# Semantics without Contents

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## 0   Introduction

Semantic theorists often wish to be metaphysically non-committal. When faced with the question of whether to follow David Lewis (1973, 1986) in thinking of the possible worlds that figure into their semantic theories are just as real as the actual world, most theorists are likely to follow Robert Stalnaker (1984) in thinking of possible worlds as in some way identified with or constructed out of properties and relations belonging to the actual world.[1] Yet, when it comes to such things as properties and relations themselves, contemporary semantic theorizing almost always proceeds on platonist grounds, unapologetically appealing to properties and relations as the semantic contents of predicates. The reason why is quite clear: properties and relations seem to be just the sorts of things that are needed at the base level of the semantic theory, providing the basic contents that can be combined in various semantically significant ways to form the meanings of complex expressions. To do semantics without appeal to properties and relations would be to do semantics without contents, and surely, one would think, such a thing cannot be done. I argue here that this is not so—we can do semantics without contents, thinking of the meanings of predicates entirely in terms of what one *does* in uttering them without any appeal to any things that one *says* of things in doing so. Moreover, what doing semantics in this way reveals is not only that it's *possible* to do semantics without appeal to properties and relations, but that it's *necessary* in order to arrive at the correct account of what these entities are: "shadows"

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[1]See, for instance, Partee (1988, 102) and Cheirchia and McConnell-Ginnett (1990, 207-208).

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of the meanings of predicates.

Here's the plan. In Section One, I'll lay out the crucial explanatory role of properties and relations in contemporary semantic theories. However, in Section Two, I'll give reasons to think why we should be wary about these appeals to properties and relations in the context of semantics: we get no account of what they are, and the most plausible account of what they are is one that precludes the legitimacy of such appeals. In Sections Three and Four, I lay out an alternative semantic theory, which does not appeal to properties or relations (or anything else to serve as the contents of basic predicates) that yields such an account. I call this theory "discursive role semantics," since, according to it, the meaning of a sentence is understood directly in terms of its role in discourse. Section Three lays out the basic philosophical ideas, and Section Four develops these ideas in formal detail. In Section Five, I'll demonstrate how discursive role semantics enables us to reconstruct the properties and relations that serve as the contents of predicates in contemporary semantics as "shadows" of the rules governing the use of those predicates. I conclude with the thought that we need not give up content-based semantics—it can play a crucial role in elucidating the semantic competencies of speakers of a natural language. But we need to give an account of the contents that such a semantics presupposes, and the only way to do that is to do semantics without contents.

## 1   Contemporary Content-Based Semantics

Let us start by distinguishing two sorts of semantic projects: *elucidatory* projects, which aim to formally explicate the structured space of meanings on which speakers are presumed to have a grip, and *explanatory* projects, which aim to account for speakers' knowledge of meaning so as to explain the behaviors they exhibit in virtue of this knowledge, such as their ability to produce novel sentences and to judge when sen-

tences entail or are incompatible with one another. Though many of the pioneers of semantic theorizing had self-consciously elucidatory aims, with semantics recently emerging as an empirical science and pursued by both philosophers and linguists in a broadly Chomskyian framework, it is the explanatory project that many working semanticists take as their aim.[2] What we're aiming to do in semantics, on such a conception of it, is give an account of speakers' knowledge of meaning that explains the observable behavior that is a manifestation of it. An essential part of this task is specifying what speakers grasp in grasping the meaning of simple predicate words like "red" or "round," which figure in complex predicates like "red and round" and complete sentences like "*a* is red and round." The theorist must specify the meanings of these words in such a way as to be able to explain how they figure in more complex meanings that bear the semantic relations to one another that they do, thereby explaining speakers' behavior by taking them to have knowledge of these meanings. According to almost every semantic theorist, the way to do this is by saying that these words signify *properties*, which can be ascribed to and instantiated by objects, which are combinable and negatable, and which stand in modal relations to one another.[3] Properties, it seems, are just the sorts of things needed to serve as the semantic values

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[2]Carnap (1947), for instance, is clear that he understands his formal semantic framework as merely a "method for analyzing and describing the meanings of linguistic expressions," (v), and Hintaakka (1975) explicitly acknowledges that an explication of the meanings of modal expressions may well be circular but that this is fine so long as the circle is "wide enough to enable a logician to uncover nontrivial aspects of the structure of the concepts involved," (135). Such merely elucidatory ambitions for semantics are at odds with the conception of semantics as an empirical science aimed at explaining observable behavior expressed, for instance, by Cheirchia and McConnel-Ginent in their introductory textbook to formal semantics:

> [A]s linguists, our focus is on modeling the cognitive systems whose operation in some sense "explains" linguistic phenomena.

For an overview of the Chomskyian contextualization of the formal methods developed by the philosophical pioneers of semantic theorizing in contemporary semantics, see Soames (2019, 133-156). See also Yalcin (2014, 2018) for a rather different but influential take on semantic explanation which essentially appeals to the use of models.

[3]For a sampling of such talk in introductory texts, see, for instance, Dowty, Wall, and Peters (1981, 7), Portner (2005, 30-31), Kearns (2011, 62-63), and Dever (2012, 62-63). For a sense of just how prevalent property-talk can be in contemporary theorizing, note that the word "property" occurs more times in King's (2001) *Complex Demonstratives*, than it does in Armstrong's *Universals*, a book about properties!

of predicates in an explanatorily adequate semantic theory. Let us see this in a bit more detail, highlighting two crucial explanatory roles that properties play.

First, we are able to produce and understand an indefinite number of novel sentences, knowing what we would be saying in uttering all sorts of sentences that we've never encountered before. Presumably, we have this capacity in virtue of the fact that meaning is *compositional*: the meaning of a whole sentence is constituted by the meanings of its components and the way they are put together. For instance, the meaning of "*a* is red and round" is compositionally derived from the meanings of "*a*," "is," "red," and "round." Now, it is customary to distinguish between "content words," like "*a*," "red," and "round," which provide the semantic meat, and "function words," like "is" and "and," which provide the semantic bones and joints.[4] By taking the semantic values of the content words "red" and "round" to be properties, namely, the property of being red and the property of being round, and by taking the semantic value of the function word "and" to be the function of conjunction, which, when given two properties as inputs, returns the property that is instantiated by an object just in case that object instantiates both of the input properties, we can explain how the meaning of this sentence is compositionally derived from the meanings of its parts. Thus, even if one has never heard the phrase "red and round" before, if one knows that "red" expresses the property of being red, "round" expresses the property of being round, and "and" expresses the conjunction function, one will know that "red and round" expresses the property that is instantiated by an object just in case it is red and it is round (i.e. the property of being red and round). Taking "*a*" to pick out *a*, "is" to encode ascription, we get that the meaning of "*a* is red and round" is the proposition that ascribes the property of being red and round to *a* and so is true just in case *a* is red and round. Likewise for the sentence "*a* is red and round, and *b* is not green," and so on for all the complex sentences of a language. Properties, it seems, are combinable and negatable

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[4]See, for instance, Lobner (2002, 4-5) and Gendler Szabo (2019) for an articulation of this distinction with the use of this terminology.

in just the way that the meanings of predicates must be to explain compositionality.

Second, we have robust judgments about which sentences entail or are incompatible with other sentences. Presumably, then, the meanings of sentences must determine the relations of entailment and incompatibility that they stand to other sentences, so that knowing the meanings of two sentences is sufficient for telling whether one entails the other or whether they are incompatible. For instance, competent speakers know that "*a* is red" entails "*a* is colored" and is incompatible with "*a* is green."[5] If we appeal to properties as contents of predicates, it seems we can straightforwardly explain these judgments as following from speakers' knowledge of the meanings of these sentences. If "red" is assigned the property of being red, "colored" is assigned the property of being colored, and "green" is assigned the property of being green, then, since anyone who grasps these properties knows that, if something's red, then it's necessarily colored and cannot possibly be green, they'll know that these predicates stand in these relations of entailment and incompatibility, and, given the way in which properties figure into propositions, the semantic values of sentences, they'll know that these sentences stand in these relations of entailment and incompatibility. The explanation of these entailment and incompatibility facts also figures crucially in a semantic theory's explanation of speakers' grasp of the truth conditions of sentences. If one describes to a speaker a situation in which there is a red ball on the lawn, they'll know that the sentence "The ball is colored" is true in that situation. The explanation of this fact is that speakers grasp that, in the situation described, the ball instantiates the property of being red, and so instantiates the property of being colored, and thus, "The ball is colored," which ascribes this property to the ball, is true. Properties and relations, it seems, stand in modal relations to one another in just the way that the meanings of predicates must in order to explain entailment and incompatibility relations between sentences.

