Complex acts and the unity of the proposition

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September 29, 2015

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Abstract

I explain one clear thing which ‘the problem of the unity of the proposition’ might mean, and show why that problem arises, in a way which has not been noticed, for act theories of propositions of the sort defended by Peter Hanks and Scott Soames. I argue that the problem, once noticed, is difficult to solve.

1 THE PROBLEM OF THE UNITY OF THE PROPOSITION

The phrase ‘the problem of the unity of the proposition’ is sometimes used in such a way as to suggest that it is a problem for anyone who believes in propositions. The idea, it seems, is that anyone who believes in propositions must explain in what their unity consists.

But it is hard to see why this should be so. We don’t usually take people who believe in the existence of the number 4 or the property of being red to face the difficult task of explaining what the unity of the number 4 or the unity of the property of being red consists in; why should propositions be any different?

The short answer, I think, is that they don’t have to be. There are plenty of views of propositions which face no special ‘problem of the unity of the proposition.’ A case
in point is the widely held view that propositions are sets of worlds. Unless one holds that anyone who believes in sets must explain ‘what the unity of the set consists in,’ it is hard to see why the proponent of a possible worlds theory of propositions should face any special problem of the unity of the proposition. The same goes for theorists who, like Plantinga (1974) and Merricks (2015), take propositions to be simple sui generis abstract objects, on par in this respect with the number 4 or the property of being red. This view, like the possible worlds theory, faces serious objections — but I don’t think that the problem of the unity of the proposition is one of them.

The problem of the unity of the proposition is not a problem for all believers in propositions. Who is it a problem for, then? I think that it is a problem for theorists who try to explain what propositions are by first enumerating some entities which are not propositions, but are in some way bound up with the identity of propositions. Often these are called ‘constituents’; but to avoid associations which that term now has, I will call them ‘elements.’ If one attempts to explain what propositions are by listing some things, the elements, which are not propositions, it is pretty obvious that one owes an account of how propositions are related to those elements. And that is just to give an account of how those elements are united into a proposition.¹

The classical theories of Russell and Frege both proceed in this way. In his discussion of the proposition that A differs from B, Russell says that the constituents of the proposition are A, difference, and B.² But of course none of these things is the proposition that A differs from B; they are just, in my neutral terminology, elements of it. Thus Russell faces the task of explaining how the proposition is related to these elements: how, that is, they are unified into a proposition.

Though matters are less clear with Frege, on one reading his approach is parallel to Russell’s but for the fact that he begins with different elements. In this case the elements are senses, which are modes of presentation of objects and concepts.³ Just as Russell owes us an explanation of the way in which the proposition that A differs from B is related to his elements — A, difference, and B — so Frege owes us an explanation of the way in which propositions are related to his elements. And to give such an explanation just is to explain what unifies the relevant modes of presentation into a proposition.

2 PROPOSITIONS AS COMPLEX ACTS

I now want to sketch a leading recent theory of propositions, and explain why this theory faces the problem of the unity of the proposition in a way exactly parallel to the way in which Russell and Frege faced this problem. This is the theory of propositions as complex acts which has been defended, in different forms, by Peter Hanks and Scott Soames.⁴ While this view of propositions has been widely discussed,

¹This is closest to the ‘unity question 1’ discussed in King (2009) and King (2013).
²Russell (1903), §54.
³This is perhaps clearest in Frege (1963), where he proposes that “we look upon thoughts as composed of simple parts, and take these, in turn, to correspond to the simple parts of sentences” (1). This suggests that the senses of simple expressions are elements of thoughts which are conceptually prior to the thought. Some reason for caution in this interpretation, though, is given by the fact that this passage is immediately preceded by the remark that “we really talk figuratively when we transfer the relation of whole and part to thoughts.”
the fact that it faces this problem seems not to have been noticed. And, as I’ll argue in the sections to follow, the problem, once noticed, is not easily solved.

2.1 Simple propositions

While there are many interesting and important differences between the theories of Hanks and Soames, those differences are mainly orthogonal to the discussion which follows; so, for simplicity, I’ll more closely follow Soames’ exposition of his theory.

Let’s start with the simplest case — a singular proposition which predicates a property $F$ of some object $o$. This proposition will, on Soames’ theory, be a complex act which includes the following sub-acts: cognizing $o$, cognizing $F$, and predicing $F$ of $o$. Because in what follows it will be useful to have abbreviations for these act-types, I’ll represent these simple acts as follows:

$$\text{cog}(o)$$
$$\text{cog}(F)$$
$$\text{pred}(F, o)$$

To have a neutral way of representing complex acts, I will use ‘$\phi \oplus \psi$’ to represent the complex act whose constituent acts are $\phi$ and $\psi$. So, in these terms,

the proposition that $o$ is $F = \text{pred}(F, o) \oplus \text{cog}(o) \oplus \text{cog}(F)$

For our purposes, we can leave the notion of cognizing an object or property at the intuitive level; one can think of it as thinking of, or calling to mind, an object or property. I will follow Soames in thinking of predicating a property of an object (or a relation of an n-tuple of objects) does not involve endorsing, in any sense, the claim that the object has that property (or that the objects stand in the relevant relation). To predicate $F$ of $o$ is just to entertain the proposition that $o$ is $F$, and not to judge that it is true.

Since propositions are acts, to entertain a proposition, on this view, is just to perform the act which the proposition is. Other mental states can be understood as going beyond this ur-act of entertaining a proposition. So, for example, Soames says that “[t]o judge B to be red is to predicate redness of B affirming what one has done, which is to predicate redness of B in a way that involves forming or activating certain distinctive cognitive and behavioral dispositions.”

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5King (2013), §5 does raise the question of whether Soames’ theory can answer the question of how the constituents of propositions are united in the proposition, but thinks that Soames’ theory can give a satisfactory answer to this question. But King here is discussing an earlier version of Soames’ theory, which did not emphasize the complexity of the acts with which propositions are to be identified. I discuss the possibility that propositions might be simple rather than complex acts in §4 below.

6Hanks (2015) sharply distinguishes between referring to an object and expressing a property. The distinction between these types of acts won’t matter for the argument to follow.

7This is one of the central points of disagreement between the theories of Soames and Hanks; since (as far as I can see) it does not matter much for the discussion to follow, I simply adopt Soames’ view for ease of exposition. For Hanks’ criticism of Soames’ view of predication, see Hanks (2015), §1.3.

8Soames (2015), 23.
2.2 First person propositions

Let’s now look at how the view handles slightly more complex propositions. Doing so will both introduce some material which will be essential to the argument to follow, and bring out one of the central attractions of the theory of propositions as acts: the fact that it promises to make room for the existence of distinct but representationally identical propositions.

Both Hanks and Soames think that their theories can make room for the existence of propositions which are distinct despite representing just the same objects as having just the same properties and standing in just the same relations. If they are right about this, their achievement would be of very great importance. Many of the most difficult problems in the philosophy of language and the philosophy of mind could be solved if we could make sense of propositions which are genuinely distinct despite representing just the same objects and properties. This is, of course, just what Fregeans aim to do by letting modes of presentation, rather than things in the world like objects and properties, serve as the constituents of propositions. The exciting thing about the project of Hanks and Soames is that they promise to deliver distinct but representationally identical propositions without invoking the dubious apparatus of Fregean senses — and to do this is to deliver something like the holy grail of contemporary work on mind and language.

To see how a theory of propositions as complex acts might make room for distinct but representationally identical propositions, let’s introduce a pair of sentences which many have thought express distinct but representationally identical propositions:

(1) I am on fire.

(2) Jeff Speaks is on fire.

