Not All Contextual Parameters Are Alike*

Michael Glanzberg
Northwestern University

Preliminary draft of June 12, 2016
Comments welcome

A great deal of discussion in recent philosophy of language has centered on the idea that there might be hidden contextual parameters in our sentences. But relatively little attention has been paid to what those parameters themselves are like, beyond the assumption that they behave more or less like variables do in logic. My goal in this paper is to show this has been a mistake. I shall argue there are at least two very different sorts of contextual parameters. One is indeed basically like variables in logic, but the other is very different, and much more like overt referring expressions.

This result is of interest in its own right, to those of us who are concerned to map out the details of the semantic and pragmatic workings of language. But it will have some wider morals as well. One of the important issues behind the debate over hidden parameters has been how we can posit hidden structure in language, and how far such structure can stray from the intuitive forms and contents speakers see in communication. I shall argue that one sort of hidden parameter is surprisingly close to the contents and forms speakers find intuitive, while another is more remote. I shall show that the

*Thanks to Kent Bach and Adam Sennet for many conversations about the ideas I present here. Earlier version of this paper were presented at the Workshop on Context and Intentions at the Center for the Study of Mind in Nature, University of Oslo, February 2009, and the Workshop on Relativism at the Institute of Philosophical Research, National Autonomous University of Mexico, February 2009. Thanks to all the participants at those events, and especially Emma Borg, Herman Cappelen, Lenny Clapp, Chris Gauker, and Peter Lasersohn for helpful comments and discussions. Special thanks to Maite Ezcurdia, my commentator at the UNAM workshop, for giving such insightful comments under less than ideal circumstances.

different properties of these two classes are reflected in different sorts of evidence we can bring to bear in showing their existence, and in different ways they interact with the contents speakers intuitively seek to convey with their utterances. Though I shall not directly engage in some of the big picture debates about the nature of language that form the backdrop for much of the discussion of the semantics/pragmatics interface, I do think that these results shed some light on them. At least, in seeing what kinds of properties parameters have, and what kinds of evidence can go with them, we can get a much firmer grip on the view that parameters in sentences are the main point of interface between semantics and pragmatics. This should be welcome by those of us, like myself, who think this is the correct view; but it should be a useful result for all parties in the debate.

As the discussion in this paper progresses, I shall also highlight some important issues about what is now commonly called *metasemantics*: how semantic values, including context-dependent ones, get fixed. I shall argue, as I also have elsewhere, that there are a range of different metasemantic properties, and that our different sorts of parameters show different metasemantics.

I shall return to some of the big-picture issues from time to time as the paper progresses, but most of this paper will be dedicated to an in-depth study of an example where we see both classes of contextual parameters at work: the case of *predicates of personal taste*. These are predicates like *tasty* or *fun*, which have been a source of much recent discussion, and have been seen by some to pose a difficult case of context dependence. I have claimed that these sorts of predicates have two distinct contextual parameters. One is common to all gradable predicates, and simply tells us what *standard*—what degree of tastiness or fun—is sufficient to count in a given context. In this respect, *tasty* is no different from e.g. *tall*. The other, I have argued, is an *experiencer class*, which tells us to whom something is to be measured as tasty or fun in a context. This is distinctive of predicates of personal taste. The latter claim is rather more controversial, and I shall devote a great deal of this paper to justifying it. But I shall show that the two hidden parameters I claim we find in these predicates are very different, and exemplify our two classes of parameters. Though the claim that there is a hidden experiencer parameters has been contentious, it turns out that the experiencer parameter is in many ways the more familiar of the two. I shall show it behaves strikingly like familiar overt referring expressions, in that it leads a rich syntactic and semantic life. Along with this, we can find a great

deal of syntactic evidence for its existence, and we can map its semantic and pragmatic properties in much the ways we do with overt expressions. In contrast, the standard parameter behaves much more like a hidden variable. It has few marked semantic or pragmatic properties beyond being set by context, and being available for some form of binding. It leads a much more impoverished syntactic life, and we find only more indirect and abstract forms of evidence for its existence. We thus find, in predicates of personal taste, examples of both sorts of hidden parameters I claim can be found, and we see that they are genuinely different.

This paper will be organized into three main sections. The first, section I, will introduce the two sorts of contextual parameters I claim we can distinguish. It will also introduce the example of predicates of personal taste and the parameters I claim we can find in them, which will be the central focus of the paper. Section II will explore the experiencer parameter in depth. I shall argue that we can find solid evidence for its existence, and I shall map out its properties. Along the way, we will see that it shares important properties with overt referring expressions. Section III will do the same for the standard parameter. We will see that it behaves like a variable, and thus, is very different from the experiencer parameter. Finally, in section IV, I shall return to some of the bigger picture issues. I shall suggest that the two sorts of contextual parameters come from two different sorts of expressions we find in language. Parameters like the experiencer have their sources in lexical categories, while parameters like the standard have their sources in functional categories. This is, I shall suggest, responsible for their differing properties. I shall also suggest that it shows that parameters can be hidden in two different ways, and that we rely on different sorts of evidence to identify them.

I Two Sorts of Hidden Parameters

My main contention is that there are two sorts of contextual parameters that we may find hidden in sentences. For reasons that will become apparent as we pursue the discussion here, I shall call one sort *functional parameters* and the other *thematic* parameters. Functional parameters include most of the examples that have been the focus of the philosophical debate, including quantifier domain restriction parameters, hidden parameters for modals, etc. It is commonplace to describe these as hidden variables, and I shall suggest

that is a good analysis. Thematic parameters, on the other hand, are much more like genuine referring expressions, though covert ones, which are not phonetically realized. This is not how we think of most contextual parameters, but I shall argue there are at least a few that fall into this category, and that when we widen our attention beyond contextual parameters, this category becomes much broader. Indeed, in some ways, its members are much less mysterious, closer to the surface of language use, and more familiar.

In this section, I shall articulate the difference between the two classes of contextual parameters further. I shall begin by discussing the variable as the model for contextual parameters, and review some familiar cases where hidden variables have been posited to explain semantics-pragmatics interactions. I shall then review some examples of thematic parameters, and explain the thematic/functional terminology. At the end of this section, I shall introduce our the examples of functional and thematic parameters in predicates of personal taste on which this paper will focus. In the following sections, I will argue those parameters are really there, and explore their properties.

I.1 The Model of the Variable

One of the most discussed case of a hidden contextual parameter is the sort argued to be responsible for quantifier domain restriction. Thus, in a case where *Every bottle is in the recycling* gets is customary interpretation where it talks only about a restricted domain of bottles, we have something like:

(1) a. Every bottle is in the recycling.

b. Every bottle (in X) is in the recycling.

More detailed proposals are developed by Stanley (2000, 2002), Stanley and Szabó (2000), and in a somewhat different forms by von Fintel (1994) and Martí Martínez (2003). The details will not matter for our discussion, so I shall leave things in this rather undeveloped state.[1]

What is X? The leading idea is that it is a variable, present in the logical form of the sentence, though not in its surface form. This picks up on an idea from Kaplan (1989b), that we should treat deictic pronouns and demonstratives on the model of variables. Why? Because their main function is to provide a referent set by context. If we think of the notion of a

[1]For opposing views on quantifier domain restriction, see Bach (2000), Cappelen and Lepore (2005), Carston (2002), Neale (2000), and Recanati (2004), among many others.

variable assignment from logic as a reflex of context, then variable do exactly what pronouns and demonstratives do.[2] In work of Stanley (2000, 2002) and Stanley and Szabó (2000), this idea is extended to see hidden parameters as a variables present in the *logical forms* of sentences. Logical form is construed as a syntactically real structure (a level of representation, in some parlance). It is distinguished in part by being the syntactic level at which quantifier scope ambiguity is resolved, and so in standard theories (but by no means all theories), it contains quantifiers and variables. Contextual parameters are then seen as free variables in logical form.

The main property of variables in logic, other than that they can be set by assignments (set by context), is that they can be bound by quantifiers. It is thus no accident that Stanley (2000) focuses on binding as one of the main pieces of evidence for the existence of hidden parameters. Stanley notes such constructions as:

(2) In every room in John's house, he keeps every bottle in the corner (= every bottle in that room).

This has a bound reading, which seems to require variable bound by the initial quantifier. Stanley argues that this variable is simply the one that was present in logical form to begin with.

The picture that emerges is one of contextual parameters behaving exactly as variables do. They are set by context when free, they can be bound, but that is more or less the extend of their properties. They have few if any distinguished semantic properties, and their syntactic properties are simply those of quantifiers and binding. Their pragmatics is exhausted by the fact that they need to be set by context.

I shall follow Kaplan (1989a) and Stalnaker (1997) in making a sharp distinction between semantics/pragmatics and metasemantics.[3] Semantics has as its job to say what semantic values are assigned to constituents. When it comes to context-dependent constituents, this may well be described as the

[2]Of course, Kaplan is also concerned to argue for direct reference, and to decide just what the role of demonstrations in demonstratives is. But these are orthogonal to our concerns here.

[3]Both Kaplan and Stalnaker are primarily concerned with the distinction as it applies to non-context-dependent expressions like names, though it naturally extends to context-dependent expressions, as Kaplan noted. The extension to context-dependent expressions is developed by Stanley and Szabó (2000) and in my (2007). Since then, the metasemantics of context-dependent expressions has become a lively research area. See e.g. King (2014). The terminology 'metasemantic' is due to Kaplan.

job of semantics and pragmatics, but either way, we are seeking to provide theories which tell us what values are assigned to constituents in context. That is the only aspect of pragmatics I shall be concerned with here, so I could safely just talk about semantics. (I am thus not concerned with implicature, or with speech act theory.) It is up to metasemantics to tell us how constituents wind up having the values they do. For instance, direct reference theory tell us that the semantic value of a name is its bearer, and if direct reference theory is right, all we need to provide for a semantics of names is their correct bearers. But we still might want to know how a name gets its bearer. Perhaps a causal-historical theory might be provided. Direct reference is a semantic thesis, but the causal-historical theory is a metasemantic theory. When it comes to context-dependent expressions, it is a metasemantic question how context fixes a particular value for an expression in context. It might be that it is simply determined by a speaker's intentions, for instance. Much of the discussion of pragmatics tends to mix semantic/pragmatic and metasemantic issues. But keeping them separate, we can say that the semantics and pragmatics of variables is simply that they are set to values by context. How context manages to set them is a metasemantic issue. I shall pay attention to metasemantics here, but it is important to keep the two sorts of questions separate.

The list of potential hidden contextual parameters is quite large, and quantifier domain restriction is just the beginning. Another good example is the 'modal base' parameter (effectively a set of worlds) in modals (e.g. Kratzer, 1981), among many. As I shall discuss much more below, it is common to assume there is a parameter to set a standard or cut-off for gradable adjectives like *tall* and *heavy*. In all of these cases, it is typically suggested that the hidden parameter is a variable present in logical form, and that it shows the typical variable behavior of a variable of being set by context when free, being bindable, and little else.

Anticipating claims I shall advance in later sections, I shall call these sorts of parameters *functional parameters*, as I shall suggest they have their roots in functional categories in syntax. Functional parameters, I shall suggest, conform well to the model of the variable. I shall argue in detail that the standard parameter in gradable predicates does. But I shall also argue that not all contextual parameters are such functional parameters, and not all of them conform to the model of the variable.

I.2 Thematic Implicit Arguments

In the linguistics literature, there has been extensive discussion of what are usually called *implicit arguments*. These are not often thought of as contextual parameters; but I shall argue that they provide a model for an important class of contextual parameters. These parameters are very different in nature and in the kinds of evidence we might provide for them from functional parameters. We will also see that these sorts of implicit arguments have thematic properties which functional parameters lack, and hence I shall call them *thematic parameters*. In this subsection, I shall review the properties of thematic implicit arguments, and the evidence for their existence. This will provide a point of reference for my case that there are genuine thematic contextual parameters.

A much-discussed example of the sort of implicit argument we will be concerned with comes from 'short' or 'agentless' passive construction. Consider:

(3) a. Nelson sank the ship.
b. The ship was sunk.
c. The ship sank.

The passive (3b) appears to have an agent argument, even though it is not overtly present in the syntax. We do not see the same thing with the unaccusative *sank*. The agent argument is explicit in (3a), implicit in (3b), and seems to be absent altogether in (3c).

Before discussing how this might shed light on contextual parameters, we should pause to review some of the properties of this sort of implicit argument. We should start with the notion of an argument itself. Semantically, arguments are the inputs of predicates, which can be verbal constructions, but also nominal and adjectival ones. Arguments can appear as Determiner Phrases (DPs), but also as Prepositional Phrases (PPs).[4] We see this in the dative alternation:

(4) a. Max gave the book to Mary.
b. Max gave Mary the book.

[4]Current syntactic theory thinks of the nominal phrases that figure as arguments as determiner phrases rather than noun phrases. I shall follow the current view, but it will not really matter for this discussion.

Syntactically, the verb (or verb phrase) contains instructions for building up a sentence which require it to take three arguments. Semantically, the are the inputs to a three-place relation.

We can think of a verb (or verb phrase) as coming with a specified list of arguments, including information about what syntactic properties those arguments must have. But typically, more information is specified than that. Verbs specify that their arguments have certain semantic properties. Important among these are the *thematic roles* specified by a verb. Verbs specify that certain arguments are agents, or themes or experiencers, etc. In (4) we see three argument with three roles. *Max* realizes the agent, *the book* realizes the theme, and *Mary* the 'goal'.

Thematic role has turned out to be extremely important in syntax, and for the interface between syntax and semantics. It is a fundamental aspect of grammar, with both syntactic and semantic reflexes. Semantically, thematic role can help capture important aspects of meaning. For instance, it captures the difference in meaning between the verbs *fear* and *frighten*, which are near-synonyms, except that they reverse the surface order of their arguments:

(5) a. $\text{Max}_{experiencer}$ fears thunder_{theme}.
b. Thunder_{theme} frightens $\text{Max}_{experiencer}$.

I shall not dwell here on the many important syntactic properties of thematic roles (nor on the question of just what syntactic structure assigns a thematic role to a subject). It will suffice to note that assigning arguments, with thematic properties, is a fundamental feature of grammar.[5]

Assigning arguments thematic roles goes well beyond verbs. Nouns and adjectives also can function semantically as predicates, and can assign thematic roles. Typical adjectives assign a thematic role to an argument position, which is usually glossed as a *theme*, though in some cases, the thematic argument of an adjective is naturally thought of as an experiencer:

(6) a. Max_{theme} is tall.
b. $\text{Max}_{experiencer}$ is happy.

This is not to say that this is the end of the argument positions in adjectives, and indeed, I shall suggest that there are more. But it shows that the idea of assigning thematic argument positions goes well beyond verbs.

[5]For an overview of some of these issues, see Levin and Rappaport Hovav (2005).

Now that we have some sense of what the basic idea of an argument is, and in particular, what a thematic position is, we should turn our attention back to implicit arguments. We noted a widely discussed case in (3). But we should ask why we really think there is an implicit argument there, and what its properties are.

It seems intuitively natural to say the passive (3b) contains a thematic agent argument, just like the active (3a) does, but that somehow the passive construction makes it implicit or hidden. But this intuition alone does not really establish the syntactic presence of the argument. It is presumably based on some mixture of syntactic and semantic knowledge, which helps us to see that in (3a) and (3b) we describe an event of sinking done by an agent (while in (3c) we simply describe the situation where the ship went down).

There are some more specific reasons to think there is a syntactically real implicit argument in (3b). The arguments I shall review have been controversial, and I shall not try to resolve any of the controversies here. Rather, I shall simply mention the sorts of evidence that has been offered. This will provide us a kind of baseline for our attempts to establish the presence of other related implicit arguments. I shall take it as success if I can do more or less as well as the agentless passive case.

Two classic arguments for the presence of the agent, highlighted by (Roeper, 1987), are licensing *by*-phrases and controlling PRO subjects. First, *by*-phrases as allowed in the short passive, but not the unaccusative:

(7) a. The ship was sunk by Bill.
b. * The ship sank by Bill.

