

Title: Non-World Indices and Assessment-Sensitivity

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Abstract

I argue that sentence contents should be assigned truth values relative to parameters other than a possible world only if those parameters are fixed by the context of assessment rather than the context of use. Standard counterexamples, including tense, *de se* attitudes, and knowledge ascriptions, all admit of alternative analyses which do not make use of such parameters. Moreover, allowing such indices greatly complicates the task of defining disagreement, and forces an odd separation between what is true, and what someone has truthfully said. If non-world indices are always fixed by the context of assessment, a characterization of semantic theories as “relativist” in terms of assessment-sensitivity converges with a characterization in terms of sensitivity to non-world indices. More tentatively, I suggest that even a possible world index, when used in the assignment of truth values to sentence contents, should be fixed by the context of assessment, not the context of use. This eliminates MacFarlane’s category of “non-indexical contextualism,” and results in a system where parameters fixed by the context of use are used only the assignment of contents to linguistic expressions, and parameters used in the assignment of truth values to contents are uniformly fixed by the context of assessment.

I. Characterizing Relativism

There appears to be some disagreement about what makes a semantic theory qualify as “relativist.” For several years now John MacFarlane has been advancing the idea that a relativist semantic theory is one which treats the contents of (at least some) sentences as propositions whose truth value depends on the *context of assessment*.¹ A related but not obviously equivalent idea, proposed by Max Kölbel is that a (“non-tame”) relativist theory is one in which the truth values of sentence contents vary with some parameter which cannot be fixed in a “uniquely relevant way.”² A somewhat similar characterization is given in my own earlier work, where sentences are assigned contents whose truth values vary according to context, but it is allowed that “objective facts of the situation of utterance” do not uniquely determine a

1. MacFarlane, ‘Future Contingents and Relative Truth’, ‘Making Sense of Relative Truth’, ‘Relativism and Disagreement’, ‘Non-Indexical Contextualism’.

2. Kölbel, *Truth Without Objectivity*, 118–119. Kölbel also considers a relativist theory “non-tame” if the truth values of sentences themselves (as opposed to their contents) vary with such a parameter, but globally, so that the truth values of *all* sentences are relative.

context.³ Mark Richard describes “truth relativism” as the view that the truth value of “what’s said” in using a sentence varies with something determined by human interests, such as a moral code or set of standards.⁴ Robert Nozick, against whose views MacFarlane sets his own,⁵ characterizes a relativist theory as one which claims that truth values vary with factors “other than the obvious ones” — the obvious ones including the meanings of utterances, the referents of the terms they contain, and “the way the world is.”⁶ One could easily go on, listing almost as many different characterizations of relativism as there are people who have written about it.

To some extent this variation may just be due to differences in what we all mean by ‘relativism’ — we are, after all, free to introduce this as a technical term and define it in whatever way suits our purposes, and there is no reason to expect that everyone who introduces it in this way will introduce it for exactly the same concept. But I don’t think that is the whole story — or even most of the story — of what is going on here. Rather, I think that with only fairly minor

3. Lasersohn, ‘Context Dependence, Disagreement, and Predicates of Personal Taste’.

4. Richard, *When Truth Gives Out*, 89.

5. ‘Making Sense of Relative Truth’, 323.

6. Nozick, *Invariances: The Structure of the Objective World*, 19.

variations, all these authors have the same fundamental concept in mind, and the different characterizations represent different accounts of what that concept requires.

If that is the case, and these different accounts of what relativist semantics is are all really “aiming for the same target,” as I think they are, we may ask whether they all hit it; or perhaps more interestingly, what additional assumptions would need to be made to *make* them hit the same target — and whether those assumptions are reasonable.

In this paper, I will examine two main hypotheses about what makes a semantic theory relativist: One is MacFarlane’s claim that this involves sensitivity to context of assessment in the assignment of truth values to sentence contents. The other is a hypothesis that MacFarlane considers and rejects, namely that a relativist semantics is one in which the truth values of sentence contents vary with some kind of index other than a possible world. I will argue that under plausible and reasonable assumptions, truth values should be assigned to sentence contents relative to non-world indices only if the truth values of sentence contents vary with the context of assessment. In other words, *the only non-world indices a semantic theory should use in assigning truth values to contents are those whose value may be fixed by the context of assessment*. If this is correct, the two hypotheses converge in characterizing the same theories as

relativist. I will then briefly consider competing characterizations of relativism from some of the works mentioned above, and suggest that under reasonable assumptions, these also converge with MacFarlane's account and the account stated in terms of non-world indices. The paper closes with a tentative suggestion that even world indices, when used in assigning truth values to contents, should be fixed by the context of assessment rather than the context of use. If correct, this would eliminate MacFarlane's category of "non-indexical contextualism," resulting in a theory in which all indices used in assigning truth values to contents are fixed by the context of assessment, with indices fixed by the context of use limited to a role in determining which contents are expressed.

II. Indices

In evaluating these proposals, it will be important to bear in mind some elementary points about the role of indices in semantic theory. First, semantic theories use indices for a variety of purposes, not limited to the assignment of truth values (or denotations more generally) to contents. For example — at least if we are operating in a broadly Kaplanian framework — some indices are used in the assignment of contents to sentences, not in the assignment of truth values to contents. Indices of this kind are not constrained in any way by our main hypothesis, which states only that *non-world indices used in assigning truth values to contents are fixed by the context of assessment*. This hypothesis says

nothing about indices used *in determining which content is expressed*. We will consider a possible constraint on such indices at the end of this paper, but our main discussion is not directly concerned with them.

Among indices involved in the determination of content, we may distinguish between indices which are used in the assignment of contents to “linguistic meanings” (in roughly the sense of Kaplan’s “characters”) and indices which are used in the assignment of linguistic meanings to words, phrases, and sentences. If, for example, we define logical consequence model-theoretically, we will assign truth values to sentences relative to a whole range of possible “interpretations” (or “models”) — that is, we index truth values to interpretations. But intuitively, fixing the value of the interpretation index amounts to fixing the linguistic meanings of the non-logical vocabulary items in the sentence; it isn’t part of the derivation of specific contents in context from those meanings, or part of the assignment of truth values to contextually-assigned contents.⁷ My suspicion is that the only sort of index that

7. Kaplan himself is inconsistent in sometimes describing character in a way which seems to imply that it should be identified with linguistic meaning, and sometimes defining it as constant across “structures” (= interpretations), as pointed out by David Braun, ‘What Is Character?’ I agree with Braun that characters are better modeled in such a way that different characters may be

is involved in the derivation of content from linguistic meaning is a possible world index whose value is fixed by the context of use,⁸ but that issue will not be considered in detail here. In any case, neither the indexation of truth to interpretations for the purposes of defining logical notions, nor the assignment of contents relative to contextual parameters such as a speaker or time of utterance, provides any sort of counterexample to the main proposal we will be considering.

