties are offered in sections 22.7 and 22.8, respectively.

The notion of truth advanced by the IC theory is modeled by Kripke's formal theory of truth. Enforcing the distinction between truth, truth value, and being assigned to the extension of the truth predicate is an important measure in answering two objections faced by Kripke's theory. The Liar sentence is excluded from the formal model, since it does not express a proposition. A sentence expressing about itself that it is not assigned the truth value true is truth paradoxical on Kripke's formal theory, as is a sentence expressing about itself that it is not assigned to the extension of the truth predicate. The formal truth paradoxicality of these sentences is relieved by modifying the rules according to which truth values are assigned, and according to which objects are assigned to the extension of the truth predicate. Modifying these rules is required independently by consideration of Gödel sentences. The ghost of the Tarski hierarchy is dispelled by strict adherence to the distinction between truth, truth value, and being assigned to the extension of the truth predicate, as above.

Section 23 addresses objections to the IC theory, including several customized truth paradoxical sentences. Although these cases are resilient and challenging, each is handled by the IC theory without any *ad hoc* claims. Specifically, each truth paradoxical sentence is shown to express a defective proposition. Since, according to the IC theory, a truth paradoxical sentence does not express a proposition, strictly speaking, the truth predicate is not partially defined; i.e., it is not metaphysically vague.

Section 24 discusses very briefly several challenging cases for a correspondence theory of truth. Though the sophistication of these philosophical problems exceeds the scope of this dissertation, it is argued that none threatens the IC theory.

The IC theory of truth is the most viable of three theories meeting the correspondence intuition; it is the only theory of truth not devastated by truth paradox; and it is the only theory of truth explaining why the Liar and Truth-Teller sentences do not express a proposition. I conclude that the IC theory succeeds in providing a notion of truth meeting all fundamental intuitions about truth and which is immune to truth paradox.

BIBLIOGRAPHY

Ackerman, Felicia, "Content, Character, and Nondescriptive Meaning" in Almog, Perry, and Wettstein (1989) pp 5-21.

Almog, Joseph, Perry, John, and Wettstein, Howard, *Themes from Kaplan* (New York: Oxford University Press, 1989).

Aristotle *Metaphysics, Books Γ, Δ, and E*, Christopher Kirwan, translator (Oxford: Clarendon Press, 1993).

Armstrong, D. M., "A World of States of Affairs" in Tomberlin (1993) pp 429-440.

Armstrong, D. M., *A World of States of Affairs* (Cambridge: Cambridge University Press, 1997).

Austin, J. L., "Truth" *Proceedings of the Aristotelian Society*, *Supplement* **24** (1950) pp 111-128.

Ayer, Alfred Jules, *Language, Truth and Logic*, second edition (New York: Dover Publications, Inc., 1952).

Baldwin, Thomas, "Frege, Moore, Davidson: The Indefinability of Truth" *Philosophical Topics* **25** (1997) pp 1-18.

Bar-Hillel, Y., "New Light on the Liar" *Analysis* **18** (1957) pp 1-6.

Barwise, Jon and Etchemendy, John, *The Liar: An Essay on Truth and Circularity* (New York: Oxford University Press, 1987).

Beall, J. C., "A Neglected Deflationist Approach to the Liar" *Analysis* **61** (2001) pp 126-129.

Beall, J. C., "Is Yablo's Paradox Non-Circular?" *Analysis* **61** (2001) pp 176-187.

Beaney, Michael, editor, *The Frege Reader* (Oxford: Blackwell Publishers, Ltd., 1997).

Black, Max, *Language and Philosophy: Studies in Method* (Ithaca, New York: Cornell University Press, 1949).

Blackburn, Simon and Simmons, Keith, editors, *Truth* (New York: Oxford University Press, 1999).

Bocheński, I. M., *A History of Formal Logic* (Notre Dame, Indiana: University of Notre Dame Press, 1961).

