

Predication as Ascription

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I articulate and defend a necessary and sufficient condition for predication. The condition is that a term or term-occurrence stands in the relation of ascription to its designatum, ascription being a fundamental semantic relation that differs from reference. This view has dramatically different semantic consequences from its alternatives. After outlining the alternatives, I draw out these consequences and show how they favour the ascription view. I then develop the view and elicit a number of its virtues.

1. Introduction

I will advance a theory of what the meanings of all predicates have in common. On the view, what predicates have in common is a way of designating.¹ In slogan form: what is special about predicates is not *what* they designate, but, rather, *how* they designate. Just as proper names designate by referring, predicates designate by ascribing. This is not the only possible view: I will soon sketch two others. It is also not particularly popular, despite some recent quasi-exceptions.²

I begin by populating logical space (Sect. 2). I compare the ascription view to two other views, each of which is motivated by its purportedly unique ability to solve a classic philosophical problem. I then motivate the ascription view by showing that, of the three views under consideration, it is the only view that allows us to adequately account for several natural language phenomena (Sect. 3). With the view motivated, I turn to explicating the ascription relation (Sect. 4). Ascription, I claim, is distinguished from reference in two ways. First, ascription is triadic. A predicate does not merely ascribe a property: it ascribes a property *to something*. Second, ascription is constrained. While any extant entity can be referred to, only a subset can be ascribed. Having

¹ Following Kripke, I use 'designate' as a catch-all term for whatever semantic relation a term bears to its worldly correlate.

² Both Wright (1998) and Burge (2007) suggest such a view on behalf of Frege though neither goes so far as to endorse the view *simpliciter*.

explained and motivated these features I show how they can be used to dispel the philosophical problems that motivated the view's competitors. I conclude by briefly considering Russell's paradox (Sect. 5).

A cautionary note: for the sake of the discussion I will set aside views on which logical form deviates greatly from surface structure. For example, I will not work with neo-Davidsonian forms as championed by, for example, Parsons (1990) and Landman (2001). However, generalizing my arguments to cover such views is fairly straightforward.³

2. Three views

The three views I consider purport to identify essential features of predication. Before presenting them, it is important to note that predication is plausibly multifarious. Words themselves are thought to be predicates, as are their occurrences.⁴ For instance, the word 'swims' is thought to be predicative and its occurrences in particular sentences may also be predicative. The relationship between words and their occurrences is complicated. In my initial presentation of the views, I will largely set aside these complications by treating words and their occurrences simultaneously. However, as will become clear in my critical discussion, properly treating both words and their occurrences requires more subtlety.

We also commonly speak of people as predicating. For instance, I may predicate wisdom of Frege by uttering a sentence that expresses the proposition that Frege is wise. Predicational acts are surely related in systematic ways to the syntax and semantics of predication. It could even be that the latter is sourced in the former. For the most part, I will set aside predicational acts. I am assuming that there are substantial things we can say about the semantics of predicates, which

³ As will become clear, the only crucial assumption is that there are genuine non-predicates and genuine predicates that stand in intimate semantic relations. These pairs could, for my purposes, exist in the metalanguage in which we give neo-Davidsonian logical forms, rather than natural language. (Here I run up against complicated issues regarding the interpretation of neo-Davidsonian views. For instance, one could either regard names as predicates of events, or as directly referential terms which are parts of predicates that are contributed by other aspects of a phrase.)

⁴ I will be careful to distinguish words from their occurrences, as well as their physical inscriptions. Just as a single word may have many occurrences, a single occurrence may have many inscriptions. Also, a single inscription may be multiple words or occurrences. See Johnston 2006 for an example, as well as Wetzel 2009 for general arguments that we need to distinguish occurrences from inscriptions.

I take to be a class of linguistic items. Relating these semantic theses to predicational acts is a distinct project.⁵

2.1 *The entity view*

Famously, Frege claimed that predicates and non-predicates designate disjoint classes of entities. In Frege's terms, predicates designate concepts, which are incomplete and unsaturated, while non-predicates designate objects, which are complete and saturated. Frege's views on predication are rich and complicated, so I will set aside Frege interpretation and focus on the view of predication suggested by his concept/object distinction.⁶ The suggested view, which I will call 'the entity view', is that predicates are distinguished by the type of entity they designate. On the entity view, there is a certain type of entity such that it is necessary and sufficient for a term or term-occurrence to be a predicate that the term, or term-occurrence, designates an entity of that type. Following Frege, I will label this type 'concepts', though the label should be understood as a mere placeholder, rather than carrying Frege's specific ontological commitments. The positive portion of the entity view is that concept designation is necessary and sufficient for predication. The negative portion is that nothing else is. In particular there is no special relation that suffices for predication. This is included to distinguish the entity view from its competitors. Here, then, is the official statement of the view.

The entity view: It is necessary and sufficient for a term or a term-occurrence to be a semantic predicate that the term or term-occurrence designates a concept. There is no relation such that a term's or term-occurrence's standing in that relation suffices for it to be a predicate.⁷

⁵ Recently, Soames (2010) and Hanks (2011) have given accounts of propositions which rely heavily on the nature of predicational acts. In this way, they link semantics with predicational acts. However, neither is focused squarely on the distinctive semantic contribution of predicates.

⁶ The main complication is that, as noted in Furth 1968, Dummett 1973, Wright 1998, Oliver 2005, and Burge 2007, Frege's views commit him to the claim that predicates bear a different relation to their designata than non-predicates. In this way, Frege's view is a combination of (the positive parts) of the entity view and the ascription view.

⁷ This is not quite precise enough. Given the class of concepts, we can define a relation—call it 'concept-designation'—such that a term stands in that relation to its designation just in case the designation is a concept. Standing in the concept-designation relation will then, on the entity view, be necessary and sufficient for predication. I mean to exclude concept designation by considering only objects and relations that are semantically crucial in the sense that

The entity view may seem relatively unmotivated, especially in the absence of a metaphysical theory about the nature of concepts. This appearance is deceiving, as the entity view follows from three natural assumptions. The first assumption is optimism about characterizing predicates semantically. This amounts to the claim that there is a semantic feature shared by all and only predicates. While not a foregone conclusion, optimism is plausible and widely assumed. The second assumption is that predicates designate. There are a multitude of ways to defend this view and I will not yet linger on any particular one. Among them are the desire to account for quantification into predicate position, as well as certain types of nominalization and anaphora. The third assumption is that a meaningful term's semantics is fully captured by the extra-semantic entities with which it is correlated. On a non-Fregean view, there will be only one such entity: the term's designation. On a Fregean view, there will be two: sense and designation. The number does not matter, what matters is that a term's semantic association with these entities provides an exhaustive account of that term's semantic properties. I will set aside complications due to sense and focus solely on designation.⁸ The third assumption has quite a bit of intuitive pull. One standard method of constructing a semantic theory is to identify a designation for each term and then specify some general rules of composition. On such a picture, it is hard to see how a term's semantics could go beyond its designation. Though I will argue that the third assumption is false, I admit that it is *prima facie* appealing. These three assumptions jointly entail the entity view: if designation exhausts meaning, predicates denote, and predicates differ in meaning from non-predicates, then we must appeal to types of entity designated to distinguish them.

Aside from being motivated by natural assumptions, the entity view has been motivated by its purportedly unique ability to account for the unity of the proposition. Roughly, and I will later be more precise, the challenge is to identify the feature that unifies the constituents of a proposition. Just as some pieces of wood fail to compose a table if improperly arranged or of the wrong character, some entities fail

standard referential semantic theories must utilize them. I take it that, on the entity view, concepts are semantically crucial and concept-designation is derivative.

⁸ This is a fair assumption because, for Frege, any ontological facts at the level of designation are mirrored at the level of sense. Thus the additional complexity of a sense theory will not carry with it any advantages for dealing with the constructions considered in Sect. 3.

to compose a proposition if they are improperly arranged or of the wrong character. For instance, there is no proposition that is solely constituted by Mitt Romney and Barack Obama. Frege (1892) claims that a view which recognizes a distinctive class of predicate designata, such as the entity view, gives us the tools to meet the challenge. Here is a classic quotation: ‘not all parts of a thought can be complete; at least one must be unsaturated or predicative; otherwise they would not hold together’ (1892, p. 193). The idea is that the distinctive ontological status of the predicate’s designation (or in Frege’s case, its sense) explains how it is that propositions (or in Frege’s case, thoughts) are unified.⁹ For now, it is sufficient to note that, historically, this is one reason for recognizing a distinctive ontology for predicate designata. In section 4.4, I will discuss the issue in greater detail.

It may be useful to compare the entity view to the view of Russell (1903). According to Russell, there is no type of entity such that designation of that type is necessary and sufficient for a term to function as a predicate. Rather, relations could be designated in two different ways—hence the famous ‘twofold nature of the verb’—either as relating or not. The problem for Russell, then, is that in false sentences the verb still must be interpreted as relating. However, this would seem to render false sentences true. The inability to account for falsity led Russell to later abandon the theory in favour of his multiple relation theory of judgement. However, we may reasonably ask ourselves whether there is another role for predicates that would allow us to account for falsity, while preserving the intuition that predicates can co-designate with non-predicates. The ascription view, which I will explain next, attempts to identify just such a role.

2.2 *The ascription view*

According to the entity view, what is special about predication is the type of entity designated. The view I will defend differs in that the conditions which give rise to predication lie not in the *type of entity* designated by a predicate but, rather, in the *nature of the relation*

⁹ Davidson 2004, King 2007 and 2009, Burge 2007, Gaskin 2008, Schnieder 2010b, and Soames 2010 contain discussions of the issue. An important theme running through these discussions is that there are a number of related questions involving sentences, propositions, and representation, which have some claim to be called unity problems.

between a predicate and its designation.¹⁰ Following Wright (1998), I will call this ‘the ascription view’.¹¹

The ascription view: There is a relation, ascription, such that it is both necessary and sufficient for a term or a term-occurrence to be a semantic predicate that it bears the ascription relation to its designation. There does not exist any type of designated entity that suffices for a term or term-occurrence to be a semantic predicate.

The ascription view has not had many recent defenders. The bulk of this paper will be dedicated to motivating and developing the view. At the very least I hope to show that the ascription view is promising and that it has several advantages over the other views. At the most I hope to win some converts. To preview, the primary motivation that I give for the ascription view is that, in contrast with its competitors, it allows us to give a satisfactory semantics for several natural language phenomena.

2.3 *The mapping view*

On both the entity and ascription view, predicate designata play a key role in the semantics of predication.¹² However, there are theorists who think that we need not countenance predicate designata in order to give an account of predication.¹³

One of Davidson’s primary motivations for pursuing such a view is that he thinks that any view on which predicate designation plays a

¹⁰ Most prominently, this view has been suggested in Furth 1968, Wright 1998, and Burge 2007 on behalf of Frege, though congenial views are found in Russell 1903, Dummett 1973, and Strawson 1959 and 1974.

¹¹ Much of the discussion of the ascription view has occurred in the context of discussing Frege’s views. This is because Frege was committed to the view that there are different relations that obtain between singular terms and their referents than obtain between predicates and their referents. This commitment arises from the fact that a singular term bears an object/object relation to its referent while a predicate bears an object/concept relation to its referent. Since these relations relate different types, they must be distinct. Discussing the entity and ascription view in the context of Frege is, then, much more complicated than I have made it seem. Since I do not aim to discuss Frege’s actual views at all in this paper I will ignore these issues.

¹² Note, though, that both views are silent about the nature of predicate designata.

¹³ Van Cleve 1994 and Davidson 2004 contain arguments for the stronger claim that countenancing a class of predicate designata actually prevents us from giving an adequate account of predication (at least in so far as these predicate designata play a role in determining truth-conditions). I criticize Davidson in Sect. 4.4.

key role in determining truth-conditions will be subject to a vicious regress.¹⁴ Here is one of many representative passages:

we might assign Theaetetus to 'Theaetetus' and the property of flying to 'flies' in the sentence 'Theaetetus flies'. The problem then arises how the meaning of the sentence is generated from these meanings. Viewing concatenation as a significant piece of syntax, we may assign to it the relation of participating in or instantiating; however, it is obvious that we then have the start of an infinite regress. Frege sought to avoid the regress by saying that entities corresponding to predicates (for example) are 'unsaturated' or 'incomplete' in contrast to the entities that correspond to names, but this doctrine seems to label a difficulty rather than solve it. (1967, p. 17)

Roughly, and, as with the unity of the proposition, I will later be more precise, the alleged regress proceeds as follows. Any assignment of designata to predicates generates the problem of linking predicate designata with non-predicate designata. The obvious solution is to introduce another entity, the instantiation relation, to do the trick. The problem is that we now must link the instantiation relation with the predicate and non-predicate designata. The solution, it is thought, is to introduce another entity, and so on *ad infinitum*.