Another kind of index we must recognize and distinguish from the indices which are our main concern in this paper are indices which provide assignments of values to variables. It is a common practice to treat *satisfaction* of a formula by an assignment of values to variables as *truth* of that formula *relative to the assignment* — that is, assignments of values to variables are formalized as indices relative to which formulas receive truth values.⁹ For the most part, this

assigned to an expression relative to different structures. Montague's notion of "meaning" in his paper 'Universal Grammar' is analogous to Kaplanian character, but is assigned relative to interpretations instead of remaining constant across them.

8. For an opposing view, see Weatherson, 'Conditionals and Indexical Relativism'; Parsons, 'Assessment-Contextual Indexicals'.

9. This is the technique in Lewis, 'General Semantics'; Montague, 'The Proper Treatment of Quantification in Ordinary English'; Kaplan, 'Demonstratives';

style of formalization has been regarded as a minor variant of the classical Tarskian technique, which makes no explicit identification of satisfaction with relative truth; and perhaps as a result of this, there has been relatively little discussion of the exact status of assignment functions when treated as indices.¹⁰ Major options include (1) regarding the context of use as providing an assignment function in the derivation of contents from linguistic meanings, so that free variables are treated similarly to indexical pronouns;¹¹ (2) regarding the assignment function as something which must be provided in the derivation of denotation from content, so that the contents of expressions containing free variables do not vary with the values of those variables, but their denotations do;¹² (3) regarding the denotations themselves as functions on the set of all

and much subsequent work. In effect it treats ordinary predicate logic as a variety of modal propositional logic: Take possible worlds to be assignments of values to variables, and the quantifier ‘ $\forall x$ ’ to be a modal operator, with the relevant accessibility relation being the relation which holds between any pair of assignments $\langle g_1, g_2 \rangle$ iff g_2 is exactly like g_1 except for a possible difference in what it assigns to x .

10. But see Zimmerman, ‘Kontextabhängigkeit’, sec. 4.1.

11. Montague, ‘Universal Grammar’; Kaplan, ‘Afterthoughts’.

12. Lewis, ‘General Semantics’.

assignment functions and/or identifying truth values *true* and *false* with (the characteristic functions of) the set of all assignment functions and the empty set, respectively;¹³ and (4) regarding the assignment index not as fixed in the assignment of contents to meanings or in the assignment of denotations to contents, and not part of what is denoted, but as never really fixed, so that sentences containing free variables don't have definite meanings, contents or denotations, and cannot be assessed for truth or falsity (except perhaps in the case of sentences having the form of a tautology or contradiction)¹⁴ — with this last option corresponding most closely, I think, to the ordinary popular conception. It would only be under Option 2 that assignments of values to variables might serve as a counterexample to the claim that the only indices involved in the assignment of truth values to contents are indices whose values are provided by the context of assessment.

Another issue that may need clarification is what it means to say that the value of an index is “fixed” by something, such as the context of use or the context of assessment. Of course in any semantic theory using indices, truth values will be assigned across a range of possible values for those indices, not just one fixed value; and in intensional contexts, all of these value-assignments

13. Montague, ‘Pragmatics’.

14. Kaplan, ‘Demonstratives’.

may be relevant to the semantic composition of a sentence. In a possible worlds semantics, for example, a formula ϕ may be assigned truth values at all possible worlds, and isn't limited to one in particular; and if ϕ appears in the scope of a modal operator, we may need to keep track of all these value assignments in order to determine the truth value of the larger formula containing ϕ . We might regard one world (the actual world) as having a special status in the definition of truth, but the proposition itself doesn't "come with" that world designated. All that having been said, in a semantics in which the truth value of a sentence content varies with the values of some sort of index, any assessment of that sentence content as true or false must be made on the basis of some particular choice of value for the index. If someone uses a sentence, we must settle on a particular value for the index before we can say whether the speaker spoke truthfully or not. In a classical Kaplanian framework, this choice is determined by the context of use: If someone uses a sentence expressing content ϕ , then we may (correctly) assess the speaker as speaking truthfully iff ϕ is true relative to the world and time supplied by the context in which the sentence was used. In a framework like that advocated by MacFarlane, we allow that an assessment may be made in part on the basis of values supplied for indices by the context in which the sentence is assessed, and not just the context in which it is used. The issue considered in this paper is whether all indices other than world indices function

in this way, or if instead, truth assessments must sometimes be made on the basis of values for non-world indices supplied in some other way than by the context of assessment.

III. The Intuitive Basis

The intuitive basis for limiting non-world indices (in the assignment of truth values to sentence contents) to indices whose values may be supplied by the context of assessment can be summarized as follows:

If someone uses a sentence S to express content φ , there is always a fact of the matter as to what the context was in which this particular use of S took place.¹⁵ Possible worlds are “total”: each world resolves all issues of fact. Identifying which world is actual therefore automatically involves identifying the context in which this use of S occurred. More generally, identifying a *world* of use for a particular use of a sentence involves identifying the *context* of that use. Fixing the value of a world index is enough to settle any kind of dependency of the truth value of φ on the context in which S was used.

15. I mean “context” here in the ordinary intuitive sense, not the technical sense developed in Lasersohn, ‘Context-Dependence, Disagreement, and Predicates of Personal Taste’. By “use” I mean a particular event in which S is used — a use token, not a general type of use.

In contrast, a single use of S to express φ can be *assessed* for truth many times, by many individuals in many contexts; there is ordinarily no fact of the matter as to what *the* context of assessment of a given use of S is.¹⁶ Identifying which world is actual does not necessarily narrow us down to a single context of assessment for each use; fixing the value of a world index will *not* settle all kinds of dependency of truth value of φ on context of assessment.

Therefore, in assigning contents to sentences relative to contexts, it should be possible in principle for a semantic theory always to assign contents which can be assessed for truth or falsity based on values for indices, only one of which is supplied by the context of use, namely a possible world index. Indeed, any other index whose value is supplied by the context of use would seem to be superfluous.

IV. Dealing With Expressions Where Non-World Indices Have Been Suggested.

In this section, we examine several grammatical constructions for which semanticists have advocated analyses using non-world indices fixed by the context of use rather than the context of assessment. My aim is to show that in all

16. Even if S is only assessed once, it ordinarily *could* be assessed on other contexts as well; a sentence use token does not “come with” a definite context of assessment the way it comes with a definite context of use.

these cases, alternative analyses are available which do not make use of such indices. Of course it will be impossible to address every kind of example for which an analysis using non-world indices fixed by the context of use has been suggested, or to give detailed analyses even for the examples discussed here; but I hope that by addressing some of the best-known cases and sketching general strategies for their analysis, I can establish at least an initial plausibility for the claim that such indices can be dispensed with.

Tense. The use of time indices in tense logic is perhaps the most “classical” application of non-world indices fixed by the context of use. The usual semantics for tense logic involves assigning truth values to sentence contents relative to temporal indices, with operators **P** and **F** interpreted so that a sentence **P** ϕ is true relative to a time t iff there exists some time t' prior to t such that ϕ is true relative to t' , and **F** ϕ is true relative to t iff there exists some time t' subsequent to t such that ϕ is true relative to t' . When such a system is presented as an analysis of natural language tense, it is generally assumed that someone who asserts a sentence with content ϕ speaks truthfully iff ϕ is true relative to the time at which the assertion is made — in other words, that the time index is fixed by the context of use.