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[5] Let us assume, for simplicity, that the entities in our domain are, if colored, essentially monochromatic. If you like, treat there as being a hidden "all over" following any color predicate I use.

We could go on and describe further the way in which properties and relations play a crucial explanatory role in a semantic theory, but we've done enough to demonstrate the basic point. As theorists like Jeff King (2019) have emphasized, by assigning properties and relations to predicates as semantic values, we get a semantic theory that "assigns semantic values to expressions of our language in such a way as to give a simple, direct explanation" of these features of linguistic meaning (784-785). Now, King is more explicit than most, but an appreciation of this essential explanatory role of properties and relations seems to be at work in the background of much of contemporary semantic theorizing. There is, however, a basic problem with these appeals to properties and relations in contemporary semantics: we get no account at all of what these entities actually are, and the explanatory role they are supposed to play in contemporary semantic theories actually precludes us from being able to give any such account. Let me explain.

## 2   The Problem of Accounting for Properties

If you ask a working semantic theorist what properties are, one sort of answer you are likely to receive is that they are certain sorts of mathematical constructions involving possible worlds. For instance, the property of being round might be said to be the following function from worlds to functions from objects to truth-values, mapping an object $x$ in a given world $w$ to the value *true* just in case $x$ is round in $w$:

$\llbracket \textbf{round} \rrbracket = \lambda w.\lambda x.x$ is round in $w$

Thinking of the contents that figure in a semantic theory in this way enables a precise mathematical specification of the way in which they compose and of what it is for them to stand in relations of entailment and incompatibility to one another.[6] However,

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[6]For instance, representing things in this way enables one to specify the function expressed by "and" as generalized conjunction (Partee and Rooth, 1983), which can be applied to both propositions and

while formalizing things in this manner enables one to precisify semantic proposals, theorists are rarely clear about what such a formalization actually functions to capture. What mathematical constructions such as functions from worlds to extensions actually model are not the *properties themselves* that speakers grasp, but, rather, what speakers are able to do *in virtue of grasping* those properties, namely, distinguish the things that instantiate them from the ones that don't. To grasp this function is to have the ability to take any possible world and sort things in that world into the ones that are round and the ones that aren't. Insofar as speakers can be credited with this ability, capable of distinguishing the round things from the ones that aren't round, they surely can only do this because they know *what it is for something to be round*. That is, only because they grasp the property of being round are they capable of distinguishing the things that instantiate it from the ones that don't. Precisely because their grasp of the property of being round *explains* the ability that is abstractly characterized by this function, their grasp of this property cannot be *identified* with such a function. Nor is there any reason to think that the property of being round itself is structured so as to correspond to the ability that is abstractly characterized by this function. So, there is no reason to think that this function *models* the property either. Such functions tell us something about what we are able to do in virtue of grasping the properties that figure into the semantic theory, but they don't tell us what these properties are.[7]

If properties are not to be understood as functions from worlds to extensions, how are they to be understood? Theorists who are clear about the role that properties must play in a semantic theory, and so acknowledge the point just made, typically say very little as to what they are. Consider Jeff King, who appeals to properties to do all sorts of explanatory heavy-lifting in his philosophical theories. King (2007) is explicit that properties are not to be understood as constructed from possible worlds;

properties, with the result that "*a* is red and round" is true in just the same worlds as "*a* is red and *a* is round."

[7]For an extended argument for the point, see Simonelli (M.S.), Chapter Two.

rather, possible worlds are to be understood as constructed from properties. As for the question of what the properties that figure into a semantic theory are, he's clear that he thinks of them as "entities in the external world" (2018, 784) "existing quite independently of minds and languages" (2007, 450), that some of them are complex in the sense of being "made up of other properties and relations" (1998, 157; 2007, 447), and that they stand in relations of entailment to other properties (1998, 173 n8). So, though King never gives an account of what properties are, he is happy to specify that they have just the features he needs them to have in order for them to play just the role he wants them to play in the sort of explanation of semantic competence that he wants to give, serving as the contents of predicates. Is this really a justifiable move? One might be inclined to liken it to postulation in other areas of scientific inquiry. For instance, of course, in the course of doing astronomy, we may posit an object with a certain gravitational force to make sense of the observed behavior of other celestial objects. However, the assumption implicit in a scientific postulation is that further scientific inquiry will eventually (or at least in principle *could*) tell us *what this thing is*, be it a gaseous planet, a large asteroid, or what have you. In semantics, however, theorists are willing to appeal to properties as explaining behavior without even a gesture at what a proper account of these things would look like.

To get a sense of what an account of properties would have to encompass, consider all the properties that need to figure into our semantic theory in order for it to be explanatory adequate. We need not just what one might regard as more fundamental properties, such as the property of being red, being green, being square, being round, and so on; being positively charged, negatively charged, and so on. We need *all* the properties corresponding to predicates of the language. So, we need the property of being a chair, being a table, a cup, a flask; the property of swimming, of skiing, of smoking; the property of being milk, coffee, tea, chocolate cake; the property of being a novel, a novella, a screenplay; and many *many* more. As competent speakers of

English we conceptually grasp this *vast network* of properties and their inter-relations, each one the content of a predicate of the language we speak. Without any story about what this vast realm of properties is or how speakers come to have a grip on it, our whole semantic theory, based on the assumption that speakers do have a grip on it, hangs in the air. Now, perhaps theorists like King simply think that, whatever story is to be told about the structured space of properties on which we have a grip, there surely is *some* story to be told, and it's simply not their job to tell it. The problem, however, is that when we actually try to tell a story of the network of properties on which speakers of natural languages have a grip, the far and away most plausible story is that they come to grasp this network of properties *through learning language*, mastering the rules governing the use of linguistic expressions, and their grasp of these properties is really *nothing other than* their grasp of these rules, transposed from of normative to a metaphysical mode. This is the story proposed by Wilfrid Sellars (1953, 1963), and, as far as I am able to see, only such a story can do justice to the whole range of properties that speakers of natural languages grasp. Such a story, however, is flatly incompatible with the explanatory ambitions of contemporary content-based semantics.

To lend some initial plausibility to the claim that a Sellarsian story is to be told, let me start by pointing out that the properties speakers grasp seem to *vary* somewhat depending on the particular language that one has learned. Consider, for instance, the property of being a chair. As speakers of English, we grasp this property. We grasp, for instance, that, if something's a chair, then it's something one can sit on, that it generally has a back (but not always, as in the case of bean bag chairs), that it might be hard, like a kitchen chair, or cushiony, like an armchair or recliner, and so on. Though it can be hard to articulate precise criteria, we know what this property is and so we know what we're saying of something when we say it's a "chair." This property, however, simply doesn't belong to the network of simple properties on which a native German speaker comes

to have a grip through learning German.[8]  In German, there's the predicate "Stuhl," which can be correctly applied to kitchen chairs, but not armchairs and recliners, there's the predicate "Sessel," which can be correctly applied to armchairs and recliners, but not kitchen chairs, and there's "Sitz," which can be applied to anything on which one might comfortably sit, but that applies to tree stumps and comfortable rocks no less than it applies to chairs—there's no one simple predicate that can be applied to all and only *chairs*.  As such, the property of being a chair simply doesn't belong to the network of simple properties on which a native German speaker comes to have a grip through learning German.  Likewise, the properties of being a Stuhl and being a Sessel don't belong to the network of properties on which a native English speaker comes to have a grip through learning English.  The most plausible way to make sense of this fact is to think that it is through learning the English language, through learning the rules governing use of the terms "chair," "cushion," "kitchen chair," "recliner," and so on, that a native English speaker comes to grasp the property of being a chair, likewise for more or less roughly corresponding German words and the properties of being a Stuhl and a Sessel.  The lack of correspondence between the properties grasped by the English speaker and the properties grasped by the German speaker understood in terms of the lack of correspondence between the rules governing the use of the English and German predicates.  While many English words correspond sufficiently closely in role to a German word, such that speakers can be said to have a grip on the same properties, "chair" does not.

