Third colloquium

Semantics and Philosophy in Europe

SPE3

BOOK OF ABSTRACTS

(Alphabetical order)

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Is Semantically Underdetermined Content Really Non-Propositional?

Is Semantically Underdetermined Content really Non-Propositional?

I. Semantic Underdeterminacy

Skepticism concerning the truth-conditional relevance of the semantic content (in context) of our utterances has brought theorists[1] to endorse the following claim, that I shall call *Semantic Underdeterminacy Thesis* (henceforth, SU):

(SU) The semantic content of a sentence *s* in context *c* (where *c* provides word-disambiguation and the references of indexicals and demonstratives) underdetermines the truth-conditions of an utterance *u* of *s* in *c*;

Supporters of SU point out that, for instance, the content (in context) of the following sentence

(1) Tipper is ready

is semantically underdetermined, in that it fails to specify the *purpose* for which Tipper is ready. This means that its semantic content (in context) does not determine an exhaustive truth-condition for an utterance of (1), and hence that it cannot determine the full-blown proposition that such utterance is expected to express.

II. Utterances, Situations and Truth Conditions

As opposed to SU, I shall argue that the semantic content of an utterance (the content of *s* in *c*) is *perfectly determined* for truth-conditional purposes. How is it? The idea behind the present proposal is that – stated very roughly – every utterance *aims at describing a situation*. Whenever we utter a sentence, there is always a situation we are in some sense related with that we wish to describe[2]. We could conceive of a situation as a "bit of reality", an arrangement of objects in the world having certain properties or bearing relations to each other[3]. For example, a situation s_1 could be such that Tipper has the property of being ready, and her purpose is to take the exam.

The particular *setting* in which the utterance occurs can be regarded as providing the resources for*"selecting" the described situation,* i.e. the situation such that, if it obtains, the uttered sentence is *true in it*. Take for example an utterance of (1) purporting to describe situation s_1, in which Tipper is ready to take the exam. The described situation could be selected (or at least constrained) on the basis of the following, utterance-related factors: (i) the sentence's content itself (also including the references of context-sensitive terms like "I" and "this", were they to occur); (ii) the conversation topic (e.g. Tipper's preparing the exam); (iii) the purpose of the conversation (e.g. imparting information concerning Tipper's state); (iv) any salient objects available to the conversants' perception (e.g. Tipper or the exam-books being around)[4].

Such factors could be seen as giving the resources for selecting, among the many situations that can be potentially described by an utterance of (1), the situation such that if it obtains, the uttered sentence is true in it. In this sense, *selecting the described situation is crucial for determining the truth-conditions* of the utterance; in the case of (1), the utterance's truth conditions may be formulated as follows[5],

(2) An utterance *u* of "Tipper is ready" is true provided certain utterance-related factors, if and only if Tipper is ready *in the situation s* selected by such factors.

The result is that the truth-conditions of an utterance of (1) are sufficiently determined, provided that s_1

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1 See Recanati, (1989); Sperber and Wilson (1986); Travis (1985) Carston (1988, 2002).

2 This idea traces back to Austin (1950).

3 See Barwise and Perry (1983) for an account of the metaphyisics of situations, as well as for their semantics based on situations, from which I draw the essential elements of the present proposal.

4 Admittedly, the list could be integrated. Factors (i)-(iv) are to be seen as the most basic ones. One could include e.g. *performative aspects* of the utterance, as stressed intonation and marking, determining *focus* phenomena.

5 See Corazza & Dokic (2007, 2010) for a similar formulation.

is selected on the basis of the utterance-related factors (i)-(iv). Not only that: the semantic content of (1) *is sufficiently determined, too*. How could this be? I will argue that an utterance's semantic content is generally *as determined as needed* for serving the purpose of selecting a situation (and hence, an utterance's truth condition), provided that also the other utterance-related factors (ii)-(iv) are.

III. Semantic Underdeterminacy Dissolved

My argument for the determinacy of semantic content will involve triggering intuitions of determinacy within specific scenarios. More specifically I will argue that, whenever the utterance-related factors (ii)-(iv) are *known enough by the hearer*, no intuition about the underdeterminacy of semantic content arises. This means that the utterance's semantic-content (including the references of context-sensitive expressions such as "I" or "this") really *is* sufficiently determined, provided that the other utterance-related factors are sufficiently determined *too* for the hearer. For the sake of illustration, consider the following scenario:

> [HOCKEY-MATCH]
> Alice and Grace are the coaches of a hockey team that is going to start a match in a couple of minutes. All players are ready to enter the game, except for Tipper, who arrived late. As Tipper appears to be ready, Alice utters (1) to Grace to let her know that the players can go out of the locker room. Now Grace knows all the relevant, utterance-related factors needed in order for her to know what situation Alice's utterance is describing: she knows about the hockey match, she knows about the whole team being waiting for Tipper to be dressed up and equipped; she trusts Alice and knows she's trying to convey useful information; she actually *sees* Tipper. So Grace doesn't need anything more than the semantic content of what Alice uttered in order to select the described situation and finally identify the truth-conditions (and the truth value) of the utterance.

In [HOCKEY-MATCH], the alleged underdeterminacy of the content of (1) doesn't seem to strike Grace as preventing her evaluation of Alice's utterance. That is indeed because all the relevant utterance-related factors are *sufficiently known* by Grace, and allow her to select the right described situation needed for the truth conditions of Alice's utterance. Thanks to Grace's knowledge of the right background-, utterance-factors, the semantic content of Alice's utterance seems to be *as determined as needed* for truth-conditions-identification. Hence, SU doesn't seem to hold in the case of [HOCKEY-MATCH].

If an exhaustive enough number of variations of the [HOCKEY-MATCH] example can be produced – which is what I shall attempt to do in the paper – then a case will have been made for the idea that the semantic content of an utterance is *not underdetermined*, for it indeed determines the truth-conditions of an utterance (in fact, it does that together with all the other utterance-related factors (ii)-(iv)). This may ultimately deflect the claim that the semantic content of an utterance (even provided reference assignment to terms like "I" or "this") is not a proposition. For, if the present proposal is right, nothing stands in the way of regarding the utterance's semantic content as enough determined for the truth-conditions of the utterance, as well as for being true or false (with respect to the described situation).

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Are there any Austinian Propositions?

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Are there any Austinian Propositions?

The core of standard truth-conditional semantics (in the tradition of Montague, Partee and Kaplan) is to provide a formal characterization of the evaluation of utterances of sentences in a context. An evaluation is a function from the semantic features of the sentence (the Kaplanian character) and the contextual parameters (i.e. the parameters through which the context of utterance is "regimented") to a truth-value. One common approach to a further articulation of this rather sketchy picture is to distinguish between the *content*, which is what is expressed by the utterance of the sentence (typically, a proposition), and the *circumstances of evaluation*, which are constituted by whatever we should take into account for evaluating the content as true or false. The route from sentences and contexts to truth-values is thus construed in two tiers: a sentence and a context lead us to a content, and a content plus the circumstances lead us to a truth-value. Since both content and circumstances are a function of the semantic properties of the sentence that is uttered and the context in which the utterance takes place, the contextual parameters can play either of two roles: (i) they can contribute to the determination of the content (content determinative role), or (ii) they can contribute to the determination of the circumstances of evaluation (evaluation role). It is important to notice that the same parameter can play both roles, even though usually if the circumstances contain a certain aspect than that aspect is not contained in the content and vice versa.

Why should we introduce contents between utterances and truth value? Philosophers such as Stalnaker and Kaplan (against Lewis) think that contents are required because the notion of correctness is essential to an analysis of assertion. By uttering sentences and thereby expressing contents we (usually) make assertions. Contents are what can be evaluated as true or false, and on whose evaluation depends whether the corresponding assertion is correct or incorrect (respectively). If this line of though is at least roughly correct, then a constraint on whatever turns out to be a content is that it has to be *evaluable*. For instance, *classical propositions* are evaluable with respect to possible world parameters, thus are true (false) *simpliciter* in case they are true (false) with respect to the actual world, and *relativized propositions* are evaluable with respect to richer parameters (e.g. a possible world and a time and a…).

Recanati, in his book *Perspectival Thoughts* (OUP, 2007), defends the idea that we need contents for the analysis of assertion, and indeed content is more articulated than Stalnaker, Kaplan and Perry have suggested. The main distinction of levels of content that Recanati draws is *not* between classical propositions and relativized propositions. Recanati argues that whether the proposition expressed is classical or relativized depends on what is linguistically articulated. Thus, classical and relativized propositions do not represent two levels of content; rather, we can find either of them at that level of content that Recanati labels *lekton*, and which is determined by looking at the explicit semantic feature of the sentence as uttered in the context. The main difference is between this level of content and the content that is determined by looking not only at the sentence and the context, but also at the point of evaluation, i.e. the Austinian proposition.

In this paper we want to focus on the question whether Austinian propositions fulfil the minimal condition for being a (kind of) content, namely being evaluable. Our point will be roughly that if we – quite naturally – define "being evaluable" as being a possible argument of a truth-function, the tenet that Austinian propositions are evaluable is problematic. Recanati defines the Austinian proposition as follows:

> The Austinian proposition is the proposition to the effect that that situation [i.e. the point of evaluation of the context of utterance] supports that claim [i.e. the content that is expressed].
> […]
> So 'It is raining' expresses a constant *lekton* whenever and wherever it is used, a content that can be modeled as a function from situations to truth-values or as a set of situations (viz. the set {s : it is raining in s}); but the complete content of an utterance of 'It is raining' is the Austinian proposition that a certain situation (that which the utterance/thought 'concerns') fits that *lekton*, i.e., belongs to the set of situations in question. (2007: Chap. 3)

There seems to be two possible reading of such a characterization of Austinian propositions. Let us consider an utterance of the sentence (1) in the actual world @.

(1) There are no robots on the moon

What is the Austinian proposition expressed by an utterance of (1) in the actual world @? Recanati tells us that is the *lekton* together with the circumstances of evaluation, namely the relevant contextual parameter – in this case, the actual world @. However, contextual parameters can play two roles, and it is not clear which role we should take the circumstances parameter to have as constituent of an Austinian proposition. On the one hand, as a constituent of the content, it should play the content determinative role, on the other hand, if an Austinian proposition is the most complete content, we have to individuate it precisely as the parameter (or the set of parameters) that plays the evaluation role. If the circumstances play the content determinative role, then an utterance of (1) in @ expresses the same proposition of

(1cr) In world @, there are no robots on the Moon

Such a proposition can be evaluated at a world and thus fulfil the minimal condition for being a content. But since a further parameter for its evaluation (e.g. the actual world @, again) can be provided, then also a further, larger, Austinian proposition can be formulated. And if with the Austinian proposition aims at being the most complete content of an utterance, it does not seem there will be anything in principle to stop the apparent regress we have triggered: for any Austinian proposition there is always a more Austinian proposition.

If the world parameter plays the evaluation role, then we stop such a regress, but the result would not be a content in the sense of being a possible argument of a truth-function (a saturated truth-function is a truth-value rather than an evaluable proposition). An alternative is to provide a meta-linguistic reading of this option, and consider the Austinian proposition expressed by an utterance of (1) in @ as the same as the proposition expressed by

(1er) That there are no robots on the Moon is true in world @

But this metalinguistic reading does not seem to be what the idea of Austinian proposition was designed for and has further problems that in the paper we will highlight; in particular, also in this case we face a form of regress.

In the final part of the paper we will provide an alternative account of the speech act of assertion, which follows a suggestion by Kit Fine (*Modality and Tense*, OPU, 2005: Chap 8). According to our proposal, there are indeed no Austinian propositions, i.e. no level of *content* corresponding to what is claimed along with what is intended as circumstances of evaluation. What Recanati and other philosophers aim at catching with such a notion is better fleshed out by distinguishing two parts of the speech act of assertion. The first is the (possibly stratified) content expressed, while the second is the *pointing* to the circumstances. Both are required to carry out an evaluation of the correctness of the assertion, but although what is pointed at can in principle always be explicitly mentioned in the utterance and thus be part of the content expressed, the act of pointing does contribute to the expression of a content.

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Expressivism for Imperatives and Ought

EXPRESSIVISM FOR IMPERATIVES AND *OUGHT*[1]

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Paul Portner [2007] has claimed that 'The performative aspect of [the] meaning [of an imperative], modeled as the addition of its prejacent to the To-Do List [TDL], [explains] everything that needs to be explained about its meaning.' Portner's very fruitful idea is that the force dimension (FD) of imperative meaning is modeled as a tendency to *introduce obligations* on an addressee A, via addition to an ordering source (cf. Kratzer [1981]) used in the interpretation of modalized descriptions of A's obligations (A's TDL). Since all conventional uses of imperatives are captured by the FD, an account of conventional imperative meaning begins and ends with an analysis of the FD.