Although this sort of system has become part of our standard background as semanticists, it has not been popular as an analysis of natural language tense for quite some time, and well known arguments have been advanced against it on both philosophical and linguistic grounds.¹⁷ Nonetheless, it may be worth responding to specific arguments that have been offered in its favor.

One frequently cited argument is represented by a brief comment by Kaplan:¹⁸ “If we build the time of evaluation into the contents..., it would make no sense to have temporal operators. To put the point another way, if *what is said* is thought of as incorporating reference to a specific time, or state of the world, or whatever, it is otiose to ask whether what is said would have been true at another time, in another state of the world, or whatever. Temporal operators applied to eternal sentences...are redundant.” Roughly, the argument is that we need time indices so that temporal operators will have something to operate on.

This is only a weak argument for temporal indices, because it presupposes that tense markers are to be treated as intensional operators — that

17. Evans, ‘Does Tense Logic Rest on a Mistake?’; King, ‘Tense, Modality and Semantic Values’; Enç, *Tense Without Scope*, ‘Towards a Referential Analysis of Temporal Expressions’.

18. Kaplan, ‘Demonstratives’, 18. See Brogaard, *Transient Truths* for more recent and extensive discussion.

is, as operators that manipulate indices involved in the assignment of truth values to sentence contents. But this is a highly debatable assumption, and at least two major alternative approaches to the semantics of tense have been offered.

First, we may treat tenses as variable binding operators rather than intensional operators. As long as we do not construe assignments of values to variables as in Option 2 (on p. 9 above), variable binding will not involve indices relative to which contents are assigned truth values, and we can maintain the assumption that the only such indices which are fixed by the context of use are world indices.¹⁹

Second, we may treat tenses on analogy to pronouns, as advocated in early work by Partee,²⁰ which presumably would involve analyzing them at least

19. It is perhaps worth noting in this connection works like Cresswell, *Entities and Indices* and Saarinen, 'Backwards-Looking Operators in Tense Logic and in Natural Language', which argue that natural language time reference requires the full expressive power of variable binding operators. However, the technical apparatus of variable binding will give us the needed expressive power even if we construe assignment indices as in Option 2, and these arguments apply equally to possible worlds as to times, so it would be a mistake to rely too heavily on them in the present context.

20. Partee, 'Some Structural Analogies Between Tenses and Pronouns in

some of the time as making demonstrative reference to particular times, as argued by Enç.²¹ This would “incorporate” reference to the time of utterance into “what is said” (to put it in Kaplan’s terms), but tenses would not be treated as operating on the contents of sentences, as Kaplan seems to have had in mind, any more than pronouns are treated in this way, so the issue of how the tense will operate on a sentence content if there is no temporal index simply does not come up.

To make an argument like Kaplan’s stick, then, it would be necessary to show that a treatment of tenses as intensional operators is correct, or at least superior to the alternatives. We might do this by showing that tenses display systematic scope ambiguities, for example — but as Enç has argued in detail, examples which initially appear to display scope ambiguities involving tense turn out on closer inspection to be quite problematic to analyze in this way. Moreover, even if compelling reasons could be found to treat tense markers as having scope, this would still be compatible with treating them as variable-binding operators rather than intensional operators. Familiar examples

English’.

21. Enç, *Tense Without Scope*, ‘Towards a Referential Analysis of Temporal Expressions’.

show that we cannot assign truth values to sentences relative to just a single time parameter, and analyze tense markers as manipulating that parameter:²²

- (1) A child was born that will become ruler of the world
≠ **P** $\exists x$ [born(x) & **F** ruler(x)]

But such examples are easily handled in a logic with an arbitrary number of time parameters or variables, and quantifiers which bind them:

- (2) $\exists t[t < t^* \text{ \& born}(x,t) \text{ \& } \exists t' [t' > t^* \text{ \& ruler}(x,t')]]$

Tenses often seem to be interpreted more like bindable variables than like operators (as observed by Partee and many others). Adverbial quantifiers can bind variables over times:

- (3) Whenever John smoked, Mary got angry.

If we analyze *John smoked* as '**P** smoke(j)' and *Mary got angry* as '**P** angry(m)', and then treat *Whenever ϕ , ψ* as true iff at every time at which ϕ is true, ψ is also true, we get the wrong results. If past tense morphemes are just variables over past and future times, however, the semantics is straightforward.

A sufficiently sophisticated version of the operator analysis can deal with such examples²³ — so they should not be seen as incompatible with an operator-based approach. But why appeal to such an analysis if a

22. Kamp, 'Formal Properties of 'Now''.

23. Ludlow, *Semantics, Tense and Time*, 'Tense'.

variable-binding analysis is available? Philosophers sometimes argue for an operator-analysis of tense on the grounds that such an analysis allows us to avoid committing ourselves to an ontology of past and future times,²⁴ but a theory which claims that sentence-contents have truth values only relative to times must surely be committed to an ontology of times anyway, so presentist arguments for an operator-analysis of tense will be of no help to the defender of such a theory.²⁵

24. Ludlow, *Semantics, Tense and Time*, 'Tense'.

25. A presentist might here object that what is fundamentally at issue is not whether sentences express contents which are true or false relative to times, but whether they may express contents which have one truth value now, but had a different one earlier, or will have a different one later. For the metaphysically scrupulous, the claim that sentences do express such contents may be attractive because it suggests a way out of the ontological commitment to past and future times.

The basic idea behind such arguments is that a T-sentence such as (i) does not contain any overt quantification over times — and can be derived compositionally without assigning a time as the semantic value of any constituent of $\mathbf{P}\varphi$ — and therefore does not involve a commitment to them (in contrast to (ii), which does):

- (i) $\text{content}(\mathbf{P}\varphi)$ is true iff $\text{content}(\varphi)$ was true.

A somewhat different style of argument that sentence-contents may be true or false relative to times is based on the fact that adding explicit time reference to a sentence often seems to alter its content — specifically, by eliminating a kind of inherent temporal perspectivity or “*de nunc*” aspect of its meaning. But let us delay consideration of this line of argument until we have examined *de se* and other centered attitudes.

Centered attitude ascriptions. Non-world indices are often invoked in the analysis of sentences describing *de se* (and similar) attitudes. For example, one might analyze sentences as expressing contents which have truth values relative to “centered worlds,” where centered worlds may be identified with ordered pairs of worlds and spacetime locations, or ordered triples of worlds, times and individuals, or something similar.²⁶ We will return to issues of time

(ii) $\text{content}(\mathbf{P}\phi)$ is true relative to t iff there exists some t' earlier than t such that $\text{content}(\phi)$ is true relative to t' .

Personally, I am not so confident that (i) does *not* involve an ontological commitment to times. Questions of ontological commitment are best resolved by presenting an explicit model-theory, not by appeals to the syntactic form of T-sentences.