It appears that the *by*-phrase is filling the argument position in the passive. There is no such argument in the unaccusative, so the *by*-phrase is not allowed, even though we might well infer the existence of a person doing the sinking in most events of ships sinking. Thus, we have some evidence that it is a syntactic feature of the verb that tells us there is an argument place for the agent, even when it is not realized explicitly.[6]

We also see evidence that the argument position figures into other aspects of syntax, which would only make sense if the argument is really there, even when implicit. One such case is control of PRO. It is a widespread view in

[6]There are some complex syntactic questions about the nature of the implicit argument, that relate to the structure of the passive itself. We will not be concerned with that structure, but see Baker *et al.* (1989) and Jaeggli (1986).

syntax that infinitival clauses must have a subject, usually represented as PRO. In important cases, PRO needs to be grammatically linked to another noun phrase which (at least partially) sets its value. This is the syntactic phenomenon of *control*. The implicit argument of a short passive seems able to control PRO, as we see with:

(8) a. The boat was sunk [PRO to collect the insurance].
b. * The boat sank [PRO to collect the insurance].

It appears that (8a) is acceptable because there is an agent argument, which is able to control PRO, even though it is implicit. There is no such argument in (8b), and hence, the sentence is unacceptable.

This argument was advanced by Roeper (1987) (following Manzini, 1983), but it has been highly controversial. The main reason is the claim that PRO requires a controller in this case is delicate, and has been the subject of much debate. I shall not try to review all the arguments that have been given on either side here. Rather, I shall simply note that if successful, this offers us a kind of syntactic argument for the existence of an implicit argument.[7]

So far, we have seen two sorts of syntactic evidence that can be offered for the presence of an implicit argument: the way a predicate selects complement phrases, and the way it figures into control and other syntactic constructions. The evidence here is by nature of the topic indirect. We will not be able to 'directly observe' an implicit argument. Rather, we observe interactions which only make sense if the implicit argument is really there, and ways that we can render it explicit. If the range of evidence adds up, we conclude the implicit argument is there. This is not the only kind of evidence we might look for, of course. For instance, psycholinguistic work of Mauner and her colleagues (e.g. Mauner and Koenig, 2000) also provides evidence. As is so often the case with the study of language, we build a case indirectly, piecing together evidence that is often indirect, from a number of sources.[8]

Though it is not all that controversial to say that there are implicit thematic arguments, it is much more difficult to say what they are. The syntax literature, in particular, has found this question elusive. Indeed, the idea of a thematic implicit argument is quite troubling. It appears to be genuinely

[7]For overview of the debate, see Bhatt and Pancheva (2006), Jones (1991), and Landau (2000). Landau concludes that the argument fails in this case, but that it is much better off in the experiencers I shall consider below.

[8]In the case of 'optional' oblique arguments, like instrument arguments, psycholinguistic results appear quite complex. See, for instance, Rissman *et al.* (2015).

in the syntax, and determined by a predicate the way other arguments are, but it is not clear how it winds up being somehow in the syntax and yet not visible.

There are several possible options, all of which have been advocated. One is to follow the philosophical tradition, and posit variables in the syntax. These are variables that occupy thematic positions determined by predicates, but variables are not pronounced, so the argument is implicit. This may be problematic, as it is not really clear how the variable wound up in a thematic position to begin with. Syntax generally sees variables as arising from specific syntactic processes (like Quantifier Raising). Another option is that we start with some kind of pronominal element in syntax, which is interpreted as a variable at logical form (Epstein, 1984). Another is that implicit arguments are simply implicit pronoun-like entities, which are unpronounced, perhaps like the null subject *pro* that appears in languages like Italian (Epstein, 1984; Manzini, 1992; Rizzi, 1986). Yet another option, which is widely discussed in the syntax literature, is that implicit arguments correspond to thematic roles that are 'not projected in syntax' (Brody and Manzini, 1988; Chomsky, 1986; Rizzi, 1986; Roeper, 1987; Williams, 1985, 1987). The idea here is that the lexical entry for a predicate provides a list of thematic roles, which are in effect slots that are to be filled by syntactic processes. Some of the slots are not filled, but the marking of the slot is still visible to some aspects of syntax—notably including control, and perhaps binding.[9] I shall not attempt to resolve this difficult issue here. What will be important as we proceed is that somehow, implicit arguments are visible to a range of syntactic processes. They lead rich syntactic lives, one way or another. This, I shall suggest, will stand in contrast with the rather impoverished syntactic lives of functional parameters.[10]

I have concentrated on the case of agentless passives, which reveals the presence of implicit thematic arguments. These show syntactic properties

[9]Some authors, such as Landau (2007), are careful to describe this view of implicit arguments as having them lexically but not syntactically represented, as a distinction between the lexicon and what syntax does with the lexicon is highlighted. A view on which some implicit arguments are represented only in the semantic side of the lexicon is developed by Safir (1991). An interesting position that posits different sorts of syntactically projected implicit arguments, displaying different syntactic properties, is developed by Landau (2010).

[10]It is worth comparing the discussion of implicit argument with the extensive discussion of unpronounced structure in the literature on ellipsis. For a survey, see Merchant (forthcoming).

like control and complement selection. They also show semantic properties. Implicit agents are indeed semantically marked as agents.[11] However, I should note that the implicit agent of an agentless passive is not something we should call an implicit contextual parameter. It shows little context dependence! This is so because of another of its semantic properties: it is interpreted existentially.[12] *The ship was sunk* means it was sunk by someone. (Indeed, we hardly even see any indication of contextual domain restriction here.)

However, there are a great many cases where we naturally posit an implicit thematic argument which are context dependent. For instance:

(9) a. She promised.
b. I tried.
c. He insisted.

As discussed by Condoravdi and Gawron (1996), these typically have the value of the implicit argument set anaphorically, though they can also receive a deictic interpretation. Either way, the context provides the value.[13]

Thematic implicit arguments come with substantial semantic content, beyond that of variables. This is clear for the existential ones, which have the content of existential quantification. But it also applies to the context-dependent ones. Of course, one way they have content is that they have thematic roles which have semantic as well as syntactic aspects. But they also often come with further semantic requirements (sometimes called 'selectional restrictions'). Again following Condoravdi and Gawron, consider:

[11]Though, there may be some variation in the thematic roles passives can assign to implicit arguments. See Baker *et al.* (1989).

[12]Baker *et al.* (1989) prefer to gloss the interpretation as on par with arbitrary PRO.

[13]In fact, Condoravdi and Gawron (1996) note that the anaphoric potential of implicit arguments tends to follow that of definite descriptions, rather than pronouns (along the lines of the distinction noted by Partee, 1989).

The context-dependent implicit thematic arguments are what Fillmore (1986) identified as the 'definite' implicit arguments. That predicates select whether they allow implicit arguments, and whether they receive an existential or a context dependent (or 'definite') interpretation is an old observation (cf. Fillmore, 1986; Fodor and Fodor, 1980; Mittwoch, 1982). Fillmore notes:

(i) a. He insisted.
b. * He required.

These predicates are nearly enough to synonymous, but the second does not allow an implicit argument.

(10) John won.

This is always interpreted as meaning that John won a particular contest or event specified by the context, even though *John won a prize* is perfectly interpretable. The predicate somehow requires its implicit argument to be of contest-type rather than prize-type.

Thematic implicit arguments also have an important metasemantic feature. Even when they are context dependent, their metasemantics is relatively simple. A speaker will typically have an entity in mind, and intend to talk about it. (In the existential case, they intend to talk about something or another.) The intention does the main work of fixing the value. Of course, in anaphora cases, the intention can be anaphoric, in that it can be to talk about whoever was indicated in a prior utterance that provides the target for anaphora. But there is an intention. We can see this by querying the speaker, by asking something like *What did John win?* or *What did she promise?*, and we will usually be able to get an answer back. In this way, the metasemantics of context-dependent thematic arguments is much like that of demonstratives.[14] It is what in other work I labeled *direct metasemantics* (Glanzberg, 2007). The contrast is with *indirect metasemantics*, which we typically see with functional contextual parameters. As I argued, what sets the standard for a gradable predicate, for instance, is typically not a single referential intention. Rather, it is a messy combination of factors including features of the utterance event, speakers' intentions, prior discourse, semantic content, etc. (cf. Kennedy, 2007). We cannot usually query a speaker about the standard for what counts as, e.g. tall, and get back any kind of straightforward answer. At best, we might get some examples and important considerations about our goals in classifying.

With functional parameters, binding was our main syntactic configuration for spotting them. In the case of thematic implicit arguments, we have already seen that other syntactic properties are important, as well as semantic and metasemantic ones. In fact, some implicit thematic arguments cannot be bound. As Bhatt and Pancheva (2006) note, the ones that are existential cannot be, including the implicit agent of an agentless passive:

[14] I do not really want to take a side on the long debate about whether intentions or publicly observable gestures (demonstrations) fix the values of demonstratives (cf. Kaplan, 1989b,a; Siegel, 2002). I shall talk about intentions as fixing the values of demonstratives and other expressions with direct metasemantics, but it is compatible with what I say that it is the public manifestation of intentions that does the work.

(11) a. Every journalist wants Kylie to be interviewed.
b. Every journalist wants Kylie to be interviewed by him.

The first (11a) lacks the bound reading that is available for (11b).[15]

On the other hand, the issue of when context-dependent implicit thematic arguments can be bound is quite delicate. In the case I shall explore in depth in section II, we will see that some speakers consistently accept bound readings, while some consistently reject them. To glance briefly at another case, it is somewhat uncertain whether we can find a genuine bound reading of:

(12) ? Most things that could be done Max promised.

I myself get the bound reading, but not everyone does, and it is not clear. There are any number of factors that might be involved here. The peculiar lexical restrictions on thematic arguments might play a role. The fact that the positions are thematic makes it harder to find acceptable sentences which are not simply ones that provide an overt quantified argument. I shall not resolve these issues in any generality. But we may note that unlike the case of functional parameters, bindability is not a crucial characteristic feature of thematic implicit arguments. I believe some of them can be bound, but some pretty clearly cannot, including some of the ones for which we have very solid evidence. Bindability is one feature to be explored, but not the deciding factor.

We have seen that implicit thematic arguments differ from hidden functional parameters in most respects. Syntactically, they enter into more syntactic processes, and importantly, show up in other constructions than binding by quantifiers. They are semantically much richer than variables as well, showing thematic and selectional semantic properties. Their metasemantic properties also differ, in that a speaker will typically have a referential intention which can set the value of a thematic argument, whereas we do not usually see this for functional parameters.

The implicit thematic arguments we have seen so far, even the context dependent ones, might seem odd to label 'hidden contextual parameters'.

[15]Chomsky (1986) makes a related point, but about binding in the linguist's sense of grammatical anaphoric connection, not binding by a quantifier. It has been observed by Koenig and Mauner (1999) that implicit arguments of passives do not behave the same was as other indefinites when it comes to supporting anaphora, which makes the claim that they are simply existentially bound DPs less certain.

They are implicit, but in a sense only barely hidden, in that we are aware of their thematic roles and other properties even when they are not pronounced. In the next section, I shall introduce a case where an implicit thematic argument is much more naturally grouped as a hidden contextual parameter. It will be a genuine thematic parameter. But in a way, the fact that implicit thematic parameters do no seem 'hidden' in the same way functional ones do is one of the main morals of our discussion here. It shows an important way in which not all contextual parameters are the same.

I.3 Hidden Parameters in Predicates of Personal Taste

With the distinction between thematic and functional parameters in place, we may now turn to the examples of them that will our main focus for the rest of this paper. I shall argue that predicates of personal taste, like *fun* and *tasty*, contain two hidden contextual parameters. One is the familiar *standard* parameter, which I shall argue is a functional parameter. The other is the *experiencer* parameter I have claimed is present in these predicates (Glanzberg, 2007). In this section, I shall simply sketch the view of predicates of personal taste I endorse, and explain what the parameters I posit are. In later sections, I shall turn to the important task of justifying my claim that an experiencer argument is there, and so, substantiating the claim that there are really hidden thematic parameters.

The analysis I prefer starts with an account of gradable adjectives in general: these include such expressions as *tall* and *heavy* as well as predicates of personal taste. It has been widely observed that these predicates rely on some contextually provided *standard*, e.g. how tall or heavy something has to be to count as tall or heavy in a given context. To repeat a common example, tall for a jockey is not the same thing as tall for a Basketball player, and the context in which an utterance is made can determine which standard counts for a given use of *tall*. Thus, gradable adjectives, including our predicates of personal taste, have at least one hidden contextual parameter: the standard parameter.[16]

The analysis of gradable predicates I favor follows the one developed by Kennedy (1997, 2007). The main idea there is that an adjective proper is a function from individuals to degrees on a scale. The standard returns a

[16]As Lasersohn (2008) notes, not every predicate of personal taste is an adjective. Even so, I shall focus on the adjectival case for this discussion.

contextually determined degree that counts as high enough. So, the adjective *tall* has as semantic value the function **tall**, which returns degrees of tallness.[17] This figures most directly into comparatives.

(13) a. Max is taller than Jane is.
b. $\mathbf{tall}(\mathbf{Max}) > \mathbf{tall}(\mathbf{Jane})$

(I am here running rough-shod over some delicate questions about the comparative construction, but they will not really matter for our purposes.)

The 'positive form', which simply says *Max is tall*, is treated as a comparison with a contextually provided standard. There are a number of different ways we might think of the standard entering our analysis. The simplest is that it is contextually provided degree d_c. I happen to prefer the theory of Kennedy (2007), which relies on a context-dependent standard function s, which applies to the value **tall** and returns the appropriate degree d_c for the context and the adjective. For the moment, the difference between these is little more than notion. I shall return to differece between them in section III, but for the most part, I shall assume my preferred view and talk about the standard function s. Our options for the positive form are thus:

(14) a. Max is tall.
b. $\mathbf{tall}(\mathbf{Max}) > d_c$
c. $\mathbf{tall}(\mathbf{Max}) > s(\mathbf{tall})$

One way or another, we have a hidden contextual standard parameter, which I will continue to refer to as s.[18]

What I am calling the standard parameter is often described as a *comparison class*. Some analyses treat gradable predicates simply as partial predicates from logic, interpreted by two sets of individuals: one the extension of the predicate, the other the anti-extension. These analyses make no use of degrees. A comparison class is a set of individuals, which can provide a domain over which the partial predicate is defined in a given context, or

[17] Where useful, I shall put specific semantic values in **boldface**. I shall not worry about what they are here, and shall mostly talk in extensional terms. But presumably semantic values are the right sorts of individuals and properties. I shall write $[\![\alpha]\!]^c$ for the semantic value of expression α in context c.

[18] The analysis sketched here follows Kennedy (2007). Se also Barker (2002), Bartsch and Vennemann (1973), Bierwisch (1989), Cresswell (1977), Heim (1985), Kennedy (1997), Lewis (1970), Rett (2015), and von Stechow (1984).

can otherwise serve to fix the interpretation of the predicate.[19] A comparison class is less obviously the right contextual parameter for a degree-based analysis, but it can easily enough be employed. A comparison class can be used as a basis for computing a standard value. For instance, the standard can be set to the mean degree of all the elements in the comparison class. I follow Kennedy (2007) in not thinking that a comparison class is the basic contextual parameter, and so I shall talk about a standard parameter instead. But nothing in the current discussion hangs on this. Those who prefer to may substitute 'comparison class' for my talk about 'standard'. What is important is that gradable adjectives have a familiar contextual parameter. In section III, I shall argue it is a functional parameter.

Adjectival predicates of personal taste, like our paradigmatic *tasty* and *fun*, are gradable adjectives, and so have a standard parameter. But what makes them *personal taste* predicate, I have claimed (Glanzberg, 2007), is that they also have an *experiencer* parameter, which I label E. That in turn affects the sort of scales they use, in such a way as to interpret them as being about the personal tastes of the experiencers. I have thus argued that the semantics of these predicates looks something like:

(15) a. $[\![\text{tasty}]\!]^c = \textbf{degree-gustatory-quality-experienced-by-}E = \lambda x.\textbf{tasty}_E(x)$

b. $[\![\text{fun}]\!]^c = \textbf{degree-enjoyment-experienced-by-}E = \lambda x.\textbf{fun}_E(x)$

Combining the two parameters, for an occurrence of a predicate of personal taste in positive form, gives something like:

(16) a. Stewed duck tongue is tasty.

b. $\textbf{tasty}_E(\textbf{Stewed duck tongue}) > s(\textbf{tasty}_E)$

For our purposes here, the most important feature of this analysis is that it relies on both the contextual parameters s and E. The presence of s is widely accepted, though I shall consider it in more detail in section III. The claim that we find an experiencer parameter E, on the other hand, is in more pressing need of defense, which I shall provide in section II.

