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ACTS AND ALTERNATIVE ANALYSES*

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A good case has recently been made for identifying propositions with a kind of structured act types. Unfortunately, as we will see in this paper, this "act-type theory of propositions" entails an unacceptable kind—and amount—of ambiguity in our language. Before outlining this problem, however, let me briefly introduce the theory by relating four central points about it.

Firstly, act-type theories divide into *Russellian* and *Fregean* variants. The former identifies the proposition that Socrates is wise with the act type of *predicating* the property of wisdom of Socrates, whereas Fregean variants would rather identify it with some act type directed toward the *senses* of 'wise' and 'Socrates', for instance, the act type of *saturating* the sense of 'wise' with that of 'Socrates'.[1] (I will discuss

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[1] The Russellian variant is developed at length by Scott Soames, *What is Meaning?* (Princeton, NJ.: Princeton University Press, 2010) and *Rethinking Language, Mind, and Meaning* (Princeton, NJ.: Princeton University Press, 2015). The Fregean variant has not quite been identified—let alone defended—in the literature, although Wayne Davis comes close in his *Meaning, Expression, and Thought* (Cambridge: Cambridge University Press, 2003). In Peter Hanks, "Structured Propositions as Types", *Mind* CXX, 477, (January 2011): 11–52, and *Propositional Content*, (Oxford: Oxford University Press, 2015), an ecumenical theory is defended, on which the proposition that Socrates is wise consists of three "component" act types: referring to Socrates, expressing wisdom, and predicating wisdom of Socrates. See also Jeffrey King, Scott Soames, and Jeff Speaks, eds., *New Thinking About Propositions* (Oxford, Oxford University Press, 2013).

Related but distinct contemporary views are found in Michael Jubien, "Propositions and the Objects of Thought", *Philosophical Studies*, CIV, 1 (May 2001): 47–62, Friederike Moltmann, "Propositions, attitudinal objects, and the distinction between actions and products", *Canadian Journal of Philosophy*, XXXXIII, 5-6. (2013): 679–701. Chapter 4 of *Abstract Objects and the Semantics of Natural Language* (Oxford: Oxford University Press, 2013), and Sean Crawford, "Propositional or Non-Propositional Attitudes?", *Philosophical Studies*, CLXVIII, (March 2014): 179–210.

A partly historical work on this theme is Friederike Moltmann and Mark Textor, eds., *Act-Based Conceptions of Propositional Content: Contemporary and Historical Perspectives* (Oxford: Oxford University Press, 2017), where Husserl, Meinong, Reinach, and Twardowski are presented as important historical forerunners. I would consider including Locke and Arnault, but I will not argue the point here.

only act-type theorists' treatments of logically atomic propositions, as logically complex propositions will be of no relevance for my argument.)

Secondly, there is a very common first impression of the act-type theory—to the effect that it must be a plain non-starter—that we should mention at the outset, if only to have it out of our way. The idea is that the theory is a "category mistake," since "one cannot believe an act type", "act types cannot be true or false", and so on. I take Benjamin Schnieder and Scott Soames to have responded decisively to this type of objection, so I will be content to defer to their works.[2]

Thirdly, the two main act-type theorists, Scott Soames and Peter Hanks, each identify propositions with some more familiar act *on* propositions. Soames claims that they are acts of *entertaining*, so that the proposition that Socrates is wise = the act type of predicating wisdom of Socrates = the act type of entertaining the proposition that Socrates is wise.[3] Hanks instead takes propositions to be acts of *judging*.[4] The question which of these alternatives is preferable has generated a significant literature, but will not concern us here, as it is unrelated to my argument.

Fourth, and finally, the general spirit of the act-type theory is well illustrated by listing its main alleged advantages, which include its ability to do the following:

(1) solve the problem of the unity of the proposition,
(2) explain how propositions can be inherently representational and have their truth conditions essentially,
(3) provide an attractive model of structured propositions,
(4) avoid Benacerraf problems of arbitrary identifications,
(5) explain how we can have cognitive access to propositions, and (yet)
(6) meet the Fregean demand of making propositions abstract, eternal and mind-independent (in the sense that they can exist without any minds existing).

Now, while some aspects of the act-type theory have been explored in detail, particularly those connected with the alleged benefits above, little attention has been devoted to the question of how to develop an *act-type-theoretical compositional semantics*. It is in this connection that the ambiguity problem arises. It arises because many sentences have *alternative analyses*.[5] For instance, 'Mary loves John' can be analysed in three different ways: as the result of saturating 'ξ loves John' with

[2] See Benjamin Schnieder, "By Leibniz's Law: Remarks on a Fallacy", *The Philosophical Quarterly*, LVI, 222 (January 2006): 39–54 and Soames, *Rethinking Language, Mind, and Meaning*, *op. cit.*, pp. 25ff.

[3] Soames, *What Is Meaning?*, *op. cit.*; and Soames, *Rethinking Language, Mind, and Meaning*, *op. cit*.

[4] 4 Hanks, "Structured Propositions as Types," *op. cit.*; and Hanks, *Propositional Content*, *op. cit*.

[5] This term derives from Michael Dummett, *The Interpretation of Frege's Philosophy* (Cambridge, MA.: Harvard University Press, 1981), Chapters 15–16, but Frege had already discussed alternative analyses—both of sentences and of thoughts—in several places. See, for instance, Gottlob Frege, "*Begriffsschrift*: a formalized language of pure thought modelled upon the language of arithmetic," (1879), *Translations from the Philosophical Writings of Gottlob Frege*, ed. Peter Geach and Max Black, 2nd ed. (Oxford: Blackwell, 1879/1970), pp. 1–20, section 9; and in Gottlob Frege, *Posthumous Writings*, ed. Hans Hermes, Friedrich Kambartel, and Friedrich Kaulbach, trans. Peter Long and Roger White (Oxford: Blackwell, 1979), p. 191ff.

'Mary', of saturating 'Mary loves ξ' with 'John', or of saturating 'ξ loves ζ' by 'Mary' and 'John' (in its first and second place, respectively). (Note that 'saturate' is here used in a sense related to linguistic expressions, distinct from the sense intended above, related to senses.)

On the most obvious semantics to accompany a Russellian act-type theory, the sentence therefore comes out as expressing both

the act type of predicating the property of loving John of Mary

and

the act type of predicating the property of being loved by Mary of John.

But since these act types are directed toward distinct entities, I will argue, they are themselves distinct. Standard act-type theories are thus committed to taking this sentence to be *ambiguous*. Since this ambiguity is neither intuitive, nor supported by any other kind of linguistic evidence, I regard this argument as a *reductio* of standard act-type theories. The argument easily generalizes to any atomic sentence with a polyadic predicate. Worse, the number of propositions a sentence comes out as expressing increases exponentially with the number of singular terms in it, making relatively simple sentences come out massively ambiguous.

As we will see, however, act-type theorists could try to avoid this consequence by positing *several* basic act types, say, predicating, predicating*, predicating**, and so on. The final argument will therefore take the form of a dilemma, with standard act-type theories on one horn and this "pluralist" variant on the other.