26. Among many others, see Lewis, ‘Attitudes *De Dicto* and *De Se*’; Cresswell,

momentarily, but for simplicity and concreteness let us assume for now that centered worlds may be represented as pairs of a world and an individual.

If we relativize truth values to pairs of a world and an individual in this way, we can easily draw a distinction between the contents of the infinitival clauses in (4)b. and (4)c., for example:

- (4) a. John expects that he will win the election
- b. John expects himself to win the election.
- c. John expects to win the election.

As the analysis goes, the infinitival clause *PRO to win the election* in (4)c. is true relative to those pairs $\langle w, x \rangle$ such that x wins the election in w .²⁷ The finite clause *he will win the election* in (4)a. and the infinitival clause *himself to win the election* in (4)b. both have a reading which is true relative to those world-individual pairs $\langle w, x \rangle$ such that John wins the election in w (and perhaps a second reading under which they are equivalent to (4)c.) Since being an x such that John wins the election in a given world w is compatible with not winning the election in w , but being an x such that x wins the election in w is not, we capture an important difference in meaning between (4)a. and (4)b. on the one hand and

Structured Meanings; Cresswell and von Stechow, 'De Re Belief Generalized'.

27. I assume (with most syntactic analyses of this sort of construction) that the infinitival phrase in (4)c. is a clause with an implicit subject, here notated *PRO*.

(4)c. on the other, namely that if John does not recognize the person he expects to win as himself, (4)a. and (4)b. can be true but (4)c. cannot.

In the analysis as just sketched, sentence contents are assigned truth values relative to pairs of indices: a world and an individual. If the individual is fixed by the context of use rather than the context of assessment, it provides a counterexample to our hypothesis that the only non-world indices to be used in assigning truth values to sentence contents are those which may be fixed by the context of assessment.

It may seem reasonable to assume that individual index is fixed by the context of use, since the subordinate clause in (4)a. can be used as a free-standing sentence, with the subject pronoun he uncontroversially fixed by the context of use:

(5) He will win the election.

However, the free-standing use of (5) does not have a *de se* reading — the non-world index is a “third wheel,” used only to keep the formalism uniform, not because it is necessary to stating the truth conditions of this example. So this is not really a very strong argument that we need a non-world index fixed by the context of use.

Even for those examples where a *de se* reading is obligatory, there is very little to suggest we need a non-world index relative to which truth values are

assigned. It is far from clear that infinitival or gerundive clauses should be regarded as having truth values — it is quite unnatural to say *For John to win the election is true*, or *John's winning the election is true*, for example, even if he does win. But infinitival and gerundive clauses are the only clear, uncontroversial, unambiguous examples in English of grammatical constructions with *de se* readings. Lewis analyzes the objects of *de se* attitudes as *predicates*²⁸ — a position which is formally similar to treating them as true relative to world-individual pairs, as he notes — but one would not normally count a *predicate* as having a truth value. Modeling the content of a clause as a function that takes both a world and an individual as arguments to yield a truth value is compatible either with construing the world and the individual both as indices, relative to which the clause denotes a truth value, or construing only the world as an index, relative to which the clause denotes a function taking an individual as an argument. These two analyses make similar claims as to what the content of the clause is, but very different claims as to what its *extension* is, and how the content relates to truth values. If *de se* clauses have a “real” argument place for an individual, and not just truth values *relative to* individuals, then they provide no counterexample to the claim that the only non-world indices used in assigning

28. Lewis, ‘Attitudes *De Dicto* and *De Se*’.

truth values to sentence contents are those which may be fixed by the context of assessment.²⁹

29. Even if we accept that *de se* readings are to be accounted for using an individual index in addition to the world index, there is some evidence that the value of this index may be fixed by the context of assessment, not the context of use. This, in fact, has been argued in some detail by Tamina Stephenson (*Towards a Theory of Subjective Meaning*, ‘Relativism and the *De Se* interpretation of PRO’, ‘Control in Centered Worlds’), who identifies the referent of *PRO* with the “judge” index posited by Lasnik, ‘Context Dependence, Disagreement, and Predicates of Personal Taste’. An advantage of this identification is that it correctly predicts that the implicit subject of *playing baseball* in (i) (from Epstein, ‘Quantifier-pro and the LF Representation of PRO_{ARB}’) is identical to the individual relative to whom this activity is judged to be fun:

(i) Playing baseball is fun.

That is, one judges (i) to be true if one enjoys playing baseball oneself; enjoying other people playing baseball is not a sufficient reason for judging (i) to be true. If we accept that sentences containing predicates like *fun* express contents which are assigned truth values relative to an individual index fixed by the context of assessment rather than the context of use, then (i) provides evidence that the

One worry which might arise if we adopt the claim that infinitival and gerundive clauses do not have truth values is that this would seem to imply that we can have attitudes toward non-truth-value-bearing contents. Consider example (6):

(6) John remembers winning the election.

Doesn't it make sense to ask whether what John remembers is *true*?

Of course it does make sense to ask such a question, and even to claim that what he remembers *is* true; but this is not problematic if we assume that sentences ascribing *de se* attitudes systematically (and unidirectionally) entail corresponding sentences ascribing *de re* attitudes.

(7) John remembers winning the election →

John remembers that he (*de re*) won the election

semantic value of the hidden *PRO* subject of infinitival and gerundive clauses must also be fixed by the context of assessment. If, in order to account for the obligatory *de se* interpretation of such clauses, we treat this semantic value as an index relative to which sentences are assigned truth values, as in the “centered worlds” approach, then the “center” of a world is determined by the context of assessment rather than the context of use.

Under this assumption, if John remembers winning, there *is* a truth-value bearing content φ such that John remembers φ — it’s just not the content of the phrase *winning the election*.

More generally, let us assume that (where P is an attitude verb and Q is a predicate):

(8) $P(x, Q)$ entails $P(x, Q(x))$

That is, we can stand in attitudes *both* to non-truth-bearing predicate contents and to truth-bearing sentence contents. Bearing an attitude toward a content of the former kind requires bearing that attitude also to a corresponding content of the latter kind.

We can have attitudes toward non-truth-bearing contents, even if the verbs expressing these attitudes do not allow infinitival or gerundive complements in English. There is considerable cross-linguistic variation in which verbs allow such complements:

(9) Italian:³⁰

Pavarotti crede /sa di essere in pericolo.

Pavarotti believes/knows to be in danger

“Pavarotti believes himself (*de se*) to be in danger.”

30. The examples are from Chierchia, ‘Anaphora and Attitudes *De Se*’.

Presumably, Pavarotti's ability to believe such a thing does not depend on the language of the person describing the belief.

We may also note that attitudes towards truth-bearing objects can be **effectively** *de se* if the attitude holder also has a related attitude toward a predicate. Suppose, for example, that John stands in the belief relation to the predicate $\lambda x[x \text{ is the subject of attitude } a]$ — that is, he believes himself (*de se*) to be the subject of some particular attitude (token) *a*. If he also stands in the belief relation to the set of worlds in which the subject of attitude *a* wins the election, then he effectively believes of himself (*de se*) that he will win the election.