The semantics I have just sketched is a 'contextualist' one, attributing the interesting properties of predicates of personal taste to context dependence. This stands in contrast to recent relativist analyses of these sorts of

[19]For theories along these lines, see Fine (1975), Kamp (1975), Klein (1980), Ludlow (1989), McConnell-Ginet (1973), and Pinkal (1995).

predicates, starting notably with Lasersohn (2005). I of course, think the contextualist view is correct, and the version of it I have defended relies on these contextual parameters.[20] But as the issue before us is only that of the parameters themselves, I shall not defend the rest of the analysis. Indeed, the claims I shall defend here are mostly orthogonal to the fundamental points of contention between relativist and contextualist accounts.

What I shall argue is that the experiencer parameter is really present, and furthermore, it is a thematic parameter. Hence, I shall establish that there are some thematic implicit arguments that deserve the label 'hidden contextual parameters'. I shall also argue that the standard parameter is a functional parameter, thus establishing that there really are both kinds of parameters.

II A Hidden Thematic Parameter

This section will focus on the E parameter I have claimed may be found in predicates of personal taste. I shall argue that it is indeed there to be found, and that it shows the properties of thematic implicit arguments we reviewed in section I.2. It is a genuine thematic parameter. I shall also explore further its syntactic, semantic, and metasemantic properties. This will allow us to flesh out the idea I introduced in section I.2 that thematic parameters lead rich syntactic lives, have substantial semantic properties, and have what I labeled direct metasemantics. Indeed, I shall argue that they show a striking number of the properties of overt pronouns, but also show a 'point of view' feature.

The first subsection of this section will show that the evidence for the E parameter is on par with that for the implicit argent argument in agentless passives, and indeed, may well be stronger. The following subsections will explore the semantic and pragmatic, metasemantic, and further syntactic of E.

[20] As far as I know, it was Lasersohn's paper that brought the class of predicates of personal taste to wide attention. Other relativist discussions include Egan (forthcoming), MacFarlane (2005), Recanati (2007), and Stephenson (2007).?? UPDATE Other contextualist view include Cappelen and Hawthorne (2009) ??UPDATE. Timing Lasersohn versus MacF.

II.1 Evidence for E

The analysis of predicates of personal taste I sketched above and defended in Glanzberg (2007) makes use of an experiencer parameter. Thus, I have claimed that we get a nice semantic and pragmatic story about these predicates if we have one. But that is not really sufficient grounds to claim there is such a parameter. The claim is that the parameter is somehow syntactically present (noting the complications about what this really means discussed in section I.2). We would thus like some syntactic evidence that the parameter really is there. I shall begin by showing that the same sorts of syntactic arguments used to establish the presence of the agent of an agentless passive apply to the experiencer parameter of predicates of personal taste. I shall thus conclude there is good syntactic evidence for E. The two arguments we reviewed in section I.2 were an argument from complement licensing, and from control. I shall consider each in turn.

II.1.1 Prepositional Phrase Licensing

The most obvious reason to think there is an experiencer argument in predicates of personal taste is that these predicates license *for* or *to*-phrases which realize them. We have:

(17) a. Duck tongue is tasty to me.
b. Disneyland is fun for the whole family.

In contrast, many gradable predicates do not allow such arguments:

(18) * Taipei 101 is tall to me/for me.

(Some people find this acceptable on a reading where it means 'according to me, Taipei 101 is tall', but otherwise it is judged uniformly bad.) This is on par with what we saw with agentless passives, which license *by*-phrases.

In fact, we see a little more here. As Stephenson (2007) notes, just which PP realizes the argument is determined by the predicate, and it varies somewhat idiosyncratically from predicate to predicate. For instance:

(19) a. The chili is tasty *to me/you/us/them.*
b. ? The chili is tasty *for me/you/us/them.*
c. The roller coaster is fun *for me/you/us/them.*
d. * The roller coaster is fun *to me/you/us/them.*

e. The chili tastes good to me/you/us/them.

f. * The chili tastes good *for me/you/us/them*.

We see some variation among speakers for which PPs are required (cf. Stephenson (2007), who lists slightly different judgments but comes to the same conclusion). But the important point here is that even with some dialectical variation, it appears to be the predicate that is selecting the particular PP complement. This kind of lexical determination is the mark of syntactically determined argument.

In the agentless passive case, we saw more than merely that the passive licenses a *by*-phrase. We also saw that the corresponding unaccusative does not:

(20) a. The ship was sunk by the captain.

b. * The ship sank by the captain.

We can typically infer the existence of an agent doing the sinking in events described by both sorts of sentences, but only the passive licenses the *by*-phrase. This helps show that the passive really selects an argument, as it shows that the acceptability of the *by*-phrase is not merely a result of inferring the existence of the agent.

It would be nice to have pair like *was sunk/sank* for predicates of personal taste. I do not have a case that is quite as clear, but I believe we do see something similar with the predicate *sublime*. Most of my informants find *for* or *to*-phrases unacceptable with *sublime*, and some report it is not a predicate of personal taste. So, most of my informants find:

(21) a. Stewed duck tongue is sublime.

b. * Stewed duck tongue is sublime to me/for me.

Though this may mean that *sublime* is not really a predicate of personal taste, it is in important ways like one. Events where something is sublime typically involve an experiencer who is in a position to judge it sublime. Thus, we can typically infer the existence of an experiencer. Even so, a *to* or *for*-phrase is not licensed. In this way, *sublime* is on par with *sank*. It shows that the unacceptability of the *to* or *for*-phrase is not simply a matter of being able to infer the existence of an experiencer. Thus, it helps to show that there is a genuine experiencer argument in predicates of personal taste. (Actually, if we look at predicates more distant from genuine personal taste predicates, we can find lots of cases where an experiencer can be inferred but

a *for* or *to*-phrase is not licensed. Color predicates like *green* or *blue* provide examples, for instance.)

We should pause to note that in some ways, the claim that there is an experiencer argument in predicates of personal taste is not remarkable. It simply classifies these predicates within the much-studied group of 'psych predicates', which involve describing psychological states. Generally, these predicates are dyadic, involving a relation between an experiencer and something which the psychological state is about or which causes it (a *theme*, or in the terminology of Pesetsky (1995), a target or subject matter). The class of experiencer predicates is clearly wider than the class of predicates of personal taste, including such 'subject experiencer' adjectives as *proud* and *fearful*. Predicates of personal taste fall within the class of 'object experiencer' predicates. I am not sure if they are equivalent, and indeed, this shows some lack of specificity in the category of predicate of personal taste. Is, for instance, *embarrassing* a personal taste predicate? It is uncontroversially an object experiencer predicate. I shall not pursue this issue, as the general issue of experiencer predicates is really one of syntax, and goes beyond our concerns here. I merely want to note that appealing to experiencer arguments is not unusual.[21]

We should also pause to note that there are a few complicating features of the arguments structure of predicates of personal taste that I shall not really be able to explore. Some predicates, like *fun*, allow nominal and clausal theme arguments, and allow extraposition:

(22) a. Roller coasters are fun.
b. Riding roller coasters is fun.
c. It is fun to ride roller coasters.

But predicates like *tasty* have a much more restricted distribution:

(23) a. Stewed duck tongue is tasty.
b. * Eating stewed duck tongue is tasty.
c. * It is tasty to eat stewed duck tongue.

I have found that a very few speaker accept (23b), and a few more (23c), but on balance I think the right conclusion is these are not grammatical.

I do not know if this sort of difference is important or not. It may reveal some important underlying syntactic differences between these sorts of pred-

[21] For more on psych adjectives, see Bennis (2000) and Landau (2006).

icates, or it may simply be a reflection of their differing semantic properties. What is fun includes events, while what is tasty does not. Though I do not think the facts are yet clear enough, I shall continue with the assumption that there is a natural class of predicates of personal taste.

??INSERT COLLINS REMARKS HERE??

II.1.2 Control

So far, we have seen evidence for an E argument in predicate of personal taste from licensing a PP, just as we saw with passives. Again as with passives, further evidence comes from control of PRO.

In fact, it turns out that most of the case for predicates of personal taste having an experiencer argument that can control is already available in the syntax literature, in work of Epstein (1984), Bhatt and Izvorski (1998), and Bhatt and Pancheva (2006), following early work of Kimball (1971).[22] Epstein notes sentences like:

(24) It is fun to play basketball.

As I mentioned above, syntactic theory tells us that the infinitive *to play basketball* needs a PRO subject. So, the sentence has an underlying form like *It is fun* [PRO *to play basketball*]. But furthermore, it is argued that the value of PRO must be set by linking it to a controller. For the sentence to have its reading, the value of PRO must be people playing basketball, which can only be provided by an implicit experiencer argument of *fun*. Thus, the sentence looks like:

(25) a. It is fun_{E_i} [PRO_i to play basketball].
b. It is fun (for us_i) [PRO_i to play basketball].

We know there must be an E parameter, as it show up in controlling the PRO subject of an embedded infinitival.

As I mentioned in section I.2, the corresponding argument for agentless passives has been quite controversial. There are lots of questions that have been raised about the nature of PRO and the control relation. But the most pressing issue is whether the controller in constructions like this really needs

[22] These observations are picked up by the more extensive discussions of personal taste in Moltmann (2010b), Schaffer (2011), and Snyder (2013).

to be somehow or another given by the syntax. If it does, then the case for an implicit argument is very strong indeed.[23]

It turns out this is a much-debated point in syntax. But, there is some reason to think that in the particular sort of case in question, the controller must be syntactically present. Here are a few such reasons. First, where the predicate does not take an experiencer argument, the construction fails. As Bhatt and Izvorski (1998) note:

(26) a. [PRO to dance] is fun.
b. * [PRO to dance] is unlikely.

When the experiencer argument is explicit, it is evident that it must be the controller, as observed by Koster (1984):

(27) a. Max said that it was fun to disguise himself as a doctor.
b. * Max said that it was fun for Mary to disguise himself as a doctor.

The properties of the experiencer argument can block readings of PRO, indicating the two must be linked.

The latter point is part of an argument that control in this sort of case is what is known in the syntax literature as 'obligatory control', which requires a controller to be present in the syntax (cf. Williams, 1980). Upon reviewing the argument, Landau (2000) concludes that this is obligatory control.[24] If so, then we have a very strong argument that the experiencer parameter must be present in the syntax (noting the complications about what this means I discussed in section I.2). The argument shows we can see the hidden experiencer parameter of a predicate of personal taste at work in the right grammatical environments. In the right environment, there is reason to think that syntax is involved in determining the visible behavior, and that only makes sense if we include the implicit experiencer in some way that is visible

[23] A related construction for adjectives like *stupid* is discussed by Barker (2002), focusing mostly on semantic properties. But this sort of evaluative adjective behaves differently from predicates of personal taste, and has a different argument structure. For more discussion of their syntax, see Bennis (2000, 2004), Cinque (1990a), Landau (2006), and Stowell (2004).

[24] As I mentioned, Landau also concludes that the case of agentless passives is not obligatory control, though Higginbotham (1997) defends the control argument for the existence of the agent argument.

to syntax.[25]

The off-the-shelf argument applies to adjectives like *fun*. As I noted in section II.1.1, adjectives like *tasty* have slightly different syntactic properties. However, the classic analysis of these predicates from Chomsky (1977, 1982) gives us exactly the same results. According to that analysis, we have:

(28) a. Chili is tasty to eat.
b. Chili$_i$ is tasty$_{E_j}$ [O_i PRO$_j$ to eat t$_i$].
c. Chili$_i$ is tasty (for us$_j$) [O_i PRO$_j$ to eat t$_i$].

The additional structure is needed to explain the object gap, but the important point is the implicit experiencer still controls the PRO subject. Thus, we again see the experiencer argument at work. Again, the syntactic phenomena give us reason to posit an implicit argument somehow in the syntax. The classic analysis of the construction makes vivid how it does so.[26]

I believe we now have some fairly solid grounds for positing a hidden experiencer parameter in predicates of personal taste. In particular, I have offered evidence of the same kind that is used for the case of agentless passives, and I believe the case for positing an implicit experiencer parameter is as good or even better that that case.

There are a number of other sorts of evidence that have been brought to bear in favor of implicit experiencer arguments in the literature. I have

[25]This is not to claim that we have the simple argument that PRO is always controlled by a syntactically represented controller. That is a contentious claim. As I have already noted, not all control structures pattern with obligatory control. Moreover, there are a number of examples in the literature of 'pragmatic control', where no controller seems to be available. These typically involve discourse effects, like:

(i) John agreed to kill Mary. But he instantly felt some hesitation. To kill her would leave poor little Billy without a mother.

(This example is from Peter Lasersohn (p.c.), but related ones can be found in Bresnan (1982).) As Higginbotham (1997) notes, the judgments on these sorts of cases are rather delicate. But more importantly, the cases of obligatory control, where discourse effects are not present, give us a strong enough pattern to provide some substantial evidence. Of course, this makes the argument for the existence of the parameter indirect, built from a number of syntactic patterns all of which make more sense if we posit the implicit argument.

[26]For more discussion, see Cinque (1990b) and Hicks (forthcoming). Though relatively little is known about the properties of this particular construction, see Lasnik and Fiengo (1974) for some interesting observations.

focused on the ones close to the agentless passive case, but let me briefly mention a few of them

On the syntactic side, effects related to ellipsis can provide evidence for the experiencer argument. For instance, Snyder (2013) observes that we can get strict/sloppy ambiguities in VP ellipsis:

(29) Ted hopes the mind bender will be fun, and so does Fred.
   a. Ted hopes the mind bender will be fun for Ted, and Fred hopes the mind bender will be fun for Ted. (Strict)
   b. Ted hopes the mind bender will be fun for Ted, and Fred hopes the mind bender will be fun for Fed. (Sloppy)

(The strict reading (29a) is salient in a context where Fred and Ted are complete strangers, who happen to be going to the theme park, to rid their favorite rollercoaster, the mind bender. The sloppy reading (29b) is salient if Fred is Ted's friend, who hates rollercoasters, but is not going to the park, and is thinking about his friend Ted.) On some approaches to ellipsis, this indicates a hidden argument in the antecedent.

In a related vein, Schaffer (2011) observes an effect with sluicing (deletion of a complement of a *wh*-clause. We see:

(30) a. The cheese is tasty, but to whom?
   b. * T
   he cheese is circular, but to whom?

Again, some prominent approaches to sluicing explain this in ways that require an implicit experiencer argument in the antecedent (see Merchant, 2001).

Outside of syntax, there is semantic evidence as well. For instance, Sæbø (2009) observes that taste predicates embed under certain subjective attitude verbs, like *find*, while non-taste predicates do not. His explanation of this requires an implicit argument in taste predicates that is absent in others. Hence, we have evidence for the implicit argument.[27] Beyond this, we might simply note that insofar as contextualist semantics for taste predicates, which

[27]He glosses the parameter as a judge rather than an experiencer. I suspect this is not important. For one reason, observations from Ninan (2014) about the close connections between judges and a requirement to have experienced the matter in question make me think the difference, on the contextualist side, between judges and experiences is not substantial.

rely on an experiencer parameter, are successful at explaining various properties of these predicate, that already is semantic evidence for the existence of that parameter.