Similarly, expressivists about normative language claim (i) the conventional meaning of a normative sentence ϕ is given, in large part, by the attitude ϕ conventionally expresses (or speech act ϕ is conventionally used to perform); (ii) ϕ does not semantically express a proposition, nor does a sincere utterance of ϕ generally express the speaker's belief that ϕ (see, e.g., Gibbard [2003]: 5–11). We explain the meaning of 'murder is wrong' by explaining that it expresses disapproval of murder (not belief that murder is wrong). Like Portner, expressivists claim that an account of conventional normative sentence meaning begins and ends with the expressive dimension (ED) of normative sentence meaning.

Portner's analysis fails to explain a central semantic fact about imperatives: the semantic inconsistency of an imperative $!\phi$ (e.g., *go to bed*) with a contrary grant of permission $¡\neg\phi$ (e.g., *you can stay up*). This failure is, we see, quite similar to Schroeder's well-known negation problem for expressivism. Both problems, I show, admit of a similar, and attractive, 'expressivist-friendly' resolution.

1 NEGATION PROBLEMS

Schroeder [2008] challenges expressivists to consider the pairs in (1), (2).[2]

(1) a. It ought to be that $\phi \approx O\phi$
b. It's not that it ought to be that $\phi \approx \neg O\phi$

(2) a. It ought to be that $\neg\phi \approx O\neg\phi$
b. It's not that it ought to be that $\neg\phi \approx \neg O\neg\phi$

What attitudes do sentences of respective forms (1a) and (1b) express? Two possible expressivist responses: (i) (1b) and (1a) express the *same attitude*, toward inconsistent contents; (ii) (1b) and (1a) express *distinct attitudes*—while (1a) expresses disapproval of $\neg\phi$, (1b) expresses a logically unrelated atittude of tolerance of $\neg\phi$. These responses are, Schroeder argues, subject to a further requirement: they must explain (as any semantics must) why the pairs in (1) and (2) are *inconsistent*.

1. For SPE3, Special Session 2: Propositional and Non-propositional Sentential Content.
2. What follows is the fullest summary of the argument allowed by space. See Schroeder [2008] for the full details.

The same-attitude analysis (SAA) seems suited to this: we assume the common attitude A is 'inconsistency-transmitting,' in that 'bearing A toward inconsistent contents is inconsistent,' and explain the inconsistency of (1a) and (1b), not by appeal to simultaneous unsatisfiability, rather to A's inconsistency-transmitting-ness (ibid.: 577). But there is a problem. By SAA, (1a), (1b) must express A toward inconsistent contents (respectively: ϕ and some ψ s.t. $\phi, \psi \vDash \bot$), and (2a), (2b) must express A toward inconsistent contents (respectively: $\neg\phi$ and some χ s.t. $\neg\phi, \chi \vDash \bot$). But, since $\phi, \psi \vDash \bot$ and $\neg\phi, \chi \vDash \bot$, it follows that $\psi, \chi \vDash \bot$. Since A is inconsistency-transmitting, SAA incorrectly predicts (1b) and (2b) inconsistent. The different-attitude analysis fares no better: it must effectively *stipulate* rational norms on which it is inconsistent to both disapprove and tolerate ϕ. It is doubtful that the expressivist is entitled to assume the existence of such norms; there are 'few good examples' of rational norms that require these sorts of relations between 'logically unrelated' attitudes (ibid.: 581).

By loading all of conventional imperative meaning into the FD, Portner would seem to face a similar challenge: to explain the inconsistency of $!\phi$ and $¡\neg\phi$ in terms of some sort of incompatibility in their associated speech acts. As before, there are two possibilities: $!\phi$ and $¡\neg\phi$ express a single type of inconsistency-transmitting speech act (toward inconsistent contents), or they express distinct, logically unrelated speech acts. Either way, we face precisely the problem faced by the expressivist.

With one difference: expressivism (or something very close) is *clearly right* for imperatives. A central dimension of imperative meaning is captured by their conventional, directive force (as argued in Portner [2004, 2007]). And imperatives do not express propositions, are not evaluable for truth, and cannot typically be used by a speaker, try as she might, to express her beliefs. Since this sort of 'quasi-expressivism' for imperatives is clearly right, the correct explanation for the inconsistency of $!\phi$ and $¡\neg\phi$ must be compatible with it. This gives us reason to hope for a (quasi-)expressivist-friendly solution to both negation problems. The rest of this abstract is devoted to vindicating this hope.

2 MODAL ANALYSIS OF THE IMPERATIVE

Modal Reductions (MRs) of imperatives (e.g. Schwager [2006]) and permissives analyze ! and ¡ as *covert modals* expressing necessity and possibility, respectively, w.r.t. a salient preference-set (the Kratzer-ian ordering source for ! and ¡). Modal reductions are burdened by the functional anomalousness of imperatives: if imperatives semantically express modal propositions, it is unclear why they cannot be used to *assert* those propositions (see Portner [2007]).

But, crucially, a modal analysis needn't be a reduction. See (3) (with T a TDL and w a world).

(3) $\langle T, w\rangle \Vdash\!\vdash\ !\phi$ iff $\langle T, w\rangle \vDash \Box\phi$

Any semantics that endorses the schema in (3) I will dub a *Modaloid Analysis* (MA). Each MR is an MA, but not conversely, since MAs, unlike MRs, needn't hold that $\Vdash\!\vdash$ and $\vDash$ express the same relation between model-theoretic entities and sentences. Specifically, $\vDash$ is a satisfaction (truth) relation: $\langle T, w\rangle \vDash \Box\phi$ means, roughly, that the sentence $\Box\phi$ *misrepresents* what is required at w (given fixed

T). Since imperatives do not express propositions, it would seem that $\Vdash$ *cannot* express satisfaction.

A natural (for reasons seen below) idea is that $\langle T, w\rangle \Vdash !\phi$ means T *enforces a constraint* specified by $!\phi$ (given w) (cf. Lemmon [1965]). Combining this with (3), we have that T enforces the constraint specified by $!\phi$ (at w) iff w satisfies the modal formula $\Box\phi$ (given fixed T). Using, for illustration, the standard Kratzer [1981] truth-conditions for $\Box$, we have, very roughly, that T enforces $!\phi$ iff all T-best worlds satisfy ϕ. Extending this to permissives, as in (4), leads to a natural notion of inconsistency.

(4) $\quad \langle T, w\rangle \Vdash ¡\phi$ iff $\langle T, w\rangle \vDash \Diamond\phi$

As before, and very roughly, T enforces $¡\phi$ iff some T-best worlds satisfy ϕ. If this is an empirically adequate semantics for imperatives (as I argue elsewhere, it is), we have a clear semantic explanation for the inconsistency of $!\phi$ and $¡\neg\phi$. Namely, assuming both that $\langle T, w\rangle \Vdash !\phi$ and $\langle T, w\rangle \Vdash ¡\neg\phi$ immediately gives rise to a modal contradiction: $\langle T, w\rangle \vDash \Box\phi \wedge \Diamond\neg\phi$.

Understanding $\Vdash$ in terms of a To-Do List enforcing a constraint leads to a natural notion of imperative content (and helps explain why MAs avoid the problem afflicting modal reductions). The content of an imperative $!\phi$ is identified as the characteristic function of a *set of* TDL*s*, namely those that enforce the constraint: $[\![!\phi]\!] = \lambda T.\langle T, w\rangle \Vdash !\phi$.[3] Functional potential is typically thought to supervene on content: the fact that $[\![\phi]\!]$ is a proposition (set of worlds) explains why a speaker conventionally performs an assertion (that ϕ) by uttering ϕ. Similarly, the content of an imperative can be used to explain why a speaker conventionally performs a command (which we model as updating the TDL *so that the result enforces the specified constraint*) by using the imperative. More precisely, let $\sigma = \langle \imath, T\rangle$ represent a cognitive state (with $\imath$ its informational parameter, T its action-guiding parameter). For both indicative and imperative ϕ, ϕ's content determines a condition on a parameter of σ (the information in the indicative case; the ordering-source [TDL] in the imperative case) (cf. Yalcin [2010]). If ϕ is indicative, the condition is that $\imath$ entail ϕ. If ϕ is imperative, the condition is that T enforce the constraint specified by ϕ, i.e., that $T \in [\![\phi]\!]$. The conventional force for each clause-type is understood in terms of the condition on σ it determines: sentences update states *so that* the relevant condition is met.

3 EXTENSION TO NORMATIVE LANGUAGE

The negation problem for quasi-expressivism about imperatives is thus avoided, while the idea that the FD forms a central part of their conventional meaning is preserved. Semantic content is closely related to the FD (indeed, by the MA, the force of an imperative supervenes on its semantic content), but in such a way that we can define a satisfactory notion of imperative inconsistency that does not *appeal to properties of speech acts*—that proceeds, in fact, in much the same way as it would proceed on a modal reduction. A similar strategy suggests itself for normative language. Imperatives show, by analogy, how to give a modaloid semantics for O—how to preserve the centrality of the ED and define a satis-

3. The idea to identify contents with these sorts of constraints on cognitive states is taken from Swanson [2008].

factory notion of semantic inconsistency, without giving a modal reduction and without having O express a modal concept (i.e., a function from propositions into propositions).[4] So, an expressivist response (or something very close thereto) to Schroeder is possible.

The response's ultimate viability depends on (i) how the expressivist suggests we understand the semantic relation R between model-theoretic entities and normative sentences, and (ii) empirical considerations (whether the data favor a modaloid semantics for deontic operators). Regarding (ii), there is a large body of evidence in favor of this (for some of it, see Kratzer [1981]). None of that evidence, moreover, in any way demands understanding R in terms of truth or satisfaction. Whether R is a *satisfaction* relation seems to be a 'substantive' (i.e., non-technical) philosophical question—one that the technical apparatus of a formal semantics for normative language does not seem, as such, to decide.

Gibbard (2003), *Thinking How to Live*. **Kratzer** (1981), The Notional Category of Modality, In Eikmeyer, Rieser (eds.) *Words, Worlds, & Contexts*. **Lemmon** (1965), Deontic logic and the logic of imperatives, *Logique et Analyse*. **Portner** (2004), The Semantics of Imperatives within a Theory of Clause Types, *SALT 14*. **Portner** (2007), Imperatives and Modals, *Nat Lang Semantics* 15. **Schroeder** (2008), How expressivists can and should solve their problems with negation, *Noûs*. **Schwager** (2006), Conditionalized Imperatives, *SALT 16*. **Swanson** (2008), Constraint semantics and its application to conditionals, Talk at Konstanz [PDF]. **Yalcin** (2010), Nonfactualism about Epistemic Modality, In Egan, Weatherson (eds.) *Epistemic Modality*.

4. I show elsewhere that this semantics for normative language captures Gibbard's [2003] semantics as a special case.

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Indeterminism and Semantic Theory

Indeterminism and Semantic Theory

A submission for the general session of the SPE3 conference

Epistemicism about the problem of vagueness faces two problems. There is the ignorance problem – that of explaining how it is that we are inescapably ignorant of the location of a vague term's sharp boundary. This is the problem that has been most directly addressed by Timothy Williamson and Roy Sorenson. There is also the precision problem – the problem of explaining how the supervenience base for semantic facts could possibly support some unique sharp boundary as being determinately and uniquely correct for a vague term. This problem is disavowed by both Williamson and Sorenson as a debt not owed by epistemicism. Insofar as no one has a detailed account of the nature of the supervenience relation of semantic facts on non-semantic facts, I agree with them. However, I think it is legitimate to worry that whatever that relation looks like, it can't determine some particular sharp boundary as uniquely appropriate for, e.g., "bald". Furthermore, epistemicism has failed to capture powerful indeterminist intuitions about vagueness. With the precision problem in mind, I offer an account of why one should not be dismayed by epistemicism's commitment to semantic precision. My hope is that this account can relieve tension between epistemicism and indeterminist intuitions, and perhaps show how indeterminist intuitions are after all better accomodated by epistemicism than by supervaluationism or other varieties of indeterminist semantics.

Against Williamson, it has been argued that even if we had access to all the non-semantic facts, we would still be unable, even in principle, to discover the location of sharp boundary separating the bald from the non-bald. I agree that this is true, and that there is therefore semantic indeterminacy in some sense, but that incorporating this indeterminacy into our semantics is the wrong way to accomodate it. Another option, I argue, is to hold that the indeterminacy is indeterminacy amongst possible semantics-like sciences. That is, we should expect for independent reasons that, as with any science, core concepts of semantics are vague and/or ambiguous. As a result, it is correspondingly indeterminate exactly which possible semantics-like science corresponds to the English word "semantics". There may truly be no fact of the matter here. An analogous case is an ambiguity in core concepts of biology: it is not settled whether viruses are to be considered as alive. As a result of this indeterminacy, it is in some sense indeterminate whether all organisms are cellularly structured, since viruses are not. But the wrong way to handle this would be to offer an indeterminist biological theory, on which living organisms are such that it is indeterminate whether they are cellularly structured. Instead, one should recognize that in discovering the indeterminacy we have discovered that there are two possible biology-like sciences competing to be the referent of the English term "biology", which offer

different answers about whether organisms are universally cellular.