Plausible as a story along these lines may be, a proponent of a content-based explanation of semantic competence is precluded from being able to accept it.  If one endorses a content-based semantics, one is going to attempt to explain the fact that "That's a chair" is incompatible with "That's a couch" by appeal to the fact that the properties of being a chair and being a couch are incompatible and so these

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[8]I thank Jim Conant for pointing me to this example.

two sentences, which respectively ascribe each of these properties to the same object, cannot both be true. If, however, grasping the property of being a chair really is nothing other than grasping the rules governing the use of "chair," such as that saying "That's a chair" precludes one from being entitled to say "That's a couch," as our example suggests, then this sort of explanation gets things backwards. Content-based semantics, insofar as it aspires to an explanation of semantic competence rather than merely an elucidation of it, does, I take it, get things backwards in just this way. Rather than properties and relations playing a crucial explanatory role in accounting for speakers' grasp of the rules governing the use of linguistic expressions, properties and relations are really nothing but "shadows" of these rules. If an account along these lines is correct, it poses a serious challenge to contemporary content-based semantics. Such an account, however, depends for its viability on the claim that we can explain the behavior that speakers exhibit in virtue of grasping the meaning of expressions of their language without any appeal to their grasp of the contents expressed by those expressions. Vindicating this claim requires no less then establishing the viability of a radically alternative semantic theory, one in which there is no appeal to properties and relations as the contents of predicates, but only appeals to rules governing the use of words. Can a semantic theory along these lines be made to work? Can we do semantics without helping ourselves to the contents presupposed by contemporary semantic theorizing, so as to able to account for those very contents? I contend that we can. Let's see how.

## 3   Semantics without Contents: The Basic Idea

The proposal for doing semantics without contents, in general terms, is that we characterize the meaning of a sentence directly in terms of what one's utterance of it *does*—the effect it has on a discursive context—without thinking that the sentence's effect on the

discursive context is mediated by its expression of a semantic content, something one *says*, in uttering the sentence. Specified in such general terms, this idea is not entirely foreign to contemporary semantic theorizing; it is simply a general formulation of *dynamic semantics*, an alternative to truth-conditional semantics that has gained significant traction over the past few decades.[9] On a dynamic semantic theory, rather than defining the semantic value of a sentence as a truth-conditional content, for instance, a set of possible worlds, we define the semantic value of a sentence directly in terms of its potential to change (or "update") a context. In a simple sort of update semantics, we think of a context as any set of worlds, each of which codifies the information of the participants of that context, and we think of the update effected by some sentence $\varphi$ as a function that takes any context $\sigma$, and returns another context, $\sigma[\varphi]$, which is the result of $\sigma$'s being updated with $\varphi$. Such a framework allows us to think of the meaning of a sentence directly in terms of what utterance of that sentence does, its function on a discursive context, without necessarily thinking of that function as mediated by its expression of a static semantic content.

Standard dynamic semantic frameworks, however, will not suffice as a way of doing semantics without contents. Though standard dynamic semantics diverge from static frameworks at some point—proposing semantic values for specific kinds of expressions such as epistemic modals or indicative conditionals that must be understood dynamically and cannot be understood in terms of the expression of an assertable content—the updates imposed by the use of atomic sentences still seem to be mediated by their expressing static semantic values. On a simple update semantics of the sort mentioned above, an atomic sentence, for instance "*a* is red," functions to eliminate all of the worlds in which it's not true that *a* is red. Now, it's hard to make sense of its doing this other than by thinking of it as representing a way for things to be, *a's being red*, which can be precisely represented as a set of possible worlds, and thinking

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[9]For seminal works motivating and pioneering the dynamic paradigm, see Groenendijk and Stokhof (1991), Veltmann (1996), and Groenendijk, Stokhof, and Veltmann (1996).

of a speaker's putting it forward in discourse as their saying that the world is that way, prompting speakers to rule out all the ways for the world to be in which it isn't that way.[10] That's surely the most plausible way of spelling out the semantic values for atomic sentences on a standard dynamic semantic theory, and so we still have an appeal to contents at the base level of our semantic theory. Nevertheless, there is a crucial insight in dynamic semantics that will be of help to us here. Dynamic semantics shows that, at least for some sentences, we can make sense of *semantic values* of these sentences, and precisely specify these values, without thinking of these values as encoding *semantic contents* that these sentences are taken to have. The question is: how might one do without contents altogether, thinking of *all* sentences, atomic ones included, simply in terms of what one does in uttering them, rather than what one says?

The key idea can be found in Robert Brandom's (1994, 2008) development of Sellars's (1953, 1954, 1974) conception of meaning. Bernhard Nickel (2013) helpfully construes Brandom's semantics as a dynamic framework but one in which contexts are not understood in *informational* terms, modeled as sets of possible worlds, but, rather, in *normative* terms. Now, the actual semantic framework that Nickel proposes on Brandom's behalf is utterly inadequate to put the basic theoretical resources of Brandom's framework to work, but his basic proposal is on the right track. We'll put forward a more adequate framework here. Rather than thinking of contexts as sets of possible worlds, as one does in a standard informational dynamic semantics, or as sets of sentences, as Nickel proposes on behalf of Brandom, we'll think of contexts as "scorecards" that speakers (or "players" as we'll call them, to stick with the game-playing metaphor) might have. These scorecards keep track of players' normative standings in discursive practice—what they're *committed* to, what they're *entitled* to,

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[10]This proposal converges with the standard pragmatic proposal from Stalnaker (1978) according to which this sentence expresses the set of worlds in which *a* is red and, when assertorically uttered, functions to rule out from the conversational context all of the worlds in which it is false.

and what they're *precluded from being entitled* to. The effect of uttering a sentence $\varphi$ is understood in terms of the fact that uttering $\varphi$ might *commit* you to some other sentence $\psi$, in the sense that, given an utterance of $\varphi$, you must be prepared to utter $\psi$ if you're prompted to do so; it might *entitle* you to some other sentence $\psi$, without committing you to it, in that you can utter $\psi$ if you wish to do so, but you need not; finally, crucially, it might *preclude* you from being entitled to some other sentence $\psi$ in the sense that, insofar as you remain committed to $\varphi$, your being able to utter $\psi$ is ruled out. These relations of committive, permissive, and preclusive consequence can be thought of as a speaker's "scorekeeping principles," which determine, when some sentence is uttered, how that speaker updates their scorecard. The semantic value of a sentence $\varphi$, from the perspective of some scorekeeper $m$, can be understood as a function that takes any player $n$ and any scorecard $\sigma$ that $m$ might have, and returns another scorecard, $\sigma[\checkmark_n\langle\varphi\rangle]$, which is the result of $m$'s updating $\sigma$ with $n$'s making the move $\varphi$.

Spelling out a semantic theory in line with this key idea requires recursively specifying rules for keeping score such that, if speakers know those rules, then, for any sentence of the language that their fellow speakers might utter, they'll know how to update the discursive score. The semantic theory that I'll lay out in the next section, which does this, will fundamentally differ from contemporary content-based semantics in the account of the two crucial features of meaning considered above. First, it provides an alternative account of the fact that speakers can understand the meanings of a potentially infinite number of sentences. Rather than accounting for this fact by thinking of the meanings of these sentences as composed out of meanings of the parts, we account for this fact by thinking of the rules for determining the semantic significance of a sentence as recursively iterable, such that rules for keeping score on the utterances of expressions of arbitrary complexity can be determined by the rules for keeping score on simple expressions. The recursive determination of meanings is

all that's necessary to account for the fact that speakers can understand a potentially infinite number of sentences. We need not think of meanings themselves as compositional, in the sense of being composed out of the meanings of their parts. That's the first major deviation from a standard framework. The second concerns entailment and incompatibility relations. In contrast to a standard content-based framework, meanings don't determine entailment and incompatibility relations. Rather, it is entailment and incompatibility relations, understood in the first instance in normative terms as principles of committive and preclusive consequence, such as the principle that commitment to "*a* is red" commits one to "*a* is colored" and precludes one from being entitled to "*a* is green," that determine meanings. Speaking of semantic relations of entailment and incompatibility between sentences or the propositions expressed by those sentences is understood simply as a way of expressing the principles that determine the normative significance of uttering those sentences. We'll consider the philosophical consequence of this feature of the account in the section following next. First, however, to illustrate that these ideas can be turned into a tractable semantic theory, let's turn to the formal details.