As I have noted, the evidence is somewhat indirect, and relies on a range of observations and theoretical considerations. We have observed that the PP experiencer complement seems to be selected, idiosyncratically, by the lexical head, and its acceptability is not a matter of the inferability of an experiencer in the described event. We have also seen how the implicit experiencer can figure in syntax, even if it is not overly represented. I also mentioned a few more pieces of syntactic and semantic evidence. These arguments are more inference to best explanation than observation. We might like to have, for this sort of syntactic exploration, something like a bubble chamber, which renders an otherwise invisible parameter visible. To my knowledge, no such technique has been found. So, instead, we rely on the sorts of indirect evidence that one always relies on to conclude something not visible is nonetheless present.[28] At least, I think we can safely say that the case for a hidden experiencer parameter in predicates of personal taste is as solid as the case for an implicit agent in 'agentless' passives.[29]

II.2 Semantics and Pragmatics of E

We now have seen some solid syntactic reasons to believe there is an E argument in predicates of personal taste. It is clearly a thematic argument, assigned an experiencer thematic role by the predicate. We thus have a thematic implicit argument which clearly deserves the name 'thematic hidden parameter'. In introducing thematic implicit arguments, I noted they come either semantically existential, or context dependent. We see that *fun* almost never means fun for someone or another, which shows that it is not semantically existential. Indeed, we see pretty clearly that in most cases,

[28] Schaffer (2011) and Snyder (2013) come to similar conclusions.

[29] ??ADD COLLINS HERE?? There remain some syntactic issues surrounding the status of the implicit experiencer as an argument. These are notoriously difficult for 'oblique' arguments (cf. Larson, 1988). For current purposes, it is not crucial whether the experiencer shows the syntactic behavior of an argument, e.g. in extraction and other environments. All that matters for now is that it is syntactically a selected and thematically marked. If that can happen with adjuncts, it is compatible with what I have argued here. I do think it is an argument, and ran a few tests which seem to indicate it is one in Glanzberg (2007), but the data is somewhat delicate. I shall keep referring to the experiencer as an implicit argument, noting that there remain some issues to be explored.

the experiencer argument picks up its value from the context, and as I shall discuss at great length in a moment, usually sets its value to include the speaker. We thus have an hidden contextual parameter which is really a thematic parameter.

In introducing thematic implicit arguments, I also noted that they typically have rich semantic as well as syntactic properties. We have already seen some important syntactic properties of E. In this section, I shall explore some of its semantic and pragmatic properties. I shall return to more syntactic properties in section II.4.

II.2.1 Point of View

We saw above that thematic arguments have both thematic roles and further selectional properties. (We noted that an implicit argument of *win* is marked to be something like a contest rather than something like a prize.) We will now see that the experiencer parameter likewise has such properties, including a somewhat mysterious one I shall label 'point of view'.

Semantically, E has as value an individual or set of individuals. It is thematically marked as an experiencer class, and so it must be a set of being capable of having experiences. Let us say it is a class of sentient beings.

We have noted that the value of E is usually set by context (though we will explore other ways it can be set in a moment). When it is, there is a strong preference for its value to either be the speaker, or a salient group containing the speaker. *Roller coasters are fun* usually means fun for the speaker or the speakers' salient group of friends or family. It usually means *fun for me* or *fun for the whole family*.

This is merely a strong preference, however, and it is defeasible in some circumstances. Examples where E does not include the speaker often require some heavy prompting. Simple cases come from interactions with children. For instance, suppose you are talking to a child and say:

(31) This hot dog is delicious.

This can be interpreted as having for experiencers the child in question, and presumably those like her. It need not include the speaker.

But even in cases like this, there remains an important property relating the speaker and the experiencer class. The speaker must in effect adopt the *point of view* of the child for the purposes of the utterance. I am not entirely sure how to analyze the notion of adopting a point of view: it appears

to be an intentional act we can undertake.[30] Admittedly, I have given the phenomenon a name rather than an analysis, but I shall go on assuming we have some rough idea that it is.[31]

I shall do so, as our goal is merely to roughly map out some of the semantic and pragmatic properties of E. Point of view relates to each, in ways that are not easy to sort out. But it appears that E is semantically marked to have as its value an individual or set of individuals whose point of view is being adopted. This is feature of content beyond its thematic marking, as a great many experiencer predicates do not mark their experiencer arguments for point of view. This is clearly evident for a range of subject-experiencer verbs like *hate*. Compare:

(32) a. This hot dog is delicious.
b. John hates hot dogs.

Sentence (32b) does not involve adopting John's or anyone else's point of view, while (32a) does, even though *John* is an experiencer argument.

So far, I have suggested it is a semantic requirement that the value of E be whoever's point of view is being adopted. This might be cashed out as saying that it really means something like *from the point of view of* E, which is in turn written into any proposition expressed. But the observations we have made so far do not really imply this. It is consistent with what we have seen that it is simply a semantically encoded requirement that the value of E be set to whoever's point of view is being adopted, but this is not written into the proposition expressed. This would be a feature of the meaning of E much like the standard view attributes to the indexical I (Kaplan, 1989b). This view holds that it is a requirement of I that its value is the speaker of the context (this is part of its character or meaning), but this does not give it the content *the person speaking*. Some of the evidence from anaphora I shall sketch in a moment suggest to me that the latter is the correct way to

[30]Ideas of Moltmann (2010a,b) about simulation might fruitfully be applied in this setting.

[31]I believe adopting a point of view is essentially the same as what Lasersohn (2008, 2009) calls adopting a stance. The main difference between my view and Lasersohn's, I believe, is that my theory makes no room for what he calls an 'acentric stance', where the parameter is not set by context at all. This is one of the features that makes his theory genuinely relativist. I argued against such theories in Glanzberg (2007), and so I conclude there is no need for the acentric stance. Schaffer (2011) also notes that experiencer arguments specify what he calls a 'perspective', which may be close to the notion of point of view.

include point of view, but I am not certain. Either way, we have identified a significant semantic property of E, whether it is an aspect of the content it contributes or a restriction on what its values might be.[32]

II.2.2 Anaphora

So far, I have noted that the experiencer of a predicate of personal taste is somehow marked for point of view. This is to give a name to a mysterious phenomenon, but it at least points out some substantial semantic restriction on the value of E, if not more. I have labeled point of view a semantic phenomenon, as it appears to be a standing feature of the meaning of an argument position. But it also relates to what kinds of values it can have in context, and so affects pragmatics.

We have seen that the most obvious way for E to get a value in context is for it to be set to the speaker or the speaker's salient group. This is a way to satisfy the point of view requirement, and it also highlights cases where the value of E is set deictically to the right salient element of the context. Most context-dependent expressions can also have their values set anaphorically. It appears this is so with the experiencer parameter as well; but it also appears that it is unusually difficult to do so, and in many cases yields degraded results. Seeing how the experiencer can be set anaphorically will thus give us some more insight into the force of the point of view requirement, and that is what we will explore in this subsection.

Here is an example. For comparison, I shall also use an implicit theme argument of the predicate *look* (without dwelling at any length on its status as an implicit argument). We find:

(33) Three people were eating duck tongue in the market.

[32]The analogy with other thematic implicit arguments makes it tempting to hold that what we see here is a selectional restriction determined by the predicate. Along these lines, Mitchell (1986) proposes that what he calls 'point of view' can be treated as sort of thematic role, or at least a feature that can be assigned in the lexicon along with thematic role (but note well, Mitchell uses the term 'point of view' in a much wider sense than I do, to include locative, spatial orientation, and other 'perspectival' or frame-of-reference notions). However, we will see below some evidence from binding that E at least might have grammatical features all its own. This would open the way for treating point of view as something like an interpretable feature, on par with gender and number. I am not at all sure which of these approaches is right. Resolving the question would require a better understanding of just how implicit thematic arguments are represented, which we will not achieve here.

a. Susan looked (= looked at them).

b. OK/? It was tasty (= tasty to them).

Most of my informants found (33b) acceptable, but many found it somewhat degraded, and more found it clearly degraded in comparison with (33a). In contrast, the following is judged clearly fine:

(34) Bill, Max, and I were eating duck tongue in the market.

It was tasty (= tasty to us).

Likewise we see:

(35) a. Mary gave a clear statement of the issue but Sue did not understand.

b. Fred, Mary and I liked duck tongue, but barbecued squid was not tasty (= tasty to us).

c. OK/? Fred and Mary liked duck tongue but barbecued squid was not tasty (= tasty to them).

It appears somewhat difficult to set the value of E to be a group not including the speaker by anaphora, and can produce degraded results, but on balance it appears possible.

I suspect this is an effect of the point of view requirement. Though we have hardly explained that requirement thoroughly, it seems to require an intention on the part of the speaker to adopt a point of view other than their own. I take it such an intention is always required, but we naturally default to the personal one. The marked case is the intention to adopt a point of view not including yourself. Anaphora alone does not suffice to provide that, and so, we have to work harder in cases like (33b) and (35c), to provide an interpretation filling in the point of view shift. This is possible, but seems to lead some speakers to note some degradation of the sentences. In contrast, (34) and (35b) anaphorically provide groups explicitly including the speaker, so no shift in point of view is required.

For some further evidence of this, consider:

(36) # Fred and Mary like hot dogs, but barbecued squid is not tasty (= tasty to them).

With the present tense, judged 'out of the blue', my informants clearly found this sentence bad. The tense seems to make it worse, as it does not direct their attention to some past event not involving the speaker. But with some heavy contextual set-up, involving point of view shift, it becomes much better.

(37) ? Fred and Mary are kids. Fred is pretty adventurous for a kid, and eats garlic and onions and chilis. Mary is a picky eater, and will only touch buttered noodles. But the way they see it, adults eat some pretty crazy things. *They like hot dogs but barbecued squid is not tasty* (= tasty for them).

This is still somewhat degraded, but is much improved over (36).

Of course, there is more to be said about the anaphoric properties of E. But what we have seen allows us to conclude that anaphora with E is more restricted than with some other parameters, and these restrictions show a non-trivial effect of the point of view requirement attached to the thematic argument position. They show more of the rich semantics of E.

The evidence from anaphora also offers a consideration in favor of treating the point of view restriction as a simply a restriction on the values E can take—like the content of the indexical I—rather than as writing *from the point of view of* into the content of the experiencer argument position. The reason is that simply saying *from the point of view of* does not appear to place these restrictions on anaphora. In particular, *from their point of view* seems to have no more restriction than *their*, and can pick up pretty much any anaphorically accessible group of animate beings. The restriction seems to follow only if it is understood as a requirement that the value of E be set to some group the context already marks as being the point of view, just as the meaning of I requires its value to be the speaker of the context. Many anaphorically accessible groups will not be so marked in many contexts, and a context will have to do extra work to make them the point of view. I do not think this consideration is definitive, and more about the nature of point of view needs to be established to be sure. But it is very suggestive, and I think it makes the presumption that point of view is a constraint on the contextually provided value.

Predicates of personal taste are often described as having *de se* or *logophoric* properties. The idea is that somehow, the speaker self-ascribes a property in utterance (e.g. Egan, forthcoming; Stephenson, 2007). I shall close my discussion of point of view by noting that point of view attributes a weaker property to personal taste predicates than genuine *de se*. I believe it is the correct account. The reason is that examples like (31) show that personal taste properties need not be self-ascribed to the speaker. They typically are, but they need not be. That they typically are is covered by the point of view constraint, and the way it makes it difficult to set the value

of E to be anything other than the speaker or the speaker's group. This gives us a pattern of self-ascribing with personal taste predicates, and a semantic content which goes with it. But as we have seen, they need not be self-ascribed when point of view can be shifted. Hence, though the notion of point of view is in need of more elaboration, it appears preferable to a *de se* account.

II.3 Metasemantics of E

In section I.2 I noted that implicit thematic arguments have what I call a *direct metasemantics*. Recall, metasemantics describes how the semantic value of an expression gets set (including how context can help to set it). Direct metasemantics is on the model of a demonstrative, where a referential intention of the speaker in effect directly sets the value. Thematic positions tend to go with referential intentions on the part of speakers. These are especially important for context dependent arguments, where the referential intention does a substantial share of the work in setting the value. We thus see that thematic arguments, even implicit ones, have direct metasemantics. We shall see that this holds for E as well, though with a small but I think interesting qualification.

The experiencer parameter, like other thematic arguments, comes with some referential intention. We can typically make the intention explicit, as we can typically answer the question *for/to who*, by providing the appropriate *for* or *to*-phrase. We thus see patterns like:

(38) This duck tongue is tasty.
To who?
To me/to us/to them/....

The intention to talk about what is tasty or fun *for someone in particular* is explicit, in the sense that speakers can readily answer queries about it (even if they did not have it in consciousness at the time of utterance). It is in this way explicit, even when the argument E is only implicit. (In anaphora cases, the situation might be slightly more complicated, and the speaker may be only to say *To whoever we are talking about*, but I take it there is still an explicit intention.)

In many cases, the referential intention suffices to fix the value of E completely. It will when the value is simply the speaker, for instance. But in some kinds of cases, further contributions from the context may be required.

One kind of case involves groups, where the speaker may intend to talk about the group, but not know exactly who is in it. In this case, it remains correct to say that the speaker's intention fixes the value of E, but we still need a further contribution from context to provide the group to which the speaker refers. The more important sort of case is one where the speaker's intentions only partially fix the value of E. This may happen if the speaker's intentions provide only some distinguished members of the group, or some property that determines it, but it is left up to the wider context to fully determine its extension. Here are a few examples:

(39) Tasty (to you).

Context: talking to a group of people, but do not know exactly who is in it.

Intention: make E that group.

Further contribution of context: fix who its members are.

(40) Tasty (to people like my readers).

Context: food columnist writing about unusual food.

Intention: make E whoever meets the condition of being one of the readers.

Further contribution of context: fix who meets the condition.

(41) Tasty (to the sort of people we are talking about)

Context: an on-going conversation about food and eating.

Intention: make E whoever is in the group implicitly fixed by our conversation.

Further contribution from context: determine what that group is.

In each of these cases, we see that a referential intention is a crucial component of the metasemantics of E, and it remains right to say that the speaker intends to talk about some individual or group. But especially as E may be a group, they can rely on context in numerous ways to help fix just what that group is.[33]

[33]This is actually a quite familiar metasemantic status. It is just the status we expect for restricted quantifier domains. In quantifier domain restriction cases, we expect speakers to be able to articulate either some members of a domain, or some salient properties of it. But they may rely on the wider context to fill in just which properties, or which individuals.

By lights of the classification of metasemantics as direct or indirect, I think the crucial role of the intention makes this count as direct. But it is not quite fully like the behavior a singular demonstrative (though it is close to the behavior of a plural demonstrative). So, to be slightly more guarded, we might gloss it as partially direct. Regardless, we will see in section III.1 a contrast with functional parameters, which lack any substantial role for referential intentions in their metasemantics, and are fully indirect.

II.4 Embeddings and Binding

We have now seen that E really works like other thematic implicit arguments. It shows the same syntactic properties, like selecting a PP complement and entering into control. It shows significant semantic properties, including its thematic role, but also further semantic properties affecting its value in context. Finally, it shows the (partially) direct metasemantics that goes with being a genuine thematic position. Its value is something speakers are intentionally talking about, and thus, its metasemantics is backed by speakers' intentions.

So far, we have focused on the ways the value of E is set by context. But E can also be set in other ways as well, in some constructions where predicates of personal taste are embedded. In this subsection, I shall explore some of them. In addition to showing some more of the important properties of E, this will fill in the claim that E leads a rich syntactic life. It will also point to some tempting speculation about how E is syntactically projected, and where its semantic properties come from. I shall first discuss the main embedding cases, and then the apparent binding-theoretic properties of E. Finally, I shall consider the question of whether E can be bound by a higher quantifier.

II.4.1 Embeddings and Binding

Experiencers need not be set by context when predicates of personal taste are embedded under attitude verbs like *consider* and *believe*:

(42) a. John/you/people in China consider duck tongue tasty.
b. John believes duck tongue is tasty.

In each of these, experiencer for the embedded *tasty* is naturally understood to be the matrix subject, regardless of the context. It can also pick out a

group including the matrix subject's value. For instance, in describing a debate among members of our food adventurer's club, we might have:

(43) John believes duck tongue is tasty but Max does not.

This naturally has a strict reading, where both beliefs are about tastiness by the standards of the group.

The semantics of embedding predicates of personal taste under attitude verbs has been extensively explored, by Lasersohn (2005), Pearson (2013), Sæbø (2009), and Stephenson (2007). I shall not explore it in detail, but I do wish to add one point about the behavior we see under attitudes, that further articulates the way our thematic E parameter behaves.

