Embedding Speech-Act Propositions

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Abstract: Hanks (2015) develops a theory of propositions as speech-act types. Because speech acts play a role in the contents themselves, the view overturns Frege's force/content distinction, and as such, faces the challenge of explaining how propositions embed under logical operators like negation. The attempt to solve this problem has lead Hanks and his recent commentators to adopt theoretically exotic resources, none of which, we argue, are ultimately successful. The problem is that although there are three different ways of negating a sentence like "Mary's card is an ace", current speech-act theories of propositions can only accommodate two of them. We distinguish between (1) "It is false that Mary's card is an ace" (*sentence negation*), (2) "Mary's card is a non-ace" (*predicate negation*), and (3) "Mary's card is not an ace" (*content negation*) and show that Hanks' and his commentators cannot explain content negation, and content negation is the negation that is required for logic. We call this *Hanks' Negation Problem*. Fortunately, we think there is a natural way for Hanks to accommodate content negation (and all the other logical operators) as successive acts of predication. The view solves Hanks' Negation Problem with only resources internal to Hanks' own view.

Introduction

Peter Hanks has recently proposed that in order for an object, *o*, and a property, *F*, to be unified into a predicative proposition, the speaker must be committed to *o*'s being *F*. Reduced to a slogan, Hanks holds that there is no content without commitment. Although we think that Hanks' arguments for this proposal are persuasive, the account has also run into a significant hurdle. Predicative propositions seem to occur in contexts where the speaker is *not* committed to their truth. These *unasserted contexts* seem to be strong counterexamples to the no-content-without-commitment slogan.

Although there are similar counterexamples with interrogative propositions and imperative propositions,[1] the apparent counterexamples to the slogan are especially salient with regard to predicative propositions and, like Hanks and most of his interlocutors,[2] we will focus our attention on predicative propositions (hereafter *propositions*). There are two main areas in which propositions appear to occur even though the speaker is not committed to them. First there are logical connectives like negation, disjunction and

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[1] For arguments that there are three distinct kinds of propositions associated with the different kinds of speech acts, see Hanks (2015: 26).

[2] An important exception to this is Schmitz (2019) who argues that the focus on the theoretical has led to some problems.

the material conditional. If I say, for example, "Mary's card is not an ace," the proposition *that Mary's card is an ace* is present, but the speaker does not commit to its truth. Similarly, when I say, "Mary's card is either an ace or a diamond," the proposition *that Mary's card is an ace* is present as is the proposition *that Mary's card is a diamond.* The speaker of the disjunction specifically commits to neither of these disjuncts however. The other kind of case in which a proposition can occur without the speaker being committed to it is one in which the speaker utters something but doesn't do it in her own voice. Following Recanati (2019), we will refer to these as cases of *polyphony.* In cases where an actor says something on stage, or cases of irony, or even in cases of what Recanati calls *polemical negation*, the speaker distances herself from the proposition even as she says it. In both the cases involving logical connectives and polyphony, the speaker manages to present a proposition without committing to it which threatens Hanks' no-content-without-commitment slogan.

Hanks is well-aware of these apparent counterexamples and builds his response into the very foundations of his theory. In contexts where a proposition occurs but is not asserted by the speaker, the speaker commits herself to the proposition then this commitment is *cancelled.* As Hanks himself admits, early presentations of cancellation suffered from confusions and incongruities. But in recent work, Hanks and those friendly to Hanks' project have looked closely at the polyphonic cases in order to show that cancellation contexts are quite common. We think that Hanks (2015) has successfully argued that: 1) cancellation is indeed a widespread phenomenon and not just an *ad hoc* explanation dragged in for the purpose of embedded contexts, and 2) the existence of cancellation in other contexts should put to rest worries that cancellation is somehow incoherent. Unfortunately, even if Hanks has shown that cancellation is on the table as an explanation for embedded speech acts, he has not shown that this is what is going on in the crucial cases involving embedding under logical connectives. Indeed, since he does not give a nuts-and-bolts explanation for cancellation, it is difficult to determine if cancellation can explain embedding under logical connectives. To remedy this, in section two, we turn to Hanks' idea of target-shifting which can provide a nuts-and-bolts account of cancellation and which is suggested by his overall view but not explicitly endorsed by Hanks himself.

In section three, we explore Hanks' idea of cancellation as understood through target-shifting as a way to explain negation. We will distinguish three different kinds of negation: 1) sentence negation, 2) predicate negation and 3) content negation, and we show that Hanks' target-shifted cancellation can explain only the first two. Since content negation is the negation familiar from classical logic, we are left with no working solution to the classic problem of embedding. We call this *Hanks' Negation Problem*. In the fourth section, we offer a solution.

We understand the cases involving logical connectives as *successive predication* which will rely upon the idea of taking past sortings as a criterion for new sortings. This involves two acts of sorting and therefore two acts of commitment, but the agent herself is only finally committed to the last one. This explains how propositions can be essentially committal and still occur in contexts in which the agent is not, finally, committed to them. Although this is a serious departure from Hanks' most current explanation of force cancellation, we take it as one of the advantages of our theory that it explains the basic cases with tools that are already present in Hanks' theory and does so without the introduction of pragmatic considerations. In other words, we think of our view as recovering rather than overturning Hanks' speech-act theory of propositions.

Section 1: Hanks on Predication

Hanks argues for a speech-act theory of propositions. According to these sorts of theories, propositions are abstractions from the particular mental or linguistic acts of agents. They inherit their unity and their truth-conditions from the individual acts from which they are abstracted. This proposal seems to have some explanatory advantages over a Fregean alternative. Rather than postulating a timeless realm of truth-bearing entities, we need only consider specific actions of agents. Individual acts of predication, says Hanks, are nothing more than acts of *sorting*. When we predicate a property *F* of an object *o*, we are simply sorting *o* according to the rule expressed by the property *F*. We pick out an object by referring to it, express a rule that we intend to apply, and then sort the object according to that rule. In an illuminating metaphor,

Hanks compares predication to the act of sorting marbles into piles according to their colors. To predicate *green* of a certain marble *o* is to sort *o* according to the rule *is-green* putting it in an IN-GREEN pile if it is green and the OUT-GREEN pile if not.