As is well-known, there are at least two ways to make the case that these sentences are used to express different propositions. The first has to do with the connection between the beliefs which would be expressed by these sentences and the actions of the subjects expressing the beliefs. For it is not hard to imagine situations in which, confused about my identity, I would react quite differently to coming to believe what is expressed by these two sentences. The first, given my desire to maintain a livable temperature, would in this case have a very direct connection to action; the connection of the second to action would depend quite a bit on my attitudes towards this ‘Jeff Speaks’ character.\(^9\)

The second is simply an instance of Frege’s puzzle which, as in other instances of the puzzle, is best pressed by embedding the relevant sentences in attitude ascriptions. It certainly seems as though there are situations in which the propositions expressed by the following sentences can differ in truth value:

(3) I believe that I am on fire.

(4) I believe that Jeff Speaks is on fire.

\(^9\)Though for some criticism of this line of argument, see Cappelen and Dever (2013).
One might think that we should want to explain how this is possible, by explaining how (1) and (2) could express different propositions.

A quick note about terminology before going any further: so far I've been talking about a difference in what pairs of sentences like the ones above express. This might be taken in two ways: first, as a claim about what these sentences semantically express; second, as a claim about what they would typically be used to assert or pragmatically convey. This question about semantic vs. pragmatic renderings of the problem of the first person is, as far as I can see, orthogonal to the questions I want to raise — so in what follows I will use the relatively neutral ‘express’, assuming that what I say can be transposed into either the semantic or the pragmatic way of construing the problem. I will use ‘(1P)’, ‘(2P)’, etc. as names for the propositions expressed, in this neutral sense of ‘express,’ by (1), (2), etc.

Here is what Soames says about the distinction between propositions like (1P) and (2P):

> ‘The new analysis springing from the cognitive conception of propositions distinguishes predicating P of an agent A identified as predication target in the first-person way from predicating P of A however identified. Since doing the first is also doing the second, but not conversely, the acts are different. Since the same property is predicated of the same thing, they are cognitively distinct but representationally identical propositions.’

Soames (2015), 46. Emphasis in the original.

Here Soames invokes a new sort of cognitive act: thinking of oneself in a first-person way. Much as we used ‘pred’ as a name for the cognitive act of predication, and ‘cog(o)’ as a name for act of cognizing o, let’s use ‘1stP(o)’ as a name for the cognitive act of thinking of o in a first-person way. On this view, first person propositions are (like all propositions) complex acts; they are distinguished from their third-person counterparts by involving an act of thinking of an object in a first-person way. Using the notation above, we might represent the difference as follows:

\[
(1P) = \text{pred}(\text{on fire, JS}) \oplus 1stP(\text{JS}) \oplus \text{cog}(o)
\]

\[
(2P) = \text{pred}(\text{on fire, JS}) \oplus \text{cog}(\text{JS}) \oplus \text{cog}(o)
\]

Since one can think of JS in the first person way only if one cognizes JS, one can perform the first act only if one performs the second. But one can perform the second act but not the first if one cognizes JS in something other than the first-person way. And this seems to be exactly what we should want, since it seems that entertaining a first person proposition entails entertaining the corresponding singular proposition, but not the converse.

This treatment of first person propositions depends essentially on the complexity of the acts with which propositions are identified. It should be sharply distinguished from another way in which an act theorist might handle first person propositions, which treats the first person way of thinking, not as an extra sub-act of a complex act, but as a modification of a target of predication. On this sort of view, we would find the following difference between the propositions expressed by (1) and (2):

\[
(1P) = \text{pred}(\text{on fire, 1stP(JS)})
\]

\[
(2P) = \text{pred}(\text{on fire, JS})
\]
But this is not a promising way to go, for two reasons. The first is a difficulty seeing what sort of entity could be denoted by ‘1stP(JS).’ It would appear that 1stP(JS) must be an entity distinct from me which is a constituent of the relevant propositions, whose presence explains the difference in informativeness between propositions like (1P) and (2P) and which refers to me — and indeed manages to rigidly designate me. What sort of entity, one wonders, could do all of these things? How could this entity manage to refer to me in every possible world, despite the extreme variance in my properties across worlds? These are, of course, just the difficult questions which Fregeans must answer. If these questions had good answers, then we wouldn’t need an act theory of propositions to make room for distinct but representationally identical propositions: we could just plug these essentially first-personal rigidly designating modes of presentation in as the constituents of propositions, and be done with it.

Second, there is a difficulty for the view that 1stP modifies one of the targets of predication in a first person proposition given the existence of devices of direct reference. For, as noted above, ‘1stP(JS)’ must denote something. Further, it must be something about which I can think (since I can predicate things of it). So presumably it is something I can name. Suppose that I name this entity ‘Rufus.’ Once I do so, I can share the name with you, and you could go on to use it to make predications of your own. So you could, for example, say to yourself, ‘Rufus is on fire.’ In so doing you would be entertaining (1P) — the first person thought which predicates of me the property of on fire. But this amounts to a reductio of the view under consideration, since it is impossible to entertain first person thoughts about anyone other than yourself.

The problems with this quasi-Fregean treatment of the first person help to bring out a key advantage of the complex act theory, which is that it offers to explain first person propositions without employing any theoretical resources other than those which are already on hand in our initial description of the problem to be addressed. It is hard to make sense of first person modes of presentation; but anyone who gets the intuitive distinction between (1) and (2) must already grant the existence of a distinction between thinking of oneself in a first person way and thinking of oneself in a non-first person way. One might, of course, want a further explanation of just what makes a given cognitive act a first person way of thinking; but whether or not we can give such an account, it is plausible that there is such a thing as the first person way of thinking of oneself, and hence plausible that the cognitive acts to which the act theorist appeals are real.\footnote{Hanks gives an account of what distinguishes first person reference to an object from other ways of cognizing objects in Hanks (2013). Soames leaves the notion unanalyzed.}

2.3 Articulated terms

Let’s now turn to our second example of a pair of sentences whose proper treatment seems to require distinct but representationally identical propositions. Consider the following two sentences:

(5) Russell defended the proposition that arithmetic is reducible to logic.

(6) Russell defended logicism.
This pair of sentences is an instance of the problem of articulated terms. As is well-known, pairs like this generate a difficult problem. On the one hand, given that ‘logicism’ is a name for the proposition that arithmetic is reducible to logic, it looks like (5) and (6) express the same proposition, since both claim that Russell stands in the relation expressed by ‘defended’ to the same entity. On the other hand, there is considerable pressure to hold that (5) and (6) express different propositions, since it looks as though substitution of one for the other in the complement of an attitude ascription can change truth value, as in examples like

(7) Mary judges that Russell defended the proposition that arithmetic is reducible to logic.

(8) Mary judges that Russell defended logicism.

One can imagine that Mary was given on the first day of her philosophy class a list of the some of the main theses that Russell defended, and was told that logicism is a thesis in the philosophy of mathematics, but was not told just which thesis in the philosophy of mathematics it is. Then intuitively, (8) might be true and (7) false.

Soames holds that his theory of propositions can explain how, (7) and (8) can differ in truth-value by explaining how (5P) and (6P) could be distinct. He says:

“understanding (6) and entertaining the proposition it expresses requires predicating trying to prove of Russell (however he is identified as predication target) and L (however it is identified). Since one can use the name ‘logicism’ to identify L without knowing much about its referent, one who has picked up the name can entertain proposition (6) without being able to identify L in any more informative manner. The conditions for understanding and entertaining (5) are the same, except that one is required to identify the second predication target, L, by entertaining it (which involves predicating being reducible of arithmetic and logic). So, to entertain proposition (5) is to entertain proposition (6), but not conversely, from which the different truth conditions of (7) and (8) follow.”