To translate the lesson as semantics, we should expect – fully independently of any particular account of vagueness – that there different precisifications of "semantics" which compete as referents for that term. I imagine that there truly is no fact of the matter as to which precisification is the proper referent of our term. Supervaluationism gets this far, and erroneously concludes that this indeterminacy requires supervaluationist semantics. But that indeterminacy is no more reason to offer an indeterminist semantics than it is to offer an indeterminist biology. The indeterminacy is there, but it is indeterminacy *amongst* semantic theories, not *within* a semantic theory. This indeterminacy amongst semantic theories can account for indeterminist intuitions about vagueness. In response to the ignorance problem, we have now an answer as to why we would be unable, even with access to all non-semantic facts, to discover the location of the sharp boundary of a vague term. The precision problem simply loses its force, since a precisified semantics includes, by definition, a precisifed supervenience relation of meaning on usage/world. Indeterminist intuitions are accomodated by the admission that there is no fact of the matter as to which precise semantics-like science semantics happens to be; and epistemicism is satisfied by the recognition that whatever the referent of "semantics" is, it gives an interpretation of our vague language that assigns unknowable sharp boundaries to our vague terms.

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The Definite Determiner and Contextual Domain Restriction: a Typological Perspective

The definite determiner and contextual domain restriction: a typological perspective

Special Session 1: Quantification, Referential Terms, and Objects

Since Partee (1987), the definite determiner (D) is assumed to create denotation in three different denotations, i.e. type *e*, type *et*, type *ett*, and be able to shift from one denotation to another by means of type-shifting operations. In this paper we propose a novel use of the D as an overt contextual domain restrictor for quantifiers in certain languages. This strategy of domain restriction via D—D_{DR}—happens by applying D_{DR} to the nominal argument, but D_{DR} can also apply to the quantificational determiner (Q-det) itself, in which case it forms a constituent with it. In both cases, D_{DR} is a type preserving function, i.e. a modifier, and supplies the contextual C variable. Evidence for our analysis is drawn from Greek and Basque—two genetically unrelated languages; our analysis also covers the behaviour of D in St'át'imcets Salish (SS). We build here on data and earlier insights of Matthewson (2001), Giannakidou (2004), Etxeberria (2005, 2008, 2009) and Etxeberria & Giannakidou (2009, to appear). In this paper we also provide novel evidence from Slavic languages (Bulgarian, Russian, Polish, Serbian).

Furthermore, our analysis provides support for the program that domain restriction is syntactically realized (von Fintel 1994, Stanley 2002, Stanley and Szabó 2000, Martí 2003, Giannakidou 2004)—as opposed to the purely pragmatic analysis (via e.g. *free enrichment* as in Recanati 2002, 2004, 2007, or a relevance theoretic process)—, but we propose an important refinement: domain restriction can affect the Q-det itself (*pace* Stanley 2002), and in fact quite systematically in certain languages. The Q-det that is affected by D_{DR} is typically a *strong* one, and we explain here why. Crucially, D_{DR} is incompatible with weak Q-dets in both Basque and Greek, as we show here, and we explain this by assuming that weak Q-dets are quantity predicates (Etxeberria 2005), thus not of the appropriate input to D_{DR} when it applies to the Q-det. We examine whether weak Q-dets can be contextually restricted in some other way, as suggested by Martí to appear. We reconsider Martí's data, and argue that what she analyzes as contextual restriction is in fact a *felicity condition* (in the sense of Ionin 2006) due to specificity.

Two sets of data serve to motivate our analysis. First, in SS, strong Q-dets *every* and *most* require DP rather than NP complements (Matthewson 2001):

(1) tákem [i smelhmúlhats-a]
all D woman(PL)-D

The discontinuous element *i...a* is D, hence the domain of *tákem [i smelhmúlhats-a]* is a DP rather than an NP. Second, in Basque, Greek, a D composes with a strong Q-det, as shown in the (2) and (3), but not with a weak one as shown in (4), to produce a complex Q-det:

(2) a. **O kathe** fititis efere ena doro. [Greek]
the every student brought.3sg one present
b. Ikasle **bakoitz-ak** opari bat ekarri zuen. [Basque]
student each-D.sg present one bring aux
'Each student brought one present'
c. **vsicki-te** momceta [Bulgarian]
all-D.pl boys

(3) a. * **o kapjios** fititis '*the some student' [Greek]
b. * ikasle **batzuk-ak** '*the some students' [Basque]
c. * **njakoi-to studenti** '*the some students' [Bulgarian]

The result is, as we see, a universal Q-det equivalent which presupposes a nonempty domain. In

Basque, all strong Q-dets appear necessarily with D (Etxeberria 2005); weak Q-dets, on the other hand, are either incompatible with it (as shown in (3)), or if they do appear with D (e.g. in cases like *the many students*, impossible in Basque) they form a constituent with the NP rather than composing with the Q-det, as we argue is the case with the strong Q-dets.

Matthewson 2001 argued that the D in (1) creates a (discourse salient) individual (type *e*) out of the property *woman*. The DP thus denotes an individual, and this in turn implies that the domain of the Q-det is not a property (type *et*), but an individual. Giannakidou 2004, on the other hand, suggested that what looks like *e*-formation is in fact overt domain restriction of the nominal argument. Building on Westerstähl's (1985) idea that the D introduces a context set (C), we capture this in (4) below: D_{DR}, the domain restricting function of D, preserves the type of the NP argument, and further adds the contextual restriction C:

(4) $[[D_{DR}]] = \lambda P_{et}\, \lambda x\, P(x) \cap C(x)$

In (4), D_{DR} functions as an intersective modifier, and this, we argue, is what *i…a* in SS (1) does: it contextualizes the NP argument and gives a salient set of women which is the domain of *takem* 'all'. To account for the Basque, Greek, and Bulgarian data (3), we generalize that the D_{DR} can also take the Q-det as its argument, illustrated in (5c):

(5) a. ikasle guzti-ak = (ikasle) [guzti-D_{DR}]
'student all-D.pl'

b. $[[\text{Q-det}]] = \lambda P\, \lambda Q\, .\, \forall x\, P(x) \rightarrow Q(x)$

c. $[[D_{DR}]] = \lambda Z_{et,ett}\, \lambda P_{et}\, \lambda Q_{et}\, Z\, (P \cap C)\, (Q)$; where Z is the relation denoted by Q-det

d. $[[\text{o kathe/guzti-ak/vsicki-te}]] = \lambda P\, \lambda Q.\, \forall x\, (P(x) \cap C(x)) \rightarrow Q(x)$

The result is again intersecting the NP argument of the Q-det with C, but this time the Q-det and D compose together, and an inherently restricting quantifier is created. In languages like Greek, Basque, or Bulgarian where D_{DR} applies only to strong quantifiers, the result is that only these will be domain restricted ("presuppositional"). Weak quantifiers and regular indefinites, as a result, will not be inherently restricted in our system, since they are incompatible with D_{DR} (5). In order to understand why weak determiners cannot be contextually restricted through D_{DR} in Basque and Greek, we must recall that, with the exception of SS, D_{DR} cannot apply directly to the NP (e.g. in Basque, Greek, English, and other European languages we are considering). For this use we use the partitive. Hence in these languages, D_{DR} does not apply to a predicate (while it can do in SS), so it can only function as a modifier of the Q-det; as cardinality predicates, however, weak "determiners" are *et* elements (e.g. they can appear in predicative position, as opposed to strong ones), thus not of the appropriate input for D_{DR}, which needs a determiner.

Another crucial point, following the basic claims in Etxeberria and Giannakidou (in press, 2009), is that D_{DR} need not be necessarily exhibited by a *morphologically* definite D. Greek and Basque show a morphological distinction of (in)definiteness, and D_{DR} is expressed by a definite D. Therefore, the prediction is made that if a language encodes familiarity and novelty in the D system, it will be only the familiar D that will qualify for D_{DR}. On the other hand, the absence of a morphological contrast between definite and indefinite D (e.g. Salish) renders the single available D vehicle of both reference and salience, thereby also enabling domain restriction for this unspecified D. If a language lacks determiners altogether, it is expected that the referential, familiar, and D_{DR} functions will again be performed by the same (albeit morphologically nondefinite). The data in Cheng (2009) suggest that the Chinese *dou* works exactly this way. Most Slavic languages do not have articles (except for Bulgarian and Macedonian) and the hypothesis is that these functions are fulfilled by an inventory – demonstratives but also morphologically non-definite items.

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Moods and Radicals

Mood and Radicals
Towards a hybrid account of sentential content

According to the standard view of formal semantics, the meaning of a sentence is regarded as a proposition, commonly understood as a set of worlds (or situations). However, just as the session description states, this picture faces challenges from two directions: One the one hand, there are sentence types other than simple declarative for which it is not that obvious that they should denote a set of world, e.g. imperatives (Portner 2004) or exclamatives (Castroviejo Miró 2008).

(1) a. Leave me alone!
b. How long this flight is!

One the other hand, there are sentences that carry expressive expressions that do not contribute to the propositional content of a sentence and hence cannot be accounted for by the standard view. The same holds for pure affective interjections or expressive speech acts.

(2) a. That damn Kaplan was promoted. (Kaplan 1999)
b. Ouch! (Kaplan 1999)

To account these challenges while keeping the basic spirit of the standard view alive, we develop a view on sentential content that we like to call *hybrid semantics*, because it combines the standard view with an expressivist or *use-conditional* (Recanati 2004) view. That is, while we are leaving intact the truth-conditional part of sentential content, we add an additional layer of use-conditional meaning. While we still treat the former as a set of world, the ladder is regarded to be a set of contexts instead to capture the immediacy of expressive content and its relation to the discourse participants (Potts 2007). The meaning of a sentence S hence is a tuple consisting of its descriptive truth-conditional content (TC) *and* its expressive use-conditional content (UC). We then can say that S is true if the actual world is an element of the set of world denoted by its truth-conditional content and S is felicitously uttered if the current context is an element of the set of contexts denoted by its use-conditional content.

(3) $[\![S]\!] = \langle [\![TC(S)]\!], [\![UC(S)]\!] \rangle$
a. S is true if $w_@ \in TC(S)$
b. S is felicitous if $c \in UC(S)$

Giving this framework, the two challenges can be tackled. First, we address the problem posed by expressive items like *damn* in (2a). The basic idea is that expressives like *damn* only contribute to the use-conditional dimension while being inert at the descriptive tier. This idea is realtively independent from the formal mechanisms used to separate the two dimension and there are different ways to achieve this (Geurts & Maier 2003; Kubota & Uegaki 2010; Potts 2005). We thus end up with roughly the follwing truth- and use-conditions for (2a):

(4) $[\![(2a)]\!] = \langle [\![\textbf{promoted}(\textbf{kaplan})]\!], [\![\textbf{damn}(\textbf{kaplan})]\!] \rangle$
a. (2a) is true if $w_@ \in \{w : \text{Kaplan was promoted in } w\}$
b. (2a) is felicitous if $c \in \{c : c_S \text{ has a negative attitude towards Kaplan}\}$

To overcome the challenge posed by non-declarative sentences, we use the same strategy of dividing the sentential content into an truth- and a use-conditional layer. Inspired by Wittgenstein's distinction between mood and radical (cf. Stenius 1967), we regard the ordinary propositional content as the core of the truth-conditional layer, while mood can be regarded as an expressive operator that takes the propositional radical as its argument and takes it to the use-conditional layer. Assuming that mood is syntactically encoded (like, e.g. in Lohnstein 2007; Truckenbrodt 2006) we can give for instance the following hybrid semantics for an assertoric declarative:

(5) a. It is raining.
b. (5a) is true if $w_@ \in \{w : \text{It is raining in } w\}$.
c. (5a) is felicitous if $c \in \{c : c_S \text{ wants to } c_A \text{ to know that it is raining}\}$

Giving this division of labour between a truth-functional and an expressivist approach, we can make use of the basic insight of the performative hypothesis (Ross 1970; Sadock 1974) while avoiding its obvious problems (Boër & Lycan 1980).

Crucially, not every of the two dimension have to be fully propositional or even have content at all. A purely expressive speech act like in (2b) only have use-conditional content. Hence (3a) cannot apply and it can neither be true or false but just (in)felicitous. This distinguishes *Ouch* from utterances like *I feel pain*.