Davidson's particular theory is tied to his views about the proper form of a semantic theory. For a given language L, a truth theory that meets proper constraints, according to Davidson, can serve as a meaning theory for L. Furthermore, we need not give a truth theory for a language by assigning designata to the predicates of that language. Rather, we can give axioms which allow us to derive the truth-conditions of particular sentences of the language, and these axioms need not make any reference to predicate designata. For instance we can capture the semantics of 'wise' as follows: 'X is wise' is true just in case the referent of X is wise.¹⁵

This is barely a sketch. The view gets much more complicated when we try to account for quantification, context sensitivity, and all sorts of

¹⁴ Davidson repeats this type of reasoning a number of times in his 2004. For some recent critical comments, see Burge 2007; for some recent sympathetic comments see Lepore and Ludwig 2005 and 2007.

¹⁵ Already here I am omitting complications. For instance, the axioms for predicates are usually given in a metalanguage and contain quantification over interpretation functions. Including these complications would needlessly muddy the waters for the sake of this discussion.

other phenomena.¹⁶ The idea, though, is that the contribution of a predicate is completely captured by giving its role in determining the truth-value of the sentences in which it occurs. That role, in turn, is captured by the axioms which we can use to match sentences with their truth-conditions. For each type of semantic contribution there will be a corresponding class of axioms. For instance, all axioms that specify the contribution of monadic predicates will be similar to the one that I gave above for 'is wise'. To capture what all predicates have in common, we will identify the feature that all predicate axioms have in common. I suggest that we do this by identifying the common feature that all predicates, on the theory, bear to their arguments. In particular, every predicate 'P' is true of its argument R just in case R is P.¹⁷ I will use the term 'mapping' to name this relation.¹⁸ The name is appropriate because we may think of the axioms as specifying the way in which predicates map their arguments to truth-values. It should be stressed that, for the envisioned Davidsonian theorist, the mapping relation is merely the relation that a predicate stands in to its arguments, as determined by the relevant axioms. This relation is not the meaning or designation of any component of the sentence, lest the Davidsonian be forced back into a regress. Here is the official statement of the mapping view.

The mapping view: There is a relation, truth-value mapping, such that it is both a necessary and sufficient condition for a term or a term-occurrence to be a semantic predicate that it contributes to the meaning of sentences by bearing the mapping relation to its argument.¹⁹

¹⁶ Larson and Segal 1995 and Lepore and Ludwig 2007 contain Davidsonian meaning theories for fragments of English. There are substantial differences between the theories, see Lepore and Ludwig 2007 for a comparison.

¹⁷ A terminological note: I use 'argument term' to designate the term (linguistic item) with which a predicate combines. I use 'argument' to designate the designation of an argument term. So, in 'Frege is wise', 'Frege' is the argument term of 'wise', and Frege is the argument of 'wise'.

¹⁸ I suspect that Davidson, or at least Lepore and Ludwig, will regard 'the mapping relation' as a mere *façon de parler*, derivative on the existence of an equivalence class of axioms. They make a similar move with regard to logical forms in their 2002 and 2007.

¹⁹ It might seem bizarre to speak of a term (as opposed to its occurrences) as bearing the mapping relation to arguments. After all, it seems like it is term-occurrences that have arguments rather than terms themselves. This strangeness is dissolved when we take meaning specification for terms to generalize over their occurrences. In this case the argument place is simply saturated by a quantifier. According to these generalizations, predicative terms are such that their occurrences generally bear the mapping relation to their arguments.

2.4 Connections

Proponents of the three views agree about one thing: that informative necessary and sufficient conditions for predication can be given. This is controversial. A sceptic about the semantics of predication thinks that the best we can do is make some syntactic and/or pragmatic generalizations about predication, but such generalizations are semantically impotent. Similarly, a sceptic may insist that specification of the truth-conditional contribution of each *particular* predicate is the most that we can informatively say about predication: there is no single informative generalization about terms that function as predicates. Ultimately, the best way to rebut such sceptical views is to provide a promising substantive view. I aim to accomplish this.

At bottom, the three views reflect three very different ways of thinking about predication. Just what is it that underlies the predicative nature of a particular term? Each view gives its own answer: the ontological status of that term's designation, the relation to that term's designation, or the relation that the term bears to its arguments.²⁰

3. Motivating the ascription view

These three views on predication have hugely different consequences. The most famous consequence of the entity view is that it leads to expressibility problems. This is brought out in Frege's discussion of the concept *horse*. In addition to discussing expressibility problems, I will argue that the entity and mapping views prevent us from giving plausible accounts of predicate nominalization and anaphora, as well as terms that have both predicate and non-predicate occurrences. The ascription view, I will show, can handle these constructions without much trouble. In sections 3.1 to 3.4, I will introduce the issues and explain why the other views run into trouble. After the issues are

²⁰ There is a fourth view worth mentioning: the view on which predicates are assigned multiple designata. Boolos (1985) called this theory 'nominalist platonism' because it is Platonistic in the sense that predicates are assigned designata, but nominalistic in the sense that those designata are exactly those entities that the predicates are true of, rather than being anything additional. Since such a view assigns designata to predicates, it will not escape regress worries. This view does not fit neatly into our logical landscape and exactly where it fits would be determined by the way in which it is developed. On one development of the view, predicates bear the same relation to their designata that non-predicates bear to theirs. Since non-predicates can also refer to multiple things, this would amount to a sceptical view on which there is no semantic feature unique to predicates. On another development of the view, predicates bear a different relation to their designata than non-predicates bear to theirs. This would amount to a version of the ascription view.

on the table I will critically discuss, in sections 3.5 and 3.6, escape routes for the proponents of the entity and mapping views.

3.1 Nominalization

English predicates have what we intuitively think of as counterparts that occupy non-predicate positions. These come in fairly natural classes.²¹ The first class is *property names*. This class consists of names that intuitively refer to those same properties that are designated by their predicate counterparts. ‘Wisdom’, for instance, seems to refer to the property that is designated by ‘wise’. The second class is *gerunds*. ‘Swimming’, for instance, appears to name the kind of activity that is designated by the predicate ‘swims’.²² The third class is *infinitives*.²³ ‘To swim’ appears, again, to name the kind of activity that ‘swims’ designates.²⁴

I will use the term ‘predicate nominalization’ to designate expressions that intuitively refer to the designata of their corresponding predicates.²⁵ There are three desiderata on a semantics of predicate nominalizations. The first is to account for our intuition that predicate nominalizations refer to the very same things designated by their

²¹ My list of types of nominalization has no pretensions to exhaustiveness. Descriptions and ‘that’-clauses may also sometimes function as predicate nominalizations, see Schnieder 2007 and Strawson 1974.

²² Not all gerunds seem to designate properties. For instance, ‘John’s swimming of Lake Cayuga’ seems to designate an event. I will focus solely on the gerunds that seem to co-designate with predicates.

²³ I am going to ignore the potential complications due to the fact that infinitives are often thought to combine with the covert subject PRO. I have two reasons for ignoring these complications: (1) the main motivations for the view apply only to infinitival complements and not infinitives in subject position, which are the only ones that I consider, and (2) even if the complications weaken my arguments, they do not affect the arguments from property names or gerunds. Also, see Culicover and Jackendoff 2006 for an anti-PRO view.

²⁴ Chierchia (1982 and 1984) discusses infinitives and gerunds in great detail. My discussions of infinitives and gerunds are highly inspired by his, though I do not think that his positive view is adequate. In essence, Chierchia gives a version of what I call ‘the proxy view’, which I criticize below.

²⁵ I am assuming that each member of a ‘family’ of nominalizations (for example ‘wisdom’, ‘being wise’, ‘to be wise’) co-designate. This has been disputed by Moltmann (2004 and 2005) and defended by Schnieder (2007). My assumption is inessential. For my arguments to work, all that is needed is that *some* nominalizations bear the supposed relationship to their predicate counterparts.

predicate counterparts. The second and third can be seen by considering the following two sets of sentences:

- (1) Frege is wise
- (2) Wisdom is a property of Frege
- (3) John is hula-hooping
- (4) Hula-hooping is a fad
- (5) Therefore, John is engaged in/participating in a fad

(1) and (2) display the intimate connections that predicate nominalizations bear to their corresponding predicates. Most speakers have the intuition that (1) and (2) are mutually entailing. In fact, moving from one to the other seems to many to be purely stylistic. Those with an antecedent commitment to nominalism may balk at the inference from (1) to (2). (Though many nominalists accept the inference and attempt to give nominalistically acceptable paraphrases.) Their hesitation, however, will be the result of theoretical commitments, rather than linguistic intuitions. What I want to focus on is the fact that movement between (1) and (2) seems freely allowed by ordinary English speakers who have no metaphysical axes to grind. I take it that it is a point in favour of a semantic theory if it can explain this intuition. After all, even if nominalism were true, the nominalist would face the task of explaining away these intuitions. Thus, the second desideratum on an account of predicate nominalizations is that it accounts for intimate (plausibly analytic) connections between sentences such as (1) and (2).

In addition to the denial of the inference from (1) to (2), some nominalists will deny that property names, such as 'wisdom', refer. This move may not look particularly desperate, since sentences like (2) are, it may be thought, inessential to our expressive power: the information communicated by using such sentences could plausibly be communicated by using other sentences, for example (1).²⁶ Such a move, however, looks implausible when we consider other types of predicate nominalizations. The connection between (3) and (4) seems

²⁶ This claim actually seems suspect, though I am willing to grant it to the nominalist for the sake of discussion. The reason the claim is suspect is that there is plausibly extra-semantic information conveyed by an utterance of (2) that is not conveyed by (1), e.g. information about the discourse topic. This can remain the case even if (1) and (2) express the same proposition. (Even the claim that (1) and (2) express the same proposition is doubtful.)

to lie solely in their shared gerund: 'hula-hooping'.²⁷ In (3) 'hula-hooping' appears to be a predicate, and in (4), it appears to be a non-predicate.²⁸ (4), unlike (2), does not seem inessential to our expressive capacities: it is hard to know how we could express the same proposition, or even one nearby enough for our communicative purposes, by using a different sentence. Rejection of the truth of (4) in order to defend nominalism will, for this reason, look unpromising. Once we accept the truth of (3) and (4) we can see that (5) follows. This can only be accounted for if there is a tight connection between the occurrences of 'hula-hooping' in (3) and (4). The third desideratum on an account of predicate nominalizations is that it accounts for arguments such as the one from (3) and (4) to (5). In such arguments, premisses are linked only by a predicate and its corresponding nominalization.

The easiest way to deal with such constructions is to claim that the predicate nominalization and its corresponding predicate designate the *very same thing*. A proponent of the ascription view can do just this. She can claim that 'wise' in (1) *ascribes* the property of being wise to Frege, the very property which is *referred to* by 'wisdom' in (2). The relationship between (1) and (2) is, then, easy enough to explain. According to the ascription theory, for (1) to be true, Frege must instantiate wisdom. A sentence expressing this proposition entails (plausibly analytically) (2).²⁹ Similar remarks hold for (3), (4), and (5). We can assume that 'hula-hooping' in (3) ascribes a kind of activity to John and this kind of activity is named by 'hula-hooping' in (4). Since the predicate nominalization in (4) names the very same thing that is ascribed in (3), we can conclude (5).

More generally, the proponent of the ascription view sees nominalization as *relation swapping*. A predicate bears the ascription relation

²⁷ Strictly speaking 'hula-hooping' is a present participle in (3). I will follow many in using 'gerund' to denote both present participles and gerunds. Whether 'hula-hooping' is a gerund in (3) does not really matter for my purposes. All that matters is that it bears systematic connections to the occurrence of 'hula-hooping' in (4).

²⁸ One may doubt that 'hula-hooping' in (4) is a non-predicate because one thinks that it is a predicate bound by an unpronounced generic operator: Gen. This view is implausible because particular instances of hula-hooping are not fads. Rather, hula-hooping, *the kind of activity*, is a fad.