One can see from this analogy why predication is inherently committal. When we sort *o* according to *F*, we are committed to *o*'s being *F*. You cannot apply a rule to an object without holding that the object really is an instance of the rule. Your application of a rule immediately opens you up to the charge that you haven't applied the rule correctly. Soames (2015) offers a sort of hybrid view between Frege's timeless mind-independent entities and Hanks' committal sortings by holding that predicating is a neutral act. This implies that we could apply a rule without being committed to the object being an instance of this rule. We side with Hanks in thinking that applications of rules do commit the agent to an object's being correctly sorted according to the rule.

We will follow Hanks' notation by representing the act type of a proposition by '⊢' which combines a reference act type **o** (in bold) and expression act type F (in small caps) which is a way of committing oneself to a certain property, i.e. a rule. The proposition picked out by the sentence "Mary's card is an ace" would be written like this:

(1)   ⊢ <**Mary's card**, BEING-AN-ACE>

Although Hanks uses this notation and the sorting explanation that undergirds it to explain increasingly complex propositions like those involving relations and quantification, Hanks thinks that by itself this notation needs to be supplemented in order to accommodate logical operators, and he introduces *target-shifting* to accomplish this. It should be noted that the notation used in (1) is supported by Hanks' explanatory model of sortings. The supplementary notation of target-shifting goes beyond the sorting model, and Hanks is forced to offer different models to explain target-shifting. We mention this only because our own solution does not require such further explanations and returns to Hanks' earlier model of sortings to explain cases of unasserted propositions.

Section 2: Embedded Predication for Hanks (2015-2019)[3]

2.1 Cancellation

The tension surrounding force cancellation for Hanks' theory can be articulated with the following three seemingly inconsistent claims[4]:

(I)   In unembedded contexts predication implies taking a stand on whether o is F.

(II)   Predicating F of o means the same thing in embedded and unembedded contexts

(III)   In some embedded contexts predication does not imply taking a stand on whether o is F.

Hanks tries to resolve this apparent inconsistency with a clarified doctrine of force cancellation that articulates and develops two major concepts: the predication/assertion distinction and cancellation contexts. Together they provide an alternative explanation for forceful predication in cases of embedding where the corresponding speech-act force is intuitively absent.

First the account distinguishes between *predicating* and *asserting*. Predicating is still sorting objects but *asserting* is predicating plus all of the usual implications of predicating like being accountable for it (Hanks 2015: 94). In certain embedded contexts, the context signals that while we are still *predicating F* of *o*, we are not *asserting* it. So in (III) above, what we should say is that in embedded contexts the propositions are not asserted, but they are still predicated. As Hanks puts it:

> The basic thought is that when you utter 'a is F' inside a disjunction your act of predication is cancelled, and because of that you do not assert that *a* is F. You predicate F of *a*, but this act of predication is cancelled and for that reason is not an assertion. My terminology here is potentially misleading. To say that an act of predication has been cancelled does not mean that no act of predication has taken place nor that it has been retroactively eliminated. Nor does it mean that the act of predication is somehow partial or incomplete. (2019: 1398)

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[3] Hanks' position here has evolved. In early work, Hanks seems to say that in cancellation contexts, predication does not take place (2011: 21). He has since rejected this view (2015: 99) and has clarified that cancellation involves more than simple predication rather than less. For criticism of the early view, see Hom and Schwartz (2013) and Reiland (2013).

[4] Since Soames and Frege deny claim (I), they have no problem with this.

Distinguishing predication from assertion opens up the possibility of having one without the other. For Hanks, this occurs in *cancellation contexts*. These are contexts where cancelled predication, which doesn't annul predication but is itself a kind of predication, takes place. The paradigm instance of a cancellation context is the dramatic stage. While on stage, the actor can meaningfully utter sentences with assertoric form, and thereby successfully predicate properties of things, but because these utterances take place on stage, the actor is not liable for any of the conventional consequences surrounding their apparent assertion. For example, the actor is not liable for providing the conventional level of epistemic justification for making her claim as she would if she were making the utterance off stage.

Cancellation contexts get at a broad phenomenon that can arise for many reasons. As Hanks notes, "A cancellation context can be triggered by conventions about a practice or activity, by the rules of a game, by the use of a linguistic device like quotation, by the use of certain words, or in any number of ways" (2019: 1392). So actions, like a tackle after a penalty in an American football game (2015: 94) or moving a chess piece in a demonstration (2015: 32) are performed but without their usual entailments, and, crucially, this is supposed to include the linguistic contexts created by negation, disjunction, and conditionals.

2.2 Target-Shifting

In order to explain logical connectives, Hanks thinks that we need one additional idea, viz. *target-shifting*. Target-shifting is the tokening of a proposition (a speech-act type) and then making it available as a target of predication. The speaker performs or tokens the speech act - this allows for forceful predication to take place. And then target-shifting allows the speaker to treat that tokened proposition as itself an object that can be sorted. It is not really a kind of reference because it doesn't pick out an external object but instead does something and then reflects on the type of thing done as a doing. In target-shifted contexts, a speaker has tokened an act (and thereby predicated and taken a stand while tokening the act), but when predicating

some property *G* of the type of this tokened act she no longer needs to take a stand about what the act tokened, although she does take a stand that the act type is a *G*.[5]

A certain amount of care is required in the presentation of Hanks' target-shifting. It is natural to think that target-shifting is something that the agent herself does. First, she predicates *F* of *o*, then, in a separate act, she stands back from this tokened proposition and by a reference act makes the proposition itself into an object of thought. She shifts the target of her predication from *o*, to the whole proposition *Fo*. Hanks himself seems reluctant to talk like this since he seems to think that target-shifting is not something separate that the agent does. The tokening of the proposition is itself what makes the proposition available for predication and no separate act of stepping back or reference is necessary (2015: 99; 2019: 1397). Perhaps, Hanks does this because reference is itself not transparent. When I say, "It is true what he said," I refer to a sorting without having to know anything about it. But when I say, "Mary's card is an ace or Joe's card is a diamond," I have to be able to understand the elements. Hanks ensures this by insisting that they actually be tokened. But we are still predicating of something we have done, and thus our original commitment need no longer be in force.[6]