So to entertain (5P) is to perform two different acts of predication:

\[
\text{PRED}(\text{reducible}, \langle \text{arithmetic}, \text{logic} \rangle)
\]

and

\[
\text{PRED}(\text{defended}, \langle \text{Russell}, \text{logicism} \rangle)
\]

To entertain (6P), by contrast, one need only perform the second. So we might represent this account of the difference between these propositions as follows:

\[
(5P) = \text{PRED}(\text{defended}, \langle \text{Russell, logicism} \rangle) \oplus \text{COG}(\text{Russell}) \oplus \text{COG}(\text{logicism}) \\
\oplus \text{PRED}(\text{reducible}, \langle \text{arithmetic, logic} \rangle) \oplus \text{COG}(\text{reducible}) \oplus \text{COG}(\text{arithmetic}) \\
\oplus \text{COG}(\text{logic})
\]

\[
(6P) = \text{PRED}(\text{defended}, \langle \text{Russell, logicism} \rangle) \oplus \text{COG}(\text{Russell}) \oplus \text{COG}(\text{logicism})
\]

\[\text{Soames (2015), 40. Emphasis in the original. I’ve changed the sentence numbers to conform to the numbering of sentences above.}\]
which gives us the wanted result that \( (5P) \neq (6P) \). On this view the treatment of articulated terms is — while different in ways which will be of interest later — of a piece with the treatment of first person propositions.

These seem like very attractive solutions to our problems. It certainly does seem as though thinking of myself in a first person way is a different type of act than thinking of myself in a non-first-person way. And it seems plausible that a conception of propositions as acts should be able to use this fact to distinguish between the propositions expressed by (1) and (2). Similarly, it does seem like the reason why we think that (8) can be true even if (7) isn’t is that one can believe that Russell defended logicism without ever having predicated reducibility of arithmetic and logic, and hence without ever having really entertained the proposition for which ‘logicism’ stands. If we multiply types of cognitive acts, the view would also seem to generalize naturally, as both Hanks and Soames emphasize, to other examples — like those involving apparent substitution failures of coreferential simple names — which seem to require distinct but representationally identical propositions. The theory of propositions as complex acts thus has considerable explanatory promise.

3 The problem of the unity of complex acts

In one very obvious sense, this theory is parallel to the theories of Russell and Frege. The theory is an attempt to tell us what propositions are. But if we ask what the proposition that \( o \) is \( F \) is, we are given a list of things, none of which is identical to that proposition: the act of cognizing \( o \), the act of cognizing \( F \), and the act of predicating \( F \) of \( o \). These are, in the above sense, elements of the proposition that \( o \) is \( F \): they are (according to the present theory) part of the explanation of what that proposition is, but none of them is that proposition. We are thus owed an account of how the complex act which is the proposition that \( o \) is \( F \) is related to these elements — an account of what unifies these acts into a proposition.

3.1 Complex acts and conjunctive acts

This much, I think, is not really disputable. What is disputable is whether this is a very serious challenge to the theory of propositions as complex acts. For a natural response to this point is to grant that the act theory of propositions faces the problem of the unity of the proposition — but to point out that the problem, as it arises in this context, is very easily solved. For the act theorist can say that to perform a complex act just is to perform all of the sub-acts of which it is composed.\(^{14}\) This is, in effect, to interpret ‘\( \otimes \)’ as ‘&.’ Let’s call this the conjunctive act theory.

The conjunctive act theory is a reasonably natural first interpretation of the way that Hanks and Soames typically explicate their views. In explaining what some proposition is, both Hanks and Soames typically explain the acts which make up the relevant complex act — and stop there. For example, in explaining which proposition is expressed by ‘George is clever,’ Hanks says that it

\(^{13}\)Hanks does not explicitly address the problem of articulated terms, though the discussion of target-shifting in Hanks (2015), §4.2 suggests an approach which is roughly similar to Soames’, at least in the sense that entertaining (5P) will, on his view as on Soames’, involve carrying out two distinct acts of predication.

\(^{14}\)Or, perhaps, to perform each of these acts within a certain interval.
Given explanations of the nature of acts (i)-(iii), Hanks then takes himself to have explained what the relevant proposition is, which suggests that there is nothing to the performance of the composite act beyond the performance of its components. Soames’ explanations of the nature of various propositions are the same in this respect.

Both Soames and Hanks now reject the picture of propositions given by the conjunctive act theory. But that theory is still worth discussing, because the problems which the conjunctive act theory encounters bring out the challenges which face any adequate account of the unity of complex acts.

### 3.1.1 The problem of coincidence

According to the conjunctive act theory, to perform the complex act to which (1P) is identical is to simply perform the acts of which it is composed: predicating being aflame of Jeff Speaks, cognizing the property of being on fire, and thinking of Jeff Speaks in a first person way. A moment’s reflection shows this view of complex propositions as conjunctive acts can’t be right. I might be thinking of myself in a first person way while also predicating the property of being aflame of Jeff Speaks without entertaining (1P), simply because I might be thinking other thoughts about myself in a first-person way while thinking that a person seen in a mirror — who of course turns out to be me — is on fire. So if (1P) is a complex act, something stronger than simply performing all, or performing all at the same time, must bind together the simple of acts of which it is composed.

Parallel problems arise with our proposed solution to the problem of articulated terms. For one can perform

\[
\text{pred}(\text{defended}, \langle \text{Russell, logicism} \rangle)
\]

thus entertaining the proposition that Russell defended logicism, and perform

\[
\text{pred}(\text{reducible}, \langle \text{arithmetic, logic} \rangle)
\]

thus entertaining the proposition that arithmetic reduces to logic, without entertaining the proposition that Russell defended the proposition that arithmetic reduces to logic. One might, intuitively, not realize that the proposition one entertains by predicating reducibility of (arithmetic, logic) is the proposition named by ‘logicism.’ Hence performing the complex act with which we are identifying this proposition must involve something over and above performing each of the acts which make it up. Our question is: what is this extra something which one must do?

### 3.1.2 The problem of structure

The problem of coincidence is enough to refute the conjunctive act theory. A separate problem helps to bring out some of the constraints on an account of complex acts which hopes to do better.

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16 Personal communication.
This problem can be brought out by noticing that, in the case of complex propositions, the sub-acts of the proposition play very different roles. Consider again the case of articulated terms. Setting aside for simplicity the acts of cognizing the individual constituents of the proposition, the proposition expressed by (5) will be, in the above notation,

\[(5P) = \text{pred}_h\text{defended}, \langle \text{Russell, logicism} \rangle \oplus \text{pred}_h\text{reducible}, \langle \text{arithmetic, logic} \rangle\]

Now consider what it takes for (5P) to be true. One might have thought that complex acts are true iff both of their sub-acts are true; but the above example shows that this is not right, since the truth of the proposition that Russell defended the reducibility of arithmetic to logic does not require that arithmetic be reducible to logic. The truth conditions of the complex act depend only on the truth conditions of the first sub-act.

Parallel points could be made about first person propositions. Indeed, given that the cognitive act

\[1\text{stP}(JS)\]

is not the sort of thing which can be true or false, we can hardly require that it be true in order for (1P) to be true.

In the case of complex propositions which involve multiple acts, the truth conditions of the proposition always seem to derive from just one of the constituent acts. I’ll call this the parent act of the proposition, and any other sub-acts of the proposition its children.\(^\text{17}\) In what follows, I’ll mark the parent act with a squiggly underline. So, officially, we will have

\[(5P) = \text{pred}_h\text{defended}, \langle \text{Russell, logicism} \rangle \text{:::} \oplus \text{pred}_h\text{reducible}, \langle \text{arithmetic, logic} \rangle\]

If propositions are acts, it seems that this squiggly underline must represent something that agents who entertain (5P) do. Our question again is: what is it?\(^\text{18}\)

It is worth noting at this stage that the need to distinguish between parent and child acts requires us to complicate slightly our view of propositional attitudes. Above I quoted Soames’ view that “[t]o judge B to be red is to predicate redness of B affirming what one has done, which is to predicate redness of B in a way that involves forming or activating certain distinctive cognitive and behavioral dispositions.” But in the case of a complex act like (5P), performance of which requires the agent to do several things, what does it take to affirm what one has done? One might have thought that it mean that one must affirm all of the things that one has done; but

\(^\text{17}\)Really, it is best to think of this as a relation between sub-acts such that one act might be the parent of another act, which is in turn the parent of one or more acts. Since in what follows we for the most part won’t be concerned with nested parent-child relations of this sort, in what follows I’ll simplify by focusing on the question of what makes one act the ‘top’ parent act of a proposition. For a discussion of more complex propositions involving conjunctions embedded in the complements of attitude ascriptions, see Appendix C below.