²⁹ I am relying on two claims here. The first involves the relationship between ascription and truth: an atomic sentence ascribing P to O is true just in case O is P. I will defend this assumption in Sect. 4. The second involves sentence entailments. In particular, the claim is that sentences entail their corresponding passivizations. For example: 'I ate pizza' entails 'Pizza was eaten by me'. I take it that this is common ground.

to some entity and that predicate's corresponding nominalization bears the reference relation to the same entity. The process of going from one to another is simply the process of swapping semantic relations while preserving designation.

The proponent of the entity view cannot give an account which is as intuitive. This is due to the fact that predicate nominalizations are not predicates and, as such, they cannot designate something which would suffice for predicative status. Similarly, the proponent of the mapping view cannot give a straightforward account of nominalization. Since predicates, on the view, do not designate anything at all, there is nothing that can serve as the designation of both the predicate and its corresponding predicate nominalization. The connections will have to be explained some other way.

3.2 *Dual occurrences*

While moving from a predicate to its corresponding predicate nominalization often requires some morpho-syntactic transformation, such as the transformation from 'swims' to 'swimming', transformation is not always required. Several types of terms plausibly have both predicative and non-predicative occurrences. Topping the list are descriptions, plural count nouns, and mass nouns.³⁰ Additionally, two of the three types of predicate nominalization that I have discussed—gerunds and infinitives—also seem to have dual occurrences. Consider the following pairs of sentences:

- (6) Those are dogs³¹
- (7) Dogs are widespread
- (8) Eating broccoli is the kind of thing that keeps you healthy
- (9) Much to his surprise, Sam discovered his son eating broccoli

³⁰ Fara (2001) defends the view that all occurrences of descriptions are predicates. Chierchia (1998a and 1998b) gives a recent version of the dual occurrences view for mass nouns.

³¹ There is a simplifying assumption that I am making here. I am assuming that the unquantified 'dogs' in the predicate position of (6) is, in fact, a predicate. On Carlson's influential theory (1977 and 1980), all unquantified plural count nouns are non-predicates. However, Carlson's reasoning conspicuously leaves out consideration of unquantified plural count nouns in predicate position: those which seem the most likely to be treated as predicates.

(10) To eat broccoli is good for you

(11) Sam forced his son to eat broccoli

The natural account of (6) is that ‘dogs’ functions as a predicate, and it ascribes doghood to the things designated by ‘those’. The natural account of (7) is that ‘dogs’ refers to a kind of animal and ‘widespread’ picks out a property that is ascribed to that kind.³² While ‘dogs’ in (6) seems predicative and dogs in (7) seems referential, they seem to have a clear relationship: all and only the members of dog-kind have the property of being a dog. This relationship between these different types of occurrences is something that we want reflected in our semantics of plurals. Similar remarks hold for the occurrences of ‘eating broccoli’ in (8) and (9), and the occurrences of ‘to eat broccoli’ in (10) and (11).³³

Just as in the predicate nominalization case, we do not have to depend solely on our intuitions that predicate and non-predicate occurrences are intimately related. We can construct arguments that display the relationship. (12) follows from (8) and (9) in a way that we will want our semantic theory to explain.

(8) Eating broccoli is the kind of thing that keeps you healthy

(9) Much to his surprise, Sam discovered his son eating broccoli

(12) Much to his surprise, Sam discovered his daughter doing something that keeps you healthy

Dual occurrences present all of the same challenges as predicate nominalizations, but they also add one. To give an adequate account of dual occurrences we must explain how two occurrences of a *single* term can differ in predicative status. Already, it is clear that the proponent of the ascription view can make a promising start: she can claim that in (6) ‘dogs’ ascribes a kind — dog kind — to the dogs that

³² An alternative view on which ‘dogs’ in (7) remains a non-predicate is the view on which it plurally refers to all of the dogs. Some may try to claim that ‘dogs’, as it occurs in (7), is a predicate bound by an unpronounced quantifier. This is problematic: particular dogs are not the types of things that can be widespread.

³³ Seemingly predicative occurrences of infinitives and gerunds led Montague (1974) to treat them as first-order predicates of type $\langle e, t \rangle$. Chierchia (1984) turns this move against Montague, using arguments that inspired mine.

are referred to by 'those', while 'dogs' in (7) refers to that very kind that is ascribed in (6).³⁴

The entity and mapping theorists run into familiar trouble. For the entity theorist, the occurrences of 'dogs' cannot co-designate on pain of both (or neither) being predicates. For the mapping theorist, the two occurrences of 'dogs' cannot co-designate because the predicate occurrence does not designate. Neither view can explain the relevant relationships in terms of co-designation and it is unclear how a different type of explanation would prove adequate.

3.3 Predicate anaphora

Paradigmatic anaphoric pronouns rely on antecedent singular terms in order to secure their referents. For instance, the pronoun 'he' in (13) refers to Frege, a referent that it inherits from 'Frege'.

- (13) Frege is widely respected now, though apparently he was not so widely respected when he was alive

As can be seen in sentences (14) and (15), singular terms are not the only terms capable of supporting anaphoric pronouns. (That is, of somehow providing them with referents.) In both (14) and (15) the pronoun 'it' is anaphoric on an earlier occurrence of a predicate.

- (14) Sam is hasty; it runs in his family
(15) Frege and Russell were clever; it (that) is something they had in common

Intuitively, the pronouns in (14) and (15) pick up their referents from antecedent predicates. If this is right, then 'it' in (14) refers to hastiness, which is the property ascribed by the predicate 'hasty'. Similarly, 'it' in (15) refers to the property of being clever, which is the property ascribed by the predicate 'clever'.

The semantic challenge is twofold. First, a referent needs to be provided for the anaphoric pronouns in (14) and (15). The sentences are true, and given that they contain anaphoric pronouns, their truth requires referents for those pronouns. Second, those referents need to

³⁴ Here I skip over the interesting relationship between kinds and properties, assuming that kinds can be predicated just as properties can. One way to achieve this aim is to identify kinds as a subset of properties. However, this is highly controversial.

be adequately related to the phrase on which the pronouns intuitively depend.³⁵

Again, we need not rely on intuitions about designation. We can construct arguments that require a semantic link between a predicate and its subsequent anaphoric pronoun. (16) is entailed by (14), and it seems that the best way to deal with this is by linking the predicate 'hasty' with the anaphoric pronoun 'it'.

(16) Sam has a property/character trait that runs in his family

The proponent of the ascription view will have no trouble with predicate anaphora. On the ascription view, predicates introduce potential referents. They do this by ascribing, not referring to, those potential referents. Once the potential referents are ascribed, and thus introduced into discourse, they become available for anaphoric reference.

The proponent of the entity view, on the other hand, runs into the same trouble that she had with predicate nominalizations. The referents of the anaphoric pronouns in (14) and (15) cannot be introduced into the discourse by the predicates on which they seem to depend. This is due to the fact that the predicates only introduce entities whose designation suffices for the designating term to be predicative. Since the anaphoric pronouns are not predicates, they cannot designate the same things as the predicates on which they seem anaphoric. So what *do* the anaphoric pronouns designate and where did these things come from? These questions are pressing for a proponent of the entity view.³⁶

The proponent of the mapping view is not in a much better spot. In fact, she may be worse off. As we will see, one strategy for the entity theorist is to claim that once an unsaturated entity is introduced into discourse, its saturated correlate is available for anaphoric reference.

³⁵ There has been substantial work on anaphora both in linguistics and philosophy. However, most of this work has focused on donkey anaphora and intersentential (discourse) anaphora. None of the approaches developed to deal with these phenomena aid the entity or mapping theorists in dealing with predicate anaphora. For an overview of the literature on anaphora, see King 2010.

³⁶ There are certainly cases where anaphoric pronouns refer to entities that are not designated by any single antecedent term. For instance, in 'Jack went on a walk with Jill. They had a good talk', the anaphor 'they' plurally refers to Jack and Jill, despite the fact that no antecedent term so-refers. In this case, however, two antecedent terms singularly refer to each of the plural referents of 'they'. The entity theorist cannot tell such a simple story. Certainly a more complicated story could be told. I do not claim that this consideration is decisive. However, I do think it presents *prima facie* evidence against the entity theory. Thanks to an anonymous referee for pushing this.

Nominalists cannot claim anything like this, at least in a way consistent with the spirit of their view. On the mapping view, predicates do not denote. Thus, they introduce no designata into the discourse. In principle, a mapping theorist could claim that predicates introduce some entities (properties?) into the discourse, though the predicates do not *denote* these entities. However, such a view would seem to undercut the key motivation for the nominalistic mapping view: to avoid incurring ontological commitment in virtue of the semantics of predicates.

3.4 Expressibility problems

Famously, Frege stumbled when attempting to specify the designation of the predicate 'horse'. It is natural to attempt to specify the designation by using a definite description, for example 'the concept *horse*'. However, a definite description, by Frege's lights, can only designate a non-concept. This is because, according to Frege, definite descriptions are always semantic non-predicates and if they could designate concepts then they could be predicates.³⁷ These claims give rise to a family of problems for Frege.³⁸

As Frege ran into problems, so does the proponent of the Frege-inspired entity view. Expressibility problems arise for the entity theorist when she attempts to specify predicate designation. Since concept designation suffices for predicativity, we cannot introduce non-predicates to discuss the designata of predicates. For instance, assume that the entity theorist wishes to discuss the designation of the predicate 'wise'. She cannot introduce a definite description, proper name, or any other non-predicate, to co-designate with 'wise', on pain of the purported non-predicate's being a predicate. It follows from the tenets of the entity theory that any two co-designating expressions make the same contribution to the argument structure of a sentence. If 'wisdom' is a predicate, any term that co-designates with it must be one too. The problem is that the entity theorist seems to require a non-predicate in order to grammatically and meaningfully discuss the designation of a predicate. English does not allow us to *use*

³⁷ It does seem clear that, *pace* Frege, some occurrences of definite descriptions are predicates. Does this undermine the concept *horse* problems? No: predicative occurrences of definite descriptions would only aid Frege if such uses could be employed to specify predicate designation. They cannot, so they do not help.

³⁸ See Frege's 'On Concept and Object' in Beaney 1997 for his discussion of the issues. Proops (2013) nicely separates a number of distinct, though related, problems in the vicinity.

predicates in order to specify their own designation. This is illustrated in (17), which is ungrammatical and meaningless.

- (17) *‘Wise’ designates wise

On the other hand, (18) is both meaningful and grammatical. However, by the entity theorist’s lights, it cannot be true. ‘Wisdom’, being a non-predicate, cannot co-designate with the predicate ‘wise’.

- (18) ‘Wise’ designates wisdom

Expressibility problems become especially dramatic when we consider the entity theorist’s semantic theses themselves. In order to adequately capture her semantic theses, the entity theorist is forced to discuss predicate designata *as if* they were objects by introducing singular terms that apparently refer to them and engaging in what appears to be first-order quantification over them. These moves are deemed illicit by the entity theorist’s own semantic theses. In other words, the entity theorist’s semantic theses prevent their very own articulation.

The root of expressibility problems is easy to identify. It seems to be a feature of natural language that we can discuss the designation of any expression with a non-predicative term. In other words, naming seems fully general. Frege denies this: naming, according to Frege, is far from general. There is a class of entities that is out of the reach of ordinary names. Expressibility problems arise when we attempt to employ names or other non-predicates in order to refer to the designata of predicates.

The ascription view easily avoids expressibility problems. A proponent of the ascription view can allow the co-designation of names and predicates. Thus, we can use non-predicative singular terms to express whatever we want about the designata of predicates. The proponent of the mapping view also avoids expressibility problems, though she does it by brute force. According to the mapping view, predicates do not designate, therefore there is no need to discuss predicate designation. In other words, the proponent of the mapping view avoids expressibility problems because she has nothing to express.

3.5 Solutions for the entity theorist

I have articulated four problems for the entity theorist and three for the mapping theorist. While the problems are distinct, they have a common core, so I will consider the possible escape routes

in tandem.³⁹ In this section I will consider escape routes for the entity theorist and in the next I will consider escape routes for the mapping theorist.