Here are a couple of instructive, paradigmatic examples of target-shifting that express the corresponding propositions where '↑' indicates target-shifting:

(2) ⟦That Mary's card is an ace is true⟧ = ⊢↑ < ⊢ <**Mary's card**, BEING-AN-ACE>, TRUE>

(3) ⟦That Mary's card is an ace is false⟧ = ⊢↑ <~⊢ <**Mary's card**, BEING-AN-ACE >, FALSE>

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[5] On Hanks' view, propositions are act types, not token act instances, and one might worry here how we can stand back from an instance of something and then predicate not of the instance but of the type. To see how this is possible consider the following sort of case. Suppose that I am trying to explain how hard a bicycle kick is, but my audience does not even know what a bicycle kick is. I could perform one, then say "the kind of kick that I just performed is really difficult." Here, just as in target-shifting, I token an action and then immediately predicate of its type. Thanks to an anonymous referee for encouraging us to clarify this point.

[6] Reiland (2019) criticizes Hanks on this score claiming that it is not enough to token a proposition, we must also refer to it. We are somewhat sympathetic with Reiland's objection here and unsure how committed Hanks really is to subtleties of his presentation. For our purposes, however, not much hangs on this issue. It is enough to note that force cancellation demands that the target of predication is shifted from *o* to *Fo*.

The idea is that the speaker performs or tokens the embedded proposition *that Mary's card is an ace*, and then target-shifting enables the speaker to distance herself to make that act type itself an object for predication. In predicating truth of that proposition, the speaker is plausibly asserting that proposition as well. The crucial contrast is when predicating falsity of that proposition, the speaker is not asserting the embedded proposition, and here we have the tilde symbol to mark this distinction between the two cases.

2.3 Target-Shifting as a Potential Explanation for Cancellation

Although Hanks provides many different places where cancellation takes place, he does not say in any detail how cancellation works. We have been told that cancellation is a widespread phenomenon. We have also been told that predicating is a kind of sorting. But what would it mean for a certain sorting to be cancelled? How can a speaker commit to sorting something according to a rule and then cancel this commitment in a way that does not undo the previous commitment? Hanks gives us other places where cancellation takes place, but what does it look like in the crucial case of sorting? Hanks is surprisingly silent on this matter. Perhaps, we could combine his two leading metaphors and imagine an actor sorting marbles on a stage. But our intuitions about this case are unclear. Does the actor actually commit to anything? Perhaps, the character commits to something and the actor does not? In any case, Hanks does not tell us how to understand this.

Fortunately, however, there is an explanation in Hanks' system ready to hand. Since we have seen that Hanks has already claimed that target-shifting is necessary to explain logical operators, it is tempting to use his account of target-shifting to explain how sorting can be essentially committal without the sorter actually committing to it. Recall that in target-shifting, the sorting is tokened and then made available for predication. In this capacity, the sorting is no longer an act of predication but the subject of a predication. When we sort on sortings, the underlying sortings play the same role in our predication as objects that we

refer to.[7] They are essentially committal acts which, as types, are being treated as an ordinary object ready for its own predication. In standing back from our sorting and predicating of its type, we no longer are committed to that particular sorting.

It is important to stress that Hanks himself never commits to this explanation of cancellation contexts.[8] In fact, since it is hard to square this account with the utterances of actors on a stage, there is reason to think that this is not Hanks' general explanation. What we have argued here is that: 1) some explanation of the nuts and bolts of cancellation is still required even after Hanks has provided other examples for where it occurs, 2) target-shifting is indeed present in Hanks' account of all logical connectives (2015: 100), and 3) target-shifting *would* explain how, in cancellation contexts, a speaker can utter an essentially committal thing without committing to it.

Section 3: A Negation Problem For Speech-Act Theories of Propositions

3.1 Hanks' Negation Problem

Hanks' target-shifting seems well suited to explain what we earlier called *polyphonic embedding*. The form of the sentence "that Mary's card is an ace is false" seems to be no different from sentences like "that Mary's card is an ace is difficult to understand" or "that Joe's card is a diamond is a timeless mind-independent proposition." All of these seem to involve treating a sorting as something that itself can be sorted. In so doing, we talk about a sorting without endorsing it.

Similarly, target-shifting seems tailor made to explain cases of irony. Suppose I say, "Well that's a real surprise," after a klutzy person knocks over her glass of water. I token the sentence but then the context and the tone make people aware that I'm distancing myself from the tokened sentence and offering a commentary on it. The context and tone allow my hearers to understand something like negation predicated of this

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sentence. Again, this seems like Hanksian target-shifting and cancellation, and again the proposition can be asserted without the speaker being committed to its truth because the speaker is distanced from her own assertion and treats it as an object for predication.

All these cases are cases of polyphony where the speaker tokens a proposition and then distances herself from it. Matters are much different, however, when we come to cases of logical embeddings. We focus here on negation. Consider first cases like "It is false that Mary's card is an ace" or "it is not the case that Mary's card is an ace". Hanks calls these cases "sentence negation" (2015: 103; 2019: 1397)[9]. Since these are cases of predicating of a tokened sentence, Hanks' target-shifting plausibly explains how we can assert the negated sentence without being committed to the unnegated proposition.