## 4  Discursive Role Semantics: A Formal Framework

There are different formal set-ups that may serve the same basic purpose, but I've opted for one here that makes the underlying philosophical ideas particularly perspicuous.[11] We start with a definition from Kukla, Lance and Restall (2009):

**Field of Play:** A *field of play* is, minimally, a triple consisting of

1. A non-empty set of players (PLAYER)
2. A non-empty set of moves (MOVE)
3. A non-empty set of deontic statuses (STATUS)

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[11]For instance, one might encode the same information as I do with my bilateral scorekeeping principles with unilateral multiple conclusion sequents (eg. Kukla, Lance, and Restall 2009, Kaplan 2018).

The players will be the speakers of the language. By allowing speakers to have differing scorekeeping principles, the framework thereby allows us to consider the way in which the semantic significance of a sentence may differ from perspective of one speaker to the next.[12] When one doesn't need to consider variation in scorekeeping, one can simplify things by just taking PLAYER to be two arbitrary speakers of the language. MOVE is, minimally, the set of claims that can be made in language, specified by the set of sentences of the language.[13] STATUS will be *commitment*, which we'll express with the symbol $\oplus$, *entitlement*, which we'll express with the symbol $\bigcirc$, *preclusion of entitlement*, which we'll express with the symbol $\ominus$, and the status of *having made a move*, which we'll express with the symbol $\checkmark$. We can now define the following things:

> **Normative Assignments:** A *normative assignment* is any formula consisting of the specification of an $s \in$ STATUS, a $\varphi \in$ MOVE, and an $n \in$ PLAYER that is written as $s_n\langle\varphi\rangle$.
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> **Scorecards:** A *scorecard* is any set of normative assignments.
>
> **Normative Positions:** A *normative position* is any formula consisting in an $s \in$ STATUS, a $\varphi \in$ MOVE, and the player place-holder $\alpha$, which is written as $s_\alpha\langle\varphi\rangle$.
>
> **Scorekeeping Principles:** A *scorekeeping principle* is a sequence of the form $\Gamma \vdash A$, where $\Gamma$ is a (possibly null) sequence of normative positions, and $A$ is a single normative position.

Speakers' "scorekeeping principles" which determine what happens, in the linguistic practice, when some speaker utters some sentence, are formalized with sequents. For instance, we can write the principle that commitment to "*a* is red" precludes one from

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[12] A representation of these differences is going to be necessary in many cases, for instance, if one wants to account for opacity in belief contexts as Brandom (1994, 495-613) does.

[13] I leave open the question of whether there are other types of acts, speech or otherwise, that must be included in MOVE. See Kukla and Lance (2009, 2010) and Milson (2014) for arguments, originating from Belnap (1990), that MOVE must be expanded beyond declarative speech acts, and Brandom (2010) for a response. My own development of this framework has sided with Brandom on this dispute (See Simonelli M.S.c), but the basic framework put forward here is neutral on it.

being entitled from "*a* is green" as follows:[14]

$$\oplus_\alpha \langle a \text{ is red} \rangle \vdash \ominus_\alpha \langle a \text{ is green} \rangle$$

Scorecards get updated through the application of scorekeeping principles like this one. The turnstile here can be informally understood as saying that if some player is scored as occupying the positions on the left, then they should be scored as occupying the position on the right. So, applying this scorekeeping principle to a scorecard $\sigma$ amounts to adding to $\sigma$, $\ominus_n \langle a \text{ is green} \rangle$ for any player $n$ such that $\oplus_n \langle a \text{ is red} \rangle$ is in $\sigma$. More generally, where $s$ is either $\oplus$ or $\ominus$, we can define the result of applying a set of scorekeeping principles to a scorecard as follows:

> **Application of Principles:** The result of applying a set of scorekeeping principles $\pi$ to a scorecard $\sigma$, which we denote $\pi(\sigma)$, is the smallest superset of $\sigma$ such that for every principle of the form $s_\alpha \langle \varphi_1 \rangle \dots s_\alpha \langle \varphi_k \rangle \vdash s_\alpha \langle \psi \rangle \in \pi$ and every player $n$, if $s_n \langle \varphi_1 \rangle \dots s_n \langle \varphi_k \rangle \in \pi(\sigma)$, then $s_n \langle \psi \rangle \in \pi(\sigma)$.

This definition of application of scorekeeping principles ensures that the operation of applying a set of scorekeeping principles to a scorecard is a closure operation. That is, for any scorecards $\sigma$ and $\tau$, the following facts hold:

> **Extensivity:** $\sigma \subseteq \pi(\sigma)$
> **Monotonicity:** If $\sigma \subseteq \tau$, then $\pi(\sigma) \subseteq \pi(\tau)$
> **Idempotency:** $\pi(\pi(\sigma)) = \pi(\sigma)$

Thus, a set of scorekeeping principles can be understood much like a classical consequence relation, under which a set of sentences, or in this case, normative assignments, can be closed.

We can now define two things, relative to one another: a set of scorecards that each player $m$ might have, and the effect of any player $n$'s making some move $\varphi$, relative to any scorecard that $m$ might have:

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[14]One might notice the similarity between scorekeeping principles such as this one and Carnap's (1956) "meaning postulates." In some sense, scorekeeping principles function much like meaning postulates, but, unlike meaning postulates, which are ambiguous between a normative or metaphysical reading, scorekeeping principles wear their normative character on their sleeve.

**Scorecards Players Might Have:** Let $m$ be any player with a set of score-keeping principles $\pi$. The set of scorecards $\Sigma_m$ that $m$ might have can be recursively defined as follows:

1. $\varnothing \in \Sigma_m$
2. For any $\sigma \in \Sigma_m$, any $n \in \text{PLAYER}$, and any $\varphi \in \text{MOVE}$, $\sigma[\checkmark_n\langle\varphi\rangle] \in \Sigma_m$

**Updates:** Let $n$ be any other player. The result of updating $\sigma$ with $\checkmark_n\langle\varphi\rangle$, which we write as "$\sigma[\checkmark_n\langle\varphi\rangle]$," is defined as the final step in the following three step process:

1. $\sigma[\checkmark_n\langle\varphi\rangle]_1 = \sigma \cup \{\checkmark_n\langle\varphi\rangle, \oplus_n\langle\varphi\rangle\}$
2. $\sigma[\checkmark_n\langle\varphi\rangle]_2 = \pi(\sigma[\checkmark_n\langle\varphi\rangle]_1)$
3. $\sigma[\checkmark_n\langle\varphi\rangle] \supseteq \sigma[\checkmark_n\langle\varphi\rangle]_2$, and, for any $\psi \in \text{MOVE}$, if $\oplus_n\langle\psi\rangle \in \sigma[\checkmark_n\langle\varphi\rangle]_2$, and neither $\ominus_n\langle\psi\rangle \in \sigma[\checkmark_n\langle\varphi\rangle]_2$ nor $\ominus_m\langle\psi\rangle \in \sigma[\checkmark_n\langle\varphi\rangle]_2$, then $\bigcirc_n\langle\psi\rangle \in \sigma[\checkmark_n\langle\varphi\rangle]$

So, supposing we are $m$, we assume that one way that we might score the game is to have it such that no one has played any moves at all, and so no one is committed, entitled, or precluded from being entitled to anything. When some player $n$ makes some move $\varphi$, we add $n$'s having made $\varphi$ and being committed to $\varphi$ to our scorecard. We then apply our scorekeeping principles to that scorecard, assigning to $n$ any positions that follow from our scorekeeping principles. Finally, we attribute entitlement to any move $\psi$ to which we now score as $n$ as committed, unless we take $n$ to be precluded from being entitled to $\psi$ or we take ourselves to be precluded from being entitled to $\psi$. This last step amounts to Brandom's (1994, 176-178) principle of "default entitlement," according to which when one makes a claim one is generally taken to be entitled to it by default, unless there's some specific reason to challenge it, such as incompatibility with the claimant's commitments or our own, and that's how entitlement figures into the system here. So, the way we are doing things here, scorekeeping principles fundamentally involve the attributions of commitments and preclusions of entitlements, and entitlement just comes along for the ride by default wherever it can.