It has been observed by Stephenson (2009) and Pearson (2013) that implicit experiencers under binding are (at least typically) subject to an 'immediacy' requirement, that it be bound by the most local operator. So, we see (following Pearson):

(44) Mary thinks that John thinks that this cake is tasty.

This does not appear to have a reading where it means tasty to Mary.

In keeping with the idea that the experiencer argument leads a rich syntactic life, we see other sorts of constraints under embedding as well. Consider:

(45) a. The things John considers fun are fun.
b. Everyone who John talked to finds Chili Tasty.

Whereas the embeddings in (42) have readings where E is linked to John, these do not. Their only readings have the value of E in the lower predicates set by the context. (Though John can be included in the contextually determined value, they always have the reading where tasty or fun is for the current context.) This holds even though in (45a) John is marked as an experiencer, and is certainly contextually salient. We see here that the grammatically linked readings for (42) are precluded in syntactic configurations where the antecedent is embedded too deeply. This is an instance of the c-command constraint familiar from binding theory, and suggests the relation between the matrix subject and E in (42) is a syntactically mediated one.[34]

[34]The phrase 'binding' has come to be used in two different ways. Philosophers tend to use it to describe the relation between a quantifier and a variable. Linguists tend to use it for a grammatically determined coreference relation. I shall need to discuss both

It shows that E interacts with syntax in yet more substantial ways, as we should expect of a thematic parameter.

So far, we have seen some evidence that the linking in cases like (42) is governed by some grammatical principles, and is not just a pragmatic effect of contextual coreference. This is suggestive of a binding-theoretic relation. But the c-command constraint is a very general one, and it is not sufficient to show we have a typical binding-theoretic relation. Following Stephenson (2009), I do believe there is evidence that E enters into genuine binding relations. In particular, I believe with Stephenson that we see what 'Principle B effects' for E. Principle B is a condition from binding theory (e.g. Chomsky, 1982) that says that a pronoun cannot be bound by an element that is too close (roughly, within the same clause). In contrast, Principle A says that reflexives must be closely bound. We see Principle B effects in binding implicit experiencers, as was also noted by Stephenson (2009):

(46) a. */? John$_i$ is fun$_{E_i}$.
b. */? Mr. Narcissist$_i$ is beautiful$_{E_i}$.
c. * Max$_i$ dislikes people [$_{\text{CP}}$ who$_j$ [t$_j$ are beautiful$_{E_j}$]].

(Examples like (46a) and (46b) are from Stephenson (2009).) The clearest case here is (46c), where the 'anti-narcissistic' reading is not available. This sentence can only mean Max dislikes people who are beautiful to Max (or to the contextually provided group). Admittedly, some of the judgments (especially 46a and 46b) are delicate. But they give us reason to think that Principle B applies, and so, that E is governed by binding theory. This shows again how it enters into substantial syntactic relations.

I have put this claim with quite a bit of caution. The c-command constraint and the apparent Principle B effects are enough, I believe, to conclude that grammatical constraints, particularly binding theory, apply to E.[35] But

sorts of relations, so I shall have to rely on readers to keep these two notions of binding separate. When I need to highlight the difference, I shall use *binding-theoretic* to pick out the coreference notion (which is described by binding theory), and *quantifier* or *quantifier-variable* binding to pick out the relation between quantifiers and the variables they bind.

[35]I thus disagree with Lasersohn (2008), who argues that we do not really see Principle B violations, but rather, just contextual effects (flowing through a relativist semantics for predicates of personal taste). I believe Lasersohn's examples show that with enough contextual prompting, non-bound readings can have interpretations which provide the same referents as the unavailable bound readings would, but nonetheless, it seems to me that some of our cases are grammatically determined, and appear to be binding.

the claim that it is simply binding as described by the binding theory should be made with care. I shall review a few reasons for caution.

First, it is contentious whether and where implicit arguments generally can enter into binding-theoretic relations. There are a few cases where it appears they do. One sort of case involves the implicit subjects of DPs, noted by (Williams, 1985, 1987):

(47) a. Respect for oneself is important (respecter = respectee).
b. Admiration of him (admirer ≠ admiree).

These at least seem to reveal effects of Principles A and B of the binding theory.[36]

It is not easy to find clear cases of implicit experiencers binding, but consider an example adapted from Landau (2007):

(48) It was insulting that no one helped himself/him/John.

The reading where the person not helped and the person insulted are the same is only available for *him*. Again, this appears to indicate binding-theoretic constraints. (To really be sure, we would have to say a lot more about the syntax of these configurations than I have. But they are certainly suggestive.)

Insulting is an experiencer predicate, but not a predicate of personal taste. Can we find examples for genuine taste predicates? It is not easy. Not least of reasons, the syntax of these makes it hard to find examples. But we might consider cases like:

(49) a. Beautiful people that he hates are always coming to dinner.
b. * Beautiful people that himself hates are always coming to dinner.

The first of these (49a) appears to have a reading where the implicit experiencer of *beautiful* is bound by *he*, while the second (49b) is clearly bad. Again, we may be seeing a binding-theoretic effect. At the very least, we are seeing some binding-like constraints on how experiencers enter into linking relations.[37]

[36] Other discussions of binding and implicit arguments include Brody and Manzini (1988), Landau (2007), and Rizzi (1986).

[37] We have already seen that implicit experiencers can *control*. Many textbook-standard presentations distinguish control from binding (cf. Chomsky, 1986), but some views argue that the two are closely related, if not identical. For instance, Manzini (1983) advances

In addition to questions about the place of implicit arguments in binding theory, there are other reasons to be cautious. There are a number of delicate issues about binding that might bear on our conclusions, and this is no place to try to address them. For instance, there are well-known complications with binding and the experiencer arguments of psych predicates (cf. Belletti and Rizzi, 1988; Pesetsky, 1995). Moreover, the point of view properties of experiencers may well relate to some difficult issues about logophors (cf. Sells, 1987) or 'exempt anaphora' (Pollard and Sag, 1992; Reinhart and Reuland, 1993). But as I have been highlighting, we have some reason to see the familiar constraints of binding theory at work, we have good reason to see the implicit parameter E as subject to substantial syntactic constraints. This is what we should expect of a thematic parameter.[38]

---

a view on which control and binding theories are assimilated, as does Koster (1984), and others. The opposing side is argued by Borer (1989), Chierchia (1984), Williams (1980), and others.

[38]??REVISE WITH SAEBO?? Lasersohn (2009) claims there is an interesting difference between (42a) and (42b). He suggests that the bound reading is obligatory for the first, but not the second. He uses this to argue that *consider* and *believe* have different structures. *Consider* receives only a *de se* interpretation, which he analyzes in terms of a relativist content for the embedded clause. (Stephenson (2009) comes to similar conclusions, which she uses to argue for a form of relativism that invokes a special null DP PRO_j.)

I am skeptical of the claim that *considers* takes distinctively relativist propositional arguments, which are interpreted as *de se* of the matrix subject. There are a number of cases where the complement of *considers* is not in any way *de se* or linked to the subject:

(i) a. Max considers plastic bags dangerous (= dangerous to small children).
b. Max considers whiskey poisonous (= poisonous to college freshmen).

As I noted in section II.2.2, I am broadly skeptical of the *de se* aspects of personal taste predicates. As I described there, I think that the point of view requirement better captures their semantic properties. Describing a situation where someone considers or believes something strongly influences the setting of point of view, and so, makes the bound readings the only accessible ones. Thus, these sentences are naturally interpreted as indicating Max's point of view. Thus, I suggest, the apparent *de se* effects with embedded personal taste predicates are still just the result of the point of view requirement on the experiencer parameter.

However, there do appear to be some important differences between *consider* and *believe*, as Lasersohn says. For instance, the strict reading of (43), where the experiencer class is set to be a group containing the two subjects, does not seem to be available for *consider*. It does appear that *considers* strongly favors, or even requires, a singular binding of the experiencer to the matrix subject. I thus agree with Lasersohn that there is an interesting difference to be explained here. I cannot take Lasersohn's route to explaining it. Instead, I shall have to say something else, either about the binding properties associated with

If our conclusion holds that the implicit experiencer parameter can be bound, and that its binding is governed by the principles of standard binding theory, then it has a striking consequence. Which binding-theoretic principles apply is determined by the element bound: whether it is a pronoun, a reflexive, or a referring expression. The implicit experiencer seems to be showing us the properties of a pronoun. This bears on the question of what it means for an implicit argument to be present in the syntax that I mentioned in section I.2. One possibility mentioned there was that it is a matter of a thematically marked slot being present, but the slot is not filled (it is not 'projected in the syntax'). On this picture, it would be hard to make sense of how the slot could show the specific properties of a pronoun or reflexive. So, the apparent binding-theoretic effects invite the conclusion that the implicit experiencer is really a null pronominal—there is an element like *pro* that is syntactically projected, but not pronounced.[39] This a strong conclusion, and the evidence so far is not sufficient to really adopt it. It is especially strong, as the standard view is that English does not have this sort of null pronominal elements (unlike languages like Italian). But the evidence is striking. Even without hazarding a claim about the very difficult issue of what it means for an implicit argument to be present in syntax, we can safely conclude that the implicit experiencer in predicates of personal taste is showing a rich range of syntactic properties, including some of those that are normally associated with pronouns. Again, we will see in a moment that functional parameters do not enjoy such rich syntactic lives. Thematic parameters are a lot more like genuine syntactic items than functional ones are.[40]

---

the verb, or how it affects point of view in context. I shall have to leave this as an open problem.

[39]in a related vein, Landau (2010) distinguishes different sorts of implicit arguments, in terms of how they function as binders in binding theory.

[40]There is another way in which E seems to pattern with pronouns. In plural cases, the semantics of the binding relation we saw in (42) is one of membership. The binder is interpreted as a member of the experiencer class (or a subset if the binder is plural). In other cases of binding, this relation holds for pronouns and not reflexives. For instance:

(i) a. Mary was hoping that they would find better jobs.

b. * Mary and Bill were dating. Mary likes themselves.

Again, we seem to see the binding behavior of pronouns when we look at E.

II.4.2 Quantifiers

Having looked at some of the binding-theoretic properties of E, we should now turn to quantifier-variable binding. As I mentioned in section I.1, this has been one of the crucial tests for the presence of hidden parameters discussed in the philosophy literature. But as I already indicated there, it applies mainly to functional parameters, and its application to thematic ones is much less clear.

Interestingly, we find a significant split among speakers about whether they allow bound readings of the experiencer parameter in predicates of personal taste when it is under a quantifier. For instance, consider:

(50) Everyone had a fun vacation.

Some speakers sharply judge this to have a bound reading, where each person had fun for themselves on vacation. Other speakers equally sharply judge that there is no such reading. The judgments do not tend to be marginal: speakers' judgments are sharp, but there is significant variation on what they judge. To further complicate matters, more speakers find quantifier-bound readings acceptable when an attitude verb intervenes (as Lasersohn, 2008 notes), such as:

(51) Most people consider duck tongue tasty.

For this case, more speakers accept a bound reading, where there is a different experiencer class for each person. But as with (50), the judgments are still not uniform.

This reveals that quantifier-binding is not a fundamental diagnostic for thematic parameters. The evidence for E remains very solid, even for the dialects of speakers who do not accept the bound readings. Thus, quantifier-binding does not reveal a fundamental property of these sorts of hidden parameters.[41]

[41] Lasersohn (2008) notes that predicates of personal taste do not show weak crossover effects, which makes trouble for any analysis which posits a hidden variable-like argument which can be bound by a quantifier. This is a serious issue, and it needs to be addressed much more thoroughly than I am yet ready to do. But, let me mention several points that I think bear on the issue, more as a promissory note than as a real reply. First, we have already seen that the facts about binding in these cases are subtle (as they have been noted to be in some other cases of covert arguments). My main conclusion from this is that the experiencer is not simply like a hidden variable, and so, in a way, I can count the lack of weak crossover effects as yet more subtle facts in support of the main conclusion.

II.5 A Thematic Contextual Parameter

I have now explored at some length the properties of the hidden experiencer parameter E in predicates of personal taste. I believe we have seen enough about its behavior to draw our main conclusion. E is a hidden contextual parameter, but it is a genuine thematic implicit argument. As such, it behaves very differently than a variable.

First of all, we have seen some syntactic evidence that there really is an E parameter in predicates of personal taste, from complement licensing and from control, among other sources. The ability to enter into control relations, as well as binding relations, shows that E syntactically behaves like a normal thematic argument position, which is visible to syntax and enters into a range of syntactic processes. I shall suggest below that we do not see this for functional parameters.

When we turn to semantics and pragmatics, we see that E is a contextual parameter, which is normally set by context, but at least in some cases for some speakers, can be bound by a quantifier. As a thematic argument, it can also be set by binding relations with other DPs. But, beyond that, it shows substantial properties that are markedly different from those of variables. First of all, as a thematic argument, it carries thematic role properties. But we have also seen that it carries other semantic properties as well, notably, the point of view requirement. Variables carry no such properties. We have also seen that its ability to be set anaphorically is much more restricted than that of typical variables. Finally we seen that E has a (partially) direct metasemantics, which reflects that thematic argument positions go with referential intentions of speakers. Again, we will see that this sets thematic hidden parameters apart from functional ones.

The evidence shows that our thematic parameter behaves strikingly like an overt referring expression. It does so syntactically, entering into many of the syntactic relations overt arguments do; semantically, showing non-trivial semantic restrictions that overt DPs can; and metasemantically, being accompanied by a referential intention. Furthermore, the binding-theoretic effects

Second, I have put a great deal of weight on the comparison between predicates of personal taste and psych predicates. As Lasersohn himself notes, psych verbs are known to provide systematic exceptions to weak crossover principles, perhaps due to their having a more complicated underlying syntax. I think this might be a promising avenue for explaining the subtle facts about quantification we see. Of course, the explanation still needs to be provided.

we have seen at least suggest that E has the properties of overt pronouns. Indeed, it appears to be very much like a pronoun with enriched semantic content requiring point of view. I believe we have seen enough to conclude that thematic hidden parameters behave remarkably like overt pronominal expressions, and not like variables.

III A Hidden Functional Parameter

We have now looked in depth at one case of a thematic parameter: the experiencer parameter in predicates of personal taste. I have argued that there really are such parameters, and explored their properties enough to show that they differ in important ways from the model of the variable that is usually assumed for hidden parameters. In this section, we turn to the more familiar type of hidden parameters. As an example, we will explore the case of the standard parameter in gradable predicates. We will map out enough of its properties to see that it fits well the model of the variable, and we will see in part why it should be labeled a functional parameter (though the main explanation of the label 'functional' will have to wait until section IV). This will establish the main claim of the paper, that there are at least two different sorts of hidden contextual parameters.

Recall from section I.3 that we are assuming that there is some kind of hidden contextual parameter in gradable predicates that sets a *standard*, e.g. for *tall*, a standard for how tall something has to be to count as tall. Following Kennedy (1997, 2007), we considered a couple of options for how that might work (repeated from 14):

(52) a. Max is tall.
b. $\mathbf{tall}(\mathbf{Max}) > d_c$
c. $\mathbf{tall}(\mathbf{Max}) > s(\mathbf{tall})$

In the first, we simply have a contextually provided standard value d_c, in the second, we have a contextually provided function that computes the standard for a given adjective. Such a computation, as we discussed in section I.3, might involve apply a norm to a contextually provided comparison class. For the moment, we only need to assume that a standard is part of the semantics of gradable predicates in some form or another. As I mentioned in section I.3, I ultimately prefer the second sort of analysis, and so I shall refer to the standard as s.