The first strategy for the entity theorist consists of providing an object correlate for each concept. For instance, the concept designated by 'horse' will be correlated with an object that stands proxy for it. We can then refer to this proxy when we wish to make claims about the concept itself.⁴⁰ The proxy-object solution allows us to provide designata for predicate nominalizations, dual occurrences, and anaphoric pronouns: proxy-objects. When a predicate is used, its object correlate becomes available for anaphoric reference. Similarly, the predicative occurrence of a term designates a concept while that term's non-predicative occurrences designate a proxy-object. Finally, a predicate's nominalization is a term that refers to the object correlate for the concept that the predicate designates.⁴¹

The proxy-object strategy comes in two flavours: semantic and pragmatic. On the semantic version of the view, 'the concept *horse* is a concept' expresses a proposition (thought) on which a second-level concept is ascribed to a first-level concept, despite the fact that the sentence's subject term designates an object and its predicate designates a first-level concept. At first glance, this is mysterious. After all, no term in the sentence appears to designate a second-level concept. The proponent of the semantic version of the strategy can dissolve the mystery by taking the thought expressed to be decomposable in two

³⁹ In particular I will skip over escape routes that address some, but not all, problems. One worth noting is an approach to expressibility problems that has us ascend to a technical language that contains, e.g. a predicate that expresses a two-place relation between objects and concepts and can purportedly be used to express facts about predicate designation. Such a move is outlined in Heck and May 2006. There are, I claim, substantial problems with such a view, which I discuss in independent work. The only important point for now is that *even if* they solve expressibility worries, they do nothing to aid us in giving an adequate semantics for predicate nominalizations, dual occurrences, and predicate anaphora.

⁴⁰ This is one strategy taken by Frege, who claims of the grammatical predicate 'is red' that 'by the very act of explicitly calling it a predicate, we deprive it of this property' (1892, p. 184, n. H). Parsons 1984 considers proxy objects in great detail.

⁴¹ There are serious worries one could raise about accounting for the analytic transformations and valid arguments that an adequate account of nominalizations requires us to treat. Such inferences and transformations seem to be clearly analytic: somehow guaranteed in virtue of meaning. However, all the proxy-object theorist gets us is a metaphysical guarantee of the truth-preserving status of such arguments and transformations. The proxy theorist secures mere truth when what we need is analyticity.

ways: as a thought about a concept and as a thought about an object.⁴² If thoughts have multiple such decompositions, then we could express one and the same thought by using sentences with differing logical structures.

On the pragmatic version of the proxy-object strategy, sentences like ‘the concept *horse* is a concept’ semantically express propositions about objects, propositions which are not also about first-level concepts. However, when we use sentences about proxy objects we pragmatically convey information about the concepts for which those objects go proxy.

There are separate difficulties for the separate strategies. According to the semantic strategy, a sentence like ‘the concept *horse* is a concept’ expresses a thought that is true just in case the designation of ‘is a horse’ itself has the (second-level) property of being a concept. The problem with this strategy is that it introduces an expressibility problem that is just as difficult as the one it set out to solve. In some contexts, we wish to discuss proxy-objects themselves. We wish, for instance, to assert that proxy-objects are not themselves concepts, that they are capable of serving as non-predicate designations, etc. Let us introduce the name ‘Sam’ with the stipulation that it co-designates with ‘the concept *horse*’ (i.e. it designates the object that goes proxy for the concept *horse*). Using ‘Sam’ to discuss the proxy-object itself, we will want to claim that the following is false:

(19) Sam is a concept

The problem is that according to the semantic version of the proxy-object strategy, (19) is true. ‘Sam’, by stipulation, co-designates with ‘the concept *horse*’. As such, intersubstitution of the two will not affect the thought expressed. Since, by hypothesis, ‘The concept *horse* is a concept’ is true, then ‘Sam is a concept’ will also be true, given that the two express the very same thought. This reasoning generalizes to every context in which we wish sentences that are intuitively about proxy-objects themselves to truth-conditionally diverge from sentences in which those objects are playing the role of mere representatives. The lesson is that the very ability of proxy-objects to allow expression of concept-centric thoughts also prevents us from expressing certain object-centric thoughts: those about proxy-objects.

⁴² See Hodes 1982 for an argument that Frege held that thoughts admitted to multiple decomposition. Heck and May 2011 contains a discussion of Frege’s view on thoughts and constituency.

The pragmatic strategy hypothesizes a looser connection between proxy-objects and the concepts for which they go proxy. The benefit of this looser connection is that it allows the proxy-object theorist to avoid the additional expressibility problems faced by the semantic version of the strategy. The cost is that for the pragmatic strategy to be plausible, a plausible account must be given of how we use sentences semantically about objects to communicate thoughts about concepts. Furthermore, this story must be flexible enough to allow us to move back and forth between discussing proxy-objects themselves and the concepts for which they go proxy.

I cannot survey all possible implementations of the pragmatic strategy here. However, there are substantial reasons to be sceptical. First, it is implausible that typical Gricean conversational mechanisms could generate the relevant implicatures. This is because the purported implicatures would be both non-cancellable and detachable. So, if we are going to use Gricean mechanisms to develop the proxy-object strategy, the implicatures would have to be conventional. However, not only is the entire category of conventional implicatures highly controversial, it is also not clear what particular conventions would be appealed to in this case.⁴³ Second, the fact that we freely move between metalinguistic and non-metalinguistic discourse means that the principles invoked would have to be highly flexible and defeasible. It is hard to see exactly what such principles would look like or how they would allow us to satisfactorily articulate both thoughts about proxies and thoughts about their correlated concepts.

The proxy-object strategy is not the only strategy available for the entity theorist. We have been operating with the tacit assumption that predicate nominalizations, anaphoric pronouns, and definite descriptions are non-predicates. An entity theorist may deny this and claim that, despite appearances, they are predicates. To see how this strategy would work, consider, again, (4):

(4) Hula-hooping is a fad

We assumed that 'hula-hooping' in (4) is a non-predicate and, therefore, that it designates an object. However, an entity theorist may doubt this. He may insist that 'fad' in (4) is a second-order predicate

⁴³ See Bach 1999 for arguments that conventional implicature does not exist. Potts 2005 contains an attempt to revive the notion. However, as far as I can tell, none of the mechanisms hypothesized by Potts would aid the pragmatic version of the proxy-object strategy.

that takes as its argument the first-order predicate ‘hula-hooping’. This assumption allows us to give uniform semantics for predicates and predicate nominalizations: they are both predicates. The analyticity of the transformation from (1) to (2) and the argument from (3) to (5) are secured. Similarly, we can claim that the predicate ‘hasty’ in sentence (14) refers to a concept, as does the pronoun ‘it’ which, despite appearances, is a predicate. We then can attempt to sidestep expressibility problems by claiming that expressions such as ‘the concept *horse*’ are, in fact, predicates which can be the argument terms of higher-order predicates. Thus, ‘the concept *horse* is a concept’ expresses a true second-order predication.

There are two ways to pursue this strategy. The first is to claim that ‘fad’, as it occurs in (4), is typed such that it can only take first-order predicates as arguments. The second is to claim that at least some of the terms in (4) are flexibly-typed: they can shift types within a single linguistic context in order to secure interpretability.

The primary virtue of pursuing a typed version of the higher-order strategy is that it allows a resolution of Russell’s paradox. The primary problem is that terms which seem to be first-order predicates have to be interpreted as second-order predicates (and so on up the hierarchy). The intuitive interpretation of (4) is that it contains a single first-order predicate ‘fad’ which takes, as its argument term, a single non-predicate: ‘hula-hooping’. This intuition is bolstered by the fact that, in (4), we seem to attribute the same thing to hula-hooping that we attribute to the activity of hula-hooping in (20).

(20) That (activity) is a fad (Demonstrating hula-hooping)

The type-theoretic higher-order strategist cannot give a uniform account of ‘fad’ as it occurs in (4) and (20). This is due to the fact that the demonstrative ‘that activity’ is a non-predicate in (20).⁴⁴ Rather, he claims that the occurrence of ‘fad’ in (4) has a different meaning from the occurrence of ‘fad’ in (20). The latter is a first-order predicate while the former is a higher-order predicate. An initial worry with this strategy is that it commits the higher-order strategist to the claim that every predicate of English is ambiguous. The explosion of ambiguity ramifies when we realize that adverbs will also have to be ambiguous in order to modify verbs of these different orders. What is

⁴⁴ Even if, following King (2001), one thinks that complex demonstratives are quantifiers, the point is not undermined. We could easily use the referential non-complex ‘that’ to refer to a kind of activity.

worse is that this explosion does not seem to be reflected in English at all, and, as Chierchia reminds us (1982 and 1984), there are no known languages that syntactically mark the purported semantic distinctions.

An even more pressing problem is explaining exactly what the two predicates have in common. It is clear that we appear to attribute the very same property in (20) as in (4). The higher-order theorist denies this. There must be some intimate connection between these properties as well as their kin that ascend up the hierarchy, but at this point we have no idea what it is.

Finally, there seem to be particular constructions that the strategy will not be able to account for:

- (21) Hula-hooping and the first day of a new job are always unpleasant

A nervous employee who dislikes moving his hips can truly utter (21). In order to account for the truth of (21), though, it seems that ‘unpleasant’ will have to be used in two separate senses at once. Given that we cannot normally use a single occurrence of an ambiguous word with more than one sense, the higher-order theorist will not be able to give a standard semantics for (21).

According to the second version of the strategy, strong type restrictions are lifted. Words may be flexibly typed, in the sense that their type is shifted within a particular context, usually in order to preserve interpretability. Flexible typing is now part of the standard toolkit of semanticists, so it seems entirely natural to utilize it in accounting for sentences like (4).⁴⁵ While I will not attempt a full-scale examination of various flexible-typing strategies, there are good reasons to think that no such approach will succeed.

As a first pass at pursuing such a strategy, we may take ‘fad’ to be flexibly typed such that in some contexts it takes objects as its arguments, and in other contexts it takes concepts. This first pass will fail, as it will be unable to account for sentences like (21). We can freely conjoin predicate nominalizations with ordinary argument terms. Given that conjunction is taken to apply only to terms with the same type, we are then forced to locate the type-flexibility within the noun phrase of (21) rather than its verb.⁴⁶ The question, then, is

⁴⁵ Type-shifting has been prominently used to account for kind-designating NPs and plurals. See Winter 2007 for a recent discussion and references.

⁴⁶ See, for example, Partee and Rooth 1983 on the semantics of conjunction, as well as Partee 1986 on type-shifting more generally.

how flexible typing lets us interpret conjoined NPs like ‘Hula-hooping and the first day of a new job’. There are two options. The first is to shift ‘hula-hooping’ from a concept-type to an object-type and then conjoin the two objects. The second is to shift ‘the first day of a new job’ to a concept-type and then conjoin the two concepts. In fact, semanticists have hypothesized that both types of shifting operation exist, so we could, in principle, utilize either. However, there are substantial problems.

Perhaps the most substantial problem in applying such type-shifting strategies is that there is a general worry that they will badly over-generate. According to most, type-shifting operations are triggered by a type-mismatch. However, if we can always shift a predicate-type expression to a non-predicate-type expression, then we will predict that we can freely substitute predicates for non-predicates and yield interpretable phrases. This is manifestly not the case.⁴⁷

It should be clear by now that there is no *easy* way for the entity theorist to deal with nominalization, predicate anaphora, and expressibility problems. Furthermore, two complicated approaches to such phenomena are themselves highly problematic. Obviously, there is more that could be said on this subject. However, it is a significant point in favour of the ascription view and against the entity view that the ascription view has no trouble dealing with nominalization, predicate anaphora, and it does not give rise to expressibility problems.

3.6 Solutions for the mapping theorist

As I formulated the mapping view (I will consider alternate formulations shortly), its proponent does not recognize referents of either

⁴⁷ Once we delve into the specific type-shifting operations, more problems become apparent. If ‘hula-hooping’ is predicate type $\langle e, t \rangle$, then we have two options for shifting it to an argument type: we can shift it to type $\langle e \rangle$ (referential) or $\langle \langle e, t \rangle, t \rangle$ (generalized quantifier). In fact, both type-shifting operations are hypothesized to exist. Chierchia (1984), for example makes use of a type-shifting operation NOM, that shifts from predicate to referential type. The problem is that NOM requires an entity correlate for every predicate. This will run into all of the same problems as the proxy-object solution. Partee (1986) discusses two operations that shift from predicate type to generalized quantifier type: A and THE. Assuming that ‘hula hooping’ is a predicate of events, then we can gloss these operations as producing meanings roughly equivalent to those of ‘an event of hula hooping’ and ‘the event of hula hooping’. The problem is that neither of these meanings is suitable for being ascribed the property of being a fad!