Defining updates and scorecards players might have in this way lets us define the semantic value of a sentence $\varphi$, relative to a player $m$, as a function that takes any

scorecard $m$ might have and any other player $n$ and returns the scorecard that is the result of $m$'s updating their scorecard with $n$'s making move the $\varphi$:

**Semantic Values:**

$$[\![\varphi]\!]^m = f : (\Sigma_m \times \text{PLAYER}) \to \Sigma_m$$
$$f(\sigma, n) = \sigma[\checkmark_n\langle\varphi\rangle]$$

The task of defining semantic values for the total set of sentences of the language amounts to the task of recursively specifying rules for keeping score, such that, given a base set of scorekeeping principles, which determine the semantic significance of the simple expressions of the language, one can specify a set of scorekeeping principles sufficient for determining the semantic significance of any of the complex expressions belonging to the language. Let us first consider how, given a set of scorekeeping principles that relate positions involving atomic sentences, we can determine the set of scorekeeping principles that relate positions involving any of the logically complex sentences.

As the symbols we've been using might have hinted, the normative statuses of commitment and preclusion of entitlement can be understood as duals of a certain sort. Specifically, the formal framework proposed here is understood as a *bilateral* framework. On a bilateral conception of logic, there are two opposite ways of being related to any propositional entity $p$, a *positive* of being related to $p$ and a *negative* way of being related to $p$, where the negative way of being related to $p$ is understood as distinct from and not reducible to being positively related to $\neg p$. Now, the standard way of thinking about the "two ways" that figure into a bilateral conception of logic is as affirmation and denial or acceptance and rejection.[15] On the framework here, however, these "two ways" are two opposed normative statuses, two opposite ways to be

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[15]For this standard way of thinking, see Smiley (1996), Rumfit (2000), Francez (2015), Restall (2005), and Ripley (2013). Fine (2017), on the other hand, adopts a version of bilateralism according to which the "two ways" are not two ways for *us* to be related to a sentence (affirming or denying it) but two ways for *the world* to be related to a sentence: verifying or falsifying. See Hlobil (2021) for an account of how these two sorts of bilateralisms relate.

non-neutrally normatively situated with respect to a move $p$: one can be *committed* to $p$ or one can be *precluded from being entitled* to $p$. That is, one can occupy the position $\oplus_\alpha \langle p \rangle$ or one can occupy the position $\ominus_\alpha \langle p \rangle$. This normative interpretation of bilateralism enables us to think of scorekeeping principles of committive and preclusive consequence as sequents that figure in a bilateral logic.

Now, there are different bilateral systems for the logical connectives that will fulfill our purpose, and any off-the-shelf bilateral system for classical logic, such as the natural deduction system proposed by Smiley (1996) or Rumfit (2000), will do.[16] However, our purposes are really better fulfilled by a sequent calculus, along the lines of Gentzen's (1935/1969) LK, where we only have introduction rules.[17] To introduce such a system, note first that our definition of the application of scorekeeping principles as a closure operation imposes on sets of scorekeeping principles validates the standard structural rules of Gentzen's sequent calculus:[18]

$$\frac{\Gamma, A, B, \Delta \vdash C}{\Gamma, B, A, \Delta \vdash C} \text{ Exchange} \qquad \frac{\Gamma, A, A \vdash B}{\Gamma, A \vdash B} \text{ Contraction} \qquad \frac{\Gamma, A \vdash B}{\Gamma, A, A \vdash B} \text{ Expansion}$$

$$\frac{}{\Gamma, A \vdash A} \text{ Containment} \qquad \frac{\Gamma \vdash A}{\Gamma, B \vdash A} \text{ Monotonicity} \qquad \frac{\Gamma \vdash A \quad \Gamma, A \vdash B}{\Gamma \vdash B} \text{ Cumulative Transitivity}$$

For operational rules in this bilateral setting, rather than having rules for getting

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[16]Rumfit's system (2000, 800-802), is arguably more natural Smiley's, but contains twice as many rules. It's worth pointing out in connection that one benefit of defining semantic values in the dynamic way that we have, rather than as they are defined in proof-theoretic semantics (Francez 2015, Stovall 2021), is that we won't have differences in meaning depending on which of two systems that both determine the same consequence relation we pick. On our approach, it is the consequence relation determined by the logical rules, which determines updates, that matters in defining semantic values, rather than the logical rules themselves.

[17]For a discussion of how Gentzen-style systems can be put to this use, see Brandom (2018), and for some examples, see Hlobil (2017) and Kaplan (2018). The specific version of this approach presented here was developed in collaboration with the ROLE (Research on Logical Expressivism) group, led by Brandom and Hlobil.

[18]If we're serious about doing natural language semantics in this framework, we're going to have to modify our definitions so as to allow for exceptions to Monotonicity and Cumulative Transitivity, as there are semantic implications and incompatibilities in natural language that violate these rules. For a substructural development of this framework, see Simonelli (M.S.), Appendix. For our purposes here, however, it does no harm to keep things simple by setting things up in a way that validates the standard structural rules.

logically complex formulas on the right and left of the turnstile, we only right rules, but which come in a positive and negative form. The following calculus is a translation of Ketonen's (1944) formulation of Genzen's LK:[19]

$$\frac{\Gamma \vdash \ominus_\alpha\langle\varphi\rangle}{\Gamma \vdash \oplus_\alpha\langle\neg\varphi\rangle} \; \oplus_\neg \qquad\qquad\qquad \frac{\Gamma \vdash \oplus_\alpha\langle\varphi\rangle}{\Gamma \vdash \ominus_\alpha\langle\neg\varphi\rangle} \; \ominus_\neg$$

$$\frac{\Gamma \vdash \oplus_\alpha\langle\varphi\rangle \quad \Gamma \vdash \oplus_\alpha\langle\psi\rangle}{\Gamma \vdash \oplus_\alpha\langle\varphi \wedge \psi\rangle} \; \oplus_\wedge \qquad\qquad \frac{\Gamma, \oplus_\alpha\langle\varphi\rangle \vdash \ominus_\alpha\langle\psi\rangle}{\Gamma \vdash \ominus_\alpha\langle\varphi \wedge \psi\rangle} \; \ominus_\wedge$$

$$\frac{\Gamma, \ominus_\alpha\langle\varphi\rangle \vdash \oplus_\alpha\langle\psi\rangle}{\Gamma \vdash \oplus_\alpha\langle\varphi \vee \psi\rangle} \; \oplus_\vee \qquad\qquad \frac{\Gamma \vdash \ominus_\alpha\langle\varphi\rangle \quad \Gamma \vdash \ominus_\alpha\langle\psi\rangle}{\Gamma \vdash \ominus_\alpha\langle\varphi \vee \psi\rangle} \; \ominus_\vee$$

For these rules to yield a complete system of propositional logic, we must impose an additional bilateral structural rule, dubbed *Reversal* by Smiley. Where $s$ and $t$ can be either $\oplus$ or $\ominus$ and $^*$ is a function that yields the opposite of any sign, the principle is the following:

$$\frac{\Gamma, s_\alpha\langle\varphi\rangle \vdash t_\alpha\langle\psi\rangle}{\Gamma, t^*_\alpha\langle\psi\rangle \vdash s^*_\alpha\langle\varphi\rangle} \; \text{Reversal}$$

Reversal is a generalized contraposition principle. A key consequence having it as a structural rule is that it amounts to treating incompatibility as symmetric. Thus, if commitment to "*a* is red" precludes entitlement to "*a* is green," we'll also have that commitment to "*a* is green" precludes entitlement to "*a* is red."[20]

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[19]The Ketonen system of which this is a translation has the same rules as the system Negri and von Plato (2008) call "G3cp," but with the standard negation rules of LK. The equivalence of G3cp (with LK negation) and the bilateral calculus presented here is shown by providing a translation procedure for mapping unilateral multi-succident sequents to equivalence classes (under Reversal, Exchange, Contraction and Expansion) of bilateral single-succident sequents and an induction on proof height that shows that each step in one system corresponds to a step in the other (proof available upon request). Note also that, while our definition of the application of scorekeeping principles imposes MO and CT, the sequent calculus presented here, which is equivalent to G3cp with LK negation, needs neither MO nor CT to function (See Kaplan 2018, Hlobil 2018).

[20]The symmetry of incompatibility is presupposed by Brandom's (1994) definition of incompatibility. It is also explicitly assumed in incompatibility-based semantics for non-classical logics proposed by Restall (1999) and Berto (2015), though this assumption has been questioned by De and Omori (2018). I've argued elsewhere that we need not take this fact as simply primitive; we can actually give a pragmatic argument for why incompatibility *must* be symmetric.