Our task in this section is to contrast the properties of s with those of E, and show how functional parameters like the standard differ from thematic parameters like E. Unlike E, we will see that the model of the variable applies very well to s. The properties of the standard parameter have been extensively investigated in recent years, again unlike the experiencer parameter. Thus, I shall be able to be much more brief in this section, and I shall rely on the literature to establish the properties of the standard parameter. I shall consider the same family of issues we explored in section II for our example of a thematic parameter, but I shall take them in reverse order. I shall first examine the metasemantic properties of the standard parameter, and then its semantic and pragmatic properties. We will see that these are all very much in line with the behavior of variables. I shall then turn to the syntactic behavior of the standard, where we will see that unlike the experiencer parameter, the standard enters into few syntactic relations. With this in mind, we will ask how the standard function enters syntax. We will see that it is provided not by an adjective itself, but by a much more abstract Degree morpheme. As I shall explain in section IV, such elements are *functional* categories in syntax, which is why I have been all along referring to the standard as a functional parameter. Finally, we will see that the presence of variable-like functional parameters is established differently than the presence of thematic parameters. They behave differently, and they reveal themselves in different ways as well. In section IV, I shall suggest that these properties flow from its origins in a functional category.

III.1 Metasemantics of s

In section II.3 we saw that the metasemantics of E is importantly similar to that of explicit referring expressions. Though wider context can also be involved, speakers will have a referential intention that helps to fix the value of E, which they can readily make explicit. Thus, I described it as an overt intention.

There is generally no identifiable referential intention that goes with s. Speakers will generally not intend to talk about a standard value or standard function, and will mostly not have any idea what such a thing is. This is not to say speakers have no intentions that relate to classifying or comparing that affect the standard value. They usually will have many of those intentions. But they will not be intentions to refer to or otherwise pick out a single standard value or function.

To see the contrast, recall the test we ran in (38), which supposed someone says *Duck tongue is tasty*. We observed you can ask *To whom?* and get a direct answer, along the lines of *To me/I am talking about me* or *To that child/I am talking about that child*. This reports a referential intention, and is the mark of the direct metasemantics we discussed in section II.3. But take a simple case of a gradable predicate, e.g.:

(53) Max is rich.

Now we will find something very different. First, it is hard to formulate a direct query like *For whom?* (a reflection of our not having a thematic argument). The best we can do is say something like *What do you mean rich?* or *How rich is rich?*. The response will not be to refer to standard (almost no speaker could formulate such a response). The most likely response is the unhelpful, *You know, rich* or *Well, kind of rich*. A more thoughtful speaker might say something like *Well, you said Mary was rich, and so is Max*, or *We are talking about Microsoft* or *We are talking about Appalachia*.

Somewhere in all the intentions to compare and measure richness, plus the effects of the wider context, including previous discourse and the environment in which the claim is being made, a standard emerges. As the comparison class view makes vivid, often salient examples or groups has a great deal to do with how it is fixed. But there is nothing like a single referential intention at work.

Instead, the standard is fixed in context by a range of factors, including whatever intentions to compare and classify speakers have, the wider context including prior discourse, and, as is stressed by Kennedy (2007) and Kennedy and McNally (2005), the meaning of the adjective involved (and hence the preference for the s notation, which makes this explicit). Work on vagueness by Fara (2000) has stressed the interests of the speakers as well. The value is fixed by a range of factors from the context that combine, in complex ways. This is what I have called *indirect metasemantics* (Glanzberg, 2007). The standard parameter has a highly indirect metasemantics, as I think many of the parameters that follow the model of the variable do. In contrast, thematic parameters have a much more direct metasemantics.

III.2 Semantics and Pragmatics of s

Metasemantically, the standard parameter s differs from the experiencer E in lacking a referential intention. What of the pragmatic and semantic prop-

erties of the standard?

Semantically, the value of the standard parameter must be something of the right type: a degree value of we take the d_c approach, a function from adjective meanings (degree-valued functions) to degree values if we take the s approach. But that is about the only thing we can say about the semantics of the standard parameter. It has no thematic properties: indeed, it hardly makes sense to ask about them. There is no way that a standard value is an agent, experiencer or theme; and more generally, it is not something we conceptualize as a participant in an event that the sentence is describing. As I shall make much of in a moment, its function seems to be purely grammatical: it fills in values needed to make the semantics work out. The standard likewise carries no further selectional restrictions. Again, it hardly makes sense to ask what they would be. It displays nothing like the point of view property we discussed in section II.2.1. It behaves like a variable of the right type, which may pick up any contextually provided value of that type, but has no additional semantic content.

This leads us to expect that the standard should not show the kinds of limitations on anaphora we saw with E in section II.2.2. There, we saw that setting E anaphorically to a value that does not include the speaker or the speaker's salient group produces somewhat degraded results, and seems to require an intentional point of view shift. We see no such complications with the standard. Consider an example on par with (33):

(54) Anne and Bill and Chris were cooking duck at home.
   a. OK/? It was tasty.
   b. Bill is tall, so Anne made him get the plates out of the cupboard.

As we saw above, the reading of (54a) where the experiencer class is set to be Anne, Bill, and Chris, but not the speaker, appears somewhat degraded, and at least requires a point of view shift on the part of the speaker and hearers. In contrast, (54b) requires no such shift, and can easily be read as having the standard for tall be set by the group without the speaker (roughly, the standard is the average of the three heights). Note, what can make (54b) bad on that reading is having something else about the context make more people salient, like their living with the members of a basketball team. But this is just a normal effect of salience in anaphora, and does not indicate anything special about the standard parameter.

We have thus seen that semantically and pragmatically, the standard behaves like a variable of a given type, that needs to have its value set to an appropriate element provided by the context. It shows no more substantial semantic or pragmatic properties.[42]

III.3 Syntax and the Standard

So far, we have seen that semantically and pragmatically, the standard behaves like a variable. In the case of the thematic experiencer parameter, we saw that it has a rich range of syntactic properties, and in particular, that it enters into control and (probably) binding relations. In fact, the control properties of E were among the important pieces of syntactic evidence, along with complement licensing, cited for establishing its existence. The standard parameter, in contrast, does not occupy a thematic position. As we will see here, this precludes it from entering into these sorts of syntactic relations. In contrast to the experiencer argument, the standard leads an impoverished syntactic life. Putting our observations about syntax and semantics together, we will see that whereas the experiencer behaves semantically and syntactically very much like an overt referring expression, the standard parameter does neither.

When it comes to the syntax of the standard, we will see a few ideas about where it fits into phrase structure in section III.4 below, but we just do not see the kinds of syntactic effects we saw with the thematic experiencer parameter. This is mostly a general point. Control and binding are understood as applying only to DPs in thematic positions. Yet clearly, as we have observed, the standard is not in one. (We will see more about what sort of position it might occupy in section III.4.) Hence, we see nothing like control of binding. [43]

This is mostly a general theoretical claim about the syntax of binding and control. Because we do not have thematic positions, attempts to set

[42] As we noted in section II.2.2, the standard does share with the experiencer and other implicit parameters the property of having greater anaphoric potential than overt pronouns. Unlike overt pronouns, implicit parameters do not require overt antecedents in anaphora (cf. Condoravdi and Gawron, 1996; Partee, 1989). We may also observe that they function like definites in requiring their values to be already provided by the context, either anaphorically or deictically. They do not function like indefinites in setting up targets for anaphora.

[43] Of course, control into adjuncts is well-known, but the controller and PRO still must occupy thematic positions.

up control or binding relations with the standard do not really get off the ground. But to drive the point home, observe we see no control in:

(55) a. * Max is tall [PRO to be a better standard of comparison].
b. Chili is tasty [PRO to eat].

This is not a minimal pair, but it is the closest we can come to the form of the control evidence we saw for E, and it clearly fails.

Likewise, as the s position is non-thematic, it is hard to even get environments which might count as binding-theoretic to test. The embedding examples we saw with predicates of personal taste fail:

(56) John/people in China consider Max tall.

This can have a reading where the standard is set by *John* or *people in China*, but it is in no way preferred to the reading where he is tall for a basketball player. It simply depends on which is contextually salient. Mentioning John or people in China can affect salience, but that seems to be as far as the embedding reflects any linking. This is in sharp contrast to examples like (42), which strongly prefer, or perhaps even require, a bound reading. Some further evidence that all we see here is the pragmatics of salience comes from the fact that the effect in (56) does not fall under the c–command constraint. We see it just as much in cases like:

(57) a. The people John considers tall are tall
b. Everyone who has seen elephants considers Hathi large.

These have the same range of readings as (56), including those where *John* or *elephants* has some effect on the standard. But, they do not c-command any possible position for the standard, and as with (56), they are readily contextually defeasible. It appears we simply have an effect of contextual salience.

With the experiencer argument, we were able to (perhaps) detect effects of the binding principles. Again, as the standard does not occupy a thematic position, we cannot really even find examples that test whether it is subject to them. But at least, we can observe that whatever is involved in cases like (56)—I claim contextual salience—is insensitive to locality just as it is to c-command. Compare:

(58) a. John/people in China consider Max tall.
b. John/people from China are tall.

We get the same range of readings for both, showing no preference depending on locality or non-locality.

The one embedding construction that produces a grammatical link is quantifier-binding, just as we should expect for variables. Stanley (2000) notes we get bound readings in sentences like:

(59) Every species has members that are small.

Presumably the quantifier *every species* is somehow binding the standard variable. Along the way, this reminds us that quantifier-binding can affect a range of positions, including non-thematic ones. But it also reminds us that there remain some real puzzles about the syntax of some of these quantificational effects. Our most natural story about quantifiers and variables in syntax (like that of May 1985) describes how quantifiers in their scope positions bind variables in thematic positions. The facts seem clearly to show that functional parameters in non-thematic positions can be bound, but the syntax underlying such constructions needs to be clarified.[44]

We thus find that when it comes to syntax, there is not anywhere near as much to say about s as there was about E. We find s figures in quantifier-binding configurations, but not control or binding-theoretic ones. This is just the sort of result we should expect for a variable occupying a non-thematic position. Semantically, pragmatically, and now syntactically, we have seen that its variable-like behavior is about all there is to this parameter.

III.4 Degree Morphemes and s

So far, we have seen that the standard parameter has much thinner properties than the experiencer, syntactically and semantically. I have stressed that it does not occupy a thematic position, which accounts for much of its impoverished syntactic life, and its lack of thematic role or selectional properties. But how then does it enter into syntax? In this section, I shall sketch one way of seeing how it does (mostly following Kennedy, 1997, 2007). Along the way, I shall finally be able to indicate why I have labeled s a functional parameter.

Let us begin by reviewing the approach to gradable predicates I sketched in section I.3. Recall, the basic semantics of gradable adjectives makes them

[44]This may well add support for the analysis of Kennedy (2007), which relies on a somewhat unusual mechanism for accounting for bound readings, but at least, offers a story about how it works and what the underlying syntax is.

functions from individuals to degrees on a scale. According to this analysis, there is no standard parameter in an Adjective Phrase (AP) at all (though there may be other parameters, like E). As we saw there, this makes the comparative construction appear more basic, as the meaning of AP feeds directly into comparatives. Above we saw (repeated from 13):

(60) a. Max is taller than Jane is.

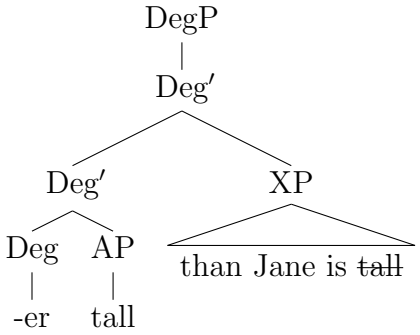
b. $\mathbf{tall}(\mathbf{Max}) > \mathbf{tall}(\mathbf{Jane})$

Our two sample options for the positive form given in (14) replace the right-hand side of the inequality (roughly corresponding to *than Jane is*) with either d_c or $s(\mathbf{tall})$. These two options present possibilities for the semantics of the standard (which also affect its pragmatics). But both put some additional structure into the positive form, beyond the adjective and its theme argument. Syntactically, our question is where this structure comes from.

The idea pursued by Kennedy (1997, 2007) is that this additional structure comes from a *Degree Phrase* (DegP) construction. The comparative constructions helps to make the basic form of the DegP visible. It is headed by the Degree element which appears as *more* in *more tall than Jane is* and as the morpheme *-er* in *taller than Jane is*. The underlying structure looks very roughly like:

(61) a. taller than Jane is

b.



Here, the Degree morpheme *-er* heads the Degree Phrase. Notice, this head does not mark any thematic positions. It selects a complement AP, and it selects an additional element which provides the comparison. To sweep a range of difficult issues under the rug, I have simply labeled that XP, but there has been considerable discussion of what the syntax of XP is. That will not be of concern to us here.[45] I am also ignoring many questions about

[45]See e.g. Kennedy (2002) and Lechner (2004).

just howXP is integrated into a DegP structure. Kennedy (1997) suggests it is selected by the Deg head and adjoined to Deg′ (much as the verb *behave* selects an adjunct), and that is the way I have represented the syntax. But all we care about is that it is a position selected by the Degree head, and it is not assigned a thematic role.[46] I am assuming, for simplicity, that the XP is suitable to denote a degree (it is in effect clausal). This allows for a relatively straightforward compositional semantics.[47]

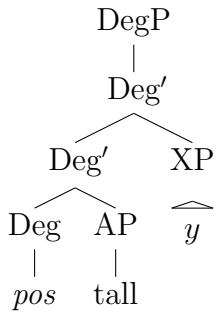
The positive form is the same, with a null morpheme *pos* in place of *-er*. So, *tall* looks like:

(62) $[_{\text{DegP}}\ [_{\text{Deg}}\ pos\ ]\ [_{\text{AP}}\ \text{tall}\ ]\ ]$

But where does the standard fit in this structure? It cannot, we have seen, come from AP. So, it must come from the Degree head.

How does the Degree head provide a standard? There are two natural ideas. One is to see the standard as filling the same StandP position occupied by the comparative phrase *than Jane is* in the comparative form. Our structure would then be something like:

(63)



The position occupied by *than Jane* is now filled by a variable y ranging over degrees, which is set to a value d_c provided by context. We can then interpret *pos* as a relation, such as: $[\![pos]\!]^c = \lambda g \lambda y \lambda x.g(x) > y$.

There are a number of delicate issues I am ignoring, both in the syntax and the semantics. More needs to be said, for instance, to account for the place of *for*-phrases on this sort of story. Those who prefer an analysis of the standard in terms of a comparison class will be particularly concerned about this. Presumably, some additional structure in XP is required, or perhaps a

[46]Related syntactic ideas are developed by Abney (1987), Corver (1997), and Grimshaw (2005).

[47]Which sorts of comparatives should be given this kind of structure has been a matter of much debate. See Heim (1985) and Kennedy (2002) for some discussion.

variant where a different adjunct is attached to Deg′. (Kennedy (1997) opts for polysemy in the *-er* morpheme to account for some of this.) But delicate issues aside, we have an illustration of how the standard might be provided by a position selected by the Degree head, but not assigned a thematic role.

This first sort of option is in the general spirit of the early Kennedy (1997). There are some reasons to be nervous about it. The free-form version I have sketched here, especially, raises detail worries about the structure proposed for the positive form, and its relation to comparatives. As I said, I am taking this only as a simplified illustration, so the detail worries about syntax are not of great concern. But there are also conceptual worries. One is just how a variable winds up filling the basically clausal XP position. The problem is not degree variables themselves, nor the presence of the degree denoting clausal position. Those are all built into the framework. The worry is how the variable winds up filling the position. As I have mentioned, we normally think of variables as occupying syntactic positions only as a result of particular syntactic processes, and it is not clear just how they would apply here. But still, the possibility that we might find the standard parameter occupying a position assigned by the Degree head still seems clear enough to work with.

Beyond these sorts of technical worries about syntax, the later Kennedy (2007) argues that view of the sort we have been considering get the semantics and pragmatics of the positive form wrong. A conservative change, which allows for observations about different semantic properties of adjective classes (e.g. Kennedy, 2007; Kennedy and McNally, 2005) is to allow the AP to be a semantic argument in the computation of the standard. This yields a a form of the second analysis indicated in (14), using the standard function s. Depending on how much internal structure we are willing to posit in XP for the positive form, there are a number of ways to implement this, all of which stay close to the structure we see in (63). We might still assume there is some deletion in XP, and it can return a degree value $s(\textbf{tall})$ rather than simply y. Or, we can modify the value XP takes to be s, the contextually determined standard function variable (cf. Barker, 2002; Lewis, 1970). We would then modify the semantics of *pos* to be $[\![pos]\!]^c = \lambda g \lambda s \lambda x.g(x) > s(g)$. This is not the place to try to decide among these options. It requires a technical exploration of the positive morpheme and the structure of the XP. My main point here is just that it is near enough to the simple form in (63). There is, one way or another, a standard variable introduced by the structure of the DegP. As before, the contextual parameter is provided by a phrase selected by the DegP, and not assigned a thematic role.