Now suppose the sentence *John believes that he will win the election* has a reading under which it is true iff John has a belief *b* (that is, a particular belief-token, which begins and ends at particular times, has a particular subject and object, etc.) whose object is the set of worlds *w* such that in *w*, the subject of *b* will win the election. By itself, there is nothing about *b* to make it *de se*; John could have belief *b* without realizing that he himself is the subject of *b*. But if he also has a *de se* belief whose object is the predicate $\lambda x[x \text{ is the subject of } b]$, then it seems quite fair to say that he believes of himself *de se* that he will win the election — even though the subordinate clause *he will win the election* simply denotes a set of worlds.

We can implement this idea by labeling attitude verbs syntactically with an index i , which may (but need not) be the same as the index on a pronoun in the subordinate clause. We let ‘ X believes $_i S$ ’ be true iff $\llbracket X \rrbracket$ has a belief b with object $\lambda w \llbracket S \rrbracket^{w.g[\text{subject}(b)/i]}$, that is, if the individual denoted by X has a belief whose object is the set of worlds denoted by clause S , when the subject of that belief is fixed as the value of any pronouns in S bearing index i .

Then the sentence *John believes $_i$ that he $_i$ will win the election* will be true iff John has a belief b whose object is the proposition λw [the subject of b wins the election in w]. The object of the belief is just a set of worlds — no non-world indices involved — but we obtain an effectively *de se* reading anyway, as long as it is plausible to assume that John believes himself (*de se*) to be the subject of b . This second, authentically *de se* attitude is not toward a set of worlds, but still does not require truth to be defined relative to non-world indices, because this object of this attitude is not truth-bearing — it is of the same type as the denotation of an infinitival phrase (i.e., a predicate).

Note that this analysis essentially treats the subordinate clause as denoting the “diagonal” proposition expressed by its clause.³¹ John’s belief occurs in some context, which fixes the subject of the belief. Each world fixes a

31. In roughly the sense of Stalnaker, ‘Indexical Belief’.

context, hence a subject for the belief. Diagonalization results in a proposition which is true in a world w if the belief-subject in w wins the election in w .

I suggest such an analysis is appropriate for any case where a clause which could stand alone as a complete declarative sentence, or serve as the argument to a truth predicate, seems to take a *de se* (or other centered attitude) reading. But for infinitival and gerundive clauses, which cannot stand alone as complete sentences, and do not serve as arguments to truth predicates, I am not advocating diagonalization, but a Lewis-style analysis which treats properties, rather than propositions, as objects of attitudes.

Other perspectival attitude reports (such as *de te* or *de nunc* attitude reports) can be handled in essentially the same way. An early argument along these lines was given by Prior:³²

One says, e.g. “Thank goodness that’s over!”, and not only is this, when said, quite clear without any date appended, but it says something which it is impossible that any use of a tenseless copula with a date should convey. It certainly doesn't mean the same as, e.g. “Thank goodness the date of the conclusion of that thing is Friday, June 15, 1954”, even if it be said then.

32. Prior, ‘Thank Goodness That’s Over’, 17.

Prior's argument is compact and not very explicit, but the point is clear, I think: One can have (and express) different attitudes towards the contents of sentences like *That's over* and *The date of the conclusion of that thing is Friday, June 15, 1954*, even when it is Friday, June 15, 1954, so we must distinguish these contents in some way. We can do that by analyzing *That's over* as expressing a content which is was false but has been true since Friday, June 15, 1954, and analyzing *The date of the conclusion of that thing is Friday, June 15, 1954* as expressing a content which was, is, and always will be true — or, to make a move Prior himself would probably not approve of, by analyzing the first sentence as expressing a content which is true relative to some times but not others, but the second as expressing a content which is true relative to all times.

Let us assume that the sentence *Thank goodness that's over* is roughly paraphrasable as “I thank goodness that that is over.” We may give an analysis of the latter sentence which maintains a difference in content as Prior suggested, but which does not appeal to temporal indices or to contents which change in truth value as time progresses.

If someone (say, John) holds an attitude of thankfulness that some event is over, that attitude — indeed, John's entire experiential state — is in some context. If John does not know what day it is, then there are various possible worlds compatible with John's beliefs about what the context (specifically the

time or date) of that experiential state is. We may diagonalize the clause *That's over*, so that it expresses the proposition which is true in a world w iff the relevant event is over in w before the time of that experiential state in w .

The appeal to experiential states distinguishes this analysis from one which Prior rejects, in which *Thank goodness that's over* means something like “Thank goodness the conclusion of that thing is contemporaneous with this utterance.” As Prior puts it, “Why should anyone thank goodness for that?”

The mere fact that the conclusion of some unpleasant event temporally precedes a particular experiential state does not by itself provide any more of a reason to be thankful than the fact that it precedes a particular utterance; but this fact in combination with knowing that experiential state *to be one's own current experiential state* does provide such a reason. Knowing a particular experiential state to be one's own can be treated as an attitude toward a non-truth-bearing property, rather than a proposition: $\lambda x[x$ is the subject of experiential state $e]$. Such properties are the kinds of things that serve as denotations of infinitival phrases, hence as a things that can be known, as the Italian examples illustrate.

Recognizing that infinitival clauses do not have truth values also allows us to make sense of the **persistence of belief**. Suppose at t_1 John puts a cup in his cupboard. He believes the cup is in the cupboard. Time passes; he does not take

the cup out of the cupboard, and no one else is around. At t_2 he still believes the cup is in the cupboard. Intuitively, it seems as though John adopts a belief toward a particular proposition — that the cup is in the cupboard — when he first puts the cup in the cupboard, and maintains that same belief with that same object throughout the story. If we take tense as making ordinary indexical reference to the time of utterance (with no diagonalization), it is difficult to capture that intuition. It would seem that John is continuously acquiring a new belief about each successive time: At t_1 he believes the proposition which is true in a world w iff the cup is in the cupboard at t_1 in w ; at t_2 , he believes the proposition which is true in a world w iff the cup is in the cupboard at t_2 in w , etc. But believing this latter proposition would not seem to be a case of “still” believing what he believed at t_1 .³³

33. Note that this is the opposite sort of problem from that addressed by Richard, ‘Temporalism and Eternalism’, ‘Tense, Propositions and Meanings’. There, the worry was that if we assume that a proposition can change in truth value as time passes, and also assume that beliefs can persist, faulty inferences will be licensed. Here, the concern is that we assume that all objects of belief have eternal truth values, certain persistent beliefs must wrongly be treated as the successive accumulation of new beliefs. See Brogaard, *Transient Truths* for additional discussion of belief persistence and changes in truth value.

This might be taken as an argument for a “non-indexical contextualist” treatment of tense: We would adopt a time index, alongside our world index, and let *the cup is in the cupboard* (in intensional contexts) denote $\lambda w \lambda t$ [the cup is in the cupboard in w at t]. We could then claim that John stands in the belief relation to this same content continuously from the time he puts the cup in the cupboard until he has reason to believe it is no longer there.