\(^\text{18}\)One might try to solve the problem of structure by imposing structural constraints of some sort on the parent-child relation — for example, by adding to our theory the rule that no act of predication can ever be the parent of a proposition of which it is a constituent. One way to show that no such structural account of parent-child relations will work would be to show that there can be distinct propositions, with distinct parent acts, which nonetheless are composed of exactly the same sub-acts. See Appendix A for an argument that we can construct cases of this sort.
the present example shows that to be incorrect, since one can judge that Russell
defended the proposition that arithmetic reduces to logic without also judging that
arithmetic reduces to logic. Hence to judge a proposition must be to entertain the
proposition, and affirm just its parent act. I’ll return to the importance of this point
in §3.4.2 below.

... It is very natural for the complex act theorist to address this pair of worries with the
following intuitive thought: the complex acts with which propositions are identical
are not just a matter of performing a plurality of acts; rather, they are a matter
of performing certain acts by performing others. There is obviously a distinction
between my getting rich by playing the lottery and my getting rich while playing the
lottery — where, in the second case, my newfound wealth has no connection to my
gambling habits. Surely we can appeal to the same distinction to solve the problem
of coincidence: there is a distinction between my predicating being aflame of JS by
thinking of JS in a first person way, and my predicating being aflame of this object
while thinking of myself in a first person way. And, once we have this distinction on
the table, we might use it to solve the problem of structure — given that ‘φing by
means of ψing’ seems to express an asymmetric relation, perhaps we’ll be able to read
parent-child structure off of the relevant dependency relations between constituent
acts.

This is an appealing thought. But I think that it is more difficult to make it work
than it might at first seems. I’ll argue this by considering two different interpretations
of the relevant ‘by means of’ relations: one broadly intentional, and one broadly
causal.

3.2 Intentional theories of complex propositions

Sometimes when we say that someone φ’s by ψing, we mean that that ψing was part
of that individual’s plan for φing. One might cash this out in different ways; here I
want to focus on a way of understanding this which analyzes plans at least partly in
terms of the propositional attitudes of the subject in question. On one simple version
of this kind of view, for ψ to be part of my plan for φing is for me to intend to φ,
believe that I can φ by ψing, and intend to ψ at least in part because of my intention
to φ and my means-end belief.

Let’s think about how we might use this sort of relation between acts to under-
stand the complex acts with which we want to identify propositions. If we focus on
the case of first person propositions, the idea would be that I not only think of myself
in the first person way while predicating being aflame of JS, but also believe that I
can predicate being aflame of JS by thinking of JS in a first person way, and intend
to think of JS in a first person way at least partly because of this means-end belief
and my intention to predicate being aflame of JS.

This appears to be a non-starter, for three reasons:

1. It is a wild over-intellectualization of first personal thought. First person
   thought seems to be among the most primitive forms of mental representa-
   tion; it would be surprising if it required the ability to form intentions and
   means-end beliefs with respect to mental acts.
2. It also seems to get the order of explanation exactly backwards. An intention to predicate being aflame of JS would seem to require me to think of JS. Hence making this intention explanatorily prior to my act of thinking of myself in a first person way would make my ‘third-personal’ thoughts about JS more fundamental than my first-personal thoughts about JS — which seems wrong.

3. Perhaps most decisively, this theory or any like it seems to lead to a vicious regress. We are trying to explain what it is for me to entertain a proposition $p$ via my intentions and beliefs. But those intentions and beliefs will have propositions other than $p$ as their contents; and to have those intentions and beliefs, I will have to entertain these other propositions. If our story is to be general, we’ll then have to explain our entertaining these propositions via yet other intentions and beliefs, with the result that we will have to entertain infinitely many propositions to entertain any.

These problems seem to generalize to any way of understanding the unity of complex acts in terms of the propositional attitudes of the relevant agent.

3.3 Causal theories of complex propositions

It is much more promising to appeal here to broadly causal, rather than intentional, relations. The simplest theory of this sort would be:

One performs $\phi \oplus \psi$ iff one’s performing $\psi$ causes one to perform $\phi$

This promises to solve both the problem of coincidence (since in the examples of coincidence above the relevant acts stood in no causal relation) and the problem of structure (since the asymmetry of causation promises to distinguish between parent and child acts).

It is no surprise that this simple causal theory fails for reasons familiar from simple causal theories of action, perception, and just about everything else. It might be that my thinking of myself in a first person way causes me to look in a mirror, at which point, seeing there an image of someone on fire (who I take not to be myself), I perform (2P). This would not be sufficient for me to entertain (1P).

The fact that this sort of problem of ‘deviant causation’ for causal theories is pervasive does not make it less real. It is sometimes swept under the rug with the stipulation that what is required is not just causation, but the ‘right kind of causation.’ This seems to be especially unsatisfactory in the present case, since we don’t have an especially strong grip on the causal relations which obtain between mental acts of predication which are themselves theoretical posits rather than introspectively evident aspects of our mental lives.

For now, though, I will set these sort of worries about deviant causation to the side, and consider two other problems which arise for the complex act theorist who aims to explain the unity of the proposition in broadly causal terms.

3.3.1 The problem of causal reversal

Suppose that, seeing an object on fire in a mirror, I predicate being aflame of that object. I then recognize that object to be myself, thus thinking of that object —
which I recognize to be the same as the object of which I predicated being aflame — in the first person way. This, it seems to me, suffices for me to entertain (1P). But in this case, the act of predication is the cause of, rather than the effect of, my act of thinking of myself in the first person way. Hence, according to the solution of the problem of structure given by the simple causal theory, the act of thinking of myself in a first person way should be the parent act of the proposition. But it isn’t: the truth conditions of the proposition are fixed by the act of predicing being aflame of JS.

One might point out that acts of thinking of oneself in a first person way don’t have truth conditions, and hence are not the sort of things which could be parent acts of propositions. But just the same problem arises in the case of attitude ascriptions like (5), which have multiple acts of predication as sub-acts. Suppose that I first predicate the relation defended of the pair (Russell, logicism), and that this act of predication causes me to recall that logicism is the thesis that arithmetic is reducible to logic (and hence also causes me to predicate reduces to of the pair (arithmetic, logic)). The fact that the acts of predication exhibit this causal order does not make the predication of reducibility of arithmetic to logic the parent act. The subject, after all, has genuinely entertained (5P), which is true iff Russell defended logicism, not iff arithmetic reduces to logic.

3.3.2 The problem of coordination

A second problem for causal theories stems from the fact that we can have a pair of complex propositions which are plainly distinct and yet consist of the same parent and child acts standing in just the same causal relations. The following sentences provide one kind of example:

(9) I am chasing Jeff Speaks.

(10) Jeff Speaks is chasing me.

Any satisfactory account of first person propositions must distinguish these three propositions. But (setting aside cases of causal reversal), whether I am entertaining (9P) or (10P), my act of predicing chasing of the pair (JS,JS) will be caused by my thinking of JS in the first person way. Hence the simple causal theory, at least, lacks the resources to distinguish between these propositions. 19

A parallel problem arises in the case of articulated terms, as the following example shows:

(11) Logicism is more plausible than the proposition that arithmetic reduces to logic.

19 It is worth noting that this problem would not arise if we had adopted the Fregean use of first person ways of thinking, discussed above. For if we could make sense of first ways of thinking as modifying targets of predication, the distinction between (9P) and (10P) would be easy to draw. This is this one place where the complex act theorist, despite enjoying many advantages over more standard Fregean views, incurs an extra explanatory obligation which the standard Fregean does not.
The proposition that arithmetic reduces to logic is more plausible than logicism.