The hybrid approach to sentential content therefore unites two big approaches to the meaning of linguistic expressions: the standard truth-conditional approach and view based on Wittgenstein's *meaning as use*. I think that the philosophical idea of hybrid semantics is pretty much independent of its actual formal implementation can be formalized in different ways making use of some of the most recent achievements in formal semantics. But even without subscribing to a concrete formalization (we provided on in Author tba), the framework we sketched so far can be used to deal with a lot of natural language expressions, which are not as lopsided as the standard view of truth-conditional semantics suggest.

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Dynamic Expressivism

Dynamic Expressivism

The Embedding Problem for Expressivism: Moral non-cognitivists hold that there are no moral properties. To avoid the conclusion that moral sentences are therefore false, they argue that moral sentences do not attempt to predicate moral properties of acts or events, despite their subject-predicate structure. According to expressivism, a branch of non-cognitivism, the meaning of a moral predicate consists in its being used to express an attitude. Moral sentences do not *report* or *describe* these attitudes; expressing a moral sentence is like yelling 'Boo' or 'Hooray'. Moral sentences therefore do not express propositions and do not have truth conditions.

The expressivist needs to explain how moral sentences can embed under logical connectives and operators (*Divorce is not wrong, Divorce might be wrong*) and enter into valid arguments, given that (a) an utterer of an embedded moral sentence need not express the attitude she would normally express in uttering the unembedded sentence and (b) logical connectives and entailment are defined in terms of truth. An expressivist semantics cannot be truth-conditional, but the embedding behavior of moral sentences shows that it must be compositional. Plus, the fact that non-moral and moral sentences can be combined (*If divorce is wrong, then John won't get a divorce*) shows that a semantics for expressivism must accommodate both moral and non-moral language.

Dynamic Expressivism: Dynamic theories can satisfy the expressivist's needs. The meaning of a sentence in dynamic semantics consists in its potential to change information states, not in its truth conditions. Dynamic semantics accommodates non-descriptive sentences, like imperatives and questions, as well as descriptive ones and does not treat logical connectives as truth-functional. The meaning of a sentence is a type of action. Sentences do not describe states—they change them.

Expression, too, is an action. I propose that when one utters a moral sentence, one expresses acceptance of certain orderings of possibilities by changing the nature of the orderings in the input information state. Let contexts be sets of $\langle w, h, O\rangle$-tuples, with w a world, h an assignment function, and O a set of partial orderings and let $>_o$ be an ordering on worlds, where w is at least as preferable as w' just in case $w \geq_o w'$. The semantics for atomic moral sentences with positive, negative or tolerance predicates are as follows:

- $[\![R_m^+ t]\!] = \{\langle O, O'\rangle |\ O' \subseteq O \wedge \forall o' \in O' \exists w'(w' \in *(w, [\![t]\!]) \wedge \forall w''(w'' \in *(w, \neg[\![t]\!]) \rightarrow w' >_{o'} w''))\}$
- $[\![R_m^- t]\!] = \{\langle O, O'\rangle |\ O' \subseteq O \wedge \forall o' \in O' \exists w'(w' \in *(w, \neg[\![t]\!]) \wedge \forall w''(w'' \in *(w, [\![t]\!]) \rightarrow w' >_{o'} w''))\}$
- $[\![R_m^t t]\!] = \{\langle O, O'\rangle |\ O' \subseteq O \wedge \forall o' \in O' \neg\exists w'(w' \in *(w, \neg[\![t]\!]) \wedge \forall w''(w'' \in *(w, [\![t]\!]) \rightarrow w' >_{o'} w''))\}$

The term $*(w, [\![t]\!])$ denotes the set of all *normal* t worlds accessible from the world of a $\langle w, h, O\rangle$-tuple in the input context. The normality condition allows for exceptions so that, e.g., 'Murder is bad' can express a ranking consistent with one that ranks highly a world in which there is exactly one murder, but the victim was about to murder 3 million people. There might be exceptions, but *normally*, murder is bad. In the discourse initial context, we start out with all sets of possible orderings on worlds. An utterance of a moral sentence changes each o in an input set of orderings O such that it conforms with the relevant condition above and will eliminate orderings that cannot be so updated. An utterance of 'Murder is wrong', for example, will change input sets of orderings so that each ordering o' in an output set O' ranks at least one normal, non-murder world w' higher than all normal murder worlds w' by removing all pairs such that $w' \leq w''$. There will often be multiple ways to update an input ordering in the requisite way (i.e. by choosing a different normal t world as witness). Not all ways will lead to consistent orderings as the discourse proceeds and may thus be eliminated later in the discourse. Because the orderings are not total orderings, they can be updated as the discourse proceeds so long as the updates are consistent.

Dynamic expressivism offers elegant analyses of sentences whose interpretations either effect or are affected by information in the discourse context. Consider someone who is talking to an unmarried, pregnant friend. She says, 'having a baby out of wedlock is bad. Nevertheless, as you are already pregnant and the father refuses to marry you, it's the right thing to do'. The factual information (that the friend is pregnant, etc.) changes the set of normal worlds in which we are interested and the meaning of 'it's the right thing to do' is analyzed as follows:
$\{\langle O', O''\rangle | O'' \subseteq O' \wedge \forall o'' \in O'' \exists w'(w' \in *(w, hb \wedge p \wedge f) \wedge \forall w''(w'' \in *(w, \neg hb \wedge p \wedge f) \rightarrow w' >_{o''} w''\}$
(Assume for simplicity that the only alternative to having the baby in this case would be having an abortion and that the speaker thinks abortion is really bad.) Thus 'Having a baby out of wedlock is bad' and 'It [having a baby out of wedlock] is the right thing to do' turn out to be consistent in this case but only because new information is added to the discourse between the updates with these two sentences and because dynamic expressivism allows the semantics of a moral sentence to depend on information introduced in discourse.

Logical connectives have standard dynamic semantics (where each c_n is a $\langle w, h, O\rangle$-tuple), e.g.:

1. $[\![\neg\phi]\!] = \{\langle c_1, c_2\rangle \mid c_1 = c_2 \ \& \ \neg\exists c_3 : \langle c_2, c_3\rangle \in [\![\phi]\!]\}$
2. $[\![\phi \wedge \psi]\!] = \{\langle c_1, c_2\rangle \mid \exists c_3 : \langle c_1, c_3\rangle \in [\![\phi]\!] \ \& \ \langle c_3, c_2\rangle \in [\![\psi]\!]\}$

Different kinds of sentences affect different parameters of the $\langle w, h, O\rangle$-tuples—descriptive sentences affect worlds; existential sentences, assignments; moral sentences, orderings—but the connectives are blind to which parameter is affected. They simply provide rules for updating contexts and thus easily connect moral and non-moral sentences, despite the fact that these two types of sentences have different semantics. (Atomic moral sentences change contexts, whereas atomic non-moral sentences only remove inconsistent contexts.) Operators and connectives work the same way for both kinds of sentences; the semantics for moral and non-moral language differ only at the atomic level. Entailment for expressivism is analyzed in a dynamic fashion: $\phi \models \psi$ iff $\forall M \forall c_1 \forall c_2 : \langle c_1, c_2\rangle \in [\![\phi]\!]_M \Rightarrow \exists c_3 : \langle c_2, c_3\rangle \in [\![\psi]\!]_M$ and two sentences (moral or otherwise) are inconsistent just in case updating with one after the other yields the empty set of orderings.

Dynamic expressivism is not a form of moral subjectivism. Someone who utters a moral sentence changes the context by changing the input sets of orderings and other conversational participants are free to accept or reject this change. The context change potential for a given moral sentence is the same no matter who utters it or who evaluates it. The orderings could be made subjective to allow other forms of expressivism (expressivism about taste, perhaps), but the moral expressivist will not want this and the semantics does not require it. Moreover, expression is not a kind of report in this theory. An utterance of an atomic moral sentence changes the context—it does not describe a state, as atomic, non-moral sentences do.

Conclusions: While dynamic expressivism bears a superficial resemblance to A. Gibbard's norm-expressivism, which posits sets of world-norm (or plan) pairs, it is far more powerful. It is a complete compositional semantic theory that accommodates imperatives, questions and moral sentences (among others) without positing ambiguous logical connectives or operators and without forcing all sentences to have an expressivist semantics. It also solves semantic problems for expressivism on completely semantic terms, is sufficiently general to be applied to different kinds of expressivism and is independently motivated. Asher, N. (2007): 'Dynamic Discourse Semantics for Embedded Speech Acts,' *John Searle's Phil. of Language*, ed. S. Tsohatzidis, Cambridge U.P.; Asher, N. & Bonzon, E. (2008): 'Extraire et Modéliser des Préférences à Partir d'un Dialogue,' L. Cholvy, ed. *Journées d'Intelligence Artificielle Fondamentale*, p. 8-15; Boutilier, C., et al. (2004): 'CP-nets: A Tool for Representing and Reasoning with Conditional Ceteris Paribus Preference Statements,' *Journal of Articial Intelligence Research*, 21; Geach, P. (1965): 'Assertion', *Philosophical Review*, 74; Gibbard, A. (1990): *Wise Choices,*

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Property Modification and the Rule of Pseudo-Detachment

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Property modification and the rule of pseudo-detachment

This paper argues that a fifth rule ought to be added to the existing four rules of inference jointly defining the logic of property modification. While the rule is easily misstated so as to license fallacy, I shall demonstrate that a reformed statement renders the rule trivially valid, as soon as existential quantification over properties is accepted. The rule is needed to validate one of the standard rules, but is also of independent philosophical interest, as when inferring, for instance, that if you have a forged banknote and a forged passport then you have two forged things.

Let a property be a function from possible worlds to functions from times to sets of individuals (in keeping with one temporally sensitive version of possible-world semantics). Let a property modifier be a function from properties to properties (in keeping with the Montagovian tradition). A predicate such as 'is a former president' denotes the property resulting from applying the modifier *former* to the property *being a president*. Where M is a modifier, F, M^* properties and a an individual, the four standard rules are (in rudimentary notation):

> *Subsective*. From $(MF)a$ infer Fa
> *Privative*. From $(MF)a$ infer $\neg Fa$
> *Intersective*. From $(MF)a$ infer $M^*a \wedge Fa$
> *Modal*. From $(MF)a$ infer $Fa \vee \neg Fa$.

(That is, modal modifiers are indeterminate between being subsective and being privative. But a classical tautology is insufficient to formally differentiate modal modifiers from the rest. It remains an open question among formal semanticists, though, what the logic, if any, of modal modification is.)

The fifth rule imitates, as it were, the effect of detaching M from $(MF)a$. Actual detachment is impossible, however, since M is a modifier and so applicable to F but inapplicable to a. Detachment would, furthermore, generate a nonsensical sentence like "a is former". But—or so I shall argue—M can be what I call *pseudo-detached* to generate a meaningful sentence like "a is a (former something)". The fifth rule is:

> *Pseudo-detached*. From $(MF)a$ infer M^*a

Note that already intersective modification calls for pseudo-detachment. Otherwise "a is a happy child" could not be validly factored out into "a is happy and a is a child". (This fact is commonly overlooked; cf. Heim and Kratzer 1998, pp. 65ff.) One problem is that the first occurrence of 'happy' denotes a modifier; the second, a property. Another is that detachment *con forza* would generate a fallacy like, "From Jumbo being a small elephant, infer that Jumbo is small"; for Jumbo is a small *what*? Nothing is small without qualification. (Cf. Gamut 1991, §6.3.11.)

It is crucial not to confuse the rule of pseudo-detachment with the following fallacy, which Geach rightly objects to:

> a is a big flea, so a is a flea and a is big; b is a small elephant, so b is an elephant and b is small; so a is a big animal and b is a small animal. (1956, p. 33)

Pseudo-detachment licenses no such conclusion, however. Geach's illegitimate move is to steal the property *being an animal* into the conclusion, thereby making a, b commensurate. To be sure, both fleas and elephants are animals, but a's being big and b's being small follow from a's being a *flea* and b's being an *elephant*, so pseudo-detachment only licenses the following two inferences, $p \neq q$:

> There is a property p such that a is a big p; there is a property q such that b is a small q.

And a big p may well be smaller than a small q, depending on the values assigned to p, q.