The paper is structured as follows. §1 presents some terminology and basic facts about alternative analyses, and next argues that we have no choice but to accept that certain sentences, as well as the propositions they express, indeed have alternative analyses. §2 contains a general discussion about act types and their linguistic designators. I there defend two principles about the identity conditions of act types, which play an important role in the argument. §3 lays out the main argument in full, with the required assumptions about semantic axioms for atomic sentences, and discusses a couple of objections as well as the question whether act-type theorists may bite the bullet and accept the ambiguity. §4 presents an additional argument against pluralist act-type theories, and §5 discusses three retreat positions act-type theorists might consider in view of my argument. In §6, finally, I consider whether the argument generalizes to any theory of structured propositions but conclude that it only sets a constraint on them. It is shown that Jeffrey King's theory[6] fails to satisfy it, and thus faces the same ambiguity problem as the act-type theory.

I. ALTERNATIVE ANALYSES OF SENTENCES AND PROPOSITIONS

I will here explain in greater detail what alternative analyses are and why they are unavoidable. In preparation, I will first introduce some terminology. I will distinguish between *simple* predicates like 'ξ runs' or 'ξ = ζ', and *complex* ones, like 'ξ = 3', which results from saturating (in the linguistic sense) the dyadic predicate 'ξ = ζ' in

[6] See Jeffrey King, *The Nature and Structure of Content* (Oxford, Oxford University Press, 2007).

its second place by '3'. (When saying that 'ξ runs' is simple, I ignore tense and mood.)

Further, I will enclose expressions within square brackets, '[' and ']', to refer to the *semantic correlate* of the expression within. On the Russellian conception of propositions, [love] will be the loving relation, whereas on the Fregean conception it will be the sense of 'love'. Although 'semantic correlate' may on the Russellian conception seem to mean the same as 'semantic value', the latter term would not be neutral with respect to the Russellian-Fregean divide. For on Fregean act-type theories, we want the term to cover the *sense* of a name, but the "semantic value" of a name is rather ubiquitously taken to be its referent. Better, then, to use the neutral term 'correlate'. Note that on both conceptions, the semantic correlate of a sentence is the proposition it expresses. Since the argument is wholly formulated in these neutral terms, it targets at once Fregean and Russellian act-type theories.

Now, we have seen that 'Mary loves John' has three analyses. Sentences with more names will have more intricate analyses. For instance, '$F(a, b, c, d, e)$' can be analysed *inter alia* as resulting from saturating '$F(a, \xi, c, d, \zeta)$' with 'b' and 'e' (in its first and second argument places, respectively). Now, it is easy to see that the number of analyses of an atomic sentence is the same as the number of predicates that can be obtained from it by removing one or more names. This number grows exponentially with the number of names in it: with one name, you get only one analysis, with two names, three analyses, with three names, seven analyses, with four names, fifteen analyses, and with five names, thirty-one analyses. More generally, a sentence with n names has $\sum_{i=1}^{n} 2^{n-i}$ analyses. We will see below that act-type theorists must posit a separate proposition expressed for each analysis. Hence, the sentence, '6 + 2 = 4 + 3 + 1' comes out as expressing 31 propositions!

There are two main kinds of resistance against the idea of alternative analyses. Frank Ramsey took the very idea to be incoherent, saying that propositions of the form '*Rab*' would be associated with "an incomprehensible trinity, as senseless as that of theology".[7] I side with Geach and Dummett[8], however, in deeming his attitude ungrounded, and act-type theorists will scarcely want to respond to the argument by echoing Ramsey's scepticism, especially given the reasons for accepting alternative analyses I will present anon. Secondly, one may consider alternative analyses intelligible but *unnecessary*, and insist that, for instance, 'Mary loves John' only needs to be analysed as formed by the *simple* expressions, 'ξ loves ζ', 'Mary', and 'John'.

Now, the reason we need to accept alternative analyses is that we have to posit complex predicates and, to go with them, complex predicative propositional constituents. But—as Ramsey correctly noted—once we do, alternative analyses are inevitable. The second part is obvious. For if there is such a predicate as 'ξ loves John', then surely it can be saturated with 'Mary' to yield 'Mary loves John', and similarly for 'Mary loves ξ' and 'John'. And this is just what it means for the sentence to have alternative analyses.

The reason we need to posit complex predicates is less obvious. I think we need complex predicates for many purposes in semantics and logic, but I will focus on an argument to the effect that we need them to state certain generalizations about

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7 Frank Ramsey, "Universals", *Mind*, XXXIV, 136 (October 1925): 401–417, at 406.

8 See Peter Geach, "Names and Identity", in Samuel Guttenplan, ed., *Mind and Language* (Oxford, Clarendon Press, 1975): 139–158 and Dummett, *The Interpretation of Frege's Philosophy*, *op. cit.*, pp. 264ff.

inferences.[9] Take the commonplace claim that the law of substitution of identicals is truth-preserving. We could state this claim thus:

(SI) For any sentences of the forms '$a = b$', '$F(a)$', and '$F(b)$', if the first two are true, so is the third.

Here, a sentence of the form '$F(a)$' is of course a sentence formed by saturating a monadic predicate with a name. But unless we posit *complex* monadic predicates, like 'ξ loves John', (SI) will not even entail such obvious instances of (SI) as,

(SII) If 'John = James' and 'John loves Mary' are true, so is 'James loves Mary'.

Thus, we must accept complex predicates and, hence, alternative analyses.

Assuming propositions are structured (as agreed by act-type theorists), we can also show that there are alternative analyses of *propositions*. If propositions are structured, then a sentence '$F(a)$' must be taken to express a proposition composed of the semantic correlates of '$F(\xi)$' and 'a', that is, [$F(\xi)$] and [a]. [$F(a)$] is thus the value of some function f from [$F(\xi)$] and [a]; that is, [$F(a)$] = f([$F(\xi)$], [a]).[10] But for a sentence like 'Mary loves John', there are two choices for the respective '$F(\xi)$' and 'a'. Thus, its semantic correlate, [Mary loves John], must be identical to both f([Mary loves ξ], [John]) and f([ξ loves John], [Mary]). And this is just what it means for a proposition to have alternative analyses.

The idea of alternative analyses of propositions is not new. Frege writes,

> If several proper names occur in a sentence, the corresponding *Gedanke* can be analyzed into a complete part and an unsaturated part in different ways. The *Sinn* of each of these proper names can be set up as the complete part over against the rest of the *Gedanke* as the unsaturated part.[11]

Alternative analyses of propositions can also be established by an argument similar to the one involving (SI) above. To see this, consider how we might formulate a variant of (SI) that concerns structured propositions rather than sentences. The obvious idea is to say,

(PI) For every x, y, P, if f_2([=], x, y) and $f(P, x)$ are true, then $f(P, y)$ is true.