These seem to express different propositions, but, like (9) and (10), seem to consist of the same parent and child predications standing in the same causal relations. The parent predication in both cases appears to be

\[ \text{pred}(\text{more plausible than, (logicism, logicism)}) \]

And each seem to involve the same child predication:

\[ \text{pred}(\text{reduces to, (arithmetic, logic)}) \]

Hence again we have distinct propositions which are identified by the simple causal theory.

Returning to the simpler case of (9) and (10), it is very natural to want to distinguish these propositions in something like the following way:

Both of (9P) and (10P) consist of the same parent and child acts, but in the two cases the child act of thinking of JS in a first person way attaches to the parent predication in different ways. In (9P), this child act attaches to the first member of the ordered pair of which the relation of chasing is predicated, whereas in (10P) it attaches to the second member of this ordered pair.

This is very plausible as far as it goes. But if we have nothing else to say, this reply labels the problem rather than solves it. (9P) and (10P) are both acts, and we need some account of what the difference in these acts is. So we need some account of what it means for the act of thinking of oneself in a first person way to attach to one argument place rather than another — when a subject entertains one of these rather than the other, the subject must be doing something which attaches this predication to one argument place rather than another.

It is not easy to see how to say what this ‘something’ is in causal terms. One might try to explicate the distinction using a broadly counterfactual theory of causation by holding that, in the case of (9P), had the subject not thought of JS in a first-person way, he would not have predicated chasing of the pair \( (JS,JS) \), but would have, for some other \( x \), predicated chasing of \( (x,JS) \). The problem is that neither counterfactual need be true. It might well be that, had the subject not thought of himself in a first person way, he would still have gone on to predicate the chasing relation of the pair \( (JS,JS) \) (while thinking of JS in some non-first-personal way), or it might be the case that, had the subject not thought of JS in a first person way, he would not have predicated the chasing relation of anything.\(^{20}\)

One might instead appeal to a more fine-grained conception of the parent act, and say that, even if in both (9P) and (10P) the act of thinking of JS in a first person way causes the subject to predicate the chasing relation of the pair \( (JS,JS) \), in the case of

\(^{20}\)This sort of problem is closely related to the much-discussed problem of preemption for counterfactual theories of causation. Going into the vast literature surrounding cases of this sort would exceed both the space available and my competence. But perhaps some of the treatments of preemption which have been offered from within broadly counterfactual approaches could be of some use to the causal theorist here.
(9P) but not (10P) the act of thinking of JS in a first person way causes the subject to predicate the chasing relation of the pair \(\langle JS\text{-as-thought-of-in-a-first-person-way}, JS\rangle\). But this to lapse into the quasi-Fregean treatment of acts of thinking of oneself in a first person way discussed and criticized in §2.2 above.

In each case just discussed, the problem results from the fact that some child act, or constituent of some child act, is \textit{coordinated} with one target of predication of the parent act, but not another.\textsuperscript{21} In what follows I’ll represent coordinated constituents via connecting lines:

\begin{equation}
(9P) = \text{pred}(\text{chasing}, (\text{JS, JS})) + \text{1stP}(\text{JS})
\end{equation}

\begin{equation}
(10P) = \text{pred}(\text{chasing}, (\text{JS, JS})) + \text{1stP}(\text{JS})
\end{equation}

So far I’ve argued for two conclusions. The first is that complex act theories of propositions of the sort defended by Hanks and Soames face a problem of the unity of the proposition in the same clear and easy to understand sense in which the theories of Russell and Frege faced this problem. The second is that the solutions to this problem which spring most readily to mind are insufficient to solve it. In the next section, I explore a less familiar style of solution to this problem. While, as we’ll see, it too faces problems, I think that it is promising and worthy of development.

### 3.4 Recognition of recurrence to the rescue?

The idea I want to explore in this section can be thought of as combining the best aspects of the intentional and causal theories discussed above. Like the intentional theory, it appeals to fine-grained aspects of the subject’s mental life rather than bare causal relations. Like the causal theory, it avoids appealing to propositional attitudes in its explication of what it is for a subject to entertain a proposition. It involves instead appeal to a phenomenon discussed by Fine, Salmon, Soames, and others, which we can call, following Salmon, recognition of recurrence.\textsuperscript{22}

The intuitive idea here is something like this: sometimes, in the course of reasoning about an object \(o\) over some interval, we recognize \(o\) as the same over the course of that interval. So suppose, for example, that I successively form the judgements

- \(o\) is \(F\)
- \(o\) is \(G\)
- \(o\) is \(H\)

There appears to be a distinction between two ways in which this could go: I could recognize \(o\) as the same throughout this chain of reasoning, or I could fail to do so.

It is plausible that this distinction can’t be explained in terms of some further judgement about \(o\) which I make or fail to make in the two scenarios. The difference

\textsuperscript{21}The term is borrowed from Fine (2007), though I use it in a somewhat different way.

can’t be a difference in whether the subject endorses a simple identity claim, since one could fail to recognize o as the same while judging throughout that o\ = \ o. And the difference can’t be a difference in whether the subject endorses some more complex identity claim, like

The thing, o, which I am now judging to be G, is the same as the thing, o, which I formerly judged to be F.

since, intuitively, one can recognize an object as the same throughout this chain of reasoning without making any complex judgement of this sort — and could make a judgement of this sort without recognizing the object of the complex judgement as the same as the simple judgements that o is F and that o is G.

One could resist this line of reasoning. But for now let’s just presume that it is correct, and that there is such a thing as recognition of recurrence, which is not analyzable in terms of any identity judgement (whether simple or complex) or indeed any propositional attitude. How might we implement this notion in our theory of complex propositions? We could add to the structure of these propositions recurrence relations, so that complex propositions are not just a matter of performing the relevant sub-acts, but of so doing while recognizing the recurrence of certain acts or their constituents. A natural thought, in particular, is that we might simply identify the coordination relation, symbolized above by the connecting lines, with recognition of recurrence.

Consider our examples (9) and (10). Both involve my act of thinking of myself in a first person way, and the act

\[
\text{pred(chasing,(JS,JS))}
\]

The difference between these two acts, on the view we are considering, is that in the case of (9P) I recognize the object which I think of in a first person way as recurring as the first member of the pair of which the relation of chasing is predicated, whereas in the case of (10P) I recognize that thing as recurring as the second member of that pair.

Much the same thing can be said about the contrast between (11) and (12). Both involve the act

\[
\text{pred(reduces to,⟨arithmetic, logic⟩)}
\]

but in the case of (11P) it is recognized as recurring as the second member of the pair of which the ‘more plausible than’ relation is predicated, whereas in the case of (12P) it is recognized as recurring as the first member of that pair. The treatment is just the same as in the first person case, except for the fact that the thing recognized as recurring is a proposition rather than an individual.

This suggests the following solution to the problem of coordination:

\[\text{T1} \quad \text{For any acts } \phi, \psi, \text{ one of } \phi’s \text{ constituents is coordinated with one of } \psi’s \text{ constituents (or } \psi \text{ itself) iff that constituent (or } \psi \text{ itself) is recognized as recurrent in } \phi.\]

This looks like a promising solution to the problem of coordination. But it also, one might think, promises to provide solutions to the problems of coincidence and
structure. Given \([T1]\), it is natural to interpret \(\exists!\) as the existential generalization of the coordination relation:

\[ [T2] \quad \text{Acts } \phi, \psi \text{ form a complex proposition iff } \psi, \text{ or one of } \psi \text{'s constituents, is coordinated with } \phi, \text{ or one of } \phi \text{'s constituents.} \]

And, since the relation of being recognized as recurrent is asymmetric, we can also use it to solve the problem of structure, by analyzing the parent-child relation as follows:

\[ [T3] \quad \psi \text{ is a child of } \phi \text{ iff } \psi, \text{ or one of } \psi \text{'s constituents, is recognized as recurrent as one of } \phi \text{'s constituents.} \]

The theory of complex propositions given by \([T1-3]\) strikes me as a promising. But it faces at least two challenges which seem to me difficult to resolve.23

### 3.4.1 Recurrence and the structure of propositions

The present approach improves on the causal theory in at least two respects: it avoids the problem of deviant causation, and it offers a solution to the problem of coordination. But it offers no real help with the problem of causal reversal.