Stepping back, the observation is as follows. It is one thing to save interpretability. It is quite another to provide the proper interpretation. Even if type-shifting operations allow us to save interpretability of (4) and (21), it is far from obvious that they allow us to achieve the proper interpretations.

predicate nominalizations or predicate anaphora. Expressibility problems do not arise for the mapping theorist because she has nothing to express: she thinks that predicates do not designate. There are several routes for a mapping theorist to take with regard to the other problems.

First, she could claim that predicate nominalizations and predicate anaphora do not refer to entities because they are, themselves, predicates. This is the same strategy discussed above as the 'higher-order' strategy and it will run into all of the same problems.

Second, she could claim that while predicates do not themselves designate, they do raise particular objects to salience. In fact, it is consistent with the mapping view to recognize the existence of properties, as long as these properties are not semantically relevant in such a way that a regress is generated.⁴⁸ Once these objects are raised to salience they become available as referents for predicate nominalization and predicate anaphora. This strategy does seem like it would solve some of the problems. However, it is ultimately ineffective. Recall that there are a number of constraints on an adequate account of nominalizations and anaphora. Not only must we identify referents for the nominalizations and anaphoric pronouns, we must also explain how nominalizations and anaphoric pronouns are semantically linked such that we vindicate entailments of the sort displayed in (1) to (2) and (8) to (12), as well as other similar examples. While the view in question can meet the first constraint (because the salient objects are possible referents), the view cannot, without additional modification, meet the second constraint. On the view in question, the fact that 'wise' raises wisdom to salience has nothing to do with the truth-conditions of 'Frege is wise'. Thus, there is no semantic element linking the truth-conditions of 'Frege is wise' and 'Wisdom is instantiated by Frege'.⁴⁹

This objection strikes at the heart of the mapping view. It is an essential feature of the mapping view that the objects associated with predicates (if there are any) do not play a role in determining truth-conditions. If they did play a role, the mapping theorist would fall prey to her own regress objection. So, any object the mapping theorist

⁴⁸ Davidson himself (1967) and (2004) is perfectly happy to admit that properties exist. He objects to the claim that they play a certain semantic role. Thanks to an anonymous referee for pushing me on this point.

⁴⁹ Note that this objection remains even if the mapping theorist claims that 'wise' refers to wisdom, rather than merely raising it to salience. As long as wisdom plays no role in the truth-conditions for 'wise', it is hard to see why the two sentences would be mutually entailing.

provides as the referent for nominalizations and anaphora cannot play a role in the truth-conditional contribution of a predicate. As such, no object will explain the relationship between predicates and their nominalizations.⁵⁰

There is one version of this strategy that is worth considering in more detail. On the mapping view, predicates do not designate. However, they are *true of* objects. One may, then, hypothesize that when we use a predicate, it raises to salience the objects that it is true of. Those objects, the strategy continues, would then be available for anaphoric reference.

The problem for this strategy is that anaphoric pronouns and predicate nominalizations do not plausibly refer to those entities that a predicate is true of. To see this, re-consider (15).

- (15) Frege and Russell were clever; it (that) is something they had in common

The predicate 'clever', we can assume, is true of all of the clever things.⁵¹ On the strategy we are considering, using the predicate 'clever' raises the clever things to salience. Those things would then be available for anaphoric reference. The problem is that 'it' in (15) does not plausibly refer to the clever things. It is not even clear that it makes sense to claim that the clever things are what Frege and Russell have in common.⁵²

Third, she could bite the bullet and claim that none of the relevant sentences containing predicate nominalizations or predicate anaphora are true. This move may be moderately plausible when considering property names such as 'wisdom', at least in the context of an underlying nominalism. However, when it comes to gerunds and infinitives, the move looks desperate. Gerunds and infinitives seem to be uncontroversially used in non-predicate positions of true English sentences and I take it that it would be a major strike against a mapping theorist if she denies the truth of these sentences.

⁵⁰ Of course, there may be further modifications one could make to the theory in an attempt to try to preserve the relevant entailments. One could, for instance, appeal to brute lexical entailment. However, absent any independent motivation such a view would be *ad hoc*.

⁵¹ Even if, following the neo-Davidsonian, 'clever' is a predicate of events, this argument can be effectively run.

⁵² This worry also applies to Boolos's view on which predicates have multiple semantic values. For additional objections to Boolos's view, see Williamson 2003.

As with the entity view, there is surely more that could be said on behalf of the mapping view. However, as with the entity view, it looks as if whatever the mapping theorist says at the end of the day will be sufficiently complicated and problematic that nominalization and predicate anaphora give us reason to favour the ascription view.

4. The ascription relation

At this point the advantages of the ascription view over its competitors should be clear. The nature of the ascription relation, however, remains unclear. If we cannot give some more substantive account of ascription and how it differs from reference, there is little reason to think that the ascription view will be satisfactory. MacBride expresses such scepticism about the ascription view as follows:

[The ascription view] is open to the complaint that ascription *is* reference in all but name and that [the ascription view] does not resolve but merely masks by re-labeling the difficulties ... (2006, p. 466)⁵³

The sceptic can only reasonably demand so much: it would not be reasonable to expect a complete characterization of the ascription relation. According to the ascription view, ascription is a fundamental semantic relation on par with reference. As such, we should expect a complete characterization of ascription to come just as quickly as complete characterization of reference. Which is to say, not very quickly at all! Rather than providing a comprehensive theory, it is sufficient, at least for our purposes, to distinguish ascription from reference. This will answer MacBride's worry that the ascription theorist is engaged in mere re-labelling.

There are two features that clearly distinguish ascription from reference. The first is a logical difference: the ascription relation is triadic, while reference is dyadic. The second is a metaphysical difference: the relata of the ascription relation are constrained in a way that the relata of the reference relation are not.

⁵³ The difficulties that MacBride is concerned with here are difficulties that flow from the principle that any two co-referring expressions are intersubstitutable. If we allow predicate nominals to co-designate with predicates then substitution failures may be rendered mysterious, e.g. 'Frege is wise' cannot be expressed with 'Frege wisdom'. The ascription view provides a way out: allow co-designating expressions to bear different semantic relations to their designata. If expression PN refers to C and expression P ascribes C, then the failure of PN to inter-substitute with P will not contravene the reference principle.

4.1 Adicity

Ordinary semantic reference is a two-place relation. At the very least, this relation holds between expressions and objects as well as expression occurrences and objects. Plausibly, it can also hold between people and objects, though I will set that aside. It is an expression-level truth that 'Frege' refers to Frege, and it is an occurrence-level truth that the occurrence of 'Frege' in (1) refers to Frege.⁵⁴

- (1) Frege is wise

Unlike reference, ascription is fundamentally a three-place relation. In (1), for instance, 'wise' ascribes the property of being wise to Frege. The claim that ascription is triadic is motivated both by our intuitions about predication and by the theoretical work that the claim can accomplish. In this subsection, I will focus on the former. In particular, I will focus on motivating the adicity claim by showing that it allows us to vindicate some core Fregean intuitions about the nature of predication.

The Fregean rhetoric—that predicates are incomplete and unsaturated—is powerful. The idea is that a predicate, by itself, contributes something that needs semantic completion by its argument. As powerful as it is, the rhetoric is opaque. The claim that ascription is triadic allows us to sharpen and vindicate the Fregean rhetoric.

Scepticism about incompleteness/unsaturatedness is already present in Ramsey 1925. Ramsey emphasizes that building a sentence (or, more generally, a clause) requires both a predicate and its argument term. Neither a predicate or a non-predicate by itself forms a complete sentence. If a term's semantic incompleteness consists of the requirement of composition with another meaningful element in order to form a sentence, then non-predicates are just as incomplete as predicates.

Ramsey's point is important. Syntactically and semantically, neither a single predicate or a single non-predicate can constitute a clause. This shows that we must flesh out the rhetoric in a different way. Describing predicates as 'incomplete' is simply a way to attempt to capture the characteristic semantic distinction between predicates and non-predicates. Non-predicates, it is generally agreed, semantically

⁵⁴ I am trying to steer clear of issues involving the metaphysics of words, though I cannot achieve complete neutrality. It may be that the expression/occurrence model, which is similar to the type/token model, is misguided when it comes to words; see Kaplan 1990. I think that the relevant parts of my discussion could be recast in Kaplan's preferred framework.

contribute their designata. Predicates, on the other hand, seem to characterize those designata. Characterization requires an object, and in this way predicates are thought to be ‘incomplete’ until such objects are provided. All of this remains at the level of rhetoric, but the rhetoric is nearly irresistible, and it is a virtue for a semantic theory if it can develop and vindicate it.

If ascription is triadic, we can account for the incompleteness intuition. According to the ascription view, there are three things that need to be specified in order to capture the full semantic contribution of a predicative occurrence of a term. First, we need to specify that the predicate stands in the *ascription* relation to its denotation and its argument. Second, we need to specify *what the predicate ascribes*: ‘wise’, for instance, ascribes the property of being wise. Third, and crucially, we need to specify *the argument of the predicate*. The argument of ‘wise’ in (1), for instance, is Frege.

The triadicity of ascription, then, accounts for the incompleteness of predicates. The complete semantic contribution of an occurrence of a predicate is determined partly by features extrinsic to that predicate itself: features determined by its linguistic context. The predicate occurrence—in and of itself—is semantically incomplete. It is only by concatenating the predicate with a subject term that the predicate makes its complete contribution.

There is a corollary here: the view that a predicate’s incompleteness consists in its possession of argument places.⁵⁵ Some have viewed such claims as merely metaphorical. If so, the ascription view provides a way to move beyond metaphor. If predicative argument places are not metaphorical, then the triadicity of ascription provides us with a helpful corollary.⁵⁶

4.2 *Relata*

An intuition that has driven much of this discussion is that we can use non-predicates to refer to anything (object, entity, concept, quantity, etc.). If something exists then we can refer to it. This intuition is buttressed by the natural language data that I relied on in section 3. Gerunds, infinitives, and property names all seem to allow us to refer to predicate designata. More carefully put, reference is a two-place

⁵⁵ See Oliver 2010 for a discussion of Frege’s version of this view.

⁵⁶ I may be understating things here. Even if we take talk of argument places for predicates at face value, it is still not obvious how predicates are semantically incomplete without supplementation. The triadicity of ascription explains this very feature.

relation and while the first place needs to be filled by something capable of referring—often a word—the second place, it seems, can be filled by anything whatsoever. Denying this intuition leads quickly to expressibility problems.⁵⁷ The entity theorist constrains reference: on her view no non-predicate can refer to a concept. This constraint undermines the possibility of expressing propositions that require, for their articulation, reference to concepts.

On the ascription view, reference is unconstrained. Anything and everything is a possible referent, even those things that can also be ascribed. This not only adequately generalizes from our actual linguistic practices, but it also captures a deeply held intuition about naming.

Ascription, on the other hand, is constrained. The first slot of the ascription relation must be filled by something capable of designating, usually a word. The second slot can only be filled by something that is capable of being ascribed. Properties and relations are the most commonly considered, though kinds may also play the role. Henceforth, I will use ‘property’ as an umbrella term for properties, relations, and kinds, unless distinctions between them are relevant.

This constraint on ascription, that we can only ascribe properties, not only serves to further set ascription apart from reference, it also captures our intuitions about predication. I cannot predicate a table of myself, this is precisely because a table is not the type of thing that can be ascribed. I can, however, ascribe wisdom to Frege. This is due to the fact that wisdom is a property.

4.3 *Nominalization and truth-aptness*

Natural language allows unconstrained generation of non-predicates from predicates. We can generate non-predicates to refer to the designata of their predicate counterparts by introducing gerunds, infinitives, or coining names. From the predicate ‘wise’ we can produce the non-predicate ‘wisdom’, from ‘eats’ we produce ‘to eat’, and from ‘thinks’ we produce ‘thinking’.

Free movement from predicates to non-predicates is not mirrored by an operation that produces predicates which ascribe the referents of corresponding non-predicates.⁵⁸ There is no predicate that ascribes

⁵⁷ There may be no metaphysical constraints on what fills the first place. Surely we can refer with more than words: non-word symbols sometimes do the trick. I will remain neutral on this here, though note that there are clear practical constraints on what we can use to refer.