Instead pseudo-detachment, when spelt out, is this two-step *rule*:

$$\frac{a \text{ is an } MF}{a \text{ is an } (M \text{ something})}$$

$$\frac{M^* \text{ is the property } (M \text{ something})}{a \text{ is an } M^*}$$

Let $[MF]$ be the property resulting from applying M to F, and let $[MF]_{wt}$ be the result of applying the property $[MF]$ to the world and time variables w, t to obtain a set, in the form of a characteristic function, applicable to a. (See Author 2008, Author et al. 2010 for details.) Further, let $=$ be the identity relation between properties, and let p range over properties, x over individuals. Then the *proof* of the rule is this:

1.	$[[MF]_{wt}\, a]$	assumption
2.	$\exists p\, [[Mp]_{wt}\, a]$	1, EG
3.	$[\lambda x\, \exists p\, [[Mp]_{wt}\, x]\, a]$	2, β-expansion
4.	$[\lambda w' \lambda t'\, [\lambda x\, \exists p\, [[Mp]_{w't'}\, x]]_{wt}\, a]$	3, β-expansion
5.	$M^* = \lambda w' \lambda t'\, [\lambda x\, \exists p\, [[Mp]_{w't'}\, x]]$	definition
6.	$[M^*_{wt}\, a]$	4, 5, Leibniz' Law

In essence, pseudo-detachment is a rule for replacing the modifier M by the property M^*. The trick is to quantify F away and replace it by the $\exists$-bound p. So if Jumbo is a small elephant, then Jumbo is small*; i.e. Jumbo is a small something (rather than small *absoluter*); i.e. there is a property p such that Jumbo is a (small p). This is trivially valid rather than contentious or outright wrong, as soon as quantification over properties is accepted. This paper demonstrates how pseudo-detachment accommodates higher-order modification, such that □*a* is a very large elephant□ does not entail the nonsensical □*a* is (a) very*□, and why Bolinger's correct observation that some adjectives in attributive position cannot also occur in predicative position (e.g., □The main station is main□) does not jeopardize the validity of pseudo-detachment.

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A Projectivist (or Expressivist) Partition Semantics for Why-Questions

A Projectivist (or Expressivist) Partition Semantics for Why-Questions

According to van Fraassen (1980), a why-question Q can be identified with a triple $\langle P_k, X, R\rangle$, where P_k is the **topic** of the question, $X := \{P_0, \ldots, P_k, \ldots\}$ a **contrast-class** for the topic, and R a relevance relation. Answers to Q are then propositions that bear relation R to $\langle P_k, X\rangle$. Kitcher and Salmon (1987) criticized this account by showing that "the lack of any constraints on 'relevance' relations allows just about anything to count as the answer to just about any question."[1] The philosophical part of this project is to shield van Fraassen from this criticism by recasting his theory as projectivist or expressivist, and as an account of explanation in general rather than as an account of scientific explanation in particular. The semantic part—and, as it happens, the initial goal of the project—is to extend partition semantics to cover why-questions. To achieve both goals, a theory of contrast-classes is formalized and the relevance relation is given some added structure and a projectivist defense.

Since van Fraassen (1980) suggests that contrastivity arises from focus or clefted constructions and such constructions are not unique to questions, I consider several arguments for the introduction of contrastivity at the propositional level. Further, as schematic examples (namely, responses to "Which of the following are true…" queries) seem to show that contrast-classes can be arbitrary, the requisite flexibility could be formally accommodated by defining propositions to be arbitrary ordered pairs of (i) a set of possible worlds and (ii) a set of sets of possible worlds containing (i). But given the role van Fraassen (1980) assigns to contrast-classes in the evaluation of answers to why-questions, it is clear that contrasts are supposed to be mutually exclusive. A better option is therefore to construe contrast-classes as the (partition semantics-style) meanings of questions to which the topic of the why-question is the answer. Formally, where $[\![?\phi]\!]_M$ is the intension of the question $?\phi$, $X = [\![?\phi]\!]_M$ such that $P_k \in [\![?\phi]\!]_M$.[2] Ultimately such a construal of contrast-classes can be formalized in an extension of Groenendijk (1999)'s **Game of Interrogation** with the addition of a stack that keeps track of questions that have been answered. Moreover this perspective on contrast-classes allows principled responses to both the revisions of Cross (1991) and the objections of Markwick (1999).

[1] Op. cit., 319.

[2] Following the notation of Groenendijk and Stokhof (1994).

Second, I add some structure to the notion of relevance. In place of van Fraassen (1980)'s R, I incorporate a philosophically attractive projectivist theory of relevance inspired by Blackburn (1984)—or if you like an expressivist theory of relevance a la Allan Gibbard—by supplying private relevance relations for each conversational participant (CP). From a projectivist or expressivist point of view, it is only natural that there should be no hard constraints on such relations, *pace* Kitcher and Salmon (1987). In the metalanguage, we can say that these private relevance relations track what each CP believes would be a contextually relevant answer to Q, as evidenced by what he or she would tend to offer or accept in the context as an answer to Q. Part of that context is a background theory or privileged set of facts F, so agents' relevance relations are construed as relative to F as well. The goal of a why-question then becomes to get a (contrastive) proposition that is related to $\langle P_k, X\rangle$ by the intersection of the CPs' contextual relevance relations. Dependence models (a generalization of Pearl (2000)'s causal models) are suggested as a way to visualize the relevance relations and Q more generally. Further, I provide some examples to make it plausible that, in particular conversations, the relevance relations of CPs are selective enough for the set of answers to partition the set of contextually possible worlds. These examples aim to generate intuitions that answers to why-questions can be (contextually) complete and mutually exclusive, focusing on (1) the use of the locution 'in light of the fact that…' and (2) the range of admissible clarification requests (drawing partly on recent work by Jonathan Ginzburg).

This theory can be favorably compared with that of Hintikka and Halonen (1995). One theme of the comparison is that Hintikka and Halonen (1995) is essentially normative about answers to a why-question, whereas the present proposal is descriptive, finding its only constraints in the relevance relations associated with CPs. For the Hempel-inclined, Hintikka and Halonen (1995)-style answers are predicted just in case the F-relative relevance relations of CPs relate A to $\langle P_k, X\rangle$ if $A \cup F$ yields P_k via your favorite notion of entailment. Comparison with work by Wiśniewski remains to be done.

Time permitting, the role of an allied 'erotetic' notion of explanation in providing truth-values for counterfactuals may be sketched as follows: Kment (2006) argues that perfect match in matters of particular fact contributes to closeness between two worlds only if the facts have the same ontic explanations in both worlds. Replacing the ontic notion of explanation with the

erotetic notion solves some recalcitrant cases and merges the similarity approach to counterfactuals with the cotenability approach, following Veltman (1985). This role of the erotetic notion of explanation is not surprising due to the potential formalization of relevance in a generalized version of Pearl (2000)'s causal models.

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Rhetorical Relations and Predicate Terms

Rhetorical Relations and Predicate Terms

General Session

Discourse relations or rhetorical relations have been identified as the principles which account for textual cohesion, i.e. for the fact that a text is not an arbitrary collection of sentences. Such relations are, e.g., Narration, Parallel, Contrast and Explanation (Hobbs 1985, Mann & Thompson 1986, Polanyi 1995, Kehler 2002, Asher & Lascarides 2003). Apart from their text constituting function, rhetorical relations have implications for the content of the clauses and sentences which they connect. Researchers have shown that reference resolution, temporal and spatial determinations, bridging, disambiguation, etc., can be explained as the result of linking sentences together by means of rhetorical relations (e.g. Lascarides & Asher 1993; Asher & Lascarides 1995, 1998). In this way many pragmatic modulations of meaning can be seen as the byproduct of textual connectivity. In order for two sentences to be related by Explanation, for instance, there must certainly be a specific temporal relationship between them. E.g. (1),

(1) a. John fell.
b. Max pushed him.

The assignment of the rhetorical relation Explanation to (1) requires that the event in (1b) precede the event in (1a), for causes precede their effects.

I will argue that the assignment of rhetorical relations to clauses and sentences not only has implications for the phenomena previously listed, but also for the actual content of predicate terms. In other words, the property ascribed by a predicate term may be affected by the requirements of the rhetorical relation assigned to the sentence in which it occurs. Consider (2):

(2) a. Anne is content.
b. Celia is happy too.

It is reasonable to relate (2a) and (2b) by means of the rhetorical relation Parallel. Parallel requires that either the same property is ascribed in (2a) and (2b) or that the property ascribed in (2b) is implied by the property ascribed in (2a). From a lexical point of view, however, this is not the case in (2). Being content and being happy are distinct properties and it is possible to be content without being happy. My claim is that the content of the terms *content* and *happy* in (2) is adjusted in such a way that the requirements of Parallel are satisfied. This amounts to a contextual specification of the content of the terms. The phenomenon is akin to so called mutual adjustment. The properties denoted by the adjective *red* in the phrases *red wine* and *red hair* respectively are arguably different, i.e. the property ascribed by *red* is adjusted in accordance with the noun qualified.

In (3) the clauses are connected via Contrast:

(3) a. In the town she drove carefully;
b. but once they were outside she speeded up.

(3a) considered in isolation states neither more nor less than that she drove carefully. Once we have assigned Contrast to (3), however, we have to adjust the content of (3a) and (3b) in such a way that there be contrasting elements in the two clauses. It seems reasonable to take the property ascribed in (3a) as involving the property of driving slowly.

In (4) the clauses are connected via Explanation:

(4) a. She hollowed her hand,
b. because she was hard of hearing.

The content of (4a) as considered in isolation is that she hollowed her hand some way or other. But if (4b) provides the explanation of the event in (4a), then she cannot have hollowed her hand in just any way. The property ascribed in (4a) must be adjusted in such a way that the event in (4a) is a reasonable consequence of being hard of hearing. Presumably she hollowed her hand round her ear. We must add a specification as a result of the assignment of the rhetorical relation Explanation. (4) represents clearly an

example of pragmatic enrichment, the content of the sentence being richer than the compositional meaning.

The implications of rhetorical relations for the content of predicate terms are methodologically interesting from the viewpoint of the semantics/pragmatics debate. For researchers who acknowledge that the context may have an impact on the truth conditional content of sentences – beside the obvious cases involving demonstratives and indexicals proper –, basically two options are available. According to indexicalism, contextual specification is required by the linguistic structure of the sentence itself. Indexicalists postulate the existence of slots in the linguistic structure the values of which are filled in by the context. This approach paves the way for a principled account of context sensitivity, but it can arguably be seen as a piecemeal and *ad hoc* manoeuvre (as argued by, e.g., Cappelen & Lepore 2005). According to radical pragmatics, contextual specification of meaning occurs without being mandated by linguistic structure. Either a principled account of context sensitivity is abandoned and appeal is made to a general urge to make sense of utterances (e.g. Recanati 2007) or the principles invoked are wholly extralinguistic (e.g. Sperber & Wilson 1995).

Rhetorical relations permit us to provide a principled account of certain important forms of context sensitivity which avoids the drawbacks of the dominant positions in the semantics/pragmatics debate. We do not have to make any assumptions regarding the lexical shape of individual linguistic items, nor do we have to explain context sensitivity by means of extralinguistic principles which are merely regulative of human interaction. Rhetorical relations are intralinguistic principles to the extent that they are constitutive for texts which are linguistic entities.

I will argue that the cohesion account has an advantage over other pragmatic accounts of context sensitivity in that rhetorical relations not only require the construction of contextual concepts and properties, but also contain definite instructions for carrying out this construction. The contextual values of predicate terms might be quite unpredictable from the viewpoint of lexical semantics, but are nevertheless obtained via 'general principles of discourse' (Grice 1989).

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C Combinator in There-Sentences

C combinator in *there*-sentences

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1. Aims and methods

The ***aim*** of this talk is to give a systematic formal semantic account of (a subtype of) *there*-sentences in a way that it becomes possible to answer several of the puzzling questions emerging either inside the set of *there*-sentences or between *there*-sentences and their canonical counterparts (see section 3 for more details).
The applied ***method*** is that an exact semantic interpretation is given to the *there*-element. This is the main innovation argued for in the talk, as it is widely accepted in the literature that the *there*-element is a dummy constituent and it has no interpretation at all.

2. The analysis

The starting point of the analysis is that (at least a subtype of) *there*-sentences can be characterized as having **inverted** (Partee and Borchev 2004) or non-canonical (Beaver et al. 2006) structure: see (2) as opposed to the "canonical" exist-sentence (1):

(1) At least two green elephants exist.

(2) There are at least two green elephants.

The semantic content of *there*-sentences is usually not stating the mere existence of the entities denoted by the pivot nominal, as it happens in the case of sentences containing the *exist* predicate, but to relate these entities to a more restricted or specific domain of entities than the universe (cf. Moltmann (2009)). Thus, *there*-sentences containing an explicit locative PP seem to be the prototypical instances, and they will be the type of data the present analysis is based on:

(3) There are at least two green elephants in the garden.

The rough structure of this sentence-type is shown in (4):

(4) *there are* DP PP_{loc}

If we assume that the denotation of a locative PP can be considered as a set of points (as defined e.g. in Zwarts and Winter 2000), and we describe the semantic structure of (4) by the relational structure the generalized quantifier approach offers to us, the denotational structure of (4) with respect to a given world w' can be grasped as shown in (5):

(5) $||\textit{there are}||^{M,g,w'}\ ||\text{Det}||^{M,g,w'}\ ||\text{N}||^{M,g,w'}\ ||PP_{loc}||^{M,g,w'} = ?\ D\ A\ B$
where D is the relation expressed by the determiner of the pivot DP, A is the denotation of the bare noun occurring in the pivot nominal (a set of entities in w'), and B is the denotation of the PP_{loc} (also a set of entities in w'). The sign ? stands for the interpretation of the *there (are)* part of (4).