Here, as before, f takes the semantic correlates of a monadic predicate and a name to a proposition composed by the two, and f_2 takes the semantic correlates of a dyadic predicate and two names to a proposition composed of them. The variables 'x' and 'y' in (PI) range over the propositional constituents related to proper names (objects or name-senses), and 'P' ranges over predicative, monadic propositional constituents

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[9] This argument resembles a line of thought pursued by Dummett, *The Interpretation of Frege's Philosophy*: 273ff., but I will not discuss the relationship between them here. He actually argued for the stronger and stranger claim that we must posit such predicates as the *monadic* predicate, 'ξ killed ξ', but I will be content to argue merely for positing such predicates as 'Mary loves ξ', 'John gives ξ to ζ', and so on.

[10] For a detailed discussion of this use of functors to designate propositions, see Arvid Båve, "Concept Designation", *American Philosophical Quarterly*, forthcoming.

[11] Frege, *Posthumous Writings*, *op. cit.*, p. 192.

(properties or monadic, predicative senses). But unless '*P*' ranges over both simple *and complex* predicative propositional constituents, (PI) will fail to entail,

(PII) If f_2([=], [John], [James]) and f([Mary loves ξ], [John]) are true, then f([Mary loves ξ], [James]) is true.

So, we must posit complex predicative propositional constituents, which commits us to alternative analyses of propositions.

Objection 1: The above appeal to (PI) and (PII) begs the question against Russellians, since they are committed to taking these principles to be incoherent. This is so, since, on their view, and assuming that John = James, the second and third propositions mentioned in (PII) are identical. (PII) therefore cannot be an instance of the law of *substitution* of identicals, properly speaking.[12] Reply: I think it is simply undeniable that (PII) is an instance of the claim that the law of substitution for structured propositions is truth-preserving, and I think Russellians must agree. It is undeniable, after all, that the following is an instance of this claim:

If the proposition that Phosphorus is hot is true, and the proposition that Phosphorus = Hesperus is true, then the proposition that Hesperus is hot is true.

Further, I do not see why Russellians should take (PI) to be incoherent. Their commitment to taking (PII) to concern only two propositions I think seems no more problematic than their usual commitment to identifying propositions others take to be distinct, such as [Hesperus is hot] and [Phosphorus is hot]. Perhaps what makes (PI) seem uncongenial to Russellians is merely the word 'substitution', since it suggests that one thing is "substituted for" *another* thing. But Russellians can then simply accept (PI)—as it seems they must in any case—and choose a different name for it. Russellians are also not committed to taking (PI) to be objectionably *trivial*. For by replacing '[=]' in (PI) with '[love]', we get a false principle. Thus, even Russellians can take (PI) to tell us something informative (as far as logical laws go) about identity.

Objection 2: 'Mary loves John' has only one analysis, on which its structure is NP-VP. Reply: natural language sentences plausibly have both ordinary phrase structure and predicate-argument structure. Besides, it would be bad enough for the act-type theorist if the relevant sentences of first-order logic came out as ambiguous, however things stand with natural languages.

II. ACT TYPES AND THEIR DESIGNATORS

The present case against the act-type theory leans heavily on two principles stating identity conditions on act types, which I will introduce and defend in this section. These principles will be formulated using such schematic expressions like 'the act type of φ-ing $x_1, \ldots, x_n$', with instances such as 'kissing John', 'giving *a* to *b*', and, of course, 'the act type of predicating wisdom of Socrates', routinely used by act-type theorists.[13] (I will mostly omit the apposition, 'the act type of', however.)

[12] This objection is due to an anonymous referee for this journal.
[13] See, for example, Soames, *Rethinking Language, Mind, and Meaning*, *op. cit.*, p. 20 and Hanks, *Propositional Content*, *op. cit.*, pp. 36ff.

Expressions of the form 'φ-ing $x_1, \ldots, x_n$' will be called "structural, canonical act-type designators", or SCADs. SCADs are like 'that'-clauses in that they have their references independently of any empirical facts, except the facts about what their constituent expressions mean (hence, 'canonical'). 'That'-clauses are like this, too, and thus differ from such "accidental", non-canonical proposition-designators as 'what he said', which do so depend. Act types, too, can be referred to thus "accidentally": compare 'killing Caesar' with 'the act type Brutus is best known for (having performed a token of)'.

SCADs are important for act-type theorists, partly because they are canonical in the sense above, but mainly because they *contain designators of propositional constituents*, as witnessed by 'the act type of predicating wisdom of Socrates', containing 'wisdom' and 'Socrates'. They thereby enable straightforward formulations of compositional semantic axioms for atomic sentences. Note that this does not hold for our brackets: '$[F(a)]$' does not contain '$[a]$'.

The most important principle about act types for the argument to come is,

(A1) If the act type of φ-ing $x_1, \ldots, x_m$ = the act type of φ-ing $y_1, \ldots, y_n$,
then each of $x_1, \ldots, x_m$ is identical to one of $y_1, \ldots, y_n$.

To give an intuitive feel for (A1), suppose we have three distinct bricks, a, b, c. Surely, the act type of laying a on b cannot be identical with the act type of laying a on c or laying c on b. Thus, if laying x on y = laying z on w, then each of x and y must be identical to one of z and w, and so on for any basic act type and any number of objects thereby acted upon. Note, though, that x need not be identical with z here, since many acts are symmetrical, like putting together x and y. (When discussing act types like φ-ing $x, y, \ldots$, I will occasionally speak of φ-ing as the *basic* act type, and the following objects, $x, y, \ldots$, as *the objects acted upon*.)[14]

If (A1) is true, then predicating the property of loving John of Mary must be distinct from predicating the property of being loved by Mary of John, since the four objects acted upon here are distinct. (A1) thereby plays an important part of the argument for the claim that act-type theorists are committed to taking 'Mary loves John' to be ambiguous.

(A1) also entails that act-type theorists are committed to holding that an atomic sentence with n alternative analyses will also express n propositions. This, as we have seen, commits them to taking fairly simple sentences to express very many propositions. To see that this is entailed by (A1), recall that each analysis of a given sentence involves a predicate of its own. Each predicate in turn has its own semantic correlate (that is, every other predicate extractable from the sentence has a distinct correlate). It follows, by (A1), that each analysis will be coupled with a unique act type. By standard semantic axioms for atomic sentences (more on which in §3), it follows that each such unique act type is a proposition expressed by the sentence.

As already mentioned in the introduction, one might now try to avoid the argument from (A1) by positing two distinct act types, say, predicating and predicating*. (A1) cannot then be used to infer the ambiguity claim, since (A1) contains two occurrences of the same schematic letter, 'φ'. But one might think there is an equally plausible principle threatening this alternative version of the act-type theory:

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[14] Basic act types in this sense are not related to basic actions in the sense of Arthur Danto, "Basic Actions", *American Philosophical Quarterly*, II, 2 (April 1965): 141–148.

(A*) If φ-ing $x_1, \ldots, x_m = \psi$-ing $y_1, \ldots, y_n$, then each of $x_1, \ldots, x_m$ is identical to one of $y_1, \ldots, y_n$.