Boghossian, Paul Artin, "Analyticity Reconsidered" *Nous* **30** (1996) pp 360-391.

Boolos, George S., and Jeffrey, Richard C., *Computability and Logic*, third edition (Cambridge: Cambridge University Press, 1989).

Bradley, F. H., *Essays on Truth and Reality* (Oxford: The Clarendon Press, 1914).

Bradley, F. H., "On Truth and Copying" in Blackburn and Simmons (1999) pp 31-45.

Bradley, F. H., *The Principles of Logic*, second edition (London: Oxford University Press, 1922).

Brandom, Robert B., *Making It Explicit: Reasoning, Representing, and Discursive Commitment* (Cambridge, Massachusetts: Harvard University Press, 1994).

Braun, David, "What is Character?" *Journal of Philosophical Logic* **24** (1995) pp 227-240.

Burge, Tyler, "Semantical Paradox" in Martin (1984) pp 83-117.

Cartwright, Richard, "A Neglected Theory of Truth" in Cartwright (1987) pp 71-93.

Cartwright, Richard, "Negative Existentials" in Cartwright (1987) pp 21-31.

Cartwright, Richard, *Philosophical Essays* (Cambridge, Massachusetts: The MIT Press, 1987).

Chapuis, André, and Gupta, Anil, editors, *Circularity, Definition and Truth* (New Delhi: Indian Council of Philosophical Research, 2000).

Chihara, Charles, "The Semantic Paradoxes: A Diagnostic Investigation" *The Philosophical Review* **88** (1979) pp 590-618.

Chisholm, Roderick, "Referring to Things That No Longer Exist" in Tomberlin (1990) pp 545-556.

Chisholm, Roderick, *Theory of Knowledge*, second edition (Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1977).

Church, Alonzo, "A Review of Rudolph Carnap's *Introduction to Semantics*" *The Philosophical Review* **52** (1943) pp 298-304.

Cohen, L. Jonathan, "Can the Logic of Indirect Discourse Be Formalized?" *Journal of Symbolic Logic* **22** (1957) pp 225-232.

Cole, Peter, editor, *Syntax and Semantics, volume 9* (New York: Academic Press, 1978).

Craig, Edward, editor, *Routledge Encyclopedia of Philosophy* (New York: Routledge, 1998).

Curry, Haskell B., "The Inconsistency of Certain Formal Logics" *Journal of Symbolic Logic* **7** (1942) pp 115-117.

Dauer, Francis, "In Defense of the Coherence Theory of Truth" *The Journal of Philosophy* **71** (1974) pp 791-811.

David, Marian, *Correspondence and Disquotation: An Essay On the Nature of Truth* (New York: Oxford University Press, 1994).

Davidson, Donald, "The Folly of Trying to Define Truth" in Blackburn and Simmons (1999) pp 308-322.

Davidson, Donald, *Inquiries into Truth and Interpretation* (Oxford: The Clarendon Press, 1984).

Davidson, Donald, "True to the Facts" in Davidson (1984) pp 37-54.

Devitt, Michael, "Minimalist Truth: A Critical Notice of Paul Horwich's *Truth*" *Mind & Language* **6** (1991) pp 273-283.

Dummett, Michael, "Of What Kind of Thing Is Truth a Property?" in Blackburn and Simmons (1999) pp 264-281.

Dummett, Michael, "Preface" to Dummett (1978) pp ix-li.

Dummett, Michael, "The Philosophical Basis of Intuitionistic Logic" in Dummett (1978) pp 215-247.

Dummett, Michael, "Truth" in Dummett (1978) pp 1-24.

Dummett, Michael, "What Is a Theory of Meaning? (II)" in Evans and McDowell (1976) pp 67-137.

Dummett, Michael, *Truth and Other Enigmas* (Cambridge, Massachusetts: Harvard University Press, 1978).

Dunn, J. Michael and Belnap, Nuel D., Jr., "The Substitutional Interpretation of the Quantifiers" *Nous* **2** (1968) pp 177-185.