The open question is the syntactic and semantic role of the *there (are)*[1] part of the sentence. Syntactic issues will not be addressed here; the only relevant thing for us is that the *there* element signals somehow that the structure of the sentence is non-canonical.

[1] The issue concerning the exact interpretation of the *is/are/*...part of *there*-sentences will not be addressed here.

The main claim of this talk is that the semantic interpretation of the *there (is/are/..)*-part of existential sentences is a special argument-changing function known as combinator **C** in combinatory logic (see e.g. in Hindley et al. 1972), definable by lambda-terms as in (6)[2]:

(6) **C**FAB= λfλaλb[f(b)(a)]

Applying this combinator to the denotational structure given as D A B above, we get (7):

(7) λfλaλb[f(b)(a)]DAB = λaλb[D(b)(a)]AB = λb[D(b)(A)]B = DBA

This means that the interpretation of *there (is/are/...)* is a function operating on another function (the determiner of the pivot DP) in a way that the original order of the arguments of D will be reversed. The result is that the interpretation of (3) will be roughly equivalent to (8):

(8) At least two entities in the garden are green elephants.

In sum, the statement expressed by the sentence *There are at least two green elephants in the garden* will be true exactly when the statement expressed by the sentence *At least two entities in the garden are green elephants*. This seems intuitively correct, and it is in accordance with the observation that the determiners occurring in existential sentences are usually symmetric (see Barwise and Cooper 1981).

3. Prospects based on the C combinator analysis

The analysis of *there (is/are/..)* as a **C** combinator opens the way for gaining a systematic and formally based account of some notoriously puzzling phenomena occurring in *there*-sentences, including the following:

- The "definiteness effect" is not to be stipulated as a constraint because it becomes simply derivable from the conservative property of natural language determiners: if the property DAB ⇔ DA(A∩B) is valid for the D, then applying the combinator **C** as described above results in the symmetric property of the allowed pivot arguments (stipulated by Barwise and Cooper 1981). It is also possible to give an account of the occurrence of the non-conservative determiners (*only/just, mostly*): in their case the conservative property is at work only after applying **C**, resulting in the property of $cons_2$ (conservativity on the second argument) as defined by Keenan (2003). Thus the question of the appropriate algebraic property of pivots can be answered simply by ***deriving*** this property from the interaction of a (quasi-)universal property of determiners and the effect of the combinator **C**.
- The "property-like" character of the pivot nominal (recently argued for by McNally 2009) gains a natural explanation by the fact that its common noun part becomes the predicative constituent of the statement if we apply the **C** combinator analysis offered here.
- The semantic difference between canonical *exist*-sentences and its *there*-sentence counterparts can be explained in a parallel way to the semantic difference between canonical locative sentences and its *there*-sentence counterparts.
- It can be derived explicitly that the (explicit or implicit) presence of a locative PP is the distinctive feature of a special subset of the set of *there*-sentences and the **C** combinator analysis can work only in the case of this subtype of *there*-sentences, simply because **C** is a three-place function. Thus *there*-sentences without any explicitly given or implicitly present locative PP (as (2) above) will turn out more similar to the *exist*-sentences in their semantic character than to the *there*-sentences containing locative phrases.
- Finally, **C** has to be typed, and by stating the exact conditions on its possible types some syntactic insights might be gained as well.

[2] Warning: **C** is a three-place function which is not to be confused with $\mathbf{C}_*$, the type-raiser (a two-place function, notated also as **T**). The latter combinator is definable with the aid of **C** (see in (6)) and **I**, the identity function: $\mathbf{C}_* =_{df} \mathbf{CI}$

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Empty Names, Roles and Transfer of Predicate

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Empty names, Roles and Transfer of predicate.
Ontological-semantic interface in the reference of fictional names

I.

In contemporary debate surrounding the reference of fictional names, the main theoretical distinction is between theories developed on the assumption of the existence of fictional objects, and theories that treat fictional names as terms that lack a referent. We may describe the debate as between realism and irrealism of fictional objects. I will assume here a realistic point of view, conforming to the theory of abstract artefacts. Assuming this view it may be held that fictional characters are real abstract entities created by authors, and that they may be objects of speakers' utterances. Thus a straightforward semantics of fictional names may be provided. Maintaining these features of the theory I will suggest that such abstract entities are roles – indeed, I suggest that fictional characters are fictional roles.
Provided that the explanation that I will develop of how an abstract entity can be ascribed the property of, for instance, "being a detective" is tenable; I argue for a more economical and functional explanation of the semantics of fictional names than that hitherto provided by an irrealistic perspective regarding fictional objects.

The idea of a role has occasionally been invoked in order to deal with examples such as "the American President is an elective office", "Miss America celebrates 70 years of life 2010", and "Chief Officer is a detective role". Expressions such as 'The American President', 'Miss America' or 'Chief Officer' may be treated as ambiguous, referring both to a role and to an individual, as in "The American President is Barack Obama" or "Miss America is blonde".
When it comes to issues related to fiction, whereas a semantics approach grounded on roles may be promising for the analysis of the reference of assertive uses of fictional names, for instance in 'Holmes is Doyle's most successful character', it is not clear how an appeal to role may help in sentences such as "according to Doyle's novels, Holmes is a detective". If the semantics function of 'Holmes' is that of referring to a role, it would seem that the foregoing statement conveys that (according to the fiction) a certain role is a detective. But this can't be right: what is desirable is rather the claim that, according to the fiction, a certain individual, who is a detective, fulfils that role. It would thus seem that fictional names (among other expressions) behave ambiguously, sometimes designating a role, sometimes being concerned with how that role is being fictionally fulfilled.
My aim is to present a solution to this problem, which does *not* appeal to an ambiguity in the semantics of proper names, 'Holmes' included.

II.

Consider an example[1] where the noun phrase, in this particular use, seems to individuate a different extension to the one that it normally designates.

[1] See Nunberg (1995).

(1) I am parked out back.

In (1) we may be tempted to claim that 'I' does not refer to the speaker, but to the speaker's car. Since 'I' in other cases obviously refers to the speaker, this would lead to the conclusion that 'I' is ambiguous. But this seems incompatible with the evidence provided by these examples:

(2) I am parked out back and have been waiting for 15 minutes.

(3) ??I am parked out back and may not start.

If Nunberg is right, this indicates that 'I' does not behave ambiguously. Indirectly, this also indicates where the semantics issue lies: since people are not parked out back in the sense in which cars are, (1) can be evaluated as true only in a different sense of 'parked out back'. The ambiguity (though this concept will be rectified below) must lie in the predicate, rather than in the singular term. In (1) the predicate, instead of individuating the class of cars parked out back, will individuate the individual that has a car parked out back. Nunberg defines this process as predicate transfer. It is possible to suppose then, that it is not the subject that transfers its reference from the speaker to the car, but that the transfer involves the predicate 'parked out back'.

Indeed, Nunberg's view is not one of accidental ambiguity, but a plurality of semantics profiles that rely on systematic and contextual relations. Nunberg suggests associating this relation with the notion of noteworthiness. "Let me describe this condition by saying that predicate transfer is only possible when the property contributed by the new predicate is 'noteworthy'. [..] Noteworthiness can be thought of as a special case of relevance, depending on how we understand the latter notion."[2] In (1) the car driver is relevantly identified through some properties of her car. The relevant car's properties in identifying the car's driver are relative to the immediate conversational purposes. Nunberg's solution may be in need of refinements, but that is not what is important here. What matters is the application of this strategy to the problem introduced above. That is, we show how fictional names need not be ambiguous by appealing to an independently motivated notion of meaning transfer.

In the case of fictional names, a strategy parallel to Nunberg puts further strain on the thesis that the name is ambiguous.

III.

Consider the following examples:

(a) Sherlock Holmes is a detective.

[2] Ibid., 114.

(b) Sherlock Holmes was created by Conan Doyle at the end of the XIX century.

Intuitively the ambiguity relies on the fact that in (a) 'Sherlock Holmes' seems to refer to an individual, and in (b) to a role. I will propose considering that in both (a) and (b) the term 'Sherlock Holmes' refers to a role, and that the alleged ambiguity can be explained by looking at how the predicate behaves.

Given the assumption that 'Sherlock Holmes' always refers to a role, we are however confronted with the problem that 'being a detective' is not a property attributable to a role. It is not a role that solves a murder. Nonetheless, a role may be occupied by a detective. For example, in the HR department of the police, talking about vacant positions, some employee may describe the chief officer's role saying 'Chief Officer is a detective', intending that the role of Chief Officer requires that it be fulfilled by a detective. On the basis of the relation that holds in some conversational contexts between individuals and roles they occupy, I propose considering in (a) the transfer meaning of the predicate. Semantically, the predicate of 'is a detective' individuates the property of 'being a detective'. However, the property, from being applied to an individual is applied to roles, but the meaning is transferred in relation to the conversational context as 'being a role such that the individual that occupies it is a detective". To be more precise, being Sherlock Holmes a fictional role and no actual individual fulfils it, we may reinterpret the predicate transfer in term of "being a role such that anyone occupying it will be a detective". In (a) 'Sherlock Holmes' refers to the role of Sherlock Holmes, and the predicate meaning is transferred as a salient property for the conversational purpose, to the role 'being a role occupied by a detective'.

Although this proposal avoids any ambiguity for 'Sherlock Holmes' (and only appeals to independently motivated phenomena of meaning transfer), it still needs to be amended: after all, according to the analysis above, (a) would end up being false, since there is no detective that occupies that role in the actual world. But this problem is not peculiar to the strategy I suggest, and its solution, appealing to an implicit operator 'in the fiction' is already eminently familiar. I shall conclude considering that two options may be available here.

The first is the usual appeal to a hidden operator 'in the story, φ'. For example in (a) the prefix "In Conan Doyle's stories" allows us to individuate the correct context of evaluation for the embedded sentence, where 'Sherlock Holmes' still refers to the role of Sherlock Holmes and the predicate conveys a transferred meaning on the basis of the conversational purposes. Namely, the property of 'being fulfilled by an individual that is a detective'. The second option obtains an already enriched property via transfer. In (a), the transfer meaning of the predicate includes the context of evaluation as 'being a role fulfilled by a detective in the story'.

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Against Structured Propositions

Against Structured Propositions

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In this paper, I consider what formal entities will do the best job as clause-denotations in a compositional semantics. Throughout, I'll use the word 'proposition' simply to mean whatever sort of entity clauses are taken to denote in a particular compositional semantics. Thus, different semantic frameworks invoke different sorts of propositions, and the present task is to evaluate various theories of what propositions might be.

In particular, I'll focus on what I call the "fineness-of-grain problem". One familiar complaint against theories that take propositions to be sets of possible worlds is that there are not enough of such propositions, that we need to draw finer distinctions than possible-world propositions will allow us to draw. This is the fineness-of-grain problem: which distinctions do we need to draw, and how shall we draw them?

Some authors (eg Carnap, Lewis, King) take the problems with possible-worlds semantics to provide an argument for building structure into propositions. I call these authors *structuralists*. (They differ in precisely how they build this structure into their propositions, but they agree that the structure is to be derived, somehow, from clausal syntax.) This allows for more distinctions to hold between propositions.

There is another familiar strategy for addressing the same problems, however, taken by eg Goddard & Routley, Rantala, and Priest. These authors, like pure possible-worlds theorists, take propositions to be sets of circumstances, but they allow for more circumstances than just possible worlds. I call them *circumstantialists*. (Again, they differ in the details of their respective approaches.) This also allows for more distinctions to hold between propositions.

Structuralists and circumstantialists offer different solutions to the fineness-of-grain problem. (Actually, each camp sees itself as offering more than just a solution to the fineness-of-grain problem, but in this talk I'll consider only the fineness-of-grain aspect of the theories.) Unfortunately, there has been relatively little engagement between the two camps. Few authors offer an argument for making the choice they make between these two broad styles of theory. Those authors who *have* considered the division have tended to be structuralists. Here, I consider the issue from a circumstantialist perspective; I argue that circumstantialists are better positioned to address the fineness-of-grain problem than are structuralists.

I argue this in two ways. First, I point out that structuralism alone is not

enough to solve the full fineness-of-grain problem. Structuralists, of course, are aware of this; this is the reason for Fregean structuralisms like that of Chalmers and pragmatic epicycles like those of Salmon. Here, I do not evaluate those additions to structuralism, but instead simply consider why there is a need for them in the first place: because structuralism alone only provides distinctions where there is syntactic structure, and we face the fineness-of-grain problem even in the absence of syntactic structure. We need to draw more distinctions than structuralism alone can provide. Structuralism does not address the full fineness-of-grain problem, but only part of it; this is why it must be supplemented.