Hanks himself notes, however, that these cases of sentence negation require that the speaker possess the predicate "not true" (2015: 106). If we accept Tarski's semantic understanding of the truth predicate, then "true" and "not true" are not part of the first-order language like other predicates such as "being an ace" or "being green". Instead, they are part of the metalanguage—the language used to talk *about* the first-order language. This means that sentential negation is not part of the first-order language. If we mark sentential negation by '¬', then the above reasoning shows that in the expression form ⌜ ¬ Fa ⌝, 'F' and 'a' stand for terms in the object language but '¬' is actually part of the metalanguage, on a par with the "⊨" in such expression forms as ⌜ ⊨Fa ⌝. Hanks would likely welcome this result for there is a sense in which his account of target-shifting has already invoked a first-order/second-order distinction in that predicates now apply not only to objects but to predications. Recall that Hanksian negation involves an act of tokening and then predicating of the tokened proposition, and we have understood this as a kind of sorting on sorting. Indeed, it is the very fact that we are removed from our predications and predicate of them that allows us to talk about an essentially committal act without committing to it. The "not true" predicate is thus predicated of an object which involves a predication at a lower level.

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[9] Ultimately, we hold that there is something misleading in calling these "sentence negation" since we will show that when the sentences of first-order logic are negated they do not involve what Hanks calls sentence negation. But hopefully our point will be clear nonetheless.

But, surely there are other, simpler, kinds of negation than sentence negation. As Hanks himself notes small children do not possess the concepts TRUE and NOT-TRUE (2015: 106), but small children seem to perfectly understand sentences like, "Daddy's not waiting with you until you fall asleep tonight," without them predicating NOT-TRUE to the proposition expressed by the embedded sentence. Hanks accommodates these simpler negations by means of what he calls "predicate negation" (2015: 103; 2019: 1398). In predicate negation, 'not' expresses a function that takes properties to other properties. Regular predicates, like "being an ace" have objects as their domain and take them either into the TRUE or the FALSE. The function expressed by 'not', on the other hand, takes properties like BEING-AN-ACE and takes it to a different property, NOT-BEING-AN-ACE. Hanks captures the difference between sentence and predicate negation like this: (2015: 100, 2015: 101)

(4) Sentence Negation: ⊢↑ <~⊢ < **Mary's card,** BEING-AN-ACE>, NOT-TRUE>

(5) Predicate Negation: ⊢<**Mary's card, <**NOT, BEING-AN-ACE>>

The notation shows that predicate negation does not involve any target-shifting, and Hanks emphasizes that it does not create a cancellation context (2019: 1398). As Hanks makes clear when he explains predicate negation in terms of sorting, predicate negation is not genuinely an instance of embedding at all. The original, un-negated proposition, does not actually occur in the negated proposition. The predicate itself is negated, and then we sort the object according to the rule expressed in the new predicate. In terms of marbles the difference is this: in sentence negation, we first token a sorting of a green marble into the green pile, then we place our tokened sorting into the pile of false propositions. In predicate negation, we sort objects according to a peculiar, derived predicate, "non-green". We can see from this model that an act of predicating GREENNESS of a marble is present only in the first kind of sorting.

We have spent some time on this because we think that the details reveal an ultimately insurmountable gap in Hanks' account of negation. Here is the puzzle. Consider a first-order logic translation of "Mary's card is not an ace", traditionally formalized as '-Fa'. The problem for Hanks is that this simple phrase '-Fa' corresponds to neither sentential nor predicate negation. Worse given his account of negation as

involving target-shifting, there is *no way* for Hanks to capture this basic act of negation. In other words, this gap is no accident. Hanks' notion of target-shifting cannot accommodate negation understood as a logical connective.

As Soames also notes (2015: 31), "Mary's card is not an ace" is not an example of either sentence negation or predicate negation. Consider sentence negation first. Sentence negation involves predicating the NOT-TRUE property of the proposition expressed by the sentence "Mary's card is an ace." We allowed the symbolism '¬ Fa', but only if we kept in mind that '¬' was actually in the metalanguage of the language which contains 'F' and 'a'. The sentence that most directly contradicts "It is not-true that Mary's card is an ace" would be "It is true that Mary's card is an ace." But now there are two contenders for the sentence that contradicts "Mary's card is not an ace": the simple sentence "Mary's card is an ace" and the more complicated sentence "It is true that Mary's card is an ace." Here is how we would symbolize these sentences in Hanks' notation:

(6) ⟦It is not true that Mary's card is an ace⟧ = ⊢↑ <~⊢ <**Mary's card,** BEING-AN-ACE>, NOT-TRUE>

(7) ⟦Mary's card is an ace⟧ = ⊢<**Mary's card,** BEING-AN-ACE>

(8) ⟦It is true that Mary's card is an ace⟧ = ⊢↑ < ⊢ <**Mary's card,** BEING-AN-ACE>, TRUE>

But this seems to argue for the identification of (7) and (8). While a deflationist about truth might be happy with this result, we shouldn't build deflationism into our theory of meaning.

As Hanks' notation makes especially clear, the sentences in (6) and (8) are only in tension because they predicate opposite properties, namely TRUE and NOT-TRUE of the same object. Sentence negation turns out to be a case of predicate negation, just at a higher level. But the usual way of understanding the negation of first-order logic is that it is an operator that works on a content to yield another content. In fact, it yields the opposite content in the sense that you can't accept (i.e. assign a value of T) to both 'Ac' and '-Ac'. '-Ac' just gives the content which is false whenever the content of 'Ac' is true. '-Ac' does not *say* that 'Ac' is false. '-Ac' is itself something that can be true or false, indeed it just gets the opposite truth assignments as 'Ac'. The

logical connective '-', unlike '¬' is a symbol in the object level, at the same level of 'F' and 'a'. As Geach notes (1965: 454-455), the following argument form:

-Ac → Fb

-Ac

∴ Fb

is as much an instance of modus ponens as the classic variety. This is because '-Ac' expresses a content just like 'Ac'. The negation that is demanded by first-order logic is not sentence negation.

But nor is this kind of negation predicate negation. Recall that predicate negation is not genuinely an instance of embedding. When I predicate NOT-BEING-AN-ACE of a Mary's card, I do not predicate BEING-AN-ACE of her card first. I only perform one sorting, I just do it with a property that happens to be derived from the BEING-AN-ACE property. But the kind of negation that first-order logic demands can be embedded. In the above instance of modus ponens, for example, '-Ac' is embedded in the conditional, and indeed, 'Ac' is supposed to be embedded in '-Ac'.