Dunn, J. Michael and Gupta, Anil, editors, *Truth or Consequences: Essays in Honor of Nuel Belnap* (Dordrecht, The Netherlands: Kluwer Academic Publishers, 1990).

Etchemendy, John, "Tarski on Truth and Logical Consequence" *The Journal of Symbolic Logic* **53**.1 (1988) pp 51-79.

Evans, Gareth and McDowell, John, editors, *Truth and Meaning: Essays in Semantics* (Oxford: Clarendon Press, 1976).

Field, Hartry, "Critical Notice: Paul Horwich's *Truth*" *Philosophy of Science* **59** (1992) pp 321-330.

Field, Hartry, "The Deflationary Conception of Truth" in Macdonald and Wright (1986) pp 55-117.

Fitch, Frederic B., "Comments and a Suggestion" in Martin (1970) pp 75-77.

Frege, Gottlob, "Compound Thoughts" *Mind* **72** (1963) pp 1-17.

Frege, Gottlob, *Gottlob Frege: Posthumous Writings* (Chicago: The University of Chicago Press, 1979).

Frege, Gottlob, "Logic" in Beaney (1997) pp 227-250.

Frege, Gottlob, "My basic logical Insights" in Frege (1979) pp 251-252.

Frege, Gottlob, "On Sense and Nominatum" in Martinich (2001) pp 199-211.

Frege, Gottlob, "The Thought: A Logical Inquiry" in Blackburn and Simmons (1999) pp 85-105.

Frege, Gottlob, "Thoughts" in Salmon and Soames (1988) pp 33-55.

Gaifman, Haim, "Pointers to Truth" *The Journal of Philosophy* **89** (1992) pp 223-261.

Garver, Newton, "The Range of Truth and Falsity" in Martin (1970) pp 121-126.

Gauker, Christopher, *Thinking Out Loud: An Essay on the Relation Between Thought and Language* (Princeton, New Jersey: Princeton University Press, 1994).

Gauker, Christopher, "Truth in Context" unpublished.

Gettier, Edmund L., "Is Justified True Belief Knowledge?" *Analysis* **23.6** (1963) pp 121-123.

Geyer, Denton L., "The Relation of Truth to Tests" *The Journal of Philosophy, Psychology and Scientific Methods* **13** (1917) pp 626-633.

Goble, Lou, editor, *The Blackwell Guide to Philosophical Logic* (Malden, Massachusetts: Blackwell, 2001).

Gödel, Kurt, "Russell's Mathematical Logic" in Schilpp (1951) pp 125-153.

Grelling, Kurt, "The Logical Paradoxes" *Mind* **45** (1936) pp 481-486.

Grim, Patrick, "Review of *Universality and the Liar: An Essay on Truth and the Diagonal Argument*" *The Philosophical Review* **104** (1995) pp 467-469.

Grover, Dorothy, *A Prosentential Theory of Truth* (Princeton, New Jersey: Princeton University Press, 1992).

Grover, Dorothy L., Camp, Joseph L., and Belnap, Nuel D., "A Prosentential Theory of Truth" *Philosophical Studies* **27** (1975) pp 73-125.

Gupta, Anil, "A Critique of Deflationism" *Philosophical Topics* **21** (1993) pp 57-81.

Gupta, Anil, "Minimalism" in Tomberlin (1993) pp 359-369.

Gupta, Anil, "Truth" in Goble (2001) pp 90-114.

Gupta, Anil and Belnap, Nuel, *The Revision Theory of Truth* (Cambridge, Massachusetts: The MIT Press, 1993.

Hamilton, Edith and Cairns, Huntington, editors, *The Collected Dialogues of Plato* (Princeton, New Jersey: Princeton University Press, 1961).

Hintikka, K. J. J., Moravcsik, J. M. E., and Suppes, P., editors, *Approaches to Natural Language* (Dordrecht, The Netherlands: D. Reidel Publishing Company, 1973).