There is no need to introduce a time index just to account for our intuitions of persistent beliefs, however. Since infinitival clauses have no tense marking and are not appropriate subjects of truth predicates, it makes sense to treat them as predicates of times — or, in intensional contexts, as denoting functions from possible worlds to sets of times. This allows us to treat the infinitival clause *the cup to be in the cupboard* as denoting $\lambda w \lambda t$ [the cup is in the cupboard in w at t] **without** appealing to a time index relative to which truth values are assigned. This denotation is an appropriate object toward which John might maintain a temporally persistent attitude of belief.

If we wish to claim that John not only persistently believes the cup to be in the cupboard, but also that the cup is in the cupboard, we may appeal again to diagonalization. Whenever a finite clause S serves as complement to an attitude verb, we allow a diagonal reading: Each world fixes a context in which the attitude occurs; we let S denote the proposition which is true in a world w iff the

ordinary (“horizontal”) proposition which S expresses relative to the context provided by w is true in w . In the example of John having a belief b that the cup is in the cupboard, the subordinate clause expresses the proposition which is true in a world w iff the cup is in the cupboard at the time of b in w — in other words, a proposition which is true iff the cup is in the cupboard for however long John happens to believe it. John need not know how long this is.

In light of all these considerations, it seems far from established that an adequate semantics for sentences describing *de se* or other centered attitudes requires that we analyze sentences as having contents which are true or false relative to non-world indices whose values are fixed by the context of use. On the contrary, it seems to me that we have every reason to be optimistic that such sentences can be adequately accounted for without such indices.

‘Know’ and standards of evidence. Another area where one might consider the use of non-world indices used in assigning truth values to sentence contents, but fixed by the context of use rather than the context of assessment, is in the analysis of sentences attributing knowledge. Many people have the intuition that the truth values of knowledge attribution sentences vary with some sort of contextual factor such as the practical interests of the speaker, or a standard of evidence

which must be met if a belief is to qualify as knowledge. To use a popular example, *John knows he has hands* might be intuitively true in an ordinary conversational context imposing typical standards of evidence for knowledge claims, but intuitively false in the context of certain kinds of philosophical discussion, where someone does not count as “knowing” a proposition unless his or her evidence for that proposition meets extremely strict standards. We might try to account for these intuitions by analyzing the sentence *John knows he has hands* as expressing a content ϕ which is true or false not only relative to a possible world index, but also relative to a standard-of-evidence index. We could then claim that if someone uses this sentence in a context c , he or she is speaking truthfully iff ϕ is true relative to the world of c and standard of evidence in force in c . In this way the truth value will vary with the context of use, even though the content of the sentence is invariant across contexts.

This kind of analysis is discussed in some detail by MacFarlane,³⁴ where it serves as the primary illustrative example of the technique which MacFarlane terms “non-indexical contextualism.” It should be noted, however, that MacFarlane himself does not seem to favor such an analysis, and argues elsewhere that the truth values of knowledge attributions depend on the standard

34. MacFarlane, ‘Non-Indexical Contextualism’.

of evidence in force in the context of *assessment*, not use.³⁵ MacFarlane points to Nikola Kompa as a possible advocate of the non-indexical contextualist position with regard to knowledge attributions,³⁶ but acknowledges that she is not completely explicit on this point. Far more commonly, recent literature has claimed either that the content itself (and not just the truth value) varies with the context of use,³⁷ or else that it is the context of the attitude-holder (that is, the person whose knowledge is under discussion) which fixes the relevant standard of evidence, not the context in which the sentence describing the knowledge is being used.³⁸

It hardly need be argued, then, that alternative analyses are available to the idea that sentences with *know* express contextually invariant contents whose truth values vary with the context of use. Moreover this idea entails some rather odd and counterintuitive results, as we will see in Section IV below.

It appears that neither *de se* attitudes, nor tense, nor knowledge ascriptions provide compelling evidence that sentences may express contents

35. MacFarlane, ‘The assessment sensitivity of knowledge attributions’.

36. Kompa, ‘The Context-Sensitivity of Knowledge Ascriptions’.

37. E.g. DeRose, *The Case for Contextualism*.

38. E.g. Stanley, *Knowledge and Practical Interests*.

whose truth values vary with non-world indices whose values are fixed by the context of use. We may next ask whether there is anything to be gained by denying that such variation is possible.

V. Problems in the Relativization of Content-Truth to Indices Fixed by the Context of Use.

A semantic theory which assigns truth values to sentence contents relative to non-world indices fixed by the context of use faces at least two difficulties.

First, it greatly complicates the task of defining *disagreement*; and second, it forces an odd and counterintuitive separation between what we accept as true, and what we regard people as having truthfully said.

Disagreement. In determining what sorts of indices a semantic theory should use in the assignment of truth values to sentence contents, a major consideration is how our choice affects the theory of disagreement. Indeed, properly accounting for our intuitions of disagreement has been the primary motivation for the recent popularity of relativist semantic theories.

For the most part, semanticists have assumed (implicitly or explicitly) a fairly simple account of what it means to disagree — usually something along the

lines of the following definition, which was formulated but rejected by

MacFarlane:³⁹

- (10) Two parties disagree just in case there is a proposition that one party accepts and the other rejects.⁴⁰

MacFarlane rejects this as an adequate account of disagreement. His reason for this rejection appears to be just that it conflicts with the possibility of a “non-indexical contextualist” semantic analysis — that is, an analysis in which sentences express contents which are assigned truth values relative to indices whose values are fixed by the context of use:

39. MacFarlane, ‘Relativism and Disagreement’.

40. I have slightly compressed MacFarlane’s wording here and in other definitions, in the interest of readability. In this definition, “accepts” and “rejects” should be understood broadly enough to cover both speech acts such as assertion and denial, and mental acts or states such as belief and disbelief. MacFarlane uses the term *proposition* while leaving open the issue whether propositions might have truth values relative to indices other than worlds; because some people understand *proposition* as by definition implying that all contextual effects have been resolved so that an absolute truth value can be assigned, I would prefer the term *sentence content* here.

Consider, for example, tensed propositions, which have truth values relative to world/time pairs. One such proposition is the proposition that Joe is sitting. (Do not confuse this with the proposition that Joe is sitting now, or at any other time: the tensed proposition is, in Kaplan's terms, "temporally neutral.") If you asserted this proposition at 2 PM and I denied it at 3 PM, we have not in any real sense disagreed. Your assertion concerned Joe's position at 2 PM, while my denial concerned his position at 3 PM. So accepting and rejecting the same proposition cannot be sufficient for genuine disagreement.⁴¹

Of course, the argument from this example is only as strong as the assumption that there are temporally neutral propositions, whose truth values vary with a time index. MacFarlane is aware of this, and suggests that the same considerations hold even for propositions whose truth values vary with nothing more than a possible world index. We will return to this claim below; for now let us consider how we might characterize disagreement if we accept the idea of temporally neutral propositions, or other sentence contents which are assigned truth values relative to non-world indices whose values are fixed by the context of use.