According to \([T3]\), asymmetric parent-child relations are explicated in terms of the asymmetry of recognition of recurrence. But, as with causal relations, it appears that parent-child relations are independent of relations of recognizing acts or their constituents as recurrent. For imagine, as in the example above, that I first predicate the relation _defended_ of the pair (Russell, logicism) and then predicate _reduces to_ of the pair (arithmetic, logic), while recognizing a constituent of the former as identical to the latter. The fact that I recognize the second act as a recurrence of a constituent of the first does not make the latter the parent act. I still manage to entertain (5P), which is true iff Russell defended logicism, and not iff arithmetic reduces to logic.

As with the causal theory, the moral appears to be that the structure of the proposition a subject entertains is independent of the psychological and explanatory relations between the acts of predication that subject undertakes. This seems like bad news for the theory that propositions are complex acts.

### 3.4.2 The problem of overgeneration

A second problem is best presented by an example. Suppose that one predicates redness of some object \(o\), and predicates squareness of \(o\), and, in performing the latter act, recognizes the recurrence of \(o\). Given the truth of \([T1-3]\), we might, using our notation for representing complex acts, represent this act as follows:

\[
\text{PRED(square,}o\text{)} \oplus \text{PRED(red,}o\text{)}
\]

23In Appendices B and C, I discuss two further objections to the view — one, discussed in Salmon (2012) and due ultimately to Church (1954), which gives a general objection to the view that propositions can involve relations of recognizing as recurrent, and one to do with the question of whether, on the complex act theory, subjects can engage in truth-functional cognition without having thoughts about propositions.
Let’s call this ‘the red square act.’ If [T2] is true, then the red square act is a proposition. But what proposition could it be? It is not the proposition that $o$ is square and $o$ is red, since to judge that proposition, one must endorse both the claim that $o$ is red and the claim that $o$ is square. But, since we know that to judge a proposition which consists of parent and child acts one need only endorse the parent act, to judge the proposition diagrammed above, one need only endorse the proposition that $o$ is square. But it can’t just be the proposition that $o$ is square, since to entertain that proposition, one need not predicate redness of $o$.

I’m thus inclined to think that the red square act is not a proposition — simply because I can’t see what proposition could be true iff $o$ is square, be such that to judge it one must endorse the claim that $o$ is square (and nothing else), and be such that to entertain it one must entertain the propositions that $o$ is red, the propositions that $o$ is square, and nothing else.

One might, in reply, say that there’s no reason to trust our intuitions about what is and is not a proposition. Perhaps the red square act is not a proposition which can be expressed by a sentence of English — but that hardly shows that it is not a proposition.

This is not unreasonable. But I don’t think that the problem is so easily skirted, because the problem of the overgeneration of propositions quickly turns into a problem of the overgeneration of judgements, beliefs, and other propositional attitudes. As we saw in our discussion of the problem of structure, for a subject to judge a proposition, the subject need not affirm every act of predication involved in that proposition (otherwise, in order to judge that Russell defended the proposition that arithmetic reduces to logic, one would have to endorse logicism). Rather, all that is required is that the subject entertain the proposition, and affirm its parent act.

So suppose, for example, that I entertain for my own amusement the proposition that my phone is inhabited by evil spirits, and then, recognizing as recurrent the phone, entertain the proposition that my phone is old. Suppose further that I affirm the proposition that my phone is old. It follows from the present theory that I will have formed a new judgement (and, presumably, a new belief) about my phone. And this will be so even if I have long believed that my phone is old. But this is just not right. Entertaining for a moment a ridiculous proposition about an object, and then affirming something about the object which one has long believed, is not sufficient for forming a new belief about that object.

24This is a slight oversimplification. If this were all that was required, then entertaining (5P) and judging (6P) would be sufficient to judge (5P) — but it isn’t. Imagine, for example, that Mary is a mathematician studying logic for the first time, and is struck by the thought that it would be wonderful if arithmetic were to reduce to logic. She might then come to wonder whether any philosophers have defended this thesis, and might come to wonder in particular whether Russell did. That will be sufficient for her to entertain (5P). But she might have been told, in a different context, that Russell defended a thesis called ‘logicism’ — without having been told what thesis, exactly, logicism was. Accepting this, she will, it seems, entertain and judge (6P), so that (7) will be true. But despite this (7) will, intuitively, not be true. But then our question is: what else does Mary have to do so make (7) true, on this view of propositions? Entertaining the proposition and affirming its parent act is, evidently, not enough. This is a separate ‘problem of unity’ than the ones discussed in the main text.

On the version of complex act theory which makes use of recognition of recurrence, the best solution is to say that one must entertain the proposition, and affirm the parent act, and while so doing see the act that one is affirming as standing in the relevant recurrence relations to the other acts which make up the proposition.
If this right, then this shows that [T2] is false. For a complex act to be a proposition, we need something more than recognition of recurrence of a constituent of the child act. But, again, it is hard to see what this something is.

4 A Fallback Option: Propositions as Simple Acts

So far our progress in understanding the nature of complex acts has been more typographical than philosophical. Each of our conventions for representing complex propositions is of course no more than that; each, in some way, must represent something that agents who entertain these propositions do. What we need to be told is what, in each case, this something is.

I’d like to close by considering a relatively simple and straightforward solution to the problems we’ve been discussing. That is to abandon the theory of propositions as complex acts for a theory of propositions as simple acts. The simplest act theory of propositions would identify all propositions with acts of predication. This theory, unlike the theory of propositions as complex acts we have been discussing, would face no special problem of the unity of the proposition. There is no more a special problem of the unity of the act of predicating \( F \) of \( o \) than there is a special problem of the unity of the act of putting \( x \) next to \( y \).

Neither Hanks nor Soames goes for this simple act theory; and one of the reasons why they don’t is that this sort of simple theory would not make room for the possibility of distinct but representationally identical propositions. For presumably if \( F = G \) and \( x = y \), then the act of predicating \( F \) of \( x \) is the same as the act of predicating \( G \) of \( y \). But this fact gives these simple acts of predication conditions of sameness and distinctness effectively the same as Russellian propositions as ordinarily construed, which notoriously make no room for distinctness of contents without some corresponding distinction in objects and properties represented.

But many Russellians have learned to live with this consequence of their view. Even if the simple act theorist can’t claim to have an advantage in this respect over more standard Russellian views, she is still not worse off than the proponent of such views. Does the simple act theory have anything to recommend it?

Aside from its making room for distinct but representationally identical propositions, one of the central motivations for the view that propositions are acts is that the view promises to explain the representational properties of propositions. Hanks and Soames have parallel views about how this explanation is supposed to run.

On Hanks’ view, the explanation begins with the fact that token acts of predicating have representational properties and truth conditions; when a subject predicates \( F \) of \( o \), that token acts of predication represents \( o \) as \( F \). Act-types — propositions — then have representational properties because their tokens do; they have, as Hanks says, representational properties and truth conditions in ‘a secondary or derivative sense.’

As he points out, we often attribute properties to types in virtue of the

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25 As King (2013), 89 in effect notes (though he is discussing a slightly different version of Soames’ theory).
26 One could deny this, and say that acts of predication are non-extensional (whatever this might mean). But positing primitive non-extensional relations would hardly give us an explanation of the possibility of distinct but representationally identical propositions.
properties of tokens, as when we say that the Union Jack — a type of flag rather than a token material object — is striped and rectangular.