Of course, if this were also true of circumstantialism, it would not help us decide between the theories. And indeed Scott Soames has argued in a series of articles that circumstantialist theories run aground on distinctions that can only be drawn syntactically, and so must be supplemented with structuralism if it is to solve the full fineness-of-grain problem. Here, I respond to Soames's arguments, showing that circumstantialism alone, unlike structuralism alone, can indeed solve the full fineness-of-grain problem.

The second argument I present for circumstantialism turns on phenomena of context-sensitivity in propositional identity. It seems that just how fine a grain we need our propositions to have can vary from one context to another; sometimes it's important to draw distinctions that other times it's important to ignore. Any theory can handle this by providing an ad hoc mechanism for collapsing unwanted distinctions. I argue that this is indeed how the structuralist must approach this phenomenon. The circumstantialist, on the other hand, already has machinery built into her approach that predicts this context-sensitivity, and handles it without ad hoc additions.

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Existence and its Discontents

For the general session at Semantics and Philosophy in Europe, 2010

EXISTENCE AND ITS DISCONTENTS

Heim (1991), Kripke (2005), and Elbourne (2005, 2008) (HEK) have objected to Russell's (1905) famous analysis of definite descriptions on the grounds that it yields incorrect predictions in non-doxastic attitude contexts. The source of the problem is that definite descriptions are analyzed as contributing an existential quantifier, viz. asserting the existence of an individual satisfying the content of the restrictor. In attitude contexts, existence is thus predicted to be part of the content of the attitude under which the definite is embedded.

(1) Hans wants the ghost in his attic to be quiet tonight. (Elbourne 2005, 2008)
   a. Hans wants [ιx: ghost$_{(x)}$](be-quiet-tonight$_{(x)}$) (narrow scope)
   b. [ιx: ghost$_{(x)}$] Hans wants (be-quiet-tonight$_{(x)}$) (wide scope)

The predicted truth conditions for (1a) is that Hans desires that there is a ghost in his attic, but this is incorrect since Hans needs no such desire for (1a) to be true. In contrast, the predicted truth conditions for (1b) is that there exists a unique ghost, but this also incorrect since (1) doesn't appear to commit the speaker to the existence of ghosts. According to Heim and Elbourne, this problem motivates an alternative analysis, an analysis on which (a) definites trigger existence presuppositions and (b) presuppositions triggered in non-doxastic attitude contexts project to belief-contexts (cf. Heim 1992).

Since presuppositions are effectively constraints on interpretability, existence presuppositions are standardly captured in terms of partial functions. That is, to capture that the use of the definite determiner is licensed only if its restrictor is singleton, we analyze the definite determiner as a function which is only defined for singleton sets.

(2) a. $\lambda P\ \exists!xP(x)\ \lambda Q\ .\ \exists x[P(x) \wedge \forall y[P(y) \rightarrow x = y]]$ $\langle$et,$\langle$et,e$\rangle\rangle$

The expression $\ulcorner\exists!xP(x)\urcorner$ indicates that the preceeding λ-function is only partially defined; a computation avoids crashing only if there is exactly one x such that $P(x)$. However, this lexical entry won't work, since if a computation of a sentence containing a definite description succeeds, and if it's defined as above, the asserted content of the definite description is an existentially quantified formula. If this is embedded under an attitude, the problem described above simply repeats itself. Thus, if the existence puzzle is to be solved, the asserted contents can contain no expressions that effectively assert existence. To avoid this problem, Heim and Elbourne resort to a referential treatment of the definite determiner, cf. (3a).[1]

(3) a. $\lambda P : \exists!xP(x)\ .\ \iota x\ P(x)$ $\langle$et,e$\rangle$

This lexical entry is typed as a function from properties to individuals and the ι-expression is here to be understood simply as a referential term. This avoids the problem posed by the existence puzzle since the asserted content of the definite description contains no expressions that assert existence. If a computation of DP+VP (where the DP is a definite description) succeeds, the result is effectively a formula of the form $F(a)$. If this formula is embedded under an attitude verb, existence of a unique individual satisfying the restrictor does not become part of the content of the attitude. So existence puzzle solved? Not quite.

As observed by Hawthorne and Manley (ms. 2008) (H&M), the problem appears to generalize to weak determiners. For example, it's easy to imagine contexts in which narrow scope interpretations of (4-5) are true, yet where Hans has no desire that there are ghosts.

(4) Hans wants a/some/one ghost in his attic to be quiet tonight.
(5) Hans wants three/many/several ghosts in his attic to be quiet tonight.

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1 See e.g. Heim and Kratzer (1998), Elbourne (2005), Schwarz (2009). The expression: $\ulcorner\exists!xP(x)\urcorner$ should be read as *there is exactly one x*.

A problem completely analogous to the problem observed in (1) thus arises for (4) and (5), but here a referential analysis fails miserably. On the referential analysis, the subject of the attitude verb is predicted to have a de re attitude, but the above sentences can be true without the subject of the attitude having a desire about any specific individual. This means that neither a quantificational analysis nor a referential analysis of the asserted contents can solve the existence puzzle.

In this talk I lay out this problem in detail and contend that the existence puzzle forces us to reconsider how to deal with existential commitments. I argue for three specific points, **P1**-**P3**.

P1. There is ample evidence that even weak determiners, e.g. indefinites, are capable of triggering existence presuppositions. This is demonstrated using a modified version of the standard projection tests for presuppositions, cf. von Fintel (1998). What these tests show is that uses of existential-there sentences which are embedded under possibility-modals (or if-clauses) are acceptable even when the speaker has openly declared herself agnostic about existence. In contrast, such uses of bare weak determiners are not. A brief example.

(6) I'm not sure whether there are any apples in the pantry.
   a. If there are some/five/several apples in the pantry and they're ripe, let's bake an apple pie.
   b. # If some/five/several apples in the pantry are ripe, let's bake an apple pie.

   c. There might/ought to/should be a couple of apples in the pantry that are ripe.
   d. # A couple of apples in the pantry might/ought to/should be ripe.

This striking contrast in acceptability between uses of existential-there sentences and bare weak determiners parallels precisely standardly accepted presuppositional expressions. I provide additional data in favor of a presuppositional analysis of weak determiners.

P2. It's entirely unclear how a Russelian analysis of definites combined with an analysis of attitude verbs is going to avoid the problematic assertions of existence while maintaining the necessary ones, e.g. complement clauses containing existential-there sentences. In other words, there are strong reasons to believe that this is a genuine problem about existential commitments and not just a problem triggered by the general complexities of attitude verbs. Since existential commitments are part of the asserted contents on the Russellian analysis, it's subject to strict syntactic constraints on movement. As a result, this analysis faces rather exigent problems.

P3. Avoiding the problematic existence commitments requires a system where presuppositional expressions can bind into asserted contents. The system must not only permit existence presuppositions to project out of embeddings, it must also allow these existentially quantified formulas to bind across syntactically complex environments. Only in a system where existential quantification is not clause-bounded, i.e. a dynamic system, is this possible.

Conclusion: I propose a novel analysis of descriptions embedded in a dynamic semantic system. I propose to analyze indefinites embedded in attitude verbs as triggering existence presuppositions and I argue that whatever changes to the semantic framework are required to handle definites, these changes are also sufficient to handle presuppositional indefinites. This yields an intuitively plausible analysis of natural language determiners, and, in turn, solves the existence puzzle.

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Combining Linguistic and Philosophical Results on Counterfactuals

General session: Combining linguistic and philosophical results on counterfactuals

The semantics of counterfactual conditionals is a subject that has always fascinated philosophers. There is hardly any area in philosophy that has not been touched by this issue. At the same time we also observe a growing interest of linguists in this topic. There are some general differences in how philosophers and linguists approach conditionals, but the basic question they try to answer: how do we interpret counterfactual conditionals, is the same. Therefore, both disciplines can only gain from a close cooperation. The purpose of the talk is to illustrate this point by combining theories from linguistics and philosophy in order to solve some well-known puzzles of counterfactuals.

Since nearly 40 years the Stalnaker/Lewis similarity approach dominates the literature on the semantics of counterfactuals. But in the meantime also a number of substantial problems for this approach have been spotted. Two classes of problems that have been discussed are (1) counterexamples that attack the similarity relation, and (2) problems with selecting optimal (maximal similar) worlds. The first class of problems is not life-threatening, because they arguably only show that we need a more concrete description of the similarity relation that matters for counterfactuals. One attempt to specify this similarity relation can be found in Schulz (2011). The second class of problems is more serious, because it attacks the very foundations of the similarity approach. A particular problem in the second group is the observation that counterfactuals with disjunctive antecedents (*If A or B had been, then C would have been*) come with the inference that the conclusion follows counterfactually from both disjuncts separately (*If A had been then C would have been* and *If B had been, then C would have been*). Given any similarity approach one can construct counterfactuals with disjunctive antecedents for which the approach predicts that the described inferences do not hold.

Interestingly, the solution proposed in Schulz (2011) for counterexamples of the first type also accounts for this particular problem of the second type. However, the responsible aspect of the theory is rather ad hoc and not convincing for linguistic reasons. The observation concerning the interpretation of disjunctive antecedents fits a much wider pattern shown by disjunction and indefinites in many different context (Free choice inferences). The solution of Schulz 2011 cannot be generalized beyond the context of counterfactual conditionals. This suggests to build a linguistic solution of the problem into Schulz (2011).

There are basically two linguistic approaches on the marked. Van Rooij (2006) uses the standard treatment of indefinites in dynamic semantics. The approach unfortunately cannot account for the observation that the inference pattern described above also applies to *might* counterfactuals with disjunctive antecedents (*If A or B had been, then C might have been*). Alonso-Ovalle (2009) uses a Hamblin-style alternative semantics for disjunction. This approach can account for *might* counterfactual. It additionally provides a nice compositional semantics for counterfactuals. But the approach does not allow to treat the antecedent as plural definite, for which many syntactic and semantic arguments have been given (Bhatt & Pancheva 2006, Schlenker 2004). Both approaches suffer from inserting one, in case of Alonso-Ovalle (2009) even two covert quantifiers in the Logical Form of counterfactuals.

We will show that by using van Rooij (2006) combined with ideas from Schulz (forthc.) we can solve all of the problems mentioned above, i.e. (i) the approach accounts for the observations on counterfactuals with disjunctive antecedents but extends to other linguistic contexts as well, (ii) the approach can be build into Schulz (2011) and provides a linguistic motivation for a previously unmotivated component of the theory , (iii) the approach comes

with a compositional semantics for conditionals that analyses the antecedent as plural definite description for possible worlds., and (iv) the logical form of conditionals will not involve any implicit quantifier.

The basic idea of the approach is to let the standard dynamic update function do all the work involved in interpreting conditionals. We do not need a special operator to calculate the set of *all* worlds where the antecedent is true, because we get this set automatically from updating with the antecedent, and we do not need a modal quantifier in the consequent that applies the consequent to *all* worlds where the antecedent is true, because updating the antecedent context with the consequent automatically applies the consequent to all antecedent worlds. The approach is spelled out in compositional type-theoretic dynamic semantics. *If* is analyzed as introducing a new discourse referent for worlds and stores here the result of updating the antecedent proposition to the common ground. For indicative conditionals this results in the set of all worlds where the antecedent is true. In case the antecedent is counterfactual we will end up with the context we get by revising the common ground with the antecedent. The consequent is analyzed as plain assertion about the hypothetical context introduced by the antecedent. This results for indicative conditionals in the same interpretation rule as proposed for epistemic conditionals in Gillies (2004), but now as output of a compositional semantics and with the possibility to learn information from conditionals. For counterfactuals the predictions depend on which revision function one chooses, but also here it is possible to learn information about the actual world from counterfactuals. Van Rooij's (2006) treatment of disjunctive antecedents can directly be inserted in this setting, because it just involves the standard dynamic treatment of existential quantification.

An important challenge for such a modal-free approach to conditionals is to account for those cases where the conditional involves explicit quantifiers, like adverbs of quantification or modal verbs. The present approach can deal with these cases, because these modals can pick up the discourse referent introduced by the antecedent anaphorically as argument. But they do not have to. We will argue that adverbs of quantification normally do pick up the context that the antecedent introduced as restrictor, but *would* and *will* in English conditionals are interpreted *in* the antecedent context and access from there a metaphysical modal base containing the possible futures of the antecedent worlds.