⁵⁸ Note that this is not to say that there is no operation whereby we form predicates from non-predicates. All I claim here is that this operation does not work by forming a predicate that ascribes the referent of the non-predicate.

the referent of a normal occurrence of 'him', just as there is no predicate that ascribes the referent of a normal occurrence of 'I'. Given the constraints on ascription, the absence of predicates derived from 'him' and 'I' is not surprising. Human beings—eligible referents for 'him' and 'I'—are not the sorts of things that can be ascribed. After all, under just what conditions would Paul McCartney be truly ascribed to a table? The bizarreness of the question, I think, brings to light just that metaphysical constraint on the ascription relation that prevents free generation of predicates from non-predicates.

Note that my examples of non-predicates above are not proper names. This is due to the fact that proper names have been thought by some to be predicative. However, even those who take proper names to be predicates agree that proper names do not ascribe ordinary individuals. For instance, Burge 1972, the best-known defence of the predicate view, argues that proper names are *sui generis* predicates that ascribe the property of bearing the appropriate relation to themselves.⁵⁹ So, even Burge's view that proper names are predicates does not contravene the principle that the second slot of the ascription relation is restricted to properties. The view about the restrictedness of ascription is a view about which entities can be ascribed, not which linguistic expressions occur as predicates.

The fact that predicates are constrained to designate properties also helps to explain the truth-aptness of meaningful sentences. Properties, unlike Paul McCartney, are true and false of objects. The property blueness is true of blue things and false of non-blue things. Since predicates must ascribe properties, it follows that predicates will also be true and false of things: those very things that their designata are true and false of. It is, then, not surprising that there is an intimate link between truth and predication. Predicates, by their nature, ascribe, and ascription, by its nature, gives rise to truth-aptness.

A worry here is that ascription *need not* give rise to truth-aptness. Consider imperatives like 'Frege, be wise!' and interrogatives like 'Is Frege wise?' In each of these cases, there is an occurrence of a predicate, though the sentence is not truth-apt.⁶⁰ In the case of interrogatives, the dominant view is that they designate sets of

⁵⁹ It is slightly misleading to describe Burge as a predicate theorist, because he thinks that many occurrences of proper names are non-predicative. When proper names occur as non-predicates, they contain an additional demonstrative element.

⁶⁰ Almost everyone agrees that sentences in the interrogative and imperative mood are not truth-apt, though there are some exceptions: e.g. Lewis 1972.

propositions. Given that sets of propositions are not truth-apt (even though propositions are), questions are not truth-apt. It looks, then, like ascription sometimes gives rise to sentences that are not truth-apt.

This illusion is dispelled when we pay closer attention to the semantic contribution of the interrogative mood. Though there are a number of distinct views about that contribution, I will stick to a simple example for the purpose of presentation. On the view presented in Karttunen 1977, the interrogative mood contributes an operator which applies to propositions to yield sets of propositions. In the case of 'Is Frege wise?' the operator applies to the proposition that Frege is wise, to yield a set of two propositions: that Frege is wise, and that he is not. If this is the proper semantics for questions, then the link between truth-aptness and ascription may stand. In 'Is Frege wise?', the predicate 'wise' does ascribe wisdom to Frege, to produce a truth-apt proposition. However, the sentential mood then contributes an operator that takes this proposition and produces a non-truth-apt designation for the sentence. Notice that even on a more complicated semantics for questions, this same general strategy will work.

Furthermore, this same story can be told for imperatives. On the view developed in Portner 2005, imperatives express properties. These properties are derived by means of an abstraction operator which is the contribution of the imperative mood.

Stepping back, there is a more general point. The fact that ascription gives rise to truth-aptness does not entail that any structure containing a predicate is also truth-apt. For instance, the sentence 'Frege is wise' is truth-apt, but the phrase 'and Frege is wise' is not! Here we have embedded the truth-apt sentence in a larger structure, which plausibly expresses a property of propositions (being jointly true with the proposition that Frege is wise). My view is that interrogatives and imperatives are a bit like 'and Frege is wise', in so far as they contain embeddings of truth-apt phrases in linguistic contexts in such a way that the entire sentence is not truth-apt. I discuss similar embeddings in section 4.5.

4.4 *Unity and regress*

When outlining the entity view, I noted that it has been motivated by its alleged potential to account for the unity of the proposition. When outlining the mapping view, I noted that it has been motivated by its purportedly unique ability to avoid a vicious regress. I will now show that the ascription view, as I have developed it, allows us to do both.

The purported regress arises from the worry that introducing a class of predicate designata does nothing to explain how predicates combine with non-predicates to form meaningful sentences. Consider (1):

- (1) Frege is wise

Davidson agrees that 'Frege' refers to Frege. He then wonders how 'is wise' combines with 'Frege' to compose a truth-apt sentence. He considers the hypothesis that 'wise' designates wisdom and argues that introducing a designation for 'wise' does nothing to explain how 'is wise' and 'Frege' compose a sentence. His worry is that mere introduction of predicate designata will force us to introduce an additional entity to link predicate designata with subject designata, and so on *ad infinitum*.

To be more precise, we wish to identify a feature of the meanings of the terms that constitute (1) that accounts for the fact that the terms compose a meaningful and truth-apt sentence. If our theory of meaning merely correlates terms with extra-linguistic entities, there is, according to Davidson, nothing to do the job. Davidson concludes that such an approach to meaning is wrong-headed. Rather than associating each term with an extra-linguistic entity, our theory of meaning should associate referring terms with extra-linguistic entities and associate the non-referring terms with rules for determining their truth-conditional contribution. According to Davidson these rules need not, and should not, associate predicates with extra-linguistic entities.

To undermine Davidson's regress worry, we will have to find a way to recognize a class of predicate designata while simultaneously accounting for the feature of predication that gives rise to truth-apt sentences. The ascription view gives us the tools to do this.

To understand the unity of the proposition problem, begin by considering tables. Tables are complex in the sense that they are composed of a number of distinct parts. The mere existence of these parts is not sufficient for a table to exist. In addition to existing, the parts must be arranged in the proper manner. Very roughly, the legs must support the top. This arrangement contrasts a table with a mere sum of table parts. For the mere sum to exist, it suffices for the table parts to co-exist. For the table to exist, those parts must also be properly related. The unity problem, as it concerns tables, is the problem of understanding the types of entities and the relationship between them required in order for some entities to compose a table.

Analogous unity problems arise for other complex objects.⁶¹ In the case of propositions, the question is the following: What relations must some entities stand in, in order to compose a proposition?⁶² (I am here focussing on one of many problems in the vicinity. King (2009) and Schnieder (2010b) are careful to distinguish them. I focus on this particular problem because it is the one that was used to motivate the entity view.) This question can be distinguished from the following question: What makes a proposition a truth-apt?⁶³ However, the two questions are connected: we may reasonably expect that any account of the unifying relations of propositions will help us to understand their truth-aptness.⁶⁴

We can also ask what unifies sentences. Sentences are complex entities composed of (at least) words. Not just any way of putting together words suffices for sentencehood. 'Happy Bob is' is not a meaningful sentence, though 'Bob is happy' is.⁶⁵

The ascription view gives us the tools to undermine Davidson's regress worry and account for both the unity of the proposition and

⁶¹ There are a number of ways that one may wish to account for the unity of material objects. See Fine 1999 for one influential approach. Exactly what accounts for the unity of material objects does not matter here; all that matters is that the issue is analogous to the problem of accounting for the unity of sentences and propositions.

⁶² The unity of the proposition, at least as it is understood here, does not arise on an unstructured view of propositions such as the ones defended by Stalnaker (1984), Lewis (1986), or Bealer (1998). After all, if propositions do not have components, then, *ipso facto*, there are no components to unify. However, even on unstructured views of propositions, the highly related problem of accounting for the unity of the sentence arises.

⁶³ This is the primary focus of King 2009 and Soames 2010.

⁶⁴ This why, for instance, Soames (2010) thinks that the only genuinely challenging question that has gone by the name 'the unity of the proposition' is the question of accounting for the truth-aptness of propositions. He thinks that without the constraint of accounting for truth-aptness, we may as well take any number of relations to unify propositions. It is only when this constraint is introduced that it becomes exceptionally difficult to explain what relation unifies propositions.

⁶⁵ One may be tempted to think that we can give a purely syntactic solution to the problem of the unity of the sentence. However, we cannot. Assuming a distinction between grammaticality (being syntactically well-formed) and interpretability (being semantically well-formed), we can distinguish the following unity questions. (U₁) In virtue of what is a particular sentence grammatical? and (U₂) in virtue of what is a particular sentence interpretable? While syntax will provide the answer to U₁, it will not straightforwardly supply an answer to U₂. To fully answer U₂, we need to know the meanings of the terms in the sentence and what relations those meanings stand in, such that the sentence is interpretable. This problem is faced even by those who think that the sentence expresses an unstructured proposition. Note that, following standard use of the terminology, it does not follow from a sentence's being interpretable that speakers possess the ability to understand it. There are, for instance, myriad exceptionally long interpretable sentences that lie beyond our cognitive processing power.

the sentence in one fell swoop. The idea is that our method of accounting for the feature of predication that gives rise to truth-aptness will consist of our identifying the feature of predicates that allows them to be related to non-predicates in order to compose unified sentences, and that that same relation can yield insight into the unity of the proposition.

I will begin with the regress worry. Davidson alleged that merely introducing predicate designata does nothing to explain how subjects and predicates can compose sentences. He concluded that we ought not to introduce them. Even if his allegation is true, his conclusion does not follow. On the ascription view, we both introduce predicate designata and explain the truth-aptness of sentences. In (1), the predicate 'wise' does not merely ascribe the property of being wise: it ascribes that property *to Frege*. The triadicity of ascription, then, gives rise to relations between the sub-sentential expressions of (1) and the designata of those sub-sentential expressions. As I discussed in 4.3, these relations give rise to the truth-aptness of the sentence. No further relations are needed and no regress arises.

At this point Davidson will object. I have invoked the ascription relation to forestall regress. However, Davidson may wonder, what part of the sentence designates ascription? This worry is misguided. The ascription relation is not designated by any constituent of (1). Rather, the relation is the *way* that 'wise' designates. The constituents of (1) and their designata give rise to truth-aptness because of the ascription relation; that relation is not itself a constituent, or the designation of a constituent, of (1). There is, perhaps, a remaining question: How must 'wise', wisdom, Frege, and the ascription relation be related to ensure that 'wise' stands in the ascription relation to wisdom and Frege? The answer, I suspect, is fairly shallow: 'wise', wisdom, and Frege jointly instantiate ascription. The reason that this is shallow is that, though it leads to a regress ('wise', wisdom, and Frege, together, instantiate ascription; 'wise', wisdom, Frege, ascription and instantiation, together, instantiate instantiation; and so on *ad infinitum*), there is no reason to think that this regress is vicious.⁶⁶ After all, the same regress arises with ordinary property instantiation. The table instantiates woodenness. The table, woodenness, and instantiation are instantiated, and so on *ad infinitum*.

⁶⁶ Here my view bears some resemblance to the view defended in Gaskin 2008. He claims that the unity of the proposition consists in such a regress. Though there is a resemblance, I think that the views can be clearly distinguished. García-Carpintero 2010 considers some interpretative issues with Gaskin.

So either we have reason to reject all relations, or there is nothing particular to ascription that should move us to reject it.⁶⁷

We forestalled regress by claiming that the ascription relation accounts for the truth-aptness of (1), though it is not designated by any term in (1). Rather, it explains the *relationship* between the constituents of (1), and their designata, that generates truth-aptness. Invoking the ascription relation will also allow us to account for the unity of the sentence. The problem is that of understanding the relationship between the words in (1) that serve to distinguish the sentence from the mere sum of those words. The solution that the ascription provides is that, in sentence (1), 'wise' ascribes wisdom to the referent of 'Frege'. This is a relation that the two expressions do not stand in when they are merely joined by summation.⁶⁸

This solution to the unity of the sentence, as I have developed it, *does* require that predicate designata are ontologically special: they must be properties. However, *pace* the entity theorist, this solution *does not* require that predicate designata are disjoint from non-predicate designata. Non-predicates which refer to properties do not generate any problem, precisely because they refer to their designata rather than ascribing them.