On Soames’ view, the explanation begins with the fact that thinking subjects represent the world as being certain ways. When a subject predicates $F$ of $o$, that subject represents $o$ as being $F$. Acts — propositions — then have representational properties in a derivative sense. Just as acts are called intelligent if they ‘would mark an agent as behaving intelligently,’ so propositions are said to have representational properties, and truth conditions, in virtue of the way any possible subject who entertained that proposition would be representing the world as being.29

So both Hanks and Soames think that propositions have representational properties and truth conditions in an extended sense. These representational properties are derived from the representational properties of token acts of which they are types (Hanks) or the representational properties of subjects who entertain those propositions (Soames). It seems to me, however, that if this is a good explanation of the representational properties of propositions, it is one which can be co-opted by virtually any view of propositions.30

The paradigm case of a view which is supposed to fail to explain the representational properties of propositions is the much-reviled view that propositions are ordered $n$-tuples. But someone who holds the view that the proposition that $o$ is $F$ is the ordered pair $(o, F)$ (and hence also holds that this ordered pair is the object of the judgement of anyone who judges that $o$ is $F$) can say that this ordered pair represents $o$ as $F$ — in a derivative, extended sense — in virtue of the fact that anyone who stands in the judgement relation to this ordered pair will be representing $o$ as $F$.

A parallel story, it seems, could be told about any other candidates to play the role of propositions. Consider the view that propositions are properties which are true if they are instantiated.31 The property theorist who wishes to can, in just the manner suggested for the ordered pair theorist, explain how these properties might have (in a secondary, derivative sense of course) representational properties. After all, on this view judgement is a relation to properties; and anyone who stands in the judgement relation to such a property will be representing the world as being a certain way. In much the same sense as we say that the British flag is rectangular or acts are intelligent, then, we might say that the property also represents the world as being that way.

So it seems that even if the Hanks/Soames explanation of the representational properties of propositions is a good one, it gives no special advantage to the view that propositions are acts.32

29Soames (2015), 17.

30In my view, it is more a way of giving up on the view that propositions have representational properties than it is an explanation of how they could have those properties. For consider the examples used to motivate the explanations. Hanks points out that we say that the Union Jack is rectangular — and he’s clearly right about this. But surely when pressed on this, the right think to do is to retreat and admit that this is loose talk. It is, after all, hard to see how an abstract object, which does not occupy space, could be rectangular! Analogous remarks, I think, apply to Soames’ examples of calling acts intelligent. Similarly, if either Hanks’ or Soames’ view were correct, I think that the right thing to say would be that propositions aren’t really representational, or true or false.

31For defenses of this view, see Richard (2014) and Speaks (2014).

32Thanks for very helpful comments on previous versions of this material to Peter Hanks, Lorraine Keller, Scott Soames, and audiences at talks at the University of Leeds and USC.
Appendix A  Propositions which differ only with respect to their parent act

The aim of this appendix is to argue that there are propositions which consist of exactly the same sub-acts but which differ with respect to which of those acts is the parent act. Cases like this are of some importance, because they seem to rule out the possibility of solving the problem of structure via structural constraints, like the rule that no act of predication can be the child of another if the latter is a constituent of it.

With some work, I think that we can construct such a case by using examples similar to the cases of indirect self-reference exploited by Kripke in ‘An Outline of a Theory of Truth.’ Imagine that A and B are reliably informed that the other is about to assert a proposition; and suppose that each has reliable information that the other almost always asserts true propositions. It seems that A might utter the sentence ‘I believe the proposition that B is about to assert,’ and B might utter the sentence ‘I believe the proposition that A is about to assert.’ Both of these sentences, it seems, might well express propositions.

Now suppose that A and B are quite lazy, and that instead of using descriptions like ‘the proposition that A is about to assert,’ they decide to introduce names for the propositions in which they want to announce belief. Suppose, in particular, that A introduces ‘B-prop’ as a name for the proposition that B is about to assert, and B introduces ‘A-prop’ as a name for the proposition that A is about to assert. Then A might utter the following sentence:

(13) I believe B-prop.

and B might utter the sentence

(14) I believe A-prop.

Given these utterances, and the way in which the names ‘A-prop’ and ‘B-prop’ were introduced, the following identity claims are plausible:

A-prop=the proposition that A believes B-prop.
B-prop=the proposition that B believes A-prop.

Now consider the following sentences:

(15) B believes that A believes B-prop.

(16) A believes that B believes A-prop.

These obviously express different propositions. But if we extend the treatment of articulated terms to these attitude ascriptions, it seems that the complex acts to which (15P) and (16P) are identical should, respectively, have the following sub-acts:
At first glance, the two columns appear to contain different collections of acts. But the apparent differences vanish once we remember that A-prop = the proposition that A believes B-prop and that B-prop = the proposition that B believes A-prop. Given these identities, the columns can be simplified as follows:

<table>
<thead>
<tr>
<th>(15P)</th>
<th>(16P)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRED(belief, (B, that A believes B-prop))</td>
<td>PRED(belief, (A, that B believes A-prop))</td>
</tr>
<tr>
<td>COG(B)</td>
<td>COG(A)</td>
</tr>
<tr>
<td>COG(belief)</td>
<td>COG(belief)</td>
</tr>
<tr>
<td>COG(that A believes B-prop)</td>
<td>COG(that B believes A-prop)</td>
</tr>
<tr>
<td>PRED(belief, (A, B-prop))</td>
<td>PRED(belief, (B, A-prop))</td>
</tr>
<tr>
<td>COG(A)</td>
<td>COG(B)</td>
</tr>
<tr>
<td>COG(belief)</td>
<td>COG(belief)</td>
</tr>
<tr>
<td>COG(B-prop)</td>
<td>COG(A-prop)</td>
</tr>
</tbody>
</table>

which makes clear that (15P) and (16P) have just the same constituent acts, but are nonetheless distinct propositions which differ with respect to which of those constituent acts is the parent.

A natural initial reply to this argument is that there is something illegitimate about the way that the names ‘A-prop’ and ‘B-prop’ were introduced. I have some sympathy with this reply — but it is not as easy to make it stick as it at first appears.

The best way to develop the objection is to say that, given the way that these names were introduced, the names fail to refer, and hence that the identity sentences above, which were used in the argument, are not true. We can, however, give the following argument that ‘A-prop’ is not an empty name:

1. If (13) expresses a proposition, then ‘A-prop’ names the proposition expressed by (13).
2. If ‘B-prop’ refers, then (13) expresses a proposition.
3. If ‘B-prop’ does not refer, then (13) expresses a proposition.

C. ‘A-prop’ names the proposition expressed by (13). 

I take it that premise (2) is uncontroversial. Not so with (1) and (3) — but a reasonable case can be made for both.

In defense of (3), it is in general plausible, as Braun (1993) and others have argued, that sentences involving empty names nonetheless express propositions. But (13) is clearly in order other than its inclusion of the somewhat odd name ‘B-prop.’
But it is hard to see how the oddness of the name could prevent (13) from expressing a proposition, if this is not explained by the name being empty. So, if sentences involving empty names typically express propositions, it is hard to see why (13) would not.

One might concede that premise (3) is true, and hence agree that (13) expresses a proposition, while still denying premise (1), on the grounds that A is in no position to name that proposition. To defend this response to the argument, one would have to explain the constraints on name introduction which rule out the way that A tried to introduce a name for the proposition expressed by (13). Perhaps this can be done — but, as Hawthorne and Manley (2012) argue, it is no easy task.33

33See especially Hawthorne and Manley (2012), Ch. 2. Note that for this response to the premise (1) of the argument to work, we’d really need constraints on singular thought about propositions, rather than constraints on naming propositions, since the example involving A and B could be reconstructed using devices for direct reference to propositions other than names.
Appendix B  The Church/Salmon objection to recurrence in propositions

Salmon (2012) adapts an argument from Church (1954) against Fine’s (2007) use of recognition of recurrence in his account of the propositions expressed by certain sentences and mental states. The argument starts with sentences like the following:

(17) Unmarried men socialize with other bachelors.