41. MacFarlane, 'Relativism and Disagreement', 22.

MacFarlane considers several alternative formulations, but finds that all of them are problematic. One possibility is to build an appeal to contexts into the definition of disagreement, in the guise of a condition on “accuracy”:

- (11) An acceptance (rejection) is *accurate* just in case the proposition accepted is true (false) at the circumstance of evaluation that is relevant to the assessment of the acceptance (rejection) in its context (or at all such circumstances, if there is more than one).
- (12) Two parties disagree iff (a) there is a proposition that one party accepts and the other rejects, and (b) it is not the case that both the acceptance and the rejection are accurate.

But this still will not work, and MacFarlane points out:

Suppose that at noon Mary accepts the tensed proposition that Socrates is sitting, and at midnight Tom rejects this proposition. And suppose that Socrates was sitting at both noon and midnight. Then Mary’s acceptance is accurate, while Tom’s rejection is inaccurate, but still there is no disagreement. (p. 24)

We might try modalizing the accuracy condition:

- (13) Two parties disagree iff (a) There is a proposition that one party accepts and the other rejects, and (b) the acceptance and the rejection *cannot* both be accurate.

But this too fails as a characterization of disagreement:

Suppose that at noon Mary accepts the tensed proposition that the number of flies in the room is either odd or even, and at midnight Tom rejects this same tensed proposition. Then Tom's rejection *can't* be accurate (he is, after all, rejecting a necessary truth), so *a fortiori* Mary's acceptance and Tom's rejection can't *both* be accurate. Yet they do not disagree: Mary's thought concerns noon, while Tom's concerns midnight. (p. 24)

Despite his own identification of this problem, MacFarlane uses (13) as a working account of disagreement, in order to move on and explore other issues. There is nothing wrong with his doing so, but it seems clear that some better account of disagreement is needed — as I think MacFarlane himself would be the first to admit. Especially given the role that disagreement has played in arguments for relativist semantics, it seems vital to the relativist project to provide an account of disagreement that works at least as well as accounts that are available in a non-relativist semantic framework.

Fortunately, relativists do not have much to worry about from the difficulties MacFarlane points out in the definition of disagreement. None of these difficulties arise because of the theoretical possibility of assigning truth values to sentence contents relative to indices whose values are fixed by the

context of assessment. They all arise because MacFarlane is deliberately keeping open the possibility that sentence contents may be assigned truth values relative to indices whose values are fixed by the context of use — that is, they arise because he is committed to the possibility of “non-indexical contextualist” analyses in semantic theory. *If we reject the use of indices in the assignment of truth values to sentence contents when the values of such indices are fixed by the context of use, a simple definition of disagreement along the lines of (10) regains its plausibility.* By rejecting such indices, we greatly simplify and render less problematic the theory of disagreement.

Acceptance and context shifts. If we accept the idea that sentence contents are assigned truth values relative to indices whose values are fixed by the context of use, we must draw an odd distinction between what we accept as true, and what we accept someone as having truthfully said.

As an example, suppose the truth value, but not the content, of knowledge ascriptions varies with a standard of evidence fixed by the context of use. John says “Bill knows he has hands,” in a context with a sufficiently liberal standard of evidence to qualify him as speaking truthfully. Later, in a much more stringent context, we discuss Bill’s evidence and conclude that he does *not* know that he has hands. Nonetheless, we regard John as having spoken truthfully when he said

that Bill did know he had hands, because the context in which he spoke involved a more liberal standard. So, we accept both that Bill does not know he has hands, and that John spoke truthfully in saying that Bill knows that he has hands.

This pattern would not be puzzling or troubling in an analysis where the content of *Bill knows he has hands* is different in the two contexts. But if we claim that John said the very same thing in claiming that Bill knows he has hands as we now deny in saying that he doesn't, it is odd indeed for us to acknowledge that he was speaking truthfully. If John said something that we agree is false, it would be inconsistent on our part to regard him as having spoken truthfully.

Of course this is a general problem to any analysis using contents which are assigned truth values relative to indices fixed by the context of use, and not just knowledge ascriptions. Assume some sentence *S* invariantly expresses a content ϕ which is true relative to index-values provided by some specific context *c* in which *S* is used. We must regard the speaker of *S* in *c* as speaking truthfully, even if we are not in *c* ourselves, because the indices are fixed by the context of use, not assessment. But we can also form attitudes toward ϕ , and if we are in a context *c'* which provides index-values relative to which ϕ is false, we are correct taking an attitude of disbelief towards ϕ — even though we are also correct in believing *S* to have spoken truthfully in asserting ϕ . But it is intuitively

inconsistent to regard someone as having spoken truthfully if the content of their assertion is something we disbelieve.

VI. Alternative Characterizations of Relativism.

In this section, we return briefly to two of the characterizations of relativism mentioned in Section I, above, and compare them with a MacFarlane-style characterization in terms of contexts of assessment, particularly under the assumption that the only non-world indices used in assigning truth values to sentence contents are those whose values are fixed by the context of assessment.

In earlier work I present a theory of predicates of personal taste in which sentences such as *Roller coasters are fun* or *The chili is tasty* are assigned truth values not only relative to a world (and time) but an individual.⁴² Each context c is assumed to provide a world, time and individual (the *judge* of c); a sentence content is defined as true in c iff it is true relative to the world, time and judge of c .

What intuitively makes this analysis “relativist” is that contexts, in the technical sense as formal objects relative to which truth values are assigned, are assumed to be in a many-one correspondence to the concrete situations in which sentences are used. In particular, it was suggested that the judge of a context was

42. Lasersohn, ‘Context Dependence, Disagreement, and Predicates of Personal Taste’.

left undetermined by the concrete situation of use, so that there were as many formal contexts for each such situation as there are potential judges of the sentence as used in that situation. Because the concrete situation of use does not determine a judge, but the truth values of sentences like *Roller coasters are fun* vary with the judge parameter, there is no “fact of the matter” whether roller coasters are fun; sentences like this can be “true for” one person but not another.

Intuitively, the judge of a context is the person assessing a sentences for truth or falsity, or the person on that basis of whose tastes such an assessment is made (in the somewhat unusual case where these are different). It is perfectly fair to recast the analysis, MacFarlane-style, as one in which sentence contents are assigned truth values relative to indices, some of which (the world and time) are fixed by a context of use, and some of which (the judge) are fixed by a separate context of assessment. The appeal to the non-world judge index amounts to an appeal to a context of assessment.

This leaves the time index as the only non-world index fixed by the context of use. But this index can be dispensed with in the manner presented in Section IV, at least if we construe it as the traditional temporal index used in the analysis of tense. (We might also use a time index to represent changes in the personal tastes of a judge, however, in which case its value would be fixed by the context of assessment, rather than the context of use.) The end result is that the

only non-world indices which the analysis really needs (in the assignment of truth values to sentence contents) are indices whose values are fixed by the context of assessment.

Max Kölbel characterizes relativism in terms of parameters for which there is no “uniquely relevant way” of fixing their values. More specifically, he considers a theory to be genuinely relativist if it can be represented in conformity with the schema in (14):⁴³

- (14) a. For any x that is an I , it is relative to P whether x is F .
- b. There is no uniquely relevant way P_i of fixing P .
- c. For some x that are I , and for some P_i, P_j , x is F in relation to P_i but not F in relation to P_j .