We could summarize the situation in the following table that includes the English sentence, a Hanksian translation, and a possible first-order translation that uses 'A' to represent the property of being an ace, 'c' to represent Mary's card, 'T' to represent the property of being true, 'NT' to represent the property of being not true, and 'a_c' to represent the proposition *that Mary's card is an ace* thought of as a target of predication.

Table 1: HANKS' NEGATION PROBLEM

Sentence	Possible First-Order Translation	Hanks Translation
Mary's card is an ace	Ac	⊢<**Mary's card,** BEING-AN-ACE>
It is true that Mary's card is an ace.	Ta_c	⊢↑ < ⊢ <**Mary's card,** BEING-AN-ACE>, TRUE>

It is false that that Mary's card is an ace.	NTa$_c$	⊢↑ <~⊢<**Mary's card,** BEING-AN-ACE>, NOT-TRUE>
Mary's card is a non-ace	nonAc	⊢ < <**Mary's card, <**NOT, BEING-AN-ACE>[10]
Mary's card is not an ace.	-Ac	??

What the table shows is that Hanks has no explanation for opposite contents. For Hanks, only properties conflict. This is obvious for predicate negation, but also turns out to be true of sentence negation. The conflicting properties are *true* and *nontrue* just applied to a predication. This leaves Hanks no room to understand the content negation contained in the logical connective, '-'.

Unfortunately, this is not something that Hanks can accommodate. The negation of first-order logic is supposed to be content negation which is both 1) part of the same first-order language as the elements that it negates, and 2) a genuine instance of embedding where the speaker non-committally asserts a part of a compound. Hanks' sentential negation cannot accommodate the first condition. Hanks' predicate negation cannot accommodate the second. In other words, Hanks has no way of explaining negation in first-order logic. This is especially problematic given the role that target-shifting plays in Hanks' theory. We have seen that target-shifting is the only worked-out explanation that Hanks can appeal to for the phenomenon of cancellation. If it turns out that logical connectives do not involve target-shifting, then there is no worked-out explanation for how cancellation works for the central cases of logical connectives.

3.2 Historical Context for Hanks' Negation Problem

It's important to see how Hanks' Negation Problem ties back to an old question in the history of negation that goes back at least to Aristotle and the Stoics. Where Aristotle postulated a logical system with just predicate negation and sentence negation, the Stoics introduced a third dimension of negation: content

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[10] Recall that for Hanks, <NOT, BEING-AN-ACE> is the application of a function, NOT, that takes the property BEING-AN-ACE to a different property, BEING-A-NON-ACE, which is then applied directly to Mary's card.

negation.[11] For Aristotle, negation applied to predicates or to sentences. For a sentence like "Mary's card is an ace", we can have predicate negation (i.e. "Mary's card is a non-ace") or we can have sentence negation (i.e. "It is false that Mary's card is an ace"). In each case, we have either the negation of a predicate or the negation of a sentence. The Stoics, and later Frege, introduced the notion of content or propositional negation that is an operator (not a predicate) on propositional content.

Inspiration for the modern understanding of negation as an operator is motivated by cases like the Law of Excluded Middle (LEM) which states that for every proposition p, the sentence of the form ⌜p or not p⌝ is a logical truth. This motivation applies equally to Hanks. Consider the following sentence from Russell (1905): 'The present King of France is bald'. According to LEM, the following sentence 'The PKOF is bald or the PKOF is not bald' is a logical truth. Let's consider the sentence under each of the ways of interpreting negation. Under predicate negation, the LEM sentence reads as: "The PKOF is bald or the PKOF is non-bald". But as Russell aptly demonstrates, we have each disjunct being false because there does not exist a unique present King of France. What about sentence negation? The LEM sentence then reads as "The PKOF is bald or it is false that the PKOF is bald". This is true! So what is the problem? The problem is that the LEM sentence wasn't just supposed to be true (or even necessarily true), but rather it was supposed to be a *logical* truth. So the truth of the LEM sentence was supposed to be derived explicitly from the logical form of the disjunction, and we don't have this. What we have is something of the form ⌜p or it is false that p⌝. On Hanks' understanding, this is true, and perhaps even necessarily true, but it isn't logically true.

Here is another way to illustrate the tension of the LEM for Hanks' view. For Hanks, the sentence 'it is not the case that Clinton is eloquent' expresses a proposition of the form: ⊢↑ <~⊢ <**Clinton**, ELOQUENT>, NOT-TRUE> (Hanks 2015: 100), and so sentence negation reduces to predicate negation of the proposition. But suppose that we consider the following modified Russell-sentence: "The proposition believed by the present King of France (PBPKOF) is true." So the LEM sentence will be "The PBPKOF is true or it is not the case that the PBPKOF is true". But as we saw previously, since sentence negation reduces

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[11] See Horn (2001: 21-22).

to predicate negation of the proposition, the LEM sentence will be interpreted under Hanks' view as: "The PBPKOF is true or the PBPKOF is not-true." But because there is no unique proposition believed by the unique PKOF (because there is no PKOF), both disjuncts are false, and so the LEM is not preserved!

The preceding arguments are not without potential responses, but we take it as problematic that Hanks' view simply assumes one side of an age-old argument, especially as it goes against the mainstream that followed Frege and the Stoics who treat negation as an operator on propositional content.

3.3 Contemporary Context for Hanks' Negation Problem

While many philosophers have expressed sympathy for Hanks' overall speech-act theory of propositions (Soames 2015; Bronzo 2019; Recanati 2019; Reiland 2019; Schmitz 2019), his account of cancellation has been often criticized, and there have been several attempts to amend it. None of these amendments, however, can explain logical negation while staying true to central commitments of speech-act theory.