With (A*), we can infer the ambiguity claim, since we here have two distinct schematic letters, 'φ' and 'ψ'. However, (A*) is inconsistent with the plausible claim,

(ID) For every act type a, a = the act type of performing a.

Given (ID), performing the act type of kissing John = kissing John, but, of course, kissing John ≠ John, so (A*) is false. Another counterexample to (A*) is the following: say that *x* johnates *y* just in case *x* introduces John to *y*, and that *x* maryizes *y* just in case *x* introduces *y* to Mary. Now, plausibly, johnating Mary = maryizing John, although John ≠ Mary.

Note, though, that these examples involve act types that somehow "overlap". Now, it is plausible to think that the *only* counterexamples to (A*) involve precisely such overlapping act types. We could thus qualify (A*) by requiring the act types not to overlap, and this will give us a principle that can be used in the argument against the pluralist version of the act-type theory:

(A2) If (i) φ-ing $x_1, \ldots, x_n = \psi$-ing $y_1, \ldots, y_n$ and (ii) φ-ing and ψ-ing do not overlap, then each of $x_1, \ldots, x_m$ is identical to one of $y_1, \ldots, y_n$.

The notion of overlapping requires some explanation. Let's say that act types *involve* other act types and objects, where this notion is governed by the schema:

(IS) The act type of φ-ing $x_1, \ldots, x_n$ involves φ-ing, as well as each of $x_1, \ldots, x_n$.

I will not be more specific about what involvement amounts to (for instance, by giving necessary and sufficient conditions for something's being involved in an act type). I take (IS) to be undeniable, since it is merely a stipulation, and I note that it does not force upon us any particular view about the nature of involvement. In particular, it does not require that we see involvement as somehow *mereological*, nor as a particularly *eligible/natural* relation in the standard, Lewisian sense. If these observations are kept in mind, I think (IS) must be seen as acceptable, at least pending an argument to the contrary.

It would now be natural to propose that for two act types to *overlap* is for there to be something they both *involve*. But given (ID), performing is involved in every act type. Hence, every act type overlaps with every other act type in this sense of 'overlap'. I will therefore say instead that two act types overlap just in case they involve something *not* involved in every act type. Then, if two act types fail to overlap, they are as disjoint as act types can be. The special case of johnating and maryizing then comes out as a case of overlap in this sense, but other examples will be far between.

(A2) is plausible because its antecedent is plausibly false. For suppose that φ-ing and ψ-ing do not overlap. Then, they are as disjoint as act types can possibly be, like, say, kicking and conceiving-of. Then, surely, φ-ing $x_1, \ldots, x_n$ cannot be the same as ψ-ing $y_1, \ldots, y_n$. Hence, the antecedent of (A2) cannot be true, and so (A2) is true. (A2) entails that if 'Mary loves John' is not ambiguous, then predicating and predicating* *overlap*. Thus, to avoid the ambiguity claim, adherents of the pluralist act-type theory must take predicating and predicating* to overlap. I argue in §3 that this is a dubious claim.

I said that (A1) is obvious, but some readers might not be convinced. I will here point to some possible misinterpretations of (A1) on which it will seems unobvious or even false (much of this discussion will apply equally to (A2)). Firstly, it is natural to say that laying *a* on *b* is "the same kind of act" as laying *a* on *c*, even if *a*, *b*, and *c* are distinct. As an observation about our lay talk of act types, this is plausible enough. But, firstly, the finer division into object-related act types surely *can* be made. Also, act-type theorists clearly *need* to make it, on pain of saying that all atomic sentences express the same proposition (on a Russellian variant, this would be the mere act type of predicating).

Doubts about (A1) might also be due to conflating

(i) identity with being tokens of the same type,
(ii) act types with act tokens,
(iii) act types with their *results*.

That these are indeed erroneous conflations will be obvious, but we do well to make them explicit, to ward off any possible confusion about (A1).

Firstly, concerning conflation (i), some readers might take (A1)–(A2) to be unobvious because they read '=' as expressing the relation that holds between two things just in case they belong to the same type. Of course, it is unclear what "the type" is supposed to be here, but I am merely trying to identify a possible misreading on which the relevant identities may seem unobvious.

Concerning (ii), some accept the "Anscombe-Davidson Thesis", saying that if A φ-s by ψ-ing, then A's φ-ing = A's ψ-ing.[15] An instance here would be, 'If I insult John by insulting his mother, then my insulting John will be identical with my insulting his mother'. This case may seem to contradict (A1), until we notice that it concerns act *tokens*, whereas (A1) concerns act *types*. Clearly, the act *types* of insulting John and insulting John's mother are distinct, since it is possible to perform one without performing the other.

Thirdly, we might easily slip into reading phrases like 'saturating x with y' as referring to the *result* of saturating x with y. When speaking of 'saturating a predicate with a name', for instance, we tend to focus at the *results* rather than the *act types* of doing so (where the results in question are of course linguistic expressions). On such a "result reading" of the SCADs in (A1), it is false, but this is of course not a problem for (A1).

It will be illustrative to see why (A1), under the "result reading", is false. Suppose we have three pieces of Lego, G, Y, and B (for green, yellow, and blue), and suppose that x^y is the *result* (not the act type) of attaching x on top of y. Here, x^y is a physical object consisting of x and y. Now, it should be clear upon reflection that (G^Y)^B = G^(Y^B). But since G^Y ≠ B ≠ G ≠ Y^B, (A1) is false under the relevant interpretation (I use '$a \neq b \neq \ldots$' to say that all of a, b, … are distinct from one another). However, the *act type* (as opposed to the *result*) of attaching G^Y on top of

[15] See Donald Davidson, "Actions, Reasons, and Causes", *Journal of Philosophy*, LX, 23 (November 1963): 685–700, at pp. 697f.

B is not identical with the act type of attaching G on top of Y^B, since they are not necessarily co-performed.

This example helps us respond to another objection against (A1). To wit, one might object that (A1) seems plausible only so long as we focus on examples with *wholly disjoint* objects, whereas when we consider *overlapping* objects, things are less clear. Thus, predicating the property of being loved by Mary of John could be identical with predicating the property of loving John of Mary, after all, since these properties overlap (they both involve loving). But G^Y and Y^B clearly overlap, and the relevant act types (as opposed to results) are still distinct. The objector is now hard pressed to explain why the case with properties should differ.