(18) Unmarried men socialize with other unmarried men.

On the view that recurrence relations can be parts of propositions, these should express different propositions, since the latter but not the former will involve recognition of the recurrence of the properties of being unmarried and of being a man. But now consider a language L which is like English but for the fact that it lacks the term ‘bachelor.’ If (17) and (18) express different propositions, it seems that the proposition expressed by (17) will be inexpressible in L. (How could one express it, if not by (18)? But this, by hypothesis, expresses a different proposition than (17).) But this means that simply adding ‘bachelor’ to L will increase L’s expressive capacity; and it seems quite implausible that simply introducing what amounts to an abbreviation could have this effect. As Church nicely puts it, the existence of terms like ‘bachelor’ is ‘not a necessity but a dispensable linguistic luxury.’

The Church/Salmon argument is easily adapted to the present examples of (5) and (6). Suppose, as we have been, that the proposition expressed by (5) involves recurrence relations. Then (5) and (6) express different propositions. But then if we consider a language L* which is like English but that it does not contain the name ‘logicism’, we will find that the proposition expressed by (6) is inexpressible in L*. But this seems implausible; ‘logicism,’ like ‘bachelor,’ appears to be a ‘dispensable linguistic luxury,’ and hence not the sort of thing which can extend the expressive capacity of a language.

This is, in the present context, a somewhat curious argument. The key thing to note is that the premise that (5P) involves recurrence relations is only used in this argument to derive the conclusion that (5) and (6) express different propositions, which is then taken to provide a reductio of the premise. But the claim here taken to provide a reductio — that (5) and (6) express different propositions — was introduced above as the datum which gets the problem of articulated terms going in the first place! So if the Church/Salmon argument is a good one, it is more a deconstruction of the problem of articulated terms than a criticism of this particular solution to that problem.

The following seems like a reasonably plausible thing to say about this situation:

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34Church (1954), 71. Church uses the example of ‘fortnight’ and ‘two weeks.’

35One might object to the assumption that this proposition is inexpressible in L* by exploiting pronouns. Suppose that someone says: ‘Consider the proposition that arithmetic reduces to logic. Russell defended it.’ It would appear that ‘it’ in this context is semantically like the name ‘logicism’ — and, if this is right, L* would give the resources to express (6P). One might in reply extend the Church argument by saying that it is implausible that pronouns can increase the expressive capacity of the language — which seems about as plausible as Church’s assumption that abbreviations cannot do so.
(i) our intuitions that (5) and (6) differ in meaning — itself based on the claim that sentences like (7) and (8) can differ in truth-value — are strong enough that we should simply accept that names like ‘logicism’ can extend the expressive capacity of a language, and (ii) the present theory of propositions explains why this result is not so bad. The reason why this result is not so bad is that, on the present view, (5P) includes (6P) as a proper part. Hence, if we modify our language by adding an expression which enables us formulate a sentence which has (6P) as its content, this is only in a very weak sense an expressive gain. Our old language, after all, already allowed us to express (6P) as a part of a larger proposition — adding ‘logicism’ to the lexicon just allows us to express (6P) by itself. It is perhaps not so implausible that a ‘dispensable linguistic luxury’ could have this sort of effect.
Appendix C  Truth-functional cognition and recognizing propositions as recurrent

Standard examples of recognition of recurrence involve recognition of the recurrence of objects in one’s reasoning. As emphasized above, the sort of recognition of recurrence we are considering making use of to solve the problem of articulated terms is importantly different: we are invoking acts of recognizing the recurrence of propositions. Hence, one might think, this sort of recognition of recurrence is something which can only be done by subjects capable of taking this sort of higher-order attitude toward propositions.

This is itself no bar to the proposed treatment of articulated terms. The central examples there, like (5), are propositional attitude ascriptions (or, like (11) and (12), at least sentences containing that-clauses); and it is not implausible to think that one must be able to think about propositions in order to understand sentences of this sort. These propositions, after all, characteristically involve predicating a relation of the pair of a subject and a proposition.

But it should be possible to entertain some propositions without thinking about propositions; hence it is an objection to the version of complex act theories which make use of recognition of recurrence if, for some of these propositions, the theory entails that entertaining them requires recognizing propositions as recurrent. The aim of this appendix is to show that, given some plausible assumptions, the propositions expressed by conjunctive and disjunctive sentences are in this category.

On Soames’ view, the propositions expressed by conjunctive sentences involve the act of applying the operation of conjunction, which we can symbolize as ‘\textsc{conj}’, to a pair of propositions, while also carrying out the predications to which the conjuncts are identical (and the acts of cognizing the constituents of those acts). So consider, for example, the sentence

\[ o \text{ is red and } o^* \text{ is green.} \]

The proposition expressed by this sentence will consist of child acts of predicating redness of \( o \) and predicating greenness of \( o^* \) and the parent act of applying the operation \textsc{conj} to those two acts of predication. Let ‘\( p \)’ be a name for the proposition that \( o \) is red, and let ‘\( q \)’ be a name for the proposition that \( o^* \) is green. Then, if our analysis of parent-child relations is correct, the proposition expressed by our conjunctive sentence will be:

\[
\text{CONJ}(p,q) \oplus \text{PRED(\text{red},o)} \oplus \text{PRED(\text{green},o^*)}
\]

Hence it seems that conjunctions, no less than attitude ascriptions, will require recognition of propositions as recurring. The same will go for negation and disjunction.

This is, while not a devastating consequence, an unfortunate one. Soames’ treatment of sentential operators and connectives is designed, as he puts it, to “get truth-functional cognition without making propositions objects of thought.”\(^\text{37}\) This is a

\(^{36}\)Here and in what follows I simplify by omitting the acts of cognizing the constituents of the relevant acts of predication.

worthy aim, since it really seems like agents could be capable of entertaining the propositions expressed by negated, conjunctive, and disjunctive sentences without being able to make objects of thought. But it is hard to see how a subject could recognize a proposition as the same without making that proposition, in at least one good sense, an object of thought.

One might think that we could escape this problem by letting conjunctions be, not complex acts unified by parent-child relations, but rather simple acts of performing \textsc{conj} on pairs of propositions (along, perhaps, with acts of cognizing the relevant propositional constituents). The problem with this move is that it would prevent us from giving a general solution to the problem of articulated terms.

Let ‘idealism’ be a name for the proposition that reality is mental, and let ‘logicism’ be a horrible neologism for the conjunction of the propositions that arithmetic is reducible to logic and that reality is mental. Then consider the following three sentences:

(19) Russell defended idealism.

(20) Russell defended logicism and idealism.

(21) Russell defended the proposition that arithmetic is reducible to logic and reality is mental.

The same intuitions which suggest that (5) and (6) must express different propositions also suggest that each of (19)-(21) express different propositions from each other. Any general solution to the problem of articulated terms must, it seems, explain this datum.

How might the complex act theory explain the difference between (19P) and (20P)? Presumably by saying that while both have the parent act of predicating defended of the pair \{Russell, idealism\}, the second also includes the child act of performing \textsc{conj} on the pair \{logicism, idealism\}. Given this, the only way to make room for the distinctness of (20P) and (21P), it seems, would be to hold that (21P), but not (20P), includes further (grand-)child acts of predicating reducible of (arithmetic, logic) and predicating being mental of reality. But that is enough to give us the result that the proposition expressed by the sentence

\textbf{Arithmetic is reducible to logic and reality is mental.}

has child acts of predication, and hence on the present view requires recognizing propositions as recurrent. Since any proposition can be named, the result generalizes. So if [T1-3] or something like it is true, it follows that to grasp the proposition expressed by a conjunction (and by parity a disjunction or negation) one must be able to have thoughts about propositions — which is the result we were trying to avoid.
REFERENCES