With these rules, a speaker's basic set of scorekeeping principles, involving only logically simple moves, can be expanded to include principles of committive and preclusive consequence with respect to logically complex claims. The basic idea underlying this way of introducing logical vocabulary is that to grasp this bit of vocabulary—to understand conjunction, disjunction, and negation—is to grasp how making a move in which it is used situates a player in the game. Accordingly, we can model the meaning of this bit of vocabulary by way of a set of rules which enable a player to expand their scorekeeping principles such that we can specify the update that takes place when a move in which this vocabulary is used is made. To see how these rules work, let's consider an example. We should want our rules for logical operators to combine with our basic scorekeeping principles in such a way that, since commitment to "$a$ is blue" precludes entitlement to "$a$ is red," and commitment to "$a$ is green" precludes entitlement to "$a$ is red," we'll have that commitment to "$a$ is blue or $a$ is green" commits one to "$a$ is not red." We get this as follows:

$$\cfrac{\cfrac{\cfrac{\oplus\langle b\rangle \vdash \ominus\langle r\rangle}{\oplus\langle r\rangle \vdash \ominus\langle b\rangle}\ \text{RV} \qquad \cfrac{\oplus\langle g\rangle \vdash \ominus\langle r\rangle}{\oplus\langle r\rangle \vdash \ominus\langle g\rangle}\ \text{RV}}{\oplus\langle r\rangle \vdash \ominus\langle b\vee g\rangle}\ \ominus_{\vee}}{\cfrac{\oplus_{\alpha}\langle b\vee g\rangle \vdash \ominus\langle r\rangle}{\oplus_{\alpha}\langle b\vee g\rangle \vdash \oplus\langle\neg r\rangle}\ \oplus_{\neg}}\ \text{RV}}$$

In this way, scorekeeping principles relating logically complex sentences can be generated by rules that expand a set of scorekeeping principles relating atomic sentences. In this way, we can make sense of one's ability to grasp the updates imposed by a potentially infinite number of complex sentences on the basis of a finite amount of knowledge—knowledge of the scorekeeping principles relating atomic sentences and knowledge of the rules for generating scorekeeping principles relating logically complex sentences.

Finally, we can think of atomic scorekeeping principles as derived from scorekeeping principles relating predicate frames and rules for substituting singular terms

into those frames. First, we can think of scorekeeping principles on sentences like $\oplus_\alpha \langle a \text{ is red} \rangle \vdash \oplus_\alpha \langle a \text{ is colored} \rangle$ as resulting from the saturation with a singular term of a scorekeeping principle on predicate frames like $\oplus_\alpha \langle x \text{ is red} \rangle \vdash \oplus_\alpha \langle x \text{ is colored} \rangle$. To spell this out, let us suppose we can use a set of variables $x_1, x_2 \ldots x_k$, and we can think of the any variable $x_i$ as replaceable with a singular term by way of the following rule, where $\Phi_1, \Phi_2 \ldots \Phi_k$ and $\Psi$ are any predicative contexts (which may or may not contain variables) and $\tau$ is any singular term belonging to the language:

$$\frac{\Gamma, s_\alpha \langle \Phi_1(x_i) \rangle \ldots s_\alpha \langle \Phi_k(x_i) \rangle \vdash s_\alpha \langle \Psi(x_i) \rangle}{\Gamma, s_\alpha \langle \Phi_1(\tau) \rangle \ldots s_\alpha \langle \Phi_k(\tau) \rangle \vdash s_\alpha \langle \Psi(\tau) \rangle}$$

Thus, we have, for instance, the following double application of this rule, where $a$ and $b$ are singular terms of our language:

$$\frac{\dfrac{\oplus_\alpha \langle x_1 \text{ is red} \rangle, \oplus_\alpha \langle x_2 \text{ is pink} \rangle \vdash \oplus_\alpha \langle x_1 \text{ is darker than } x_2 \rangle}{\oplus_\alpha \langle a \text{ is red} \rangle, \oplus_\alpha \langle x_2 \text{ is pink} \rangle \vdash \oplus_\alpha \langle a \text{ is darker than } x_2 \rangle}}{\oplus_\alpha \langle a \text{ is red} \rangle, \oplus_\alpha \langle b \text{ is pink} \rangle \vdash \oplus_\alpha \langle a \text{ is darker than } b \rangle}$$

In this way, we can think of the semantic significance of predicates in terms of the rules governing sentence frames that can be saturated with any singular terms. The semantic significance of singular terms can be understood in terms of the way in which co-referential terms can be substituted in for one another. If $a$ and $b$ are taken to be co-referential, then, for any good inference in which $a$ figures in a certain spot, either in the premises or the conclusions, there will be a corresponding good inference in which $b$ figures in that spot. That is, we'll have the following rules:[21]

$$\frac{\Gamma, s_\alpha \langle \Phi(a) \rangle \vdash A}{\Gamma, s_\alpha \langle \Phi(b) \rangle \vdash A} \qquad\qquad \frac{\Gamma, s_\alpha \langle \Phi(b) \rangle \vdash A}{\Gamma, s_\alpha \langle \Phi(a) \rangle \vdash A}$$

Of course, this yields a very simple account of the meaning of proper names, a Millian one that does not take into account anything like Fregean sense, but since our main

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[21]Because $s$ is an arbitrary status, and we have Reversal, these rules also give us the rules where the relevant formulas occur in the conclusion.

concern here is with the meanings of predicates, it will do for our merely illustrative purposes.[22]

## 5   Worldly Contents as Shadows of Meanings

Of course, I've only laid out the very bare bones of a discursive role semantic framework, and much more work needs to be done to provide this sort of framework with the complexity it needs to offer illuminating analyses of the sort of linguistic phenomena puzzling semantic theorists today. For our purposes here, however, let us leave the formal apparatus where we've left it and turn back to the philosophical upshot of the fact that semantics can be done in this sort of framework at all. Discursive role semantics enables us to think about the meaning of a sentence directly in terms of what one *does* in uttering it, changing the discursive score in a particular way, without thinking of this change in score as mediated by something one *says*. Once we're able to think about meaning in this way, we are able to make sense of what is expressed by locutions traditionally understood as ascribing contents without any appeal to contents at all. For instance, we can think that the phrase "that $p$" in the sentence "$n$ says that $p$" not as picking out a propositional content to which $n$ stands in the saying relation, but, rather, as simply functioning to classify $n$'s saying as a distinctive sort of doing: a move that plays a distinctive role in the language game, committing one to certain moves, precluding one from being entitled to others, and so on.[23] The same goes for the phrase "that it is $F$" in the sentence "$n$ says of $a$ that it is $F$." We can think of this phrase not as functioning to pick out a property to which $n$ stands in the saying-of relation with $a$. Rather, once again, we can think of it as functioning to characterize what one is doing in uttering any sentence in which any singular term has been substituted

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[22]This way of representing the inferential significance of proper names follows the proposal of Tanter (2021). However, unlike the framework proposed by Tanter, this framework, due to its multiperspectival nature, is capable of accommodating Brandom's (1994) proposal for Fregean senses.

[23]See Simonelli (forthcoming) for a discussion of how this idea figures in Sellars's philosophy.

for "*a*." Performing any such act, for any singular term *x*, for instance, might commit one to "*x* is *G*," preclude one from being entitled to an "*x* is *H*," and so on. Explicit talk of "the property of being *F*," then, and its distinctive modal profile—its being instantiated by objects of certain sorts and its entailing and being incompatible with other properties—as a way conceptualizing the discursive role of the act of deploying the predicate "*F*," not in terms of its *intrinsic function as an act* but as *related* to a certain kind of *object*: a content.

Discursive role semantics thus enables us to spell out the Sellarsian account of the contents that are presupposed in the context of a standard semantic theory, things such as the property of being red, accounting for these contents as "shadows" of the rules governing the use of predicates such as "red." This account comes in two key ideas. The first key idea is that the way to say *what the property of being red is* is to articulate its modal profile. For instance, when asked what the property of being red is, we might say that it's a color property, one that something must instantiate if it instantiates the property of being scarlet and can't instantiate if it instantiates the property of being green; we might say that it's a property that's instantiated by stop signs, and ripe tomatoes but not unripe ones. We might say that it's an observable property, such that, if someone with color vision is looking at something red in good lighting, then they'll see that it's red. This, on the account proposed here, is all an articulation of the modal profile that defines what the property is. The second key idea, made possible by discursive role semantics, is that what one is doing in articulating the modal profile of the property of being red is expressing one's scorekeeping principles, which determine the discursive role of the predicate "red," principles like the following:[24]

$$\oplus_\alpha \langle x \text{ is red} \rangle \vdash \oplus_\alpha \langle x \text{ is colored} \rangle$$
$$\oplus_\alpha \langle x \text{ is red} \rangle \vdash \ominus_\alpha \langle x \text{ is green} \rangle$$
$$\oplus_\alpha \langle x \text{ is a stop sign} \rangle \vdash \oplus_\alpha \langle x \text{ is red} \rangle$$

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[24]Properly accommodating all of these principles requires modifications and extensions of the basic framework presented here. For some of the requisite modifications and extensions, see Simonelli (M.S.), Appendix.