III. THE ARGUMENT

We are now in a position to present in full detail the argument involving 'Mary loves John', including the necessary assumptions about semantic axioms. Any compositional semantics will need some semantic axiom(s) showing how the semantic correlate of a sentence or complex predicate is determined by the correlates of its immediate parts. The simplest and most uniform semantics will operate with some axiom like,

(PA) PLUG_i('$F(\xi_1, \ldots, \xi_n)$', 'a') has $plug_i([F(\xi_1, \ldots, \xi_n)], [a])$ as its semantic correlate,

where PLUG_i is a mode of combination, taking an n-place predicate '$F(\xi_1, \ldots, \xi_n)$' and a name 'a' to the $n-1$-place predicate resulting from saturating (or "plugging") '$F(\xi_1, \ldots, \xi_n)$' in its ith place with 'a' (here, the n–1-place predicate may be 0-place, in which case it is a sentence). Thus, PLUG_2 takes 'ξ loves ζ' and 'John' to 'ξ loves John', and so on. Further, the nature pf $plug_i([F(\xi_1, \ldots, \xi_n)], [a])$ will of course depend on whether we adopt a Russellian or Fregean conception of propositions (this "plug notation" is due to Zalta[16]).

While (PA) is natural, it is not mandatory, so we should not assume that act-type theorists are committed to it. And it suffices for the argument that we suppose only that they are committed to the weaker,

(P1) For any monadic predicate '$F(\xi)$' and name 'a', PLUG_1('$F(\xi)$', 'a') expresses $plug_1([F(\xi)], [a])$,

where $plug_1(x, y)$ is some act type on x and y. (In (P1), the clumsy 'has as its semantic correlate' can be replaced with 'expresses', since it deals only with sentences and propositions.) We are here presupposing that 'Mary loves John' = PLUG_1('Mary loves ξ', 'John'), and so on, but this falls directly out of the definition of PLUG_1 in terms of 'saturate'. The claim that 'Mary loves John' has alternative analyses can now be expressed as follows:

(P2) 'Mary loves John' = PLUG_1('Mary loves ξ', 'John') = PLUG_1('ξ loves John', 'Mary').

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[16] Edward Zalta, *Intensional Logic and the Metaphysics of Intentionality* (Cambridge, MA.: MIT Press, 1988).

It follows from (P1) and (P2) that:

(C) (a) 'Mary loves John' expresses $plug_1$([Mary loves ξ], [John]),
(b) 'Mary loves John' expresses $plug_1$([ξ loves John], [Mary]).

Further, where x is the semantic correlate of a monadic predicate, act-type theorists must take $plug_1(x, y)$, to be an act type directed toward x and y. It is now tempting to infer (from (P1) and (P2)) that they are also committed to holding that, for some act type A and for any predicate 'F(ξ)', PLUG$_1$('F(ξ)', 'a') expresses A-ing [F(ξ)], [a]. This would be fallacious, however. What follows is merely that for all predicates 'F(ξ)', there is an act type A such that PLUG$_1$('F(ξ)', 'a') expresses A-ing [F(ξ)], [a].

A counterexample to the fallacious inference is a case with two *distinct* act types, A-ing and A*-ing, such that 'Mary loves John' expresses the act type of A-ing [ξ loves John], [Mary] and the act type of A*-ing [Mary loves ξ], [John]. This hypothesis forms the second horn of our dilemma.

Grabbing now the first horn, assume first that the act-type theorist posits only one basic act type, which we call A-ing. He will then define $plug_1$ so that, where x is a monadic predicative propositional constituent,

$plug_1(x, y)$ = the act type of performing A toward x and y (in that order),

or, for short,

$plug_1(x, y) = A$-ing x, y.

Given these assumptions, (C) above entails

(C2) (a) 'Mary loves John' expresses A-ing [Mary loves ξ], [John],
(b) 'Mary loves John' expresses A-ing [ξ loves John], [Mary].

The unacceptable conclusion that 'Mary loves John' is ambiguous follows from (C2) and the claim,

(≠) A-ing [Mary loves ξ], [John] ≠ A-ing [ξ loves John], [Mary],

which in turn follows from (A1) plus the trivial assumption that [Mary] ≠ [ξ loves John] ≠ [John] ≠ [Mary loves ξ].

Showing how this argument applies to the specific views of flesh-and-blood act-type theorists, like Soames and Hanks, is now a trivial exercise. For instance, the instantiation of (≠) relevant to Soames's theory would just be

(≠I) The act type of predicating the property of being loved by Mary of John ≠ the act type of predicating the property of loving John of Mary.

In Hanks's case, we would also need to assume that complex act types that are composed of distinct sets of sub-acts are distinct, but this is obvious enough.

Consider now the second horn of the dilemma, concerning pluralism. On this view, different basic act types must be appealed to depending on whether the predicate is of the form '$R(\xi, a)$' or '$R(a, \xi)$'. Rather than (C2), pluralism is committed to there being two distinct act types, A-ing and A^*-ing, such that

(C2*) (a) 'Mary loves John' expresses A-ing [Mary loves ξ], [John],
(b) 'Mary loves John' expresses A^*-ing [ξ loves John], [Mary].

By (A2) plus trivial distinctness claims, we can now infer that 'Mary loves John' is unambiguous only if A-ing and A^*-ing overlap. Let us now discuss this commitment.

These act types would overlap, of course, if they were *identical*, and this is a fully intelligible hypothesis. But this just brings us back to the first horn of the dilemma. Thus, we must rather consider the hypothesis that they overlap but are *distinct*. But it is difficult to see just which object or basic act type these act types are supposed to have in common. Positing two distinct act types and insisting that they overlap also seems *ad hoc*: two unobvious claims are made here only to avoid the conclusion that 'Mary loves John' is ambiguous. To dodge this suspicion, some independent argument for this view is needed, but it is hard to see what such support might consist in. If, surprisingly, this way out should turn out viable, it would be a notable deviation from standard act-type theories, and thus we would have a significant result in any case.

Let me now consider an objection against this main line of argument. According to the objection, we can only conclude that the relevant sentences are ambiguous by making the implausible assumption that if a sentence expresses several propositions, then it is ambiguous. But this is false, since context-sensitive sentences can be unambiguous and yet express several propositions. But my argument does not require this implausible assumption. It goes through on the more plausible assumption that a sentence is ambiguous if it expresses several propositions *in each context*. The way in which 'Mary loves John' comes out (on act-type theories) as expressing several propositions does not depend on the context, and thus it expresses several propositions in each context. Hence, it is ambiguous. Besides, this last step of my argument is not really necessary: we could have omitted the word 'ambiguous' and said merely that act-type theories are committed to 'Mary loves John' expressing several propositions, independently of context and of any lexical ambiguity in 'loves'. This commitment is bad enough.

Let us now ask whether the act-type theorist can bite the bullet and accept the ambiguity that ensues from their theory. It may be thought that all I have shown is that 'Mary loves John' is *syntactically ambiguous*, and therefore expresses several propositions, which is commonplace. But the phenomenon of alternative analyses is different from syntactic ambiguity, as ordinarily conceived. A standard example of the latter is, 'Flying planes can be dangerous'. This sentence is clearly ambiguous, saying, on one parsing, that the activity of flying planes can be dangerous, and, on the other, that planes that fly can be dangerous. But 'Mary loves John' is quite different. *A fortiori*, it does not seem to "say" different things depending on the "parsing". Biting this bullet thus means hypostatizing an ambiguity where there does not seem to be one, and without any other, independent reason contrary to standard methodological principles of semantic theory.