Horwich, Paul, *Truth*, second edition (New York: Oxford University Press, 1998).

Hughes, G. E., *John Buridan on Self-Reference: Chapter 8 of Buridan's* Sophismata, *with a Translation, an Introduction, and a philosophical Commentary* (Cambridge: Cambridge University Press, 1982).

James, William, "Pragmatism's Conception of Truth" in Blackburn and Simmons (1999) pp 53-68.

Joachim, Harold H., *The Nature of Truth* (Oxford: Clarendon Press, 1906).

Juhl, Cory, "A context-sensitive liar" *Analysis* **57** (1997) pp 202-204.

Kalish, Donald, Montague, Richard, and Mar, Gary, *Logic: Techniques of Formal Reason*, second edition (New York: Harcourt Brace Jovanovich, Publishers, 1980).

Kaplan, David, "Afterthoughts" in Almog, Perry, and Wettstein (1989) pp 565-614.

Kaplan, David, "Bob and Carol and Ted and Alice" in Hintikka, Moravcsik, and Suppes (1973) pp 490-518.

Kaplan, David, "Demonstratives" in Almog, Perry, and Wettstein (1989) pp 481-563.

Kaplan, David, "Dthat" in Cole (1978) pp 221-253.

Kirkham, Richard L., "Deflationary Theories of Truth" in Craig (1998) volume 9, pp 475-478.

Kneale, William C., "Russell's Paradox and Some Others" *British Journal of the Philosophy of Science* **22** (1971) pp 321-338.

Koons, Robert, *Paradoxes of Belief and Strategic Rationality* (Cambridge: Cambridge University Press, 1992).

Koons, Robert, "Review of *The Revision Theory of Truth*" *Notre Dame Journal of Formal Logic* **35** (1994) pp 606-631.

Kovach, Adam, "Deflationism and the Derivation Game" *Mind* **106** (1997) pp 575-579.

Kripke, Saul, "A Puzzle about Belief" in Margalit (1979) pp 239-283.

Kripke, Saul, "Is There a Problem about Substitutional Quantification?" in Evans and McDowell (1976).

Kripke, Saul, *Naming and Necessity* (Cambridge, Massachusetts: Harvard University Press, 1980).

Kripke, Saul, "Outline of a Theory of Truth" in Martin (1984) pp 53-81.

Langford, C. H., "Moore's Notion of Analysis" in Schilpp (1942).

Leeds, Stephen, "Theories of Reference and Truth" *Erkenntnis* **13** (1978) pp 111-129.

Leeds, Stephen, "Truth, Correspondence, and Success" *Philosophical Studies* **79** (1995) pp 1-36.

Löb, M. H., "Solution to a Problem of Leon Henkin" *Journal of Symbolic Logic* **20** (1955) pp 115-118.

Macdonald, Graham and Wright, Crispin, editors, *Fact, Science and Morality: Essays on A. J. Ayer's* Language, Truth and Logic (New York: Basil Blackwell Inc., 1986).

Marcus, Ruth Barcan, "Interpreting Quantification" *Inquiry* **5** (1962) pp 252-259.

Margalit, Avishai, editor, *Meaning and Use* (Dordrecht, Holland: D. Reidel Publishing Company, 1979).

Martin, Robert L., *Paradox of the Liar* (Atascadero, California: Ridgeview Publishing Company, 1970).

Martin, Robert L., *Recent Essays on Truth and the Liar Paradox* (New York: Oxford University Press, 1984).

Martinich, A. P., editor, *The Philosophy of Language,* fourth edition (New York: Oxford University Press, 2001).

McGee, Vann, "Applying Kripke's Theory of Truth" *The Journal of Philosophy* **86** (1989) pp 530-539.

McGee, Vann, "Revision" in Villanueva (1997) pp 387-406.

McGee, Vann, *Truth, Vagueness, and Paradox: An Essay on the Logic of Truth* (Indianapolis: Hackett Publishing Company, 1991).