As I read Kennedy (2007), this is not what he has in mind. Rather, he takes s to be a context dependent aspect of the meaning of *pos* itself. (Thus, the value of *pos* would change in a notationally small but important way, to: $[\![pos]\!]^c = \lambda g \lambda x.g(x) > \mathbf{s}(g)$.) In this way, the standard comes not from a position determined by the Degree head, but from the meaning of the Degree head itself. Presumably, the idea is that the null morpheme *pos* does not select an adjunct, and semantically it is able to return a predicate without one.

I shall not attempt to decide between these options here, though if I had to chose, I would opt for the intermediate position that relies on an XP position whose interpretation includes s. But we do not have to choose now. Any of the options shows that the standard is provided by the Degree head, either by occupying a position selected by the Degree head, or being part of the semantics of the head itself. We can thus conclude that the standard comes not from the adjective, but from the Degree.[48]

Either way, the standard does not occupy a thematic position, and it is not a thematic implicit argument. Elements like the Degree head are what are called *functional categories*, as I shall explain more in section IV. But to anticipate a little, we see that the Degree provides a sort of 'grammatical glue' that allows the AP to form a predicate, and allows it to form comparative phrases as well. Functional categories provide this kind of 'glue'. As the standard is provided by a functional head, I have labeled it a functional parameter. I shall suggest in section IV that the variable-like behavior we see for the standard follows naturally from its functional source.

III.5 Evidence for s

Assuming some form of analysis like we just reviewed, or something like it, is right, what is the evidence that an s parameter is really there? It turns out the evidence is quite indirect; perhaps more so than for agentless passives or

[48]In my 2007) I effectively endorsed Kennedy's view. But in retrospect, I do not think I needed to take quite so firm a stand. My main point there was that the indirect metasemantics of the standard can take into account factors including the meaning of the adjective involved. This is compatible with any semantic analysis we have considered, including the d_c one. Kennedy and McNally (2005) offer evidence that in some cases, the semantics of an adjective overrides the pragmatics of value setting. For this reason, I am still inclined to rely on s, as it captures the behavior of those and the more context-dependent cases together. But that leaves open the intermediate option we just considered.

for E.

It is often observed that the positive forms of gradable adjectives license *for*-phrases and measure phrases:

(64) a. Max is tall for a jockey.
b. Max is five feet tall.

The idea is that both somehow specify the standard, and it is often suggested that the *for*-phrase is an overt realization of the position occupied by the standard variable.

We have already seen some reason to be wary of these argument. Though they clearly tell us something about the semantics and syntax of gradable predicates, it is not at all clear that they directly reveal a distinct syntactic position that can be occupied by a hidden parameter. If indeed there is a syntactic XP position in the positive form, it is not at all clear that a *for*-phrase is of the right semantic type to occupy it. It is not clear if it returns a d_c or an s value. Furthermore, Kennedy argues, convincingly to my mind, that treating the *for*-phrase as realizing a comparison-class like standard input gets the semantics and pragmatics wrong. Instead, he suggests, a *for*-PP is a complement of the adjective which functions to restrict the domain of its semantic value. Both the syntax and semantics of these sorts of expressions are subtle, and it is hard to draw a firm conclusion about the presence of a parameter from them. But this means it is not easy to conclude from the licensing of *for*-phrases that a standard parameter is present. Hence, we see our first difference with thematic implicit arguments, where the licensing of PPs seemed much more clearly to show us the presence of a lexically selected argument.

With thematic parameters, we were also able to provide other sorts of syntactic evidence, notably evidence from control and possibly from binding. We saw in section III.3 that none of these arguments can be applied to the standard. So, by the measure of the arguments for the agentless passive which we used as a baseline in section I.2, functional parameters like the standard come up short.

On the other hand, we have also seen one point on which the standard does better than the experiencer parameter. We have seen in section III.3 that the standard is readily bindable by quantifiers. The bound reading of (59) provides a different standard for each species. Elephants have members that are small for elephants, and fleas have members that are small for fleas.

The binding argument claims that this shows there must be a bound variable in the logical form of (59).

The binding argument has been the subject of much discussion.[49] I myself find it compelling, but it is also a somewhat blunt instrument. I believe it tells us there must be some contextual parameter in the sentence, but it does little to tell us exactly where it figures syntactically, or what its properties beyond bindability are. Again, we see a contrast with the evidence we saw with thematic implicit arguments, where syntactic considerations allowed us to fairly directly map out the argument structure of predicates, including the implicit arguments.

In discussing the evidence for E, I noted that the case was somewhat indirect, relying on a range of syntactic effects. If anything, the evidence for s is notably more indirect. The binding argument indeed tells us there must be something bindable somewhere, but not much about what. The evidence from *for*-PPs is equivocal, at best. What really convinces us that there is a standard function is the compellingness of the analyses that rely on it, of the sort sketched in section III.4, or in other forms. Insofar as the semantic and syntactic accounts we have looked at, or their cousins, offer a good theory, we are willing to follow it and posit s. The binding argument tells us that one way or another we will have to take some such step, so we do it when the theory looks right. But the real case for any specific proposal about s is, I believe, is that cannot build a theory without it, and the theory is good. The case for the standard is thus quite holistic, and the case for any specific syntactic and semantic account of the standard is decidedly holistic.

III.6 The Standard and the Model of the Variable

We have now explored the syntax of the standard, as well as its semantics, pragmatics, and metasemantics. We have seen throughout that the standard accords very well with the model of the variable for contextual parameters. This makes it markedly different from the thematic experiencer parameter.

Semantically and pragmatically, s behaves like a variable. It lacks semantic content beyond its type, and in particular, lacks thematic properties or other selectional restrictions. As a variable, it simply has its value set by context, or by binding by a quantifier. When set by context, either anaphorically or deictically, it shows few restrictions, beyond needing an appropriately

[49] See the references in footnote 1.

salient element of the context.

There are important ways in which the standard is highly implicit. It has a highly indirect metasemantics, so its value is not directly set by a speaker's referential intention. Correspondingly, it is not in a thematic position in syntax. Both these features highlight the same point: the standard does not pick out one of the participants of an event as described by a sentence. Those are the things a speaker should have referential intentions to pick out, and they correspond to the thematic positions in the sentence. A syntactic consequence of this is that the standard is unable to enter into binding or control relations, and generally, not to figure into wider syntactic processes other than quantifier-binding. It really is just like an implicit variable, which merely has its value set by context or quantifier-binding, and feeds into whatever compositional semantics its syntactic position provides for, but nothing more.

In the discussion of the syntax of the standard in section III.4, I noted that it is not entirely clear whether we describe it as a variable occupying its own non-thematic XP position, or whether we think of it as a feature of the semantics of a functional Degree head. But either way, it turns out the model of the variable is an accurate model for the standard parameter.

IV Thematic and Functional Parameters

Our detailed examination of the thematic hidden parameter E, and our somewhat briefer discussion of the functional parameter s, have shown that they are different. One fits the model of the variable, while the other is strikingly like an overt referring expression (indeed, like an overt pronominal). I thus believe we have established the main claim of this paper: not all contextual parameters are the same, and there are at least two important classes of contextual parameters.

The range of differences between the two sorts of parameters is wide. It is not merely that one is semantically thin, like a variable, and the other semantically richer. They differ in their syntactic properties as well. As we have seen, thematic parameters are able to enter into syntactic dependencies, while functional ones are not. They also differ in their metasemantics. Speakers intend to pick out the value of a thematic parameter, but not a functional one. We have seen that this leads to different sorts of evidence for our two sorts of parameters. The evidence for both is somewhat indirect;

but the implicit thematic parameter enjoys more direct and more focused evidence, while the functional relies on holistic evidence from syntactic and semantic theories.[50]

I shall conclude by suggesting what the basis of these differences is, and along the way, I shall finally explain why I have labeled the standard parameter a *functional* parameter. The source of the experiencer parameter, I have claimed, is the adjective itself, which assigns a thematic position. If we follow the 'not projected' line, this thematic position just is the implicit parameter. If we follow the line I have cautiously hazarded here, the thematic parameter is a covert pronominal element that fills the position. Either way, the thematic parameter is determined by the adjective, as its other thematic positions are. In contrast, the source of the standard parameter is the Degree head. It either occupies an XP position selected but not assigned a thematic role by Deg, or it is a feature of the semantics of *pos* itself. The 'thin' properties of the standard, I propose, stem from the corresponding functional properties of the Degree head.

As I briefly mentioned in section III.6, there are broadly two types of expressions in language: *lexical* and *functional*. The Degree head is a functional head, while adjectives are lexical. Generally, the lexical categories are the familiar ones of Noun, Verb, and Adjective.[51] These are open classes, which can expand as our interests or ability to describe the world around us grow. They provide the core content of the propositions we express and convey with language. Such content is sometimes glossed as 'idiosyncratic', as it varies with our concerns and abilities. The open-class nature of these categories reflects this. Semantically, we think of idiosyncratic content as

[50]It is tempting to think, both from the kinds of evidence for them and the kinds of behaviors they display, that thematic parameters might be somewhat less objectionable to those like Bach (1994, 2000), Carston (2002, 2004), Recanati (2004), and Sperber and Wilson (1986) who have been skeptical of hidden structure in logical forms. I do not know of any discussion from their point of view that indicates sensitivity to the distinction I have advocated here, so it is hard to be sure. Recanati (2004) does discuss some cases of what I classify as thematic hidden parameters. He grants that some of them are at least pragmatically obligatory, though he also labels them as one sort of unarticulated constituent. However, he also counts the standard as having the same status, while he explicitly denies the presence of an argument in agentless passives. The latter, he says, is merely 'metaphysically implied'. Thus, his approach cross-cuts the distinction between thematic and functional parameters.

[51]The status of prepositions as lexical or functional is uncertain. See Baker (2003) for an argument that they are non-lexical.

providing descriptions of events or states, and their participants. It thus tells us what things are like. The formal reflex of this is that lexical categories all assign thematic roles, which are the participants in the events or bearers of the states they describe. Thematic roles are also the key point of interface between the lexical entries for lexical items and their syntax, and thus, semantics and syntax of lexical categories is thus fundamentally centered around thematic roles.

Functional categories might be a little less familiar, but they have played an increasingly important role in linguistic theory. They include the complementizers (*that* and *which*), tenses and other inflectional elements, logical connectives, etc. Recently, it has been argued that determiners (quantifier-expressions) are a functional category. Degree morphemes are likewise functional. Speaking loosely, functional categories are the 'grammatical glue' that holds a sentence together. This is most visible for the complementizers, which glue relatively clauses to nouns. But the same can be said of inflectional elements, which in effect glue the whole sentence together, according to current theories in syntax. As pieces of glue determined by grammar, the functional categories are closed classes, and they do not enter into derivational morphology. Semantically, some functional categories like complementizers seem to have little or no content at all. Other categories, like tenses and Degree, have highly abstract contents, and do not directly describe events or states the way lexical categories do. They are often described as "lacking descriptive content" (Abney, 1987). Often, as in the case of Degrees, the contents are partly about making compositional semantics fit together (like turning a degree-valued function into a predicate), and adding some abstract content (like the $>$ relation). Along with the observation that they do not directly describe events goes the more formal point that they do not assign thematic roles. They may select complements, but do not assign thematic roles.

In keeping with their roles as grammatical glue, functional categories typically select a lexical-phrasal complement, and they form a kind of grammatical wrapper around the lexical phrase. DegP selects a gradable AP, and forms a wrapper around it. This converts the AP into a predicate, and can add a mode of comparison (e.g. $>$ or $<$), but the specific content of how something is being described comes from the lexical category Adjective.[52]

[52]Important discussions of functional categories include Abney (1987) and Grimshaw (2005). See Fukui (2001) for a survey. I have argued that a useful diagnostic for lexical categories is provided by metaphor (Glanzberg, 2008): lexical categories can be given metaphorical interpretations, but functional ones cannot.

Our two sorts of hidden parameters correspond to these two sort of linguistic categories. Thematic parameters are introduced by lexical categories. Our thematic parameter E is introduced by a certain class of adjectives. Functional parameters are introduced by functional categories. Our functional category s is introduced by Deg. I suggest this makes their distinctive properties exactly the ones that we should expect.

First, the thematic parameters correspond to thematic positions assigned by lexical elements. Thus, they pick out participants in events as we are describing them with sentences. We should expect direct metasemantics to go with these participants, as in describing the event, we will form referential intentions to pick out those participants. Likewise, they can be assigned distinctive semantic contents that go with those events and their participants. There appear to be a number of syntactic relations that are defined on these sorts of positions, including binding and control. These are syntactic relations that govern grammatically determined coreference (or related properties), and so seem to apply only to the thematic positions where reference, backed by referential intentions, applies. We should expect thematic hidden parameters to be able to enter into those relations. Even when the parameter that fills a thematic position is itself hidden, the position corresponds to part of our intuitive description of the event as provided by the lexical items, and is coded up in the sentence as such. Thus, thematic parameters behave like overt elements in important ways.

In contrast, the functional parameters correspond to functional heads, or positions they assign. These are not thematic positions, and they do not directly enter into descriptions of events in any normal way. They thus have at best highly abstract or 'thin' content. When a context dependent element has this sort of content, it winds up behaving like a variable. Thin or abstract content shows up as only providing grammatical type, and a context dependent element only specified for grammatical type functions as a variable over that type. We should not expect any sort of direct metasemantics for functional parameters, as their positions do not correspond to participants in events as we are describing them with our sentences. As parts of the 'grammatical glue', functional parameters show us syntactic properties related to phrase structure and semantic properties related to semantic composition. But they do not enter into relations like binding or control that are restricted to thematic positions.[53]

[53]Partee (1989, p. 267) asks of contextual parameters, "Why Not Do It All with Pro-

The distinction between thematic and functional parameters is thus an instance of a very general distinction between functional and lexical categories, but it also has wider morals for how we think about hidden parameters. I shall conclude by mentioning two. First, it reveals something about the evidence we can find for hidden parameters. Thematic parameters, as we have seen all along, go with a different pattern of evidence than functional ones. Whereas binding is crucial, if not definitive, for functional parameters, it is one piece of evidence among many we might find for thematic ones. As functional categories are basically like variables, bindability is a key to finding them. But thematic parameters are not particularly like variables, and the syntactic configurations that thematic arguments figure into are more important for spotting them.

Finally, the thematic versus functional distinction tells us something about what it is for a parameter to be hidden. Thematic parameters are only barely hidden at all. We have substantial intentions that go with them, can recognize the argument positions they fill conceptually, and can spot them syntactically. They are unpronounced, but hardly hidden. It is the functional parameters that are hidden in a much more thoroughgoing way. They do not correspond to anything in our intuitive conceptualization of the content of a sentence. Rather, they are part of the abstract grammatical glue that language imposes and exploits. Like most of that sort of structure, we find them indirectly, and only get a handle on what they are like via our developed theories of the language faculty.

---

nouns?" She goes on to offer some reasons why not, but we can offer her one more here. Though some contextual parameters might well be like pronouns, the functional ones are not, and doing it all with any one sort of covert nominal would miss the difference.

Partee's discussion, following work of Mitchell (1986), concentrates on broadly locative or perspectival parameters that appear with expressions like *local, opposite*, and *enemy*. She notes significant variation in which such expressions allow overt pronominals to realize their arguments; and when the are allowed, in which sorts of contexts they are felicitous. With respect to the distinction I have drawn here, her observations make the question of whether her cases are of thematic or functional parameters (or even some third option?) an interesting one. With Partee, I think that only a thorough investigation of the details can tell us, and I shall not hazard a guess now. She stresses that these cases show context dependence associated with open-class items. That might be seen as suggesting they are assigned by lexical items, and so should wind up as thematic. But, only a thorough investigation can decide if they are really assigned by a lexical category, or by a functional shell which surrounds it (as the standard is). If they are really assigned by the lexical categories, we would still like to which of the properties of thematic arguments they have.