These conditions are carefully formulated to allow for relativism about things other than truth. For our purposes here, we may consider just one instance of this schema, where we read I as “proposition (of a certain kind K)” and F as “true.” This gives what Kölbel calls “non-tame” relativism.

What does it mean to say that there is (or is not) a “uniquely relevant” way of fixing a parameter relative to which propositions are true? Kölbel characterizes this in terms of norms governing belief; but rather than exploring this position in detail, I would simply like to suggest that if a parameter is fixed

43. Kölbel, *Truth Without Objectivity*, 118.

by the context of use, then the value for the parameter provided by that context of use is the (uniquely) relevant value. In contrast, if a parameter is fixed by the context of assessment, the fact that a single token of a sentence can be assessed multiple times in a variety of contexts, with none of these privileged above the others, amounts to a claim that there is no uniquely relevant way of fixing the parameter.

If this is right, then the presence or absence of a unique way of fixing a parameter correlates exactly with the fixing of that parameter by the context of use or the context of assessment, respectively, and the characterization of relativism becomes essentially the same as MacFarlane's. If we then add the additional restriction advocated here, that non-world indices used in assigning truth values to sentence contents are limited to those which may be fixed by the context of assessment, we could equally well characterize relativism as the claim that the truth values of sentence content may vary with the values of non-world indices other than a possible world index.

It appears, then, that several competing characterizations of what makes a semantic theory "relativist" come close to converging, if we rule out the possibility of sentence contents which are assigned truth values relative to indices which are fixed by the context of use.

VII. Anti-Non-Indexical-Contextualism.

As we have seen, there is significant motivation for adopting a semantic theory in which sentence contents are never assigned truth values relative to non-world indices fixed by the context of use. In this case, any appeal to non-world indices in the assignment of truth values to sentence contents would seem to involve sensitivity to the context of assessment, and therefore would make the theory relativist by MacFarlane's characterization. If we adopt such a restriction and make the further assumption that possible world indices are always fixed by the context of use, then the same theories will be classes as relativist, whether we define relativism in terms of assessment-sensitivity or in terms of non-world indices.

On the other hand, we might do well to consider the opposite assumption — that possible world indices used in assigning truth values to sentence contents are always fixed by the context of assessment. In this case, the resulting theory will be one in which *all* indices used in assigning truth values to sentence contents are fixed by the context of assessment. Indices fixed by the context of use would be employed only in the assignment of contents to sentences, not in the assignment of truth values to contents. Taking this position would completely eliminate the kind of analysis MacFarlane terms “non-indexical contextualist”;

there would be no indices, not even possible world indices, used in the assignment of truth values to sentence contents, fixed by the context of use.

How plausible would such an assumption be? MacFarlane, certainly, would say that propositions are assigned truth values relative to worlds, but that the world index is fixed by the context of use, not the context of assessment:

Consider Jane (who inhabits this world, the actual world) and June, her counterpart in another possible world. Jane asserts that Mars has two moons, and June denies this very proposition. Do they disagree? Not in any real way. Jane's assertion concerns our world, while June's concerns hers. If June lives in a world where Mars has three moons, her denial may be just as correct as Jane's assertion.⁴⁴

But as argued by Cappelen and Hawthorne, it doesn't really make sense to ask whether two people in different worlds disagree with one another:

...the claim that each of two individuals in different worlds accepts some proposition P is not akin to the claim that two individuals in different countries accept that proposition. The latter claim entails that there are two individuals that accept P. But, even if we unrestrict our quantifiers as far as possible, the

44. MacFarlane, 'Relativism and Disagreement', 23.

former claim does not entail that there are two individuals that accept P. ...Thus, possible worlds scenarios of the sort that MacFarlane entertains do not provide examples where a pair of individuals accept some content P but nevertheless fail to agree that P, or examples where a pair of individuals accept P and not-P respectively but nevertheless fail to disagree that P.⁴⁵

The most one can ask about disagreement in scenarios like the one MacFarlane presents, I think, is not whether Jane disagrees with June, but whether Jane (actually) disagrees with what June would have been saying, if Mars had three moons and June said “Mars does not have two moons.” It seems to me that she does, at least if we understand *two* in this example as meaning “exactly two.” (This is not to say that Jane would have disagreed with June under such circumstances, of course.) Such examples, then, do not provide us with a reason to regard the possible world index as fixed by the context of use rather than the context of assessment.

Are there any reasons why we might find it advantageous to analyze possible worlds indices as fixed by the context of assessment? The only reasons I can offer at this point are ones of theoretical simplicity: If we accept the main thesis of this paper, that the only non-world indices involved in the assignment of

45. Cappelen and Hawthorne, *Relativism and Monadic Truth*, 64.

truth values to sentence contents are those whose values may be fixed by the context of assessment, but claim that the value of the possible world index is fixed by the context of use, then the possible world index seems oddly exceptional. However, if we claim that the possible worlds index is fixed by the context of assessment, and adopt the other conclusions of this paper, then *we obtain a semantic theory in which all indices involved in the assignment of truth values to sentence contents are fixed by the context of assessment.* Indices whose values are fixed by the context of use would be limited to those involved in assigning contents to sentences, not in assigning truth values to contents. If we further require that indices involved in the assignment of contents to sentences be limited to those whose values may be fixed by the context of use (*pace* Weatherson and Parsons), the resulting theory will be one in which the structural role of an index in the grammatical system correlates exactly with the way in which its value is fixed: indices fixed by the context of use govern the assignment of contents to sentences; indices fixed by the context of assessment govern the assignment of truth values to contents.

VIII. Conclusion.

To summarize: Intuitively, there is always a fact of the matter as to the context of any particular use-token of a sentence. Therefore, a possible world index should be sufficient to resolve any dependence of truth of sentence contents on context

of use. Constructions for which semanticists have suggested analyses using non-world indices fixed by the context of use, including *de se* attitude ascriptions, tense, and knowledge ascriptions, all seem to admit alternative analyses which do not use such indices. Relativizing truth values of sentence contents to non-world indices fixed by the context of use greatly complicates the definition of disagreement, and opens an odd gap between what we accept as true, and what we accept someone as having truthfully said. If we rule out the possibility of sentence contents which are assigned truth values relative to non-world indices fixed by the context of use, then several competing characterizations of what makes a semantic theory “relativist” appear to converge. My conclusion is that the use of non-world indices fixed by the context of use should be ruled out in the assignment of truth values to sentence contents, and that a relativist theory may therefore be characterized as one which assigns truth values to sentence contents relative to non-world indices. More tentatively, I would also suggest that even possible world indices, when used in the assignment of truth values to sentence contents, are fixed by the context of assessment, and that the distinction between use-sensitive and assessment-sensitive indices correlates precisely with the distinction between indices involved in the assignment of contents to sentences, and indices involved in the assignment of truth values to contents.

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