Consider Recanati's recent account. Recanati makes cases of polyphony central to his account of how a proposition can occur without being endorsed by the speaker. In cases of polyphony, Recanati claims that there are two different forces associated with the sentence. The first kind of force is the force of the speaker itself, whether the speaker asserts it, questions it, or commands it, for example. The second kind of force is the force of what he calls the *enunciator*, i.e. the person at whose feet the responsibility for the sentence is laid. In usual cases, the speaker and the enunciator are the same. The speaker both tokens the sentence and takes responsibility for it. In cases of irony, however, the speaker tokens the sentence but foists responsibility for the sentence on another. The speaker is commenting on, rather than asserting, the sentence.

Recanati's account comes close to the way that we have interpreted Hanks (2019: 1413-14). Like target-shifting for Hanks, Recanati relies upon standing back from a particular performance of an action and commenting on it in order to explain how propositions can be essentially forceful and yet not performed by the speaker. Unlike Hanks, however, Recanati recognizes that logical connectives aren't naturally thought of

as cases of polyphony. He recognizes that in order to handle these cases, he must rely on there being a hidden, "generic", enunciator (2019: 1417). While he admits that the introduction of these generic enunciators "weakens the theory somewhat" (2019: 1417), he believes that this is the only way to handle the basic logical cases under the account of polyphony that he has sketched. In section 4, we offer a different account which does not rely on polyphony and does not need to appeal to generic enunciators.

Reiland criticizes Hanks for not owning up to the commitments of his own theory. Reiland argues that when a speaker shifts the target of her predication so that the proposition can itself be predicated of, she does so by means of an act of reference (2019: 150). Hanks thinks that target-shifting is a way of picking out something without referring to it, but at the broadest level objects just are what we predicate over, and target-shifting seems to treat a proposition like an object. Above we have interpreted Hanks in such a way that he does not fall prey to Reiland's complaints.[12] Reiland himself suggests replacing the idea of target-shifting with the idea of an agent grasping a proposition by means of a practical mode of presentation (2019: 153-54). In either case, it is clear that Reiland's proposal will not be able to solve Hanks' Negation Problem. Reiland interprets Hanks as we have here in thinking that the fundamental mechanism whereby propositions can occur in unasserted contexts is by turning them into objects that can be predicated over. We have seen that the logical connective '-' does not do that.

Schmitz has recently argued that embedded acts of forceful predication are much more ubiquitous than has previously been recognized. Schmitz notices, for example, that I can ask whether the door is closed or ask whether to close the door (2019: 21ff). It seems in these cases that I am asking about the same content, but that the two cases have a different direction of fit. When I ask whether *to close the door*, I ask about a practical content, and when I ask whether *the door is closed*, I ask about a theoretical content. In other words, even simple questions have embedded components that are marked either practically or theoretically. Similarly, even when we put something forward for consideration, we do so either practically or theoretically. Both of these examples are meant to show that forceful embedding is so ubiquitous, even those accounts like

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[12] That is not to say that Reiland's complaint is not fair. See footnote 6.

Frege's or Soames' (see below) have to make room for it. Schmitz concludes that embedding is a basic operation whereby one element is unified into a "higher level of unity" by means of some functional transformation. At this level of description, Schmitz is surely right. In what follows, however, we hope to show exactly how these higher levels of unity are formed.

Finally, as we noted above Soames recognizes the precise problem to which we are pointing. He makes room for three different kinds of negation, corresponding to predicate negation, sentential negation and connective negation and understands the first two in the same way that we have (2015: 29-32). He understands that connective negation must have a different account than the other two and understands it as kinds of "operations on propositions that don't involve predicating anything of them" (2015: 31). This will come close to the account that we will give in the next section, but his account departs from ours because it relies on his idea of neutral predication. As Hanks and others have pressed, however, it is unclear just what neutral predication is. Hanks explains predication through his model of sorting, but sorting involves taking a stand. Until Soames explains neutral predication, the account is incomplete.[13]

Section 4: The Positive Account

Our positive account, successive predication, will be generated from the ground up as part of a speech-act theory of propositions. Recall that for Hanks, predication can be understood as a kind of sorting where sorting requires that we can pick up an object, check to see if it satisfies F, and if so, place it in an "IN-F" pile and if not, place it in an "OUT-F" pile. Hanks himself tries to understand negation as a kind of higher-level sorting where we supplement this first-order sorting ability with the reflective capacity to stand back from our sortings and sort on our own sortings. Above we argued that this reflective capacity did not explain negation, here we provide an alternative. Instead of supplementing our ability to sort with the ability to stand back from our own sortings, we supplement the basic sorting ability with an ability to keep track of

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[13] Recanati makes this same point in (2019: 1405).

what we have sorted. This ability to hold onto previous sortings will be the basis for our account of successive sortings. It will also explain how we can non-neutrally, but temporarily, sort without being committed to the temporary sorting.

4.1 Relativized Commitment

Consider the idea of sorting according to a misapplied rule. Suppose, for example, that we are trying to sort marbles as our friend Alice would, who happens to be red-green colorblind and can't distinguish red marbles from green ones. Alice, we can imagine, sorts both red and green marbles into the IN-RED pile and anything else into the OUT-RED pile. It is not hard to understand how to apply Alice's rule, we just have to pick up a marble and check to see if it is red or green. If it is, then put it in the IN-RED pile, and if not, put it in the OUT-RED pile. Now, we have yet to give our account of applying a disjunctive predicate, but here we want to draw attention to a different issue with applying Alice's rule. When we apply the rule, we do not apply it as our own rule, but instead apply it as Alice's rule.

Even though we follow the same procedure, there is a difference between correctly sorting marbles according to the RED-OR-GREEN rule, and intentionally sorting the marbles incorrectly according to Alice's rule. Even though Alice's rule just amounts to the RED-OR-GREEN rule, in the Alice case, we apply the rule knowing that it is different from another rule to which it is being compared. Alice's rule is not RED-OR-GREEN, it is the RED rule *misapplied.* In other words, applying Alice's rule, as a misapplied rule, requires not only that we can apply the RED-OR-GREEN rule but also the RED rule. To apply a rule incorrectly, we must be able to both apply the rule correctly and incorrectly at the same time and compare the results. Alice's misapplication of the RED rule can be understood as a misapplication only if we can remember how a marble was sorted according to one rule while sorting it according to another rule.