McGrath, Matthew, *Between Deflationism & Correspondence Theory* (New York: Garland Publishing, Inc., 2000).

McGrath, Matthew, "Weak Deflationism" *Mind* **106** (1997) pp 69-98.

Mills, Andrew P., "Unsettled Problems with Vague Truth" *Canadian Journal of Philosophy* **25** (1995) pp 103-117.

Moore, G. E., *G. E. Moore: Selected Writings*, edited by Thomas Baldwin (New York: Routledge, 1993).

Moore, G. E., *Some Main Problems of Philosophy* (New York: The Macmillan Company, 1953).

Moore, G. E., "A Reply to my Critics: Analysis" in Schilpp (1942).

Moore, G. E., *Principia Ethica* (Cambridge: Cambridge University Press, 1903).

Moore, G. E., "The Nature of Judgment" in Moore (1993) pp 1-19.

Moore, G. E., "Truth and Falsity" in Moore (1993) pp 20-22.

Parsons, Charles, "The Liar Paradox" *Journal of Philosophical Logic* **3** (1974) pp 381-412.

Parsons, Terence, "True Contradictions" *Canadian Journal of Philosophy* **20** (1990) pp 335-354.

Peirce, Charles Sanders, *Collected Papers of Charles Sanders Peirce, Volume V: Pragmatism and Pragmaticism*, Charles Hartshorne and Paul Weiss, editors (Cambridge, Massachusetts: Harvard University Press, 1934).

Plato, "Sophist" in Hamilton and Cairns (1961).

Pollock, John L., "The Truth about Truth: A Reply to Skyrms" in Martin (1970) pp 79-89.

Priest, Graham, *In Contradiction: A Study of the Transconsistent* (The Hague: Martinus Nijhoff, 1987).

Priest, Graham, "Yablo's Paradox" *Analysis* **57** (1997) pp 236-242.

Priest, Graham, "What Is So Bad about Contradictions" *The Journal of Philosophy* **95** pp 410-426.

Prior, Arthur, "Epimenides the Cretan" *The Journal of Symbolic Logic* **23** (1958) pp 261-266.

Prior, Arthur, *Objects of Thought*, edited by P. T. Geach and A. J. P. Kenny (Oxford: The Clarendon Press, 1971).

Putnam, Hilary, "A Defense of Internal Realism" in Putnam (1990) pp 30-42.

Putnam, Hilary, "Introduction" to Putnam (1978).

Putnam, Hilary, *Meaning and the Moral Sciences* (London: Routledge and Kegan Paul, 1978).

Putnam, Hilary "Realism and Reason" in Putnam (1978) pp 123-138.

Putnam, Hilary, *Realism and Reason: Philosophical Papers, Volume 3* (Cambridge: Cambridge University Press, 1983).

Putnam, Hilary, *Realism with a Human Face* (Cambridge, Massachusetts: Harvard University Press, 1990).

Putnam, Hilary, *Reason, Truth, and History* (Cambridge: Cambridge University Press, 1981).

Putnam, Hilary, "Reference and Truth" in Putnam (1983) pp 69-86.

Putnam, Hilary, "Reference and Understanding" in Margalit (1979) pp 199-217.

Putnam, Hilary, *The Many Faces of Realism* (LaSalle, Illinois: Open Court Publishing Company, 1987).

Quine, W. V., *From A Logical Point of View* (Cambridge, Massachusetts: Harvard University Press, 1953).

Quine, W. V., "Notes on the Theory of Reference" in Quine (1953) pp 130-138.

Quine, W. V., *Philosophy of Logic*, second edition (Cambridge, Massachusetts: Harvard University Press, 1986).

Quine, W. V., *Pursuit of Truth*, revised edition (Cambridge, Massachusetts: Harvard University Press, 1992).

Quine, W. V., *Quiddities: An Intermittently Philosophical Dictionary* (Cambridge, Massachusetts: The Belknap Press of the Harvard University Press, 1987).