Finally, we can address the unity of the proposition. On structured views of propositions, it is generally assumed that propositional structure is isomorphic to sentence structure. With this assumption in hand, we can use our account of the unity of the sentence to begin to generate an account of the unity of the proposition. The proposition that Frege is wise is composed of Frege and wisdom. Frege and wisdom, in turn, are related by ascription: wisdom is ascribed to Frege. This distinguishes the proposition that Frege is wise from the mere sum of Frege and wisdom: in composing the sum, Frege and wisdom need not be related by ascription. This is, of course, only the beginning of a full account of the unity of propositions. To give such an account, we would have to show that invoking ascription as the relation

⁶⁷ There is another nearby question: In virtue of what does 'wise' ascribe wisdom? I have not been concerned with answering such metasemantic questions, as my focus has been semantics. I suspect the answer to this difficult metasemantic question involves a complex appeal to usage, though this is beyond the scope of my discussion.

⁶⁸ There may be a deeper question lurking: What is it that guarantees that this relationship is expressed in a given sentence? García-Carpentero (2010) identifies this as the root of the unity of the proposition problem and claims that no substantial answer can be given. It does seem that this is a deep question, and I have little to say about it here. Since the question does not specifically target the ascription view, I leave it aside.

between propositional constituents generates propositions which are capable of fulfilling the familiar tasks attributed to propositions. Though accomplishing this task must be left to another discussion, I can make some preliminary remarks here.

On the view envisioned, the ascription relation gives rise to propositions. More specifically, the fact that 'wise' ascribes wisdom to Frege suffices for the existence of the proposition that Frege is wise. There are two immediate worries that one may have with such a view. The first worry is that such a view makes propositions offensively linguistic: they seem to contain words. The second worry, which is related, is that such a view makes propositions contingent. After all, before the existence of 'wise', Frege and wisdom did not stand in the relevant ascription relation.

To respond to the first worry we need merely to existentially generalize away the first slot of the ascription relation. It suffices for the existence of the proposition *that Frege is wise* that something ascribes Frege to wisdom. Thus particular linguistic items are not parts of propositions, though they can explain why certain propositions exist. The second worry is a bit more complicated. If *something* must ascribe wisdom to Frege in order for the proposition to exist, then it looks like that proposition may not exist before language, or in non-linguistic worlds. There are three ways one may respond to this objection. One may follow King (2007) and defend the view that propositions are contingent, by appeal to some general metaphysical principles. Alternately, one may argue that propositions are necessary, because there are necessarily extant ascriptions. Finally, one may move from the existential generalization of the ascription relation, to the following modalized relation: it is possible for something to ascribe *x* to *y*.

Needless to say, these and many more obstacles must be overcome in order to adequately defend the view of the unity of the proposition that is suggested by the ascription view. However, it should be clear that the ascription view allows us to make a promising start, or at least as promising a start as the entity view.

4.5 *Embedded predication and relational predication*

Thus far, I have focused on the expression-occurrences that most naturally complement the treatment of ascription as triadic. I now turn to more complicated cases.

To begin with, it may seem unnatural to take ascription as triadic when sentences are embedded. Consider, for example, the following:

- (22) Either Frege is wise or snow is white

On the ascription view, the occurrence of 'wise' in (22) ascribes wisdom to Frege and the occurrence of 'white' in (22) ascribes whiteness to snow. Some find this implausible. The doubt is driven by the thought that if 'white' in (22) ascribes whiteness to snow, then a requirement on the truth of (22) is that snow is white. In order to defend the ascription view, it is important to show how 'white', in (22) ascribes whiteness to snow, even though the truth of (22) does not require that snow is white.

Before I respond to the charge of implausibility, let me set aside a red herring that often drives the objection. The worry is that when speakers assert (22), they need not ascribe whiteness to snow. This may be true, though it is irrelevant. The ascription view is *not* a view about predication. Rather, it is a view about the semantics of predicates: expressions with the semantic function of ascribing. Thus, the claim that 'wise' in (22) ascribes wisdom to Frege *does not* entail that a speaker, in uttering (22), endorses that predication.

An easy way to see that the two can be divorced is to take on Frege's force/content distinction. While the semantic function of 'wise' in (22) is to ascribe wisdom to Frege, one need not *endorse* that ascription solely due to the fact that one utters a sentence in which such an ascription is embedded. In fact, this is similar to Frege's initial argument for the force/content distinction.⁶⁹ This lesson generalizes to constructions of different sorts. For instance, in asserting a conditional one need not endorse the ascription contained in the antecedent or consequent.

So, setting aside predication, we can focus on the proper form of the objection. The worry is that 'white' in (22) does not plausibly ascribe whiteness to 'snow', because the truth of the sentence does not require that snow is white. My response is that 'white' in (22) does ascribe whiteness to snow, and that this is compatible with the fact that the truth of (22) does not require the whiteness of snow. Let me explain. Complex representations often contain other representations.

⁶⁹ I invoke the force/content distinction for purely illustrative purposes. The ascription view is also compatible with Hanks's recent denial (2007) of the force/content distinction in which operators such as disjunction cancel the assertive force of embedded sentences.

For example, a crude drawing of a dog, located inside a drawing of a park, may represent that dogs are allowed in a certain area of a park. However, not every complex representation that contains such a dog-drawing is accurate only if dogs are allowed. Consider a park map that contains a dog-drawing underneath a large 'X'. In this case, the complex representation will be accurate only if dogs *are not* allowed. The lesson is that a complex representation may contain a simpler representation, even when the accuracy conditions of the complex do not contain the accuracy conditions of the simpler relations. Now back to (22). (22) contains a representation of snow as white—this is guaranteed by the fact that 'white' ascribes whiteness to snow. However, (22) may be true even if snow is not white: that is due to the fact that the representation of snow as white is embedded under a disjunction. Just as the 'X' cancelled the representational content of the dog, the disjunction similarly interacts with the representational content of 'snow is white'.⁷⁰

Relational predicates provide us with another context in which it may seem odd to treat ascription as triadic. Consider the following:

(23) Russell admires Frege

(23) contains the relational predicate 'admires'. On the ascription view, that predicate ascribes the relation of being admired by something. The problem is that it seems that to preserve the triadicity of ascription we are forced to make the impossible choice between Frege and Russell. The admiration relation seems ascribed to them both (in a certain order), thus making ascription quadratic, at least in this particular case. Of course, other cases could be conjured and the result would be that ascription is a multigrade relation.

Pace this reasoning, relational predication does not force us to abandon the triadicity of ascription. To understand how, we must

⁷⁰ Exactly how this works depends on one's preferred semantics for disjunction. Though I wish to remain neutral on the details, here is a more concrete proposal. 'Or', at least as it occurs in (22), expresses a relation between propositions. (Ignoring intensionality, the natural type is $\langle t, \langle t, t \rangle \rangle$.) Those propositions stand in the relation just in case at least one of them is true. Now, here is how the semantics for 'Frege is wise or Snow is white' goes. 'Wise' ascribes wisdom to Frege, resulting (as discussed in Sect. 4.4 in the proposition that Frege is wise, which is the semantic value for 'Frege is wise'. *Mutatis mutandis* for 'white' and 'Snow is white'. 'Or' ascribes the aforementioned relation to those two propositions to produce the proposition that Frege is wise or snow is white. So, the predicates still ascribe their respective designata, however, the entire sentence is true in the conditions specified because of the semantic value of 'or'.

first follow Oliver and Smiley (2004) in making a distinction between argument slots and the number of entities that fill those slots.⁷¹ The predicate ‘admire’ contains two argument slots: one for the admirer and the other for the admired. However, each of these places may be filled with multiple entities.

(24) Lewis and Kripke admire Russell and Frege

In (24) ‘admire’ expresses a dyadic relation, in the sense that the relation has two places. However, that dyadic relation is saturated by multiple arguments in each place. The admirer relation is filled by Lewis and Kripke, and the admired place is filled by Russell and Frege.⁷²

Now re-consider ascription. The ascription relation, I maintain, is triadic. However, it may be filled by multiple entities at the third place. Thus, in (23), ‘admire’ ascribes admiration to Russell and Frege. This strategy could be generalized for relations of higher adicity.

Of course, a mystery remains. If ascription is triadic, how is it that (23) is true just in case Russell admires Frege, and not vice versa. Here we can treat the third slot of the ascription relation as applying to a plurality of objects, in a specific order. Thus, the difference between Russell admiring Frege and vice versa is due to the order of the plurality. Of course, there remain deep philosophical issues with regard to understanding such ordering. However, these issues do not have anything to do with the ascription relation, as such.⁷³ Whatever story one tells about relational order in general could be easily grafted onto the ascription view.

All of this said, perhaps one thinks it is more plausible to treat ascription as a multigrade relation. Though this is not my preferred

⁷¹ Here is a compelling reason to follow Oliver and Smiley in making the distinction. Consider ‘Alex and Timothy fought Saul’. It is clear what this sentence expresses (at least on one salient reading): that there was a fight with Alex and Timothy on one side (together) and Saul on the other. Now, if we cannot distinguish the slots of a property from the entities that fill those slots, then we can only represent the particular ascription of fighting as triadic: $F(a, t, s)$. The problem is that this is the same representation we would get for ‘Alex fought Timothy and Saul’. However, these sentences express very different things! I think the lesson is clear: we must be able to somehow group the fighters into two sides. (There are obviously lots of complications I am sliding over, but I hope the general idea is clear enough.) Distinguishing between slots and the entities that fill those slots is a straightforward way to do this.

⁷² One may take the third place to be filled by a single entity, e.g. the doubleton of Lewis and Kripke. There are, however, a number of important arguments against such a strategy. See Oliver and Smiley 2001, Yi 2005, and McKay 2006.

⁷³ See, especially, Williamson 1985, Fine 2000, Dorr 2005, and MacBride 2007.

view, it does seem to cohere with just about everything else I have said about the ascription view.

4.6 *Incorporating the ascription view into a compositional semantics*

Thus far, I have been focussing primarily on predicative occurrences of expressions. I have yet to make substantive claims about expressions themselves. However, there are a number of reasons why we may wish to discuss expressions themselves, rather than their occurrences. Perhaps the most familiar is that we wish to articulate clauses of a semantic theory that allows us to calculate the semantic content of any arbitrary sentence based on facts about the semantics of words that occur in those sentences. Merely knowing that 'wise' ascribes wisdom to Frege in (1) does not allow us to determine the meaning for other sentences containing the predicate 'wise'. What we need is an expression-level fact about 'wise' that allows us to determine its semantic contribution in arbitrary sentences.

To emphasize the worry for the ascription theorist, note that proponents of the mapping view and the entity view can straightforwardly give semantic clauses for 'wise'. On the entity view, 'wise' refers to wisdom, and on the mapping view, a sentence of the form 'X is wise' is true iff the referent of 'X' is wise. If the ascription view cannot give similar clauses, then this would be a significant disadvantage.

To see how the proponent of the ascription view can meet this challenge, I will sketch two theories that allow us to compositionally derive truth-conditions for monadic predications. The first theory is extremely simple. In order to sketch this theory, note that occurrence-ascription, as already stressed, is triadic. Expressions themselves do not stand in this triadic relation because there is no single argument for a given predicate. 'Wise', for instance, ascribes wisdom to varying arguments, depending on the linguistic contexts in which it occurs. Expressions, however, are disposed to ascribe properties when they occur. We will define a function *dasc*, from expressions to the properties that they are disposed to ascribe to their arguments. So, *dasc*('wise') = wisdom. Disposition to ascribe is a dyadic relation between expressions and properties that is understood in terms of the triadic ascription relation that holds between occurrences, properties, and arguments. In familiar fashion, we will take *ref* to be a function from expressions to their referents, so *ref*('Frege') = Frege. Both *dasc* and *ref* have limited domains, *dasc*('Frege') is undefined, because 'Frege' is not disposed to ascribe. We will take *dom* to be a function from functions to their domains.

Given these resources, it is very easy to derive truth-conditions for monadic predications. The trick is to conditionalize on semantic categories, in order to determine their contribution to truth-conditions.

If $w_x \in \text{dom}(\text{ref})$ and $y_x \in \text{dom}(\text{dasc})$ then ‘ wy ’ is true iff $\text{ref}(w)$ instantiates $\text{dasc}(y)$

Even this extremely simple view can be seen to be superior, at least in some ways, to the semantic theories suggested by the entity and the mapping views. First, consider a Montague-style semantic theory inspired by the entity view. On such a theory, each word is assigned a meaning in the type-theoretic hierarchy, and function application is the only rule of composition. Importantly, interpretation is type-driven in the following sense: which meaning is the function and which is the argument is determined by their location on the type-theoretic hierarchy. I argued against the entity theory earlier on the grounds that it did not allow us to take nominalizations to co-designate with their corresponding predicates. Now we can make that charge a little more precise. Assume, for *reductio*, that ‘being nice’ co-designates with ‘nice’ and ‘being intelligent’ co-designates with ‘intelligent’. Now compare the following two sentences:

(25) Being nice is intelligent

(26) Being intelligent is nice

Obviously (25) and (26) mean different things, so there had better be a way to divorce them. However, on the envisioned version of the entity view, they each contain constituents with the same meanings, and they are each combined in accordance with function-application. Function-application, in turn, is type-driven: given two entities (in the broad sense) it applies the one with the higher type to the one with the lower type. However, there is nothing to favour applying intelligence to niceness or vice versa, since they are of the same type. (Or, assuming they are of different types, it follows that the two sentences mean the same thing, since the type-driven aspect of function application will yield the same result in both cases.) Hence the sentences mean the same thing. This is absurd, so our assumption is false.