$\oplus_\alpha\langle x \text{ is a tomato}\rangle, \oplus_\alpha\langle x \text{ is ripe}\rangle \vdash \oplus_\alpha\langle x \text{ is red}\rangle$

$\oplus_\alpha\langle x \text{ is red}\rangle, \oplus_\alpha\langle\text{The lighting is good}\rangle, \oplus_\alpha\langle x \text{ is in } n\text{'s line of sight}\rangle, \oplus_\alpha\langle n \text{ has color vision}\rangle \vdash$
$\oplus_\alpha\langle n \text{ sees that } x \text{ is red}\rangle$

And so on . . .

The property of being red, understood in terms of its modal profile, is nothing but a "shadow" of these principles: a reification, made conceptually articulate through the use of alethic modal vocabulary, of the norms governing the use of the predicate "red." Likewise for all the other properties that are grasped by competent speakers of a natural language. The task of accounting for properties then, is a concrete task for a linguistic theory: to account for these properties by articulating the scorekeeping principles of which they are a reification just is to provide the lexical semantics for that language.[25]

Properties, on this account, exist, but they exist only as conceptual reifications of the rules governing the use of linguistic expressions. As such, they can play no explanatory role in the context of an account of the fact that, for instance, saying "$x$ is red," for any singular term $x$, precludes one from being entitled to say "$x$ is green." In this way, the account of properties here constitutes an inversion of the order of explanation implicit in contemporary theorizing. On the standard order of explanation, what explains the fact that saying "$x$ is red" precludes one from being entitled to say "$a$ is green" is that it is impossible for something to instantiate both the property of being red and the property of being green, and so, if what one says in saying the first sentence is true, what one says in saying the second sentence must be false. On the order explanation proposed here, the fact that it is impossible for something to instantiate both the property of being red and the property of being green is simply a reflection of the fact that saying "$x$ is red," for any singular term $x$, precludes one from being entitled to say "$x$ is green." It is the norms of the discursive practice, what I've represented above in

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[25]See Partee (2005) for a way of spelling out formal lexical semantics, drawing from Carnap (1952), compatible with this idea.

terms of speakers' "scorekeeping principles," that are taken as primitive rather than derived from the truth-conditions of the sentences whose utterances they concern. The "world of contents," which determine the truth-conditions of sentences of a given langauge, is really nothing but shadow of the non-truth-conditional meanings of the sentences of that language.

On the picture proposed here, one is not aware of the world prior to one's learning a language. Prior to learning a language, one does not have the world in view so as to be able to conceptually grasp the things in it and match up those things with words one hears. That's the "Augustinian" picture of language, famously critiqued in Wittgenstein's *Philosophical Investigations*, which, despite the influence of Wittgenstein's work, remains the philosophical picture implicit in the vast majority of contemporary semantic theorizing. On the alternative picture proposed here, a speaker comes to have the world in view, being able to conceptually discern the things that constitute it, not *prior* to learning a first language, but *through* learning a first language. To learn a language is to be brought into a linguistic practice. When one first comes to follow the rules of scorekeeping that determine the discursive significance of the expressions of the language, one does not do so rationally, but *blindly.* Only through being brought into the linguistic practice initially blindly does one eventually get a grip on what one would be doing in uttering the various expressions belonging to that practice and only then does one come to have a grip on the conceptual contents conferred by that practice.

## 6   Conclusion

I've proposed a radical alternative to contemporary content-based semantics, a way of doing semantics without contents. Moreover, I've claimed that this way of doing semantics enables us to account for the contents that are presupposed by contemporary

semantics theories. I should conclude by being clear that I should not be read as dissuading working semanticists from doing what they do. Rather, I am offering a way of grounding this work. I see contemporary formal semantics, generally done in a framework of possible worlds, as a science that, with great success, formally specifies the contents that speakers grasp in grasping the rules governing the use of linguistic expressions. This task, however, ought to be seen as an *elucidatory* one rather than an *explanatory* one.[26] Content-based semantics *elucidates* the contents that speakers grasp, but it offers no *explanation* of *what* these contents are or *how* speakers come to grasp them. Discursive role semantics, on the other hand, gives an account of those contents in terms of rules governing the use of linguistic expressions. Of course, to give a proper account of the rules themselves, much work needs to be done. For instance, giving a proper account of the rule that commitment to "*a* is red" precludes entitlement to "*a* is green" is going to involve an account of the sensory states that prompt usages of "red" and "green," to which speakers are conditioned to respond in learning the language, which exclude one another and more generally, stand in relations of exclusion and inclusion with other states belonging to the same quality space that systematically correspond to the relations of preclusive and committive consequence that other color words bear to one another.[27] Discursive role semantics is just one aspect of a full account of conceptual understanding, but it is a necessary one in getting semantics on the firm ground of natural science.

# References

[1] Adams, Robert. 1974. "Theories of Actuality." *Nous* 8, no. 3: 211-231.

[2] Armstrong, D. M. 1989. *Universals: An Opinionated Introduction*. Westview Press.

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[26]For a fuller spelling out of this distinction, see Simonelli M.S., Chapter One.

[27]This is Sellars's (1956, 1968) view, and he saw it as a necessary complement to his functional role semantics. For a contemporary Sellarsian account along these lines, see Berger (2015, 2021).

[3] Belnap, Nuel. 1990. "Declaratives Are Not Enough." *Philosophical Studies* 59, no. 1: 1-30.

[4] Berger, Jacob. 2015. "The Sensory Content of Perceptual Experience." *Pacific Philosophical Quarterly* 96: 446-468.

[5] Berger, Jacob. 2021. "Quality-Space Functionalism about Color." *Journal of Philosophy* 118, no. 3:138-164.

[6] Berto, Francesco. 2015. "A Modality Called 'Negation'." *Mind* 124, no. 495: 761-793.

[7] Brandom, Robert. 1994. *Making It Explicit.* Cambridge, MA: Harvard University Press.

[8] Brandom, Robert. 2008. *Between Saying and Doing.* Oxford: Oxford University Press.

[9] Brandom, Robert. 2010. "Response to Rebecca Kukla and Mark Lance." In *Reading Brandom: On Making It Explicit*, ed. by J. Wanderer and B. Weis. New York: Rutledge.

[10] Brandom, Robert. 2018. "From Logical Expressivism to Expressivists Logics: Sketch of a Program and Some Implementations." In *From Rules to Meanings: New Essays on Inferentialism*, ed. O. Beran, V. Kolman, and L. Koren, 151-164. New York: Routledge.

[11] Carnap, Rudolph. 1947. *Meaning and Necessity.* Chicago: University of Chicago Press.

[12] Carnap, Rudolph. 1952. "Meaning Postulates." *Philosophical Studies* 3, no. 5 (October): 65-73.

[13] Chierchia, Gennarro and Sally McConnell-Ginnet. 1990. *Meaning and Grammar: An Introduction to Semantics*. Cambridge, MA: MIT Press.

[14] Colyvan, Mark. 2019. "Indispensibility Arguments in the Philosophy of Mathematics." *Stanford Encyclopedia of Philosophy*.

[15] Dever, Josh. 2012. "Formal Semantics." In *The Continuum Companion to the Philosophy of Language*, edited by Manuel García-Carpintero and Max Kölbel. Continuum International.

[16] Dowty, David, Robert Wall, and Stanley E. Peters. 1981. *Introduction to Montague Semantics.* Reidel.

[17] Egan, Andy. 2004. "Second-Order Predication and the Metaphysics of Properties." *Australasian Journal of Philosophy* 82, no. 1: 48-66.

[18] Field, Hartry. 1980. *Science without Numbers*. Princeton: Princeton University Press.