Rajchman, John and West, Cornell, editors, *Post-Analytic Philosophy* (New York: Columbia University Press, 1985).

Ramsey, F. P., "Facts and Propositions" *Proceedings of the Aristotelian Society*, supplemental volume 7 (1927) pp 153-171.

Ramsey, Frank Plumpton, *The Foundations of Mathematics and other Logical Essays* (New York: Harcourt Brace and Company, 1931).

Rescher, Nicholas, *The Coherence Theory of Truth* (Oxford: The Clarendon Press, 1973).

Rorty, Richard, *Consequences of Pragmatism: Essays 1972-1980* (Minneapolis, Minnesota: University of Minnesota Press, 1982).

Rorty, Richard, *Philosophy and the Mirror of Nature* (Princeton, New Jersey: Princeton University Press, 1979).

Rorty, Richard, "Solidarity or Objectivity?" in Rajchman and West (1985) pp 3-19.

Russell, Bertrand, "Descriptions" in Martinich (2000) pp 221-227.

Russell, Bertrand, "Mathematical Logic as based on the Theory of Types" *American Journal of Mathematics* **30** (1908) pp 222-262.

Russell, Bertrand, "Meinong's Theory of Complexes and Assumptions (III)" in *Mind* **13** (1904) pp 509-524.

Russell, Bertrand, "On Denoting" in Martinich (2000) pp 212-220.

Russell, Bertrand, "On the Nature of Truth and Falsehood" in Russell (1966) pp 147-159.

Russell, Bertrand, *Philosophical Essays* (New York: Simon & Schuster, Inc., 1966).

Russell, Bertrand, *The Problems of Philosophy* (Oxford: Oxford University Press, 1912).

Russell, Bertrand, *The Analysis of Mind* (London: George Allen & Unwin Ltd., 1921).

Russell, Bertrand, *The Principles of Mathematics*, second edition (London: George Allen and Unwin, Ltd., 1937).

Russell, Bertrand, "Truth and Falsehood" in Russell (1921) pp 253-278.

Russell, Bertrand, "William James's Conception of Truth" in Blackburn and Simmons (1999) pp 69-82.

Salmon, Nathan, "Analyticity and Apriority" in Tomberlin (1993) pp 125-133.

Salmon, Nathan, "Being of Two Minds: Belief with Doubt" *Nous* **29** (1995) pp 1-20.

Salmon, Nathan, *Frege's Puzzle* (Atascadero, California: Ridgeview Publishing Company, 1986).

Salmon, Nathan, "Nonexistence" *Nous* **32** (1998) pp 277-319.

Salmon, Nathan "Tense and Intension" unpublished manuscript (1997).

Salmon, Nathan, "Tense and Singular Propositions" in Almog, Perry, and Wettstein (1989) pp 331-392.

Salmon, Nathan, and Soames, Scott, editors, *Propositions and Attitudes* (New York: Oxford University Press, 1988).

Schilpp, Paul Arthur, editor, *The Philosophy of G. E. Moore* (LaSalle IL: Open Court Press, 1942).

Schilpp, Paul Arthur, editor, *The Philosophy of Bertrand Russell*, third edition (New York: Tudor Publishing Company, 1951).

Sellars, Wilfrid, "Truth and 'Correspondence' " *The Journal of Philosophy* **59** (1962) pp 29-56.

Skyrms, Brian, "Notes on Quantification and Self-Reference" in Martin (1970) pp 67-74.

Simmons, Keith, "Deflationary Truth and the Liar" *Journal of Philosophical Logic* **28** (1999) pp 455-488.

Simmons, Keith, *Universality and the Liar* (Cambridge: Cambridge University Press, 1993).

Simons, Peter, *Parts: A Study in Ontology* (Oxford: Oxford University Press, 1987).

Smullyan, Raymond M., *Gödel's Incompleteness Theorems* (New York: Oxford University Press, 1992).