Hanks himself allows us to pick up an object, check it against a criterion (e.g. rule R), and then place it into an IN-R pile or an OUT-R pile. Applying a rule incorrectly involves something else. It involves the ability to pick out an object, check it against a criterion R, place it into an IN-R or OUT-R pile and then

remember or hold onto that result. When we apply a different rule, i.e. pick out the very same object, check it against a new criterion, G, and place it into an IN-G or OUT-G pile, we can then compare our results to the previous sorting. The ability to hold onto or remember past sortings also allows us to use past sortings as itself a criterion to check against. Indeed, one way to think of the difference between applying RED-OR-GREEN and applying Alice's rule is that the Alice rule takes objects that have already been sorted according to the RED rule and then re-sorts them according the RED-OR-GREEN rule.

One consequence of this ability is that remembered sortings need not be endorsed by the person sorting. You can pick up an object on the basis of a past sorting and apply a different sorting to it. In other words, you can check to see how it has been sorted and then re-sort according to a different criterion. This means that past sortings are available to be sorted on, and when you do sort in this fashion, you do not need to endorse the past sorting. In fact, if you intend to remember a sorting only as a criterion for later sorting, then there is a way that even when you are doing the first sorting, you are only committing to it provisionally.

At this point, it might be thought that we are taking Hanks' sorting metaphor too literally. Recall, however, the role that the sorting metaphor plays in Hanks' system. Predication, Hanks tells us, can be understood as a kind of sorting. We are claiming that successive predication can be understood as an extension of Hanks system. What is required, therefore, is precisely to explain successive predication in terms of Hanks' own guiding metaphor.

4.2 Successive Predication

We have seen that simple sorting allows us to pick up an object, check it against a criterion, R, and place it in an IN-R or OUT-R pile. Successive sorting adds the capacity to use previous sortings as a criterion for new sortings. We hold that negation can be understood as a successive sorting. To see how this would work it is useful to consider another agent who suffers from a visual pathology. Suppose that Ivan has a defective visual system that inverts red and green, and imagine him sorting marbles into IN-IVAN-RED piles and OUT-IVAN-RED piles. Now how would we follow this sorting. We would first sort things into IN-

RED and then OUT-RED and then take this very sorting as a criterion of a new sorting. If something was IN-US-RED we put it in OUT-IVAN-RED and if it is in OUT-US-RED we put it in IN-IVAN-RED. We submit that this is just negation where we ourselves are playing the role of Ivan. What the negation operator does is it takes as its sorting criterion whether something has been sorted according to a certain predicate, say F, and if it has then it sorts it into the OUT-NEG-F pile, and if has not then it sorts it into the IN-NEG-F pile. First the agent would sort according to F but proleptically the agent knows that this sorting is going to be used as a criterion for later sorting. When the sorter applies the NEGATION rule, they check each marble to see if it has been sorted as an F, i.e. she uses IN-F as a criterion of sorting. If it satisfies IN-F, then it sorts it to the OUT-NEG-F pile, and if not, then it sorts it to the IN-NEG-F pile. This procedure makes '- - F' equivalent to 'F'. In the '- - F' rule, the agent takes the results of the above process as a sorting criterion and takes things sorted according to IN- -F criterion, and takes them to the OUT-NEG-F pile and otherwise the IN-NEG-F pile.

It's one thing to treat the application of a rule as itself an object that can be sorted according to another rule. (This is Hanks' strategy with target-shifting that leads to sortings on sortings.) It's quite another thing to successively take the result of a rule as a criterion for sorting in another rule. This latter proposal is the one we endorse through the concept of successive sorting.

It is important to stress that this understanding of successive sorting allows us to finally solve the problem of embedded predication. Recall that the problem was that predication was essentially committal but embedded speech acts seem to involve predication to which the speaker is not committed. Hanks has shown that this is possible by appealing to cancellation contexts but, we have argued, his explanation for *how* this happens is either lacking or involves sortings on sortings (target-shifting). We propose that the relativized commitment contained in our account of negation explains how this is done. Return to Hanks' guiding metaphor of sorting marbles according to their colors. An agent who sorts according to '-R' does the following. First, they sort according to RED, but they do so with the understanding that this sorting is going to only be a criterion of a later sorting and is not their final sorting. This *is* committal. They can go wrong, even at this stage, in applying the RED rule. A careless person could accidentally sort a pink marble at this

stage into the IN-RED pile and this would be a mistake even at this level. Although they are committed to sorting correctly according to the RED rule, this commitment is provisional. I commit to the marbles being correctly sorted according to the RED rule, but only insofar as it is an intermediate step for further sorting. When I apply the negation operator to R, I take the previous sorting as a criterion and sort according to the rule: "If the marble is in the IN-RED pile, then sort it to the OUT-NEG-RED pile, if the marble is in the OUT-RED pile, then then sort it to the IN-NEG-RED pile". To this final sorting, I commit not only to the fact that negation has been correctly applied, but I commit to it in the further sense that Hanks points to when he distinguishes between predication and assertion. Hanks is right to insist that all sorting according to rules generates correctness conditions and is committal. We think he overlooked the possibility that we can commit to things for different purposes. In successive predication, it is important to sort correctly even at the first stage, but this importance is only relative to the final results.

Our proposal is distinct from another view that holds that compound sorting is a non-successive functional composition of functions. To illustrate this alternative, consider two mathematical functions: *f*: (x+1) and *g*: (x-3). You can imagine two ways of composing *f* and *g*. You might think that their functional combination yields a new function *h*: (x-2), and so for every element x of the domain, you simply subtract 2 to generate its functional output. This is to dissolve the representational integrity of each of *f* and *g*. Hanks' predicate negation is a good example of non-successive sorting. Recall that he thinks that predicate negation is a function that takes properties as an input and yields another property as an output. The resulting property is what is used to sort *o*. There is only one sorting. Our proposal, on the other hand, calls for the distinct application of *g* on *o* and takes that output, as the input for the distinct application of *f*, thus preserving the representational integrity of each function. This two-step successive procedure generates the same final output but requires an intermediate step.