Accepting the ambiguity of the relevant sentences would also raise new, awkward questions. For instance, which of the 31 propositions expressed by '$6 + 2 = 4 + 3 + 1$' does one believe when, as we would naïvely put it, one "believes that $6 + 2 = 4 + 3 + 1$"? All of them? Could one believe one but not the others? If one can, then how do the beliefs differ? Note that if one cannot, then the claim that they are nevertheless distinct violates even the fine-grained "cognitive significance" test of propositional identity urged by Frege.

It may be thought, still, that act-type theorists may be in a better position than other semanticists to accept this ensuing ambiguity, since they can make certain additional assumptions about act types in view of which the resulting ambiguity seems more palatable. There are three such "additional assumptions" I want to consider:

(1) The act types related to different analyses of a sentence are just *ways* of performing the act type which is the proposition the sentence expresses.

(2) These act types *necessarily coincide*: one cannot perform one of them without performing the others.

(3) These act types have the same truth conditions.

But (1) is incompatible with the original act-type theories of Soames and Hanks. They take the act type of predicating a property of an object to *be* a proposition, not an act type by which the proposition can be performed. I will discuss this account as a possible "retreat position" in §5, but I want to note here already that it is difficult to see why the claim *would* mitigate the ambiguity, even if it were available to act-type theorists.

Analogous points apply to (2) and (3): why should the fact that the three act types necessarily coincide, or have the same truth conditions, make it acceptable to say that the sentence is ambiguous?

There are also specific worries about (2) and (3). We have already seen that (2) violates Frege's identity conditions on propositions. It also seems that in order to perform the relevant act on a predicative propositional constituent, for instance, to predicate a property of something, one must "think about" that constituent in a way that requires a non-zero cognitive effort. If so, then entertaining or judging the proposition that $6 + 2 = 4 + 3 + 1$ requires, implausibly, performing 31 distinct effort-taking mental acts.

Claim (3) is also uncongenial to act-type theorists, since they take propositions to be structured, and since the main motivation for doing so is that one can thereby distinguish propositions that have the same truth conditions. Thus, saying that the ambiguity is acceptable because the act types have the same truth conditions is in tension with a major motivation for structured propositions.

IV. A FURTHER ARGUMENT AGAINST PLURALISTIC ACT-TYPE THEORIES

Even if the above argument against standard act-type theories was conclusive, the argument against the "pluralist" variant was not. In this section, I will present a stronger argument against pluralism, which is independent of (A2) and of any notion of act types "involving" certain entities or of "overlapping". The argument shows that pluralists are forced to posit infinitely many basic act types.

Consider the sentence '$7 + 8 = 15$', from which one can extract the three monadic predicates,

'$7 + 8 = \xi$',
'$7 + \xi = 15$',
'$\xi + 8 = 15$'.

If we try to avoid the conclusion that ‘7 + 8 = 15’ is ambiguous by multiplying basic act types, we need to posit not two, but *three* distinct basic act types. More specifically, we would need to posit distinct act types, A-ing, A^*-ing, and A^{**}-ing, such that,

(C2$^+$) (a) ‘7 + 8 = 15’ expresses A-ing $[7 + 8 = \xi]$, $[15]$
(b) ‘7 + 8 = 15’ expresses A^*-ing $[7 + \xi = 15]$, $[8]$
(c) ‘7 + 8 = 15’ expresses A^{**}-ing $[\xi + 8 = 15]$, $[7]$,

For suppose that they are not all distinct. Then, some identity between two of them holds and then the argument from (A1) sets in, and we can infer that ‘7 + 8 = 15’ is ambiguous. We can generate infinitely many more arguments like this, with predicates of ever-increasing complexity.

Given this infinity of basic act types, certain claims that the act-type theorist will want to make cannot be finitely stated. Consider, for instance, the definition of $plug_1$. It seems that this definition will need one clause for each of the infinitely many forms that monadic predicates may take, where these “forms” are,

$R(a_1, \ldots, a_n, \xi)$,
$R(a_1, \ldots, a_{n-1}, \xi, a_n)$,
$R(a_1, \ldots, a_{n-2}, \xi, a_{n-1}, a_n)$,

and so on, for each n. The simplest definition will define $plug_1$ over predicative propositional constituents, which differ in which argument place (first, second, …) is “empty”. I will here consider a definition, which has one clause for each adicity:

(DP) $plug_1(x, y) =_{\mathrm{df}}$ the entity z such that:

(i) if x is monadic, then:
if x is simple, then z = the act type of B-ing x, y, and
if x is complex and its first place is empty, then z = A-ing x, y, and
if x is complex and its second place is empty, then z = A^*-ing x, y, and
…

(ii) if x is dyadic, then:
…

The reason why this definition cannot be finitely completed is that the adicities of predicates have no upper limit, whence the dots in clause (i) cannot be finitely filled in.

Note that I am here using, ‘empty’ and ‘place’ in non-standard senses, in which, for instance, the second place in ‘$1 = \xi$’ is empty, but not the first. Normally, one would say that any monadic predicate has only one place and that a place is by definition empty. But I think this alternative terminology should be obvious enough.

It may be suggested that a finite formulation might still be available if, instead of merely labelling these act types ‘A’, ‘A^*’, ‘A^{**}’, …, we refer to them using *complex expressions containing numerals*. For instance, we could posit a single, basic act type, *C*-ing, which takes as objects not merely the semantic correlates of predicates and names, but also positive integers. Clause (i) can then be finitely restated as follows:

(i′) if x is monadic, then:
if x is simple, then z = the act type of *B*-ing x, y, and
if x is complex and its nth place is empty, then z = *C*-ing x, y, n

This is a finite formulation, which only commits one to an unproblematic infinity of numbers. However, this proposal is a non-starter. We are here supposed to avoid the ambiguity of 'Mary loves John' by appeal to the identity,

[Mary loves John] = *C*-ing [Mary loves ξ], [John], 2 =
= *C*-ing [ξ loves John], [Mary], 1.

But this claim contradicts (A1), given trivial distinctness facts about the objects acted upon. I conclude that pluralist act type theorists can avoid the ambiguity problem only by positing an unacceptable infinity of basic act types.

V. THREE RETREAT POSITIONS

By a "retreat position", I mean a theory that is modified so as to avoid the argument above, but that is still *in the spirit of* standard act-type theories. I will not define 'being in the spirit of', but one important way of assessing this is by seeing whether the position in question will have the alleged advantages of standard act-type theories listed in the introduction. I will consider three retreat positions, which say, respectively, that propositions are

(i) *equivalence classes* of act types,
(ii) *results* of act types,
(iii) *more inclusive* act types (which can be performed *by* performing the usual act types of predicating or saturating).

Option (i) is to define some relation of equivalence that makes the three acts related to 'Mary loves John' equivalent, and then identify [Mary loves John] with their set, and similarly for other atomic sentences. The main problem with this idea is that it does not take propositions to be (syntactically) structured and so is not in the spirit of standard act-type theories. More precisely, this account is committed to taking equivalent propositions to be identical, which is precisely the kind of commitment one tries to avoid by taking propositions to be structured.