References

Abney, S. P., 1987. *The English Noun Phrase in its Sentential Aspect*. Ph.D. dissertation, MIT.

Bach, K., 1994. Conversational impliciture. *Mind and Language* **9**:124–162.

———, 2000. Quantification, qualification, and context: A reply to Stanley and Szabó. *Mind and Language* **15**:262–283.

Baker, M., K. Johnson, and I. Roberts, 1989. Passive arguments raised. *Linguistic Inquiry* **20**:219–251.

Baker, M. C., 2003. *Lexical Categories*. Cambridge: Cambridge University Press.

Barker, C., 2002. The dynamics of vagueness. *Linguistics and Philosophy* **25**:1–36.

Bartsch, R. and T. Vennemann, 1973. *Semantic Structures: A Study in the Relation between Semantics and Syntax*. Frankfurt: Athenäum, 2nd edn.

Belletti, A. and L. Rizzi, 1988. Psych-verbs and θ-theory. *Natural Language and Linguistic Theory* **6**:291–352.

Bennis, H., 2000. Adjectives and argument structure. In P. Coopmans, M. Evaraert, and J. Grimshaw (eds.), *Lexical Specification and Insertion*, pp. 27–67. Amsterdam: John Benjamins.

———, 2004. Unergative adjectives and psych verbs. In A. Alexiadou, E. Anagnostopoulou, and M. Everaert (eds.), *The Unaccusativity Puzzle*, pp. 84–113. Oxford: Oxford University Press.

Bhatt, R. and R. Izvorski, 1998. Genericity, implicit arguments, and control. *Proceedings of the Student Conference in Linguistics* **7**.

Bhatt, R. and R. Pancheva, 2006. Implicit arguments. In M. Everaert and H. van Riemsdijk (eds.), *Blackwell Companion to Syntax*, vol. II, pp. 554–584. Oxford: Blackwell.

Bierwisch, M., 1989. The semantics of gradation. In M. Bierwisch and E. Lang (eds.), *Dimensional Adjectives*, pp. 71–261. Berlin: Springer-Verlag.

Borer, H., 1989. Anaphoric AGR. In O. Jaeggli and K. J. Safir (eds.), *The Null Subject Parameter*, pp. 69–109. Dordrecht: Kluwer.

Bresnan, J., 1982. Control and complementation. *Linguistic Inquiry* **13**:343–434.

Brody, M. and M. R. Manzini, 1988. On implicit arguments. In R. M. Kempson (ed.), *Mental Representation: The Interface between Language and Reality*, pp. 105–130. Cambridge: Cambridge University Press.

Cappelen, H. and J. Hawthorne, 2009. *Relativism and Monadic Truth*. Oxford: Oxford University Press.

Cappelen, H. and E. Lepore, 2005. *Insensitive Semantics*. Oxford: Blackwell.

Carston, R., 2002. *Thoughts and Utterances*. Oxford: Blackwell.

———, 2004. Explicature and semantics. In S. Davis and B. S. Gillon (eds.), *Semantics: A Reader*, pp. 817–845. Oxford: Oxford University Press.

Chierchia, G., 1984. *Topics in the Syntax and Semantics of Infinitives and Gerunds*. Ph.D. dissertation, University of Massachusetts at Amherst. Published by Garland, New York, 1988.

Chomsky, N., 1977. On *Wh*-movement. In P. W. Culicover, T. Wasow, and A. Akmajian (eds.), *Formal Syntax*, pp. 71–132. New York: Academic Press.

———, 1982. *Some Concepts and Consequences of the Theory of Government and Binding*. Cambridge: MIT Press.

———, 1986. *Knowledge of Language*. New York: Praeger.

Cinque, G., 1990a. Ergative adjectives and the lexicalist hypothesis. *Natural Language and Linguistic Theory* **8**:1–39.

———, 1990b. *Types of $\bar{A}$-Dependencies*. Cambridge: MIT Press.

Condoravdi, C. and J. M. Gawron, 1996. The context-dependence of implicit arguments. In M. Kanazawa, C. Piñón, and H. de Swart (eds.), *Quantifiers, Deduction, and Context*, pp. 1–32. Stanford: CSLI Publications.

Corver, N., 1997. The internal syntax of the Dutch extended adjectival projection. *Natural Language and Linguistic Theory* **15**:289–368.

Cresswell, M. J., 1977. The semantics of degree. In B. Partee (ed.), *Montague Grammar*, pp. 261–292. New York: Academic Press.

Egan, A., forthcoming. De gustibus non disputandum est (at least, not always). In R. Feldman and T. Warfield (eds.), *Disagreement*. Oxford: Oxford University Press.

Epstein, S. D., 1984. Quantifier-pro and the LF representation of PRO_{arb}. *Linguistic Inquiry* **15**:499–505.

Fara, D. G., 2000. Shifting sands: An interest-relative theory of vagueness. *Philosophical Topics* **20**:45–81. Originally published under the name 'Delia Graff'.

Fillmore, C. J., 1986. Pragmatically controlled zero anaphora. *Proceedings of the Berkeley Linguistics Society* **12**:95–107.

Fine, K., 1975. Vagueness, truth and logic. *Synthese* **30**:265–300.

von Fintel, K., 1994. *Restrictions on Quantifier Domains*. Ph.D. dissertation, University of Massachusetts at Amherst.

Fodor, J. A. and J. D. Fodor, 1980. Functional structure, quantifiers, and meaning postulates. *Linguistic Inquiry* **11**:759–770.

Fukui, N., 2001. Phrase structure. In M. Baltin and C. Collins (eds.), *Handbook of Contemporary Syntactic Theory*, pp. 374–406. Oxford: Blackwell.

Glanzberg, M., 2007. Context, content, and relativism. *Philosophical Studies* **136**:1–29.

———, 2008. Metaphor and lexical semantics. *Baltic Yearbook of Cognition, Logic and Communication* **3**:1–47.

Grimshaw, J., 2005. Extended projection. In *Words and Structure*, pp. 1–73. Stanford: CSLI Publications.

Heim, I., 1985. Notes on comparatives and related matters. Unpublished ms, University of Texas, Austin, available at http://semanticsarchive.net/Archive/zc0ZjY0M/.

Hicks, G., forthcoming. *Tough* constructions and their derivation. *Linguistic Inquiry* .

Higginbotham, J., 1997. A plea for implicit anaphora. In H. Bennis, P. Pica, and J. Rooryck (eds.), *Atomism and Binding*, pp. 183–202. Dordrecht: Foris.

Jaeggli, O. A., 1986. Passive. *Linguistic Inquiry* **17**:587–622.

Jones, C., 1991. *Purpose Clauses*. Dordrecht: Kluwer.

Kamp, H., 1975. Two theories about adjectives. In E. L. Keenan (ed.), *Formal Semantics of Natural Language*, pp. 123–155. Cambridge: Cambridge University Press.

Kaplan, D., 1989a. Afterthoughts. In J. Almog, J. Perry, and H. Wettstein (eds.), *Themes from Kaplan*, pp. 565–614. Oxford: Oxford University Press.

———, 1989b. Demonstratives. In J. Almog, J. Perry, and H. Wettstein (eds.), *Themes From Kaplan*, pp. 481–563. Oxford: Oxford University Press. First publication of a widely circulated manuscript dated 1977.

Kennedy, C., 1997. *Projecting the Adjective*. Ph.D. dissertation, University of California, Santa Cruz. Published by Garland, 1999.

———, 2002. Comparative deletion and optimality in syntax. *Natural Language and Linguistic Theory* **20**:553–621.

———, 2007. Vagueness and grammar: The semantics of relative and absolute gradable adjectives. *Linguistics and Philosophy* **30**:1–45.

Kennedy, C. and L. McNally, 2005. Scale structure, degree modification, and the semantics of gradable predicates. *Language* **81**:345–381.

Kimball, J. P., 1971. Super equi-NP deletion as dative deletion. *Papers from the Chicago Linguistics Society* **7**:142–148.

King, J. C., 2014. The metasemantics of contextual sensitivity. In A. Burgess and B. Sherman (eds.), *Metasemantics: New Essays on the Foundations of Meaning*, pp. 97–118. Oxford: Oxford University Press.

Klein, E., 1980. A semantics for positive and comparative adjectives. *Linguistics and Philosophy* **4**:1–45.

Koenig, J.-P. and G. Mauner, 1999. A-definites and the discourse status of implicit arguments. *Journal of Semantics* **16**:207–236.

Koster, J., 1984. On binding and control. *Linguistic Inquiry* **15**:417–459.

Kratzer, A., 1981. The notional category of modality. In H.-J. Eikmeyer and H. Rieser (eds.), *Words, Worlds, and Contexts*, pp. 38–74. Berlin: de Gruyter.

Landau, I., 2000. *Elements of Control*. Dordrecht: Kluwer.

———, 2006. Ways of being rude. Manuscript, Ben Gurion University.

———, 2007. The explicit syntax of implicit arguments. Manuscript, Ben Gurion University.

———, 2010. The explicit syntax of implicit arguments. *Linguistic Inquiry* **41**:357–388.

Larson, R. K., 1988. Implicit arguments in situation semantics. *Linguistics and Philosophy* **11**:169–201.

Lasersohn, P., 2005. Context dependence, disagreement, and predicates of personal taste. *Linguistics and Philosophy* **28**:643–686.

———, 2008. Quantification and perspective in relativist semantics. *Philosophical Perspectives* **22**:305–337.

———, 2009. Relative truth, speaker commitment, and control of implicit arguments. *Synthese* **166**:359–374.

Lasnik, H. and R. Fiengo, 1974. Complement object deletion. *Linguistic Inquiry* **5**:535–571.

Lechner, W., 2004. *Ellipsis in Comparatives*. Berlin: Mouton de Gruyter.

Levin, B. and M. Rappaport Hovav, 2005. *Argument Realization*. Cambridge: Cambridge University Press.

Lewis, D., 1970. General semantics. *Synthese* **22**:18–67. Reprinted in Lewis (1983).

———, 1983. *Philosophical Papers*, vol. 1. Oxford: Oxford University Press.

Ludlow, P., 1989. Implicit comparison classes. *Linguistics and Philosophy* **12**:519–533.

MacFarlane, J., 2005. Making sense of relative truth. *Proceedings of the Aristotelian Society* **105**:321–339.

Manzini, M. R., 1983. On control and control theory. *Linguistic Inquiry* **14**:421–446.

———, 1992. The projection principle(s): A reexamination. In I. M. Roca (ed.), *Thematic Structure: Its Role in Grammar*, pp. 271–291. Berlin: Foris.

Martí Martínez, M. L., 2003. *Contextual Variables*. Ph.D dissertation, University of Connecticut.

Mauner, G. and J.-P. Koenig, 2000. Linguistic vs. conceptual sources of implicit agents in sentence comprehension. *Journal of Memory and Language* **43**:110–134.

May, R., 1985. *Logical Form: Its Structure and Derivation*. Cambridge: MIT Press.

McConnell-Ginet, S., 1973. *Comparative Constructions in English: A Syntactic and Semantic Analysis*. Ph.D. dissertation, University of Rochester.

Merchant, J., 2001. *The Syntax of Silence*. Oxford: Oxford University Press.

———, forthcoming. Ellipsis; A survey of analytical approaches. In J. van Craenenbroeck and T. Temmerman (eds.), *Oxford Handbook of Ellipsis*. Oxford: Oxford University Press.

Mitchell, J. E., 1986. *The Formal Semantics of Point of View*. Ph.D. dissertation, University of Massachusetts at Amherst.

Mittwoch, A., 1982. On the difference between *eating* and *eating something*: Activities versus accomplishments. *Linguistic Inquiry* **13**:113–122.

Moltmann, F., 2010a. Generalized detached self-reference and the semantics of generic *One*. *Mind and Language* **25**:440–473.

———, 2010b. Relative truth and the first person. *Philosophical Studies* **150**:187–220.

Neale, S., 2000. On being explicit: Comments on Stanley and Szabó, and on Bach. *Mind and Language* **15**:284–294.

Ninan, D., 2014. Taste predicates and the acquiantance inference. *Proceedings of Semantics and Linguistic Theory* **24**:290–309.

Partee, B. H., 1989. Binding implicit variables in quantified contexts. *Papers from the Chicago Linguistic Society* **25**:342–356.

Pearson, H., 2013. A judge-free semantics for predicates of personal taste. *Journal of Semantics* **30**:103–154.

Pesetsky, D., 1995. *Zero Syntax*. Cambridge: MIT Press.

Pinkal, M., 1995. *Logic and Lexicon*. Dordrecht: Kluwer.

Pollard, C. and I. Sag, 1992. Anaphors in English and the scope of binding theory. *Linguistic Inquiry* **23**:261–303.

Recanati, F., 2004. *Literal Meaning*. Cambridge: Cambridge University Press.

———, 2007. *Perspectival Thought*. Oxford: Oxford University Press.

Reinhart, T. and E. Reuland, 1993. Reflexivity. *Linguistic Inquiry* **24**:657–720.

Rett, J., 2015. *The Semantics of Evaluativity*. Oxford: Oxford University Press.

Rissman, L., K. Rawlins, and B. Landau, 2015. Using instrument arguments to understand argument structure for gradient representations. *Cognition* **142**:266–290.

Rizzi, L., 1986. Null objects in italian and the theory of *pro*. *Linguistic Inquiry* **17**:501–557.

Roeper, T., 1987. Implicit arguments and the head-complement relation. *Linguistic Inquiry* **18**:267–310.

Sæbø, K. J., 2009. Judgment ascriptions. *Lingusitics and Philosophy* **32**:327–352.

Safir, K., 1991. Evaluative predicates and the representation of implicit arguments. In R. Freidin (ed.), *Principles and Parameters in Comparative Grammar*, pp. 99–131. Cambridge: MIT Press.

Schaffer, J., 2011. Perspective in taste predicates and epistemic modals. In A. Egan and B. Weatherson (eds.), *Epistemic Modality*, pp. 179–226. Oxford: Oxford University Press.

Sells, P., 1987. Aspects of logophoricity. *Linguistic Inquiry* **18**:445—479.

Siegel, S., 2002. The role of perception in demonstrative reference. *Philosopher's Imprint* **2**:1–21.

Snyder, E., 2013. Binding, genericity, and predicates of personal taste. *Inquiry* **56**:278–306.

Sperber, D. and D. Wilson, 1986. *Relevance*. Cambridge: Harvard University Press.

Stalnaker, R., 1997. Reference and necessity. In B. Hale and C. Wright (eds.), *A Companion to the Philosophy of Language*, pp. 534–554. Oxford: Blackwell.

Stanley, J., 2000. Context and logical form. *Linguistics and Philosophy* **23**:391–434.

———, 2002. Nominal restriction. In G. Preyer and G. Peter (eds.), *Logical Form and Language*, pp. 365–388. Oxford: Oxford University Press.

Stanley, J. and Z. G. Szabó, 2000. On quantifier domain restriction. *Mind and Language* **15**:219–261.

von Stechow, A., 1984. Comparing semantic theories of comparison. *Journal of Semantics* **3**:1–77.

Stephenson, T., 2007. Judge dependence, epistemic modals, and predicates of personal taste. *Linguistics and Philosophy* **30**:487–525.

———, 2009. Relativism and the *de se* interpretation of PRO. *Proceedings of the North East Linguistics Society* **38**:387–400.

Stowell, T., 2004. The alignment of arguments in adjective phrases. In S. D. Rothstein (ed.), *Perspectives on Phrase Structure: Heads and Licensing*, vol. 25 of *Syntax and Semantics*, pp. 105–135. New York: Academic Press.

Williams, E., 1980. Predication. *Linguistic Inquiry* **11**:203–238.

———, 1985. PRO and subject of NP. *Natural Language and Linguistic Theory* **3**:297–315.

———, 1987. Implicit arguments, the binding theory, and control. *Natural Language and Linguistic Theory* **5**:151–180.