Our proposal is, we believe, also distinct from the orthodox Fregean understanding of negation. According to Frege, negation is an operator that takes as its inputs the outputs of functional predicates. Frege (1893: 214-217) understands a predicate as referring to a function that maps objects onto the TRUE or the FALSE. Negation takes the output from this function and maps it back onto the TRUE or the FALSE,

taking the TRUE to the FALSE and the FALSE to the TRUE. Since negation takes as its input the output of a previous function, this view is very close to ours.

We think, however, that in this context, the classic Fregean understanding raises worries that our own account avoids. Negation, on the Fregean understanding, takes as its inputs, or uses as a criterion, the TRUE and the FALSE which, although they are objects in the Fregean picture, they are, following Tarski, objects that can only be defined in a higher-order language. Since we have just criticized Hanks for relying on higher-order sortings on sortings, it is important that we ourselves avoid this sort of thing. We believe that having access to previous sortings is not a second-order idea. Negation combines with a particular sortal act that is kept track of but does not need to postulate the existence of a higher-order (in Tarski's sense) concept like the TRUE or the FALSE as a criterion to sort. Our own account references a particular act of sorting and holds onto it as a criterion for future sorting, but it does not sort on all possible sortings according to a higher order sorting. In other words, our IN-R piles and OUT-R piles are different from the TRUE and the FALSE because they are always indexed to a particular rule whereas the TRUE and the FALSE are fixed for all acts of sorting.

4.3 Disjunction, Conjunction, and Material Implication

The account can be extended to other first order connectives if we combine the successive predication account given above with Hanks' understanding of relations. Hanks understands relations as sortings on pairs of objects. Successive predication allows us to use past sortings as a criterion for a new sorting. Disjunction takes pairs of objects, checks to see how they have been sorted by a previous property F and G, if either one of them has been sorted into the IN-F pile or the IN-G pile, it will sort it into the IN-DISJ pile otherwise it will sort it to the OUT-DISJ pile. If we consider the disjunction, 'Mary's card is an ace or Joe's card is a diamond,' we can sort pairs of objects according to the IS-AN-ACE rule and the IS-A-DIAMOND rule, checking them two at a time. When we come to the pair, <Mary's card, Joe's card>, we apply the IS-AN-ACE rule and the IS-A-DIAMOND rule respectively. Disjunction again takes pairs of objects but

checks them against a criterion of past sortings. What it asks of the <Mary card, Joe's card> pair is whether they have been have been placed in the IN-ACE pile and the IN-DIAMOND pile respectively. If the answer for either is yes, then it sorts the pair into the IN-DISJ pile, otherwise it sorts them into the OUT-DISJ pile.

Once we have the idea of taking objects as pairs and sorting them according to how they have been previously sorted, then the other logical connectives, conjunction and material implication, can be handled rather directly. Conjunction asks of the <Mary card, Joe's card> pair whether they have been sorted according to the IS-AN-ACE rule and the IS-A-DIAMOND rule respectively. If the answer for both is yes, then it sorts the pair into the IN-CONJ pile, otherwise it sorts them into the OUT-CONJ pile. Material implication asks of the <Mary card, Joe's card> pair whether they have been sorted according to the IS-AN-ACE rule and the IS-A-DIAMOND rule respectively. If the answer to the first is no or the answer to the second is yes, then it sorts it into the IN-IF pile, otherwise it sorts it to the OUT-IF pile.

Since recalling the results of previous sortings does not involve moving up a level, successive sorting does not involve moving up arbitrary levels of metalanguage as Hanks' theory does. Since we can recall past sortings and since a connective, at the end of the day is a sorting, it too can be recalled. A sentence of the form ⌜ - (p v q) ⌝, for example, would take the negation sorting but it would take as its past sorting the object pairs sorted by the disjunctive sorting which in turn would take as its past sorting p and q. This illustrates how our view of successive sorting generalizes to capture the recursive application of the logical operators.

Conclusion

We have suggested that Hanks can explain how propositions can occur in unasserted contexts by means of target-shifting. This is a major advance over previous understandings of force cancellation. Unfortunately, we have seen that it runs into serious difficulty when it tries to accommodate the simple logical connectives like 'not'. Essentially, Hanks must try to explain these either by sentential negation or predicate negation, but it seems clear that the logical connective 'not' is neither of these. This is Hanks' Negation Problem. According to our own view, logical negation is explained by successive sortings. It doesn't

sort on sortings nor does it sort predicates into other predicates, it takes past sortings as a criterion for future sortings.

Besides for the decisive advantage of being able to accommodate logical negation, our own view has other major advantages as well. The first is that it blocks pragmatic intrusion (i.e. appeals to cancellation contexts) to derive the truth-conditions for sentences of logic. Because the analysis only makes use of fundamental semantic concepts, the truth-conditions for logical sentences come entirely with the semantic contributions of each of their components. We believe that any correct theory of propositions should explain basic logical relations between propositions without appeal to context.

The second major advantage which applies to Hanks, Recanati, Soames, and Reiland is that this view is built from recursive combinations of first-order sortings, and only makes use of concepts fundamental to Hanks' own view supplemented by an ability to recall past sortings. Thus, it avoids incorporating the exotica of target-shirting, generic enunciators, neutral predication, or practical modes of presentation which gets Hanks and his amenders in trouble (see Section 3.3). Our view is a unified, simpler explanation for both performance and relative commitment in cases like content negation and disjunction, and so it focuses on the right cases. Unlike Hanks and subsequent commentators, this view does not focus on polyphony cases like actors on stage or quotation, which may still work for sentences that take the form $\ulcorner$ That p is true $\urcorner$ or $\ulcorner$ That p is absurd $\urcorner$. The primary focus is giving a unified explanation of the embedded logical sentences. In contrast, our view is a relentlessly first-order semantic explanation of logically embedded content.

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