[19] Fine, Kit. 2017. "Truthmaker Semantics." In *A Companion to the Philosophy of Language: Second Edition*, ed. B. Hale, C. Wright, and A. Miller, 556-577. John Wiley & Sons.

[20] Francez, Nasim. 2015. *Proof-Theoretic Semantics*. College Publications.

[21] Hintikka, Jaakko. 1975. *The Intentions of Intentionality and Other New Models for Modalities*. Reidel.

[22] Hlobil, Ulf. 2016. "A Nonmonotonic Sequent Calculus for Inferentialist Expressivists." In *The Logica Yearbook 2015*, ed. P. Arazim and M. Dančák, 87-105. London: College Publications.

[23] Hlobil, Ulf. 2018. "Choosing Your Nonmonotonic Logic: A Shopper's Guide." In *The Logica Yearbook 2017*, ed. P. Arazim and T. Lávička, 109-123. London: College Publications.

[24] Hlobil, Ulf. 2021. "Bilateralist Truth-Maker Semantics for ST and Related Logics." Presentation at UConn Logic Colloquium. Available at: https://www.youtube.com/watch?v=YIf1BWR64Ps&ab_channel=UConnLogicGroup.

[25] Kaplan, Daniel. 2018. "A Multi-Succident Sequent Calculus for Logical Expressivists." In *The Logica Yearbook 2017*, ed. P. Arazim and T. Lákiva, 139-154. London: College Publications.

[26] Kearns, Kate. 2011. *Semantics: Second Edition*. New York: Palgrave Macmillan.

[27] King, Jeff. 2001. *Complex Demonstratives.* Cambridge, MA: The MIT Press.

[28] King, Jeff. 2007. "What in the World Are the Ways Things Might Have Been?" *Philosophical Studies* 133, no. 3 (April): 443-453.

[29] King, Jeff. 2018. "W(h)ither Semantics! (?)" *Nous* 54, no. 4: 772-795.

[30] Kraut, Robert. 2010. "Universals, Metaphysical Explanations, and Pragmatism." *The Journal of Philosophy* 107, no. 11: 590-609.

[31] Kukla, Rebecca and Mark Lance. 2009. *'Yo!' and 'Lo!'*. Cambridge, MA: Harvard University Press.

[32] Kukla, Rebecca and Mark Lance. 2010. "Perception, Language, and the First-Person." In *Reading Brandom*, ed. J. Wanderer and B. Wiess, 115-128. New York: Routledge.

[33] Kukla, Rebecca, Mark Lance, and Greg Restall. 2009. "Appendix: Toward a Formal Pragmatics of Normative Statuses." *'Yo!' and 'Lo!'*, 217-234. Cambridge, MA: Harvard University Press.

[34] Lewis, David. 1973. *Counterfactuals*. Basil Blackwell.

[35] Lewis, David. 1986. *On the Plurality of Worlds*. Wiley Blackwell.

[36] Löbner, Sebastian. 2002. *Understanding Semantics*. Abington: Routledge.

[37] Milson, Jared. 2014. "Queries and Assertions in Minimally Discursive Practices." *Proceedings of the Society for the Study of Artificial Intelligence and the Simulation of Behavior.* Goldsmiths Press.

[38] Negri, Sara and Jan von Plato. 2008. *Structural Proof Theory*. Cambridge: Cambridge University Press.

[39] Nickel, Bernhard. 2013. "Dynamics, Brandom-Style." *Philosophical Studies*, 162 (2), 333-354.

[40] Partee, Barbara. 1988. "Possible Worlds in Model Theoretic Semantics," in *Possible Worlds in Humanities, Arts, and Sciences*, 93-123. Berlin: De Gruyter.

[41] Partee, Barbara. 2005. "Meaning Postulates and the Lexicon." Lecture 5 notes for *Topics in Formal Semantics*.

[42] Partee, Barbara and Mats Rooth. 1983. "Generalized Conjunction and Type Ambiguity." In *Meaning, Use and Interpretation of Language*, ed. R. Bäuerle, C. Schwarze, and A. von Stechow, 361-383. Berlin: De Gruyter.

[43] Plantinga, Alvin. 1976. "Actualism and Possible Worlds." *Theoria* 42: 139-160.

[44] Portner, Paul. 2005. *What Is Meaning?* Blackwell.

[45] Restall, Greg. 1999. "Negation in Relevant Logics." In *What Is Negation?*, ed. D. M. Gabbay and H. Wansing, 53-76. Dordrecht: Springer.

[46] Restall, Greg. 2005. "Multiple Conclusions." In *Logic, Methodology and Philosophy of Science*, ed. P. Hájek, L. Valdés-Villanueva and D. Westerstahl. College Publications.

[47] Rumfitt, Ian. 2000. "Yes and No." *Mind* 109, no. 436: 781-823.

[48] Sellars, Wilfrid. 1953. "Inference and Meaning." *Mind* 62, no. 247: 313-338.

[49] Sellars, Wilfrid. 1954. "Some Reflections on Language Games." *Philosophy of Science* 21, no. 3: 204-228.

[50] Sellars, Wilfrid. 1963. "Abstract Entities." *The Review of Metaphysics* 16, no. 4: 627-671.

[51] Sellars, Wilfrid. 1956. " Empiricism and the Philosophy of Mind." *Minnesota Studies in the Philosophy of Science* 1:253-329.

[52] Sellars, Wilfrid. 1968. *Science and Metaphysics*. London: Routledge & Keegan Paul.

[53] Sellars, Wilfrid. 1974. "Meaning as Functional Classification." *Synthese* 27, no. 3-4: 417-437.

[54] Sellars, Wilfrid. 1979. *Naturalism and Ontology*. Atascadero: Ridgeview Publishing.

[55] Simonelli, Ryan. 2020. "The Normative/Agentive Correspondence." *Journal of Transcendental Philosophy*.

[56] Simonelli, Ryan. Forthcoming. "Sellars's Ontological Nominalism." *European Journal of Philosophy*. Available at ryansimonelli.com/papers.

[57] Simonelli, Ryan. M.S.a. *Meaning and the World*. Dissertation: University of Chicago. Chapters One, Two, Three and Appendix available at ryansimonelli.com/dissertation.

[58] Simonelli, Ryan. M.S.b. "Considering the Exceptions." Available at ryansimonelli.com/papers.

[59] Smiley, Timothy. 1996. "Rejection." *Analysis* 56, no. 1: 1-9.

[60] Soames, Scott. 2010. *Philosophy of Language*. Princeton: Princeton University Press.

[61] Soames, Scott. 2015. "Reply to Peter Hanks and Ray Buchanon." APA Session on *New Thinking about Propositions*, St. Lous Missouri.

[62] Soames, Scott. 2019. *The World Philosophy Made.* Princeton: Princeton University Press.

[63] Stalnaker, Robert. 1978. "Assertion." *Syntax and Semantics* 9: 315-332. Reprinted in Stalnaker, Robert. 1999. *Context and Content*, 78-95.

[64] Stalnaker, Robert. 1984. *Inquiry*. Cambridge, MA: MIT Press.

[65] Tanter, Kai. 2021. "Subatomic Inferences: an Inferentialist Semantics for Atomics, Predicates, and Names." *Review of Symbolic Logic.*

[66] Thomason, Richard. 1974. "Introduction." In *Formal Philosophy: The Selected Papers of Richard Montague*, edited by Richard Thomason, 1-69. New Haven: Yale University Press.

[67] Veltman, Frank. 1996. "Defaults in Update Semantics." *Journal of Philosophical Logic*, 25, 221-261.

[68] Willer, Malte. 2013. "Dynamics of Epistemic Modality." *Philosophical Review*, 122 (1), 45-92.

[69] Wittgenstein, Ludwig. 1953/1958. *Philosophical Investigations*, trans. G. E. M. Anscombe. Oxford: Basil Blackwell.

[70] Yalcin, Seth. 2014. "Semantics and Metasemantics in the Context of Generative Grammar." In *Metasemantics: New Essays on the Foundations of Meaning*, edited by Alexis Burgess and Brett Sherman, 17-54. Oxford: Oxford University Press.

[71] Yalcin, Seth. 2018. "Semantics as Model-Based Science." In *The Science of Meaning: Essays on the Metatheory of Natural Language Semantics*, edited by Derek Ball and Brian Rabern, 334-360. Oxford: Oxford University Press.