One might try to avoid the worst excesses of unstructured views of propositions by setting stricter conditions on equivalence. If equivalence is cashed out simply in terms of truth-in-the-same-worlds or mutual inferability, then, for any p, q, [p] = [p & (q or not-q)], which is precisely the kind of consequence we are trying to avoid.

But suppose we add the requirement that act types are equivalent only if the basic act type with "widest scope" in each is the same. Then, *A*-ing [ξ loves John], [Mary] and *A*-ing [Mary loves ξ], [John] come out as equivalent, since the relevant basic act type in each of them is *A*-ing. Further, in order to distinguish this equivalence class from [Mary loves John and (p or not-p)], we could identify the latter with the act type of A^+-ing [and], [Mary loves John], [p or not-p], where *A*-ing ≠ A^+-ing.

But we can still not distinguish between [*p* and *q*] and [(*p* and *q*) and (*r* or not-*r*)]. Requiring in addition equivalent act types to have the same simple constituents would not be sufficient either, since [(*Fa* or not-*Fa*) and (*Gb* or not-*Gb*)] and [(*Ga* or not-*Ga*) and (*Fb* or not-*Fb*)] would still come out as identical. The obvious remedy is to say that act types *a* and *b* are equivalent just in case they have identical structures and, for every entity *e* and node *n* in this structure, *a* has *e* at *n* just in case *b* has *e* at *n.* But now, *A*-ing [ξ loves John], [Mary] and *A*-ing [Mary loves ξ], [John] are no longer equivalent. This points to a general difficulty: that of distinguishing logically equivalent propositions without thereby multiplying propositions wherever there are alternative analyses. It is not clear whether any version of option (i) can meet this constraint, nor whether the resulting theory would be in the spirit of standard act-type theories.

Option (ii), on which propositions are *results* of act types, could perhaps be independently motivated.[17] But the idea as it stands is highly underspecified: we do not yet know what kind of entity propositions are, whether abstract, concrete, events, states, sets, and so on. All we know is that they result from certain acts.

There is also reason to think this account, however specified, will not be in the spirit of original act-type theories, because it will not assign any real theoretical work to act types. Assume that we decide that propositions are *X*s, which result in some systematic way from act types of predicating or saturating. Suppose also we define $plug_i$ in the usual act-type-theoretical (Fregean or Russellian) way and then say that propositions are the values of some function $\mathbf{plug}_i$, such that $plug_i(x, y)$ always results in $\mathbf{plug}_i(x, y)$. The *crux* is that we can now just refer to propositions using '$\mathbf{plug}_i$', and any detour via act types will be otiose. The obvious alternative to (PA), for instance, would be,

(PA′) PLUG_i('$F(\xi_1, \ldots, \xi_n)$', 'a') expresses $\mathbf{plug}_i([F(\xi_1, \ldots, \xi_n)], [a])$.

Let's finally consider option (iii), of taking propositions to be "more inclusive" act types, which can be performed *by* performing the usual act types of predicating or saturating. Here, [Mary loves John] would be an act type that can be performed by performing any of the three act types associated with 'Mary loves John'. This seems to be in the spirit of the original act-type theory, since propositions are here identified with act types.

So far, however, this proposal is seriously underspecified. What are these more inclusive act types, and how do we refer to them? In particular, can we refer to them using designators that contain designators of the propositional constituents? A closely related worry: toward which object(s) is [Mary loves John] directed, on this view? Is [Mary loves ξ] and [ξ loves John] among then, and what about [John] and [Mary]?

These worries bear directly on the question of what the semantic axioms for atomic sentences are supposed to read. Consider,

(P1′) For any predicate '$F(\xi)$' and name 'a', PLUG_1('$F(\xi)$', 'a') expresses the act type of *A*-ing [$F(\xi)$], [a].

This is not available on option (iii), since the act type of *A*-ing [$F(\xi)$], [a] is now not the proposition expressed by '$F(a)$' but merely an act type that can be performed *by*

[17] See Moltmann, "Propositions, attitudinal objects, and the distinction between actions and products", *op. cit.*

performing that act type. One might, as an alternative, propose something along the lines of,

(P1″) For any predicate ‘$F(\xi)$’ and name ‘a’, PLUG_1(‘$F(\xi)$’, ‘a’) expresses an act type that can be performed by performing $plug_1([F(\xi)], [a])$.

But (P1″) does not by itself associate sentences with determinate semantic correlates. It does not say *which* act type is expressed by a given sentence.

We could try describing the proposition expressed as *the* act type that can be performed by performing act type *A*. But how do we know that this description singles out a unique act type? This proposal also does not explain toward which objects [Mary loves John] is supposed to be directed. Similar remarks apply to the proposal that we refer to the act type as “the act type that can be performed by performing any of …”, where the dots are filled in with a complete list of the act types that are related to the analyses of the sentence (as we have been conceiving of them throughout). Again, uniqueness is not clearly guaranteed, and we still do not know toward which objects the inclusive act type is directed.

By referring to the proposition as the act type of entertaining (or judging) that proposition, uniqueness is guaranteed (let us grant), but the other worries remain. ‘The act type of entertaining [Mary loves John]’ does not contain designators of the relevant propositional constituents and we do not know which objects are acted upon. Consequently, it is also unclear how to formulate the semantic axioms.

Let me consider one final possibility, which, while clearly related, goes somewhat beyond the original characterization of option (iii): propositions are act types directed toward simple constituents, which can be performed by performing act types directed toward complex constituents. Thus, [Mary loves John] is the act type of predicating loving of Mary and John (in that order), which can be performed by performing either of the two remaining act types.

This account handles the problem of uniqueness and tells us toward which objects the act type is directed, namely, [Mary] and [John] only. But this last commitment immediately makes the account unable to compositionally handle sentences involving complex predicates. Since the act type expressed *ex hypothesi* is not directed toward any complex predicative propositional constituents, there is no semantic correlate to associate with complex predicates, which can help determine the semantic correlates of atomic sentences.

A further, rather different complaint about this proposal is that one cannot simply *stipulate* that the act type of predicating loving of Mary and John can be performed by predicating loving John of Mary. This is something that must be derived from independently plausible assumptions, but it is not clear what those assumptions might be. Thus, like the two options previously considered, option (iii) raises several difficult questions, and is not, as it stands, a safe retreat position for act-type theorists.