Soames, Scott, "The Truth about Deflationism" in Villanueva (1997) pp 1-44.

Soames, Scott, *Understanding Truth* (New York: Oxford University Press, 1999).

Soames, Scott "What Is a Theory of Truth?" *The Journal of Philosophy* **81** (1984) pp 411-429.

Sorensen, Roy, "Yablo's Paradox and Kindred Infinite Liars" *Mind* **107** (1998) pp 137-155.
Sosa, Ernest, "Epistemology, Realism, and Truth" in Tomberlin (1993) pp 1-16.

Sosa, Ernest, "The Truth of Modest Realism" in Villanueva (1993) pp 177-195.

Stalnaker, Robert C., "Pragmatic Presuppositions" in Stalnaker (1999) pp 47-62.

Stalnaker, Robert C., *Context and Content* (New York: Oxford University Press, 1999).

Stebbins, Sarah, "A Minimal Theory of Truth" *Philosophical Studies* **66** (1992) pp 109-137.

Strawson, P. F., "Truth" *Analysis* **9** (1949) pp 83-97.

Strawson, P. F., "Truth" *Proceedings of the Aristotelian Society*, *supplement* **24** (1950) pp 129-156.

Tarski, Alfred, *Introduction to Logic and to the Methodology of the Deductive Sciences* (New York: Oxford University Press, 1941).

Tarski, Alfred, *Logic, Semantics, Metamathematics: Papers from 1923 to 1938*, second edition (Indianapolis: Hackett Publishing Company, Inc., 1983).

Tarski, Alfred, "The Concept of Truth in Formalized Languages" in Tarski (1983) pp 152-278.

Tarski, Alfred, "The Establishment of Scientific Semantics" in Tarski (1983) pp 401-408.

Tarski, Alfred, "The Semantic Conception of Truth and the Foundations of Semantics" *Philosophy and Phenomenological Research* **4** (1944) pp 341-375.

Tarski, Alfred, "Truth and Proof" *Scientific American* **220** (6) June 1969, pp 63-77.

Taylor, Barry, "States of Affairs" in Evans and McDowell (1976) pp 263-284.

Tomberlin, James, editor, *Philosophical Perspectives* **4**: *Action Theory and Philosophy of Mind* (Atascadero, California: Ridgeview Publishing Company, 1990).

Tomberlin, James, editor, *Philosophical Perspectives* **7**: *Language and Logic* (Atascadero, California: Ridgeview Publishing Company, 1993).

Vallicella, William F., "Three Conceptions of States of Affairs" *Nous* **34** (2000) pp 237-259.

van Fraassen, Bas, "Presupposition, Implication, and Self-Reference" *The Journal of Philosophy* **65** (1968) pp 136-152.

Villanueva, Enrique, editor, *Philosophical Issues* **3**: *Science and Knowledge* (Atascadero, California: Ridgeview Publishing Company, 1993).

Villanueva, Enrique, editor, *Philosophical Issues* **8**: *Truth* (Atascadero, California: Ridgeview Publishing Company, 1997).

Williams, C. J. F., *What Is Truth?* (Cambridge: Cambridge University Press, 1976).

Williams, Michael, "Do We (Epistemologists) Need a Theory of Truth?" *Philosophical Topics* **14** (1986) pp 223-242.

Williams, Michael, "Epistemological Realism and the Basis of Scepticism" *Mind* **97** (1988) pp 415-439.

Wilson, W. Kent, "Some Reflections on the Prosentential Theory of Truth" in Dunn and Gupta (1990) pp 19-32.

Wittgenstein, Ludwig, *Tractatus Logico-Philosophicus* (London: Routledge and Kegan Paul Ltd., 1922).

Yablo, Stephen, "Paradox Without Self-Reference" *Analysis* **53** (1993) pp 251-252.

Zimmerman, Michael J., "Propositional Quantification and the Prosentential Theory of Truth" *Philosophical Studies* **34** (1978) pp 253-268.