It is clear what the entity theorist needed to avoid the absurdity: some way to mark the fact that ‘being nice’ is a non-predicate in (25) while ‘nice’ is a predicate in (26). Moving to the ascription view allows us to do just this by marking off a difference between reference and ascription.

Second, consider a Davidson-style semantic theory inspired by the mapping view. On such a theory, each name is assigned a referent, and every other term is assigned a rule that captures its truth-conditional contribution. Importantly, as I stressed earlier, predicates are not correlated with extra-linguistic entities. As I stressed then, this leaves us without semantic values for predicate anaphora or nominalizations.

The extremely simple theory that I utilized above has the virtue of elegance. However, I ultimately favour a more complicated theory that better captures the connections between reference, ascription, truth, predication, instantiation, propositions, words, and occurrences of words. Before sketching the second theory, let me hedge. The discussion thus far has been dedicated to arguing for and developing the ascription view. The tenets of the view can be incorporated into a variety of compositional semantic theories. I am not going to defend the theory I sketch. Rather, the hope is that by showing how to incorporate the philosophical insights of the ascription view into a compositional theory, we thereby clarify the view.

The second theory will consist of several layers. First, it will contain clauses about the meanings of words themselves. Second, it will allow us to generate the meanings of word occurrences based on word meanings as well as linguistic context. Third, it will allow us to generate propositions based on occurrence meanings and a compositional rule. Fourth, and finally, we will give a truth-definition over propositions. Again, we are only going to generate predictions for simple monadic predications.

Following much of the discussion, our basic notion of ascription will be a triadic relation between word occurrences, properties, and their arguments. We will model this using a function — *asc* — from occurrences to ordered pairs of properties and arguments. To disambiguate words and their occurrences, I will subscript occurrences with the numbers of the sentences in which they occur, while words themselves will not be subscripted. So, $\text{asc}(\text{'wise'}_{(1)}) = \langle \text{wisdom, Frege} \rangle$.

We will define two other relations from *asc*. First, we will again use *dasc*, which is the same as explained in the presentation of the first theory. Second, we will take '*pasc*' to designate the existential generalization of the ascription relation, which, I hypothesized, structures propositions. This relation holds between an object and a property just in case something ascribes the property to the object. '*pasc*' is defined as follows: $\text{pasc}(a, b) \leftrightarrow \exists x(\text{asc}(x) = \langle a, b \rangle)$. Wisdom and Frege stand in this relation in virtue of the fact that '*wise*' in (1) ascribes wisdom to Frege.

We will start by taking semantic facts about words themselves as given. Using both *dasc* and *ref* instead of a single interpretation function displays one central tenet of the ascription view: that there are multiple distinct semantic relations that terms bear to their semantic values.

$\text{ref}(\text{'Frege'}) = \text{Frege}$

$\text{dasc}(\text{'wise'}) = \text{Wisdom}$

Our next step is to derive the meanings of the $\text{'Frege}_{(i)}$ and $\text{'wise}_{(i)}$. To do this, I will again make use of *dom*. I will also take for granted that we have, independently available, a function from predicative occurrences to their argument terms (*arg*), that is plausibly syntactically driven. For example, $\text{arg}(\text{'wise}_{(i)}') = \text{'Frege}_{(i)}'$. (A serious development of the view would say more here.) Here, then, are two general principles for deriving occurrence meanings from word meanings:

if $w_x \in \text{dom}(\text{ref})$ then $\text{ref}(w_x) = \text{ref}(w)$

if $w_x \in \text{dom}(\text{asc})$ then $\text{asc}(w_x) = \langle \text{dasc}(w), \text{ref}(\text{arg}(w_x)) \rangle$

The first principle states that an occurrence of a referential expression refers to the same thing as that expression. The second provides us with a method for deriving facts about ascription from facts about disposition to ascribe, plus linguistic context. When we add these principles to our facts about 'Frege' and 'wise', we yield the following claims about the meanings their occurrences in (1):

$\text{ref}(\text{'Frege}_{(i)}') = \text{Frege}$

$\text{asc}(\text{'wise}_{(i)}') = \langle \text{wisdom}, \text{Frege} \rangle$

Next, we use these occurrence-level facts to assign a proposition to (1). To do this, we will formulate a simple composition rule that is conditional on the category of the occurrences. We also need a method for designating propositions. Thinking of propositions as just one type of complex object, we can name propositions by describing their constituents, as well as the relationship in which those constituents stand. I may describe my desk as follows: it is the object composed of its legs and top, that exists because the legs are affixed to the top. Taking l_1 , l_2 , l_3 , l_4 , and t to name those parts, and A to designate the *affixed on top* relation, we can abbreviate that definite description — 'the object composed of its legs and top, that exists because the latter is affixed on top of the former' — as follows: $A \langle t, l_1, l_2, l_3, l_4 \rangle$. Generalizing this yields a convention for describing complex objects. Given my hypothesis that propositions as structured by *pasc*, descriptions for

propositions will look like this: $\text{pasc} \langle p, o_1 \dots, o_n \rangle$. pasc And $\langle \text{wisdom}, \text{Frege} \rangle$ is, by hypothesis, the proposition that Frege is wise. Here, then, is the compositional rule:

If $w_x \in \text{dom}(\text{ref})$ and $y_x \in \text{dom}(\text{asc})$ then ‘ wy ’ expresses $\text{pasc}(\text{asc}(y_x))$ ⁷⁴

This compositional rule may initially strike one as odd because it contains mention of the semantic value of the ascribing expression, but not the referring expression. However, note that asc is a function from ascribing-expressions to ordered pairs of what they are disposed to ascribe, as well as the referents of their arguments’ terms. So, in order to utilize this rule, we must, at a prior step, have been able to derive the referent of w_x . This compositional rule has the result that (1) expresses the following proposition: $\text{pasc} \langle \text{Frege}, \text{wisdom} \rangle$.

Finally, we can give our basic rule for assigning truth-conditions to monadic propositions:

$\text{pasc} \langle x, y \rangle$ is true iff y instantiates x

Putting this together with all of our prior steps, we generate the result that (1) is true iff Frege instantiates wisdom, which, of course, is the desired result. Though, as stressed, I will not mount a serious defence of this theory, a few remarks may help.

Notice, first, that this theory is extremely limited. I have merely given a method for deriving truth-conditions for simple context-insensitive monadic predications. Extending this to account for quantification, context-sensitivity, and other complications is challenging and beyond the scope of this paper. I will make one suggestion, though. Consider truth-functional operators like sentential negation. Taking (1) to express $\text{pasc} \langle \text{Frege}, \text{wisdom} \rangle$, we could take sentential negation to ascribe falsity to that proposition. So, ‘It is not the case that Frege is wise’ expresses $\text{pasc} \langle \text{falsity}, \text{pasc} \langle \text{Frege}, \text{wisdom} \rangle \rangle$, and then we could give a truth-definition in the obvious way. This helps clarify our discussion of disjunction in section 4.5.

Notice, second, that I have explicitly stated that occurrence-ascription is the more fundamental notion, but I have derived truth-conditions by taking disposition-to-ascribe — a term-level relation — as fundamental. I think there is no genuine conflict here. I take

⁷⁴ To generalize this beyond the monadic case, we can see this compositional rule as an instance of a more general rule that takes an n -adic property, a referent, and returns an entity that results from the referent saturating a place of the property. In the monadic case, a proposition is returned. If a dyadic property is ascribed to an entity, a monadic property is returned. (This monadic property is then available for ascription.)

occurrence ascription to be metaphysically more fundamental than disposition-to-ascribe, and I think it is also likely metasemantically fundamental. (That is to say that words have certain dispositions at least partly in virtue of the fact that their occurrences ascribe in various ways.) Disposition-to-ascribe is merely taken as fundamental for the sake of giving a compositional semantic theory. This is no departure from the norm. Word meanings are generally taken as fundamental in constructing a theory but most affirm some version of the claim that word meaning supervenes on use.

Stepping back, I have now shown two ways in which we may incorporate the ascription view into a compositional semantics that allows us to derive truth-conditions for a variety of English sentences. There are myriad possible alternatives, and deciding between them will depend on issues beyond the scope of this discussion.

5. Paradox

I have argued that the ascription view has significant advantages over the entity and mapping views in so far as it allows us to give a plausible semantics for several natural language constructions. I have also developed the view in such a way that it allows us to dissolve the regress-style arguments that motivated the mapping view, and the unity of the proposition motivations for the entity view. The view, then, is well motivated both by its semantic advantages, and its ability to deal with some classic philosophical issues. All of that said, there is a remaining worry which I will very briefly address: that the view is subject to Russell's paradox.⁷⁵

Though a full defence of the ascription view will depend on a solution to the paradox, there is reason for optimism. First, an important dialectical point. Even if I am wrong and the entity and mapping views allow us to give better solutions to Russell's paradox, we should keep in mind that there are related puzzles, for example Grelling's

⁷⁵ The ascription theorist attributes designata to predicates and allows for genuine self-predication: the referent of a sentence's subject term may be the very entity that is ascribed by the predicate of that same sentence. These two features lead to the property version of Russell's paradox. Consider the predicate 'not self-instantiating'. By hypothesis it designates the property of being not self-instantiating. Assume that the predicate truly ascribes the property to itself. It follows, then, by the nature of the property, that the property does not instantiate itself. We contradict our assumption and can conclude its falsity. The same contradiction can then be concluded from the negation of the assumption.

antinomy, that are not solved by those theories.⁷⁶ Wright, in his defence of the ascription view, stresses this point: ‘too many of the family of paradoxes that exercised Russell survive the imposition of Frege’s hierarchy to allow us to think that it gets to the root of that particular one’ (1998, p. 90). If this point is right then it should undermine any paradox-based appeal of the entity view and mapping view over the ascription view.

Second, there are a number of paradox-free approaches to natural language semantics that are compatible with the ascription view. Cocchiarella (1972), for instance, denies that ‘is non-self-instantiating’ is well-defined. Since it is not well defined, it does not designate, and attempts to generate the paradox fall flat. Others attempt to avoid paradox by questioning the logical assumptions that the reasoning relies on. Chierchia and Turner (1988) advance an approach based on Gupta and Belnap’s revision theory (1993). On this approach, the biconditional is construed as a device for revising earlier conclusions. So we can conclude each half of the contradiction, we just cannot conclude them concurrently, in order to assert the contradiction. Similarly, the law of excluded middle may be limited as in Field 2004 and Schlenker MS in order to give the Russell biconditional some status short of truth. Burge 1979 contains a contextualist solution that centres on the claim that the meaning of the pernicious expression shifts with context.

A more dramatic solution is to accept the seemingly paradoxical reasoning. Acceptance can take two forms. One could take a page from Priest 1987 and accept the truth of certain contradictions but revise classical logic in order to avoid a contradiction-induced explosion. Alternatively, one could follow Eklund (2002) and claim that natural language is, in some sense, inconsistent. On this view it could be that the rules of English freely allow for predicate nominalization and anaphora, and these rules are enough to generate paradox. Unlike Priest, this theorist can claim that not all of the rules of English can be respected when determining semantic values for English, on pain of inconsistency. In other words, the Russell-reasoning is good in the sense that it is allowed by English but bad in the sense that the conclusion is untrue: this is because the rules of English do not allow for consistent assignment of semantic values.

⁷⁶ Schnieder 2010a contains an insightful discussion of the relationship between Russell’s paradox and Grelling’s antinomy.

I do not wish to either endorse or dismiss any of these approaches. Assessing their relative merits is far beyond the scope of this discussion. I only bring them up to show that the ascription theorist has a number of options, many of which are appealing, for dealing with Russell's paradox.⁷⁷

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