VI. A GENERAL CONSTRAINT ON STRUCTURED PROPOSITIONS

Does the argument above generalize to all kinds of structured propositions, thus refuting the very idea? No, but it does amount to a general constraint on structured propositions. Very roughly, propositions may not be identified with the kind of construction that obeys a principle analogous to (A1). Since not all constructions do, however, the argument does not generalize. This, in any case, will be the upshot of this section. We will close by looking at Jeffrey King’s and Edward Zalta’s theories of structured propositions, and see that while Zalta's theory is not committed to the kind of ambiguity we have been discussing, King's theory is.[18]

Constructions that do not obey any principle analogous to (A1) include the following:

(1) the mereological sum of $x_1, \ldots, x_n$,

(2) the state of affairs in which $F(x_1, \ldots, x_n)$,

(3) $x_1 \hat{} x_2$ (from Section 2)

(Note that some constructions have a determinate number of variables, as in case (3).) Now, for a construction to "obey a principle analogous to (A1)" is for it to satisfy the general schema,

(G) If $X(x_1, \ldots, x_n) = X(y_1, \ldots, y_n)$, then each of $x_1, \ldots, x_n$ is identical with one of $y_1, \ldots, y_n$.

When I use a schematic letter *in* the "construction", as in (2) above, I mean that it satisfies (G) if all of its instances do.

That none of the constructions (1)–(3) satisfy (G) is shown by the following counterexamples:

(C1) sum(sum(a, b), c) = sum(a, sum(b, c)),
although sum(a, b) ≠ c ≠ a ≠ sum(b, c),

(C2) the state of affairs in which John has the property of being loved by Mary = the state of affairs in which Mary has the property of loving John, although John ≠ being loved by Mary ≠ Mary ≠ loving John,

(C3) G^(Y^B) = (G^Y)^B, although G ≠ Y^B ≠ G^Y ≠ B.[19]

Now, the general constraint on structured propositions that can be derived from the argument from alternative analyses reads,

(GC) $[F(a)] = X([F(\xi)], [a])$ only if X does not satisfy (G).

For suppose X satisfies (G). We know that there will be cases in which $[R(\xi, b)] \neq [a] \neq [R(a, \xi)] \neq [b]$. From these assumptions, it follows that $X([R(a, \xi)], [b]) \neq X([R(\xi, b)], [a])$, and, hence, that '$R(a, b)$' is ambiguous.

[18] The relevant works are King, *The Nature and Structure of Content*, *op. cit.*, and Zalta, *Intensional Logic and the Metaphysics of Intentionality*, *op. cit.*

[19] How about 'the property of R-ing $x_1, \ldots, x_n$'? On a coarse-grained conception of properties, this construction fails to satisfy (G). For on such a conception, the property of being a world in which John has the property of being loved by Mary = the property of being a world in which Mary has the property of loving John. How things stand with fine-grained properties is less clear. In general, it seems difficult to give a general account of which kinds of constructions obey (G) principles and which do not.

While failing to satisfy (G) is a necessary condition for a construction type being identifiable with propositions, it is clearly not sufficient. For 'the mereological sum of $x_1, \ldots, x_n$' fails to satisfy (G), but it does satisfy the principle, '$X(x_1, x_2, x_3) = X(x_1, x_3, x_2)$'. Thus, identifying a proposition with the sum of its constituents would entail, absurdly, that $[R(a, b)] = [R(b, a)]$.

Let us now, finally, have a look at two extant theories of structured propositions, the theories of Jeffrey King and Edward Zalta, to see how they fare with alternative analyses.

King identifies propositions with a certain kind of complex fact. The proposition that Rebecca swims is identified with the fact that Rebecca stands in the complex relation *REL* with the property of swimming. For now-familiar reasons, King must say that [Mary loves John] is identical both with

(F1) the fact that Mary *REL*s [ξ loves John], and

(F2) the fact that John *REL*s [Mary loves ξ].[20]

The relevant instance of (G) is thus,

(GK) If the fact that $REL(x, y)$ = the fact that $REL(z, w)$, then each of x and y is identical with one of z and w.

We will see that King's theory, like act-type theories, entails that sentences with alternative analyses are ambiguous. However, the argument for this conclusion takes a rather different route. For given the complexity and technical character of *REL*, we do not have reliable intuitions about (GK) as we do with (A1). Although we will soon find reason to reject (GK), this reason is an independent reason to believe that F1 ≠ F2 (from which the falsity of (GK) can be inferred). Since the claim that F1 ≠ F2 is what we ultimately aim to derive, (GK) will play no role in our argument.

Now, to see whether F1 = F2, we must look closer at *REL*. King defines *REL* as holding between x and y iff there is a language L, lexical items a and b of L and a context c, such that

(i) a and b occur at the left and right terminal nodes (respectively) of the sentential relation R that in L encodes ascription, and
(ii) x is the semantic value of a in c, and
(iii) y is the semantic value of b in c.[21]

In contrast to the Lewisian, abstract conception of languages, King takes a language to be *actually used*.[22] But in that case, there will be worlds in which F1 exists but F2 does not. For instance, there is a world where there is a language containing a primitive lexical element whose semantic value is [Mary loves ξ] but no language with a lexical element whose semantic value is [ξ loves John]. I am assuming here that there can be non-composite lexical elements that designate complex properties,

[20] King himself accepts these commitments: see his *The Nature and Structure of Content*, *op. cit.*, pp. 16ff.
[21] King, *The Nature and Structure of Content*, *op. cit.*, p. 62
[22] King, *The Nature and Structure of Content*, *op. cit.*, pp. 46ff.

but this seems innocuous. If such a world exists, however, then F1 ≠ F2, even on a coarse-grained conception of facts, on which strict equivalence suffices for identity.

Suppose King switches to the Lewisian conception of languages in order to avoid ambiguity. Then, however, the *definiens* of *REL* becomes a necessary truth for any values of ‘*x*’ and ‘*y*’. Given the coarse-grained conception of facts, there is then only one atomic proposition! So the switch had better be coupled with a fine-grained, structured conception of facts. On such a conception, F1 = F2 only if (1) they have the same structure and (2) for any entity *e* and node *n* in this structure, F1 has *e* at *n* just in case F2 has *e* at *n.* But on such a conception, obviously, F1 ≠ F2, since the two facts have different entities at their nodes. (This argument equally afflicts King’s actual account, coupled with a fine-grained conception of facts). I conclude that King’s theory, like the act-type theory, entails that sentences with alternative analyses are ambiguous.

Zalta’s theory, by contrast, seems immune to the argument from alternative analyses. He refers to propositions using such gerunds as ‘Socrates having wisdom’, or ‘Mary standing in the loving relation to John’. But, intuitively, Mary’s having the property of loving John = John’s having the property of being loved by Mary. Thus, at least as far as these proposition designators are concerned, Zalta’s theory avoids the argument. True, these designators cannot be used to state semantic axioms for atomic sentences. For this purpose, Zalta uses a kind of technical proposition designator, but since we have no intuitions about them, there is no simple argument from an intuitive (G)-principle against Zalta’s theory. The same holds for Bealer’s theory.[23] This invites the anti-reductionist conclusion that in order to avoid the argument from alternative analyses, we must not identify propositions with some other kind of entity, like act types or facts of some kind. For now, however, this idea must remain a speculation.

[23] George Bealer, *Quality and Concept* (Oxford, Oxford University Press, 1982).