The approach outlined in this abstract follows the position of Kratzer: there is no conditional construction as such. A conditional reading results from the interplay of independent elements: in this case the antecedent that introduces hypothetical contexts and the consequent - in most cases a simple assertion. The crucial difference with Kratzer's position is that this approach is not bound to the existence of overt or covert quantifiers. The approach can be turned into an argument for the use of dynamic semantics. It uses the universal force of the update function to replace the implicit modal in Kratzer's theory. This can then be taken to explain the cross-linguistic observation that languages generally do not use obligatory modal elements in conditionals.

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In Defence of Arithmetical Singular Terms

In Defence of Arithmetical Singular Terms

Special Session 1: Quantification, Referential Terms, and Objects

In the Fregean tradition the view that numbers are objects arises from the observation that there are arithmetical singular terms—i.e. expressions that refer to numbers, if they refer at all—that feature in true sentences.[1] A prime candidate for being an arithmetical singular terms is 'eight' as it occurs in

1 The number of moons of Jupiter is *four*.[2]

Let the *Referential Hypothesis* (RH) be the thesis that 'four' as it occurs in (1) is a singular term. In his 2005 and 2007 Thomas Hofweber argues against RH and in favour of the view that 'four' as it occurs in (1) has the same semantic function as it has in:

2 Jupiter has *four* moons;

i.e. that 'four' as it occurs in (2) is a determiner rather than a singular term. Le us us call this view the *Determiner Hypothesis* (DH). Should DH be correct—and, thus, RH be false—this would greatly diminish the plausibility of the view that numbers are objects. In my talk I will argue that Hofweber's Argument for DH (and against RH) fails and that, hence, RH still stands tall.

Hofweber's argument is this: sentences like 'The number of moons of Jupiter is *four*' are *focus constructions*, i.e. they effect focus in a way that is independent of intonation (structural focus). This needs to be explained. The best explanation is incompatible with RH but vindicates DH. Hence, DH. Hofweber's argument for DH relies on an analogy between, on the one hand, sentence pairs like (2)/ (1), and sentence pairs of paradigm focus-constructions and their corresponding simple counterparts, on the other. Consider the following sentence pair of a simple sentence and a corresponding focus-construction:

3 Mary entered quietly.

3* Quietly Mary entered.

Hofweber's account of structural focus relies on the following assumptions. First, that (3) and (3*) share a level of syntactic representation (LSR). Secondly, that (3*) derives from the shared LSR by means of extraction and movement. Thirdly, that LSR determines an expression's semantic function as well as its canonical position, i.e. the position that, given its semantic function, one would expect the expression to occupy. Finally, that there is an asymmetry between how accurately (3) and (3*) mirror LSR. It is (3) that semantically calls the shots. It is because of this that (3*) effects structural focus but (3) does not: due to its non-canonical position in (3) the attention is funneled towards the information carried by the adverb 'quietly'. According to Hofweber, *every* case of structural focus is to be explained in this way. In particular, it applies to (1). Thus, Hofweber's argument relies on the assumption that (1) and (2) share a LSR that (2) mirrors more accurately than (1). In my talk I will undermine this assumption.

The assumption that focus-constructions and their simple counterparts share a LSR is plausible for *stylistic* focus-constructions (SFC) such as, for instance, 'A woman appeared at the door with blonde hair'/ 'Into the room John walked'/ 'Sitting in front of her was Bill'.[3] However, it is doubtful whether it is plausible for other focus-constructions as well. Take, for instance, so-called Interrogative Clefts (IC) such as 'What John likes is himself'/ 'Who invited them is your friend Becky'/ 'How Valium soothes is by blocking that neurotransmitter'. While SFCs (mostly) only involve a change in word order, ICs contain linguistic material absent from their counterparts. Also, as opposed to sentences like 'The number of moons of Jupiter is *four*', SFCs and do not

[1] See **?** and Wright (1983).

[2] This is meant to generalize to all suited substituends for 'n' in sentences of the form 'The number of *Fs* is *n*.

[3] See Rochemont and Culicover (1990) for more on SFCs.

contain new 'singular terms', i.e. they do not contain phrases that have not been singular terms in their simple counterparts but that occupy singular term position in the derived constructions. ICs, on the other hand, sometimes do. Whereas in (3*) 'quietly' does not even seem to be a singular term, the above 'What John likes' clearly does. Finally, the following observation shows that it is highly unlikely that (1) derives from a LSR it shares with (2) in the same way that (3*) derives from a LSR shared with (3). If this were the case, replacing 'eight' in (2) with determiners like 'some/few/many', and moving those determiners in the proposed way should yield well-formed sentences. But it does not:

1? *The number of the planets is *some/few/many*.

This observation should make us wary about the claim that (2) and (1) share a LSR from which (1) is derived by movement. Clearly, if sentences like 'The number of moons of Jupiter is *four*' are at all analogous to paradigm focus-constructions, they will be analogous to ICs rather than to SFCs. Thus, the question is whether there is an account of ICs that vindicates DH. I will argue that there is not. The account most congenial to DH is the so-called question-in-disguise theory (QID).[4] According to QID, ICs equate an (in)direct question IQ with its answer A part of which has been elided:

4 IQ: [What John likes] is A: [~~John likes~~ himself].

Working from this model, the relation between (2) and (1) could be conceived of as follows:

5 IQ: [The number of moons of Jupiter] is A: [~~Jupiter has~~ *four* ~~moons~~].

If this were correct, DH would again be vindicated. Although (2) and (1) would not *share* a LSR, the LSR of (1) would still be such that 'four' as it occurs in (1) has the same semantic function as the one it has in (2), i.e. that of a determiner. However, the following two objections show that this cannot be correct. First, the sentences 'Jupiter has *finitely many* moons' and 'The number of moons of Jupiter is *finite*' stand in the same relation that (2) and (1) bear to each other. But QID predicts that, on analysis, (5) should be 'IQ: [The number of moons of Jupiter] is A: [~~Jupiter has~~ *finite* ~~moons~~]'. This however equates the wrong answer to the question. However, equating the right answer results in grammatical garbage: '*IQ: [The number of moons of Jupiter] is A: [~~Jupiter has~~ *finitely many* ~~moons~~]'. Secondly, even if QID is correct, some ICs invite a, albeit incorrect, singular term interpretation of the post-'is' phrases ('What John likes is *himself* / 'Who invited them is *your friend Becky*'), while others decidedly do not (How Valium soothes is *by blocking that neurotransmitter*).This needs to be explained. A satisfactory explanation, suggested by Stephen Yablo, is this:[5] a sentence of the form ⌜IQ is A(-)⌝ will invite a singular term interpretation of A(-) just in case A(-) *is*, in the complete answer A, a singular term.[6] Applying this explanation to the above cases delivers the correct results. 'himself' and 'your friend Becky' invite singular term interpretation, because in the complete answers that, according to QID, occupy their respective post-'is' positions, i.e. 'John likes *himself*' and '*Your friend Becky* invited them' the unelided answer-parts 'himself' and 'your friend Becky' *are* singular terms. Conversely, the above A(-): 'by blocking that neurotransmitter' does *not* invite a singular term interpretation because in the complete answer A: 'Valium soothes by blocking that neurotransmitter' it is *not* a singular term. This suggests that (5) cannot be the correct analysis of (1). (1) also invites a singular term interpretation of 'four'. However, if (5) was correct, it should not do so. According to (5), the complete answer that occupies the post-'is' position is 'Jupiter has *four* moons'. But in (2), 'four' is not a singular term but a determiner. This contradicts the explanation. In order to reconcile the 'felt singularterm-hood' of 'four' as it occurs in (1) with the explanation, the best one could do is to abandon (5) in favour of:

6 [The number of moons of Jupiter] is [~~The number of moons of Jupiter is~~ *four*].

However, this move is doomed to failure because taking refuge to QID in this fashion would still fail to show that 'four' as it occurs in (1) is a determiner and not a singular term. This refutes Hofweber's argument for DH. Thus, there is no obstacle to regard 'eight' as it occurs in (1) as what it appears to be: an arithmetical singular term. This in turn substantiates RH, and so provides reason to side with the Fregeans in thinking that numbers are objects.

[4] See e.g. Schlenker (2003).

[5] A(-) is the unelided part of the complete answer A.

[6] Yablo (1996: pp. 199-202).

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Contents are Hardly Ever Propositional

Contents are hardly ever propositional

(abstract for SPE3 special session: Propositional and Non-propositional Sentential Content)

In this talk, we argue that cases in which sentence content is a proposition are exceptions rather than the rule, and that this is true not just in general, but also for the subclass of *assertive* sentences. What is more, we focus not on those sentences that involve special lexical items or constructions, such as epistemic modals or dangling adverbs, which are admittedly problematic for propositionalist approaches. Rather, we argue that even in the case of most plain and simple sentences, like "I am hungry" or "She is late", the content falls short of being a proposition.

The talk is divided in two parts. In the first part, we present our account of sentence content, in general albeit rough lines. For the sake of exposition, we will present it as a generalization of a fairly well-known account of *attitudinal* content put forward in Lewis (1979). In the second part, we motivate our account by arguing that it fares better than the more traditional propositionalist accounts on (at least) two scores: (i) it provides a better account of the same-saying relation (that is to say, of the conditions under which we are enclined to hear and report two speakers as "saying the same thing"); and (ii) it coheres with some plausible assumptions regarding the syntax-semantics-pragmatics interface. We will end (if time permits) on a comparison between our Lewisian account and the one recently put forward in Moltmann (2009).

Short summary of Part I: applying Lewis' account of attitudes to assertion

Lewis (1979) proposes an account of beliefs in terms of self-ascription of properties (the account is primarily intended for *de se* attitudes, but generalizes to all other attitudes). For example, the content of Ann's belief that she is hungry, which she might express by saying "I am hungry", is, according to Lewis, just the property of being hungry, a property that Ann ascribes to herself. Lewis never held, though, that the content of *assertion* should be analyzed along the same lines, and the dominant view is that if Ann says "I am hungry," the asserted content is the proposition that Ann is hungry (at a given time). In this talk, we will extend Lewis's proposal for *de se* attitudes to assertion. The content of Ann's utterance of "I am hungry", we suggest, is (equivalent to) the property of being hungry, and is a property that Ann is asserting of herself. In greater generality, however, we will depart from Lewis in two respects: (i) while Lewis' contents are always properties, i.e. map triples (agent, time, world) to truth values, our contents are mappings from possibly richer sequences, involving e.g. a pair of individuals (rather than a single agent), a location, a scale, etc. (ii) while Lewis generalizes the account to the 3rd person (or *de re*) case by construing it as a special kind of the *de se* case, viz. one in which the agent self-ascribes the property of inhabiting a world in which a certain proposition is true, we see the content as being the same regardless whether the sentence is in the 1st person or in the 3rd person; the difference is that in the former case, the speaker *self*-asserts this content while in the latter, she asserts it *of* the person or the object that she is talking about. Both points

may be illustrated by considering “She is late”. Suppose I say this while pointing to Ann. The asserted content is, then, the property of being late, and is a property that I assert of, or about, Ann. What is more, being late is a *relational* property: to be late is to be late *for* something. This, in turn, gives us for a content that maps quadruples (individual, event, time, world) to truth values; a content that, let's suppose, I assert of Ann and of the concert tonight.

Short summary of Part II: motivations

Our primary motivation for applying Lewis' account of *de se* belief to assertion is the fact that if two speakers say “I am hungry”, there is a strong intuition that there are saying the same thing – for, each is saying that he or she is hungry. The dominant, propositionalist views usually explain this intuition by pointing out that such speakers are, after all, uttering the same words, and in this sense may be said to have “said the same thing.” We argue that this response doesn't work, because using the same sentence is neither a necessary nor a sufficient condition for same-saying. Thus suppose that, at the ENS, Ann says “I study here”, and suppose that Bill says “I study at the ENS”. If one replies to Bill, “That's what Ann said, too”, the report is ambiguous between reporting Ann as having said that Bill studies at the ENS versus that *she herself* studies there. There is thus an important sense in which Bill and Ann said the same thing – they said that they study, each, at a certain place, viz. ENS. On the other hand, using one and the same sentence does not warrant same-saying. Thus suppose that Ann, pointing at Bill, says “He is crazy”, and that Carol utters the same sentence pointing at Dan. If one replies to Carol, “That's what Ann said, too”, the reply, as it stands (and without special context) is not ambiguous, but downright false. There is a striking asymmetry between the first person pronoun 'I' and the rest, and we will show how our Lewisian account of assertion can explain the asymmetry.

These examples illustrate the kind of linguistic evidence coming from same-saying reports that we use to motivate our account. Our account also handles immediately and without difficulty the so-called “non-sentential” cases that have received some attention lately (partly due to Stainton (2006)). Additional motivation for our account comes from more theoretical considerations regarding the notion of semantic content. In particular, we show that the proposed notion fits well with the picture of the syntax semantics interface as outlined e.g. in Stanley (2000). We also think that it provides a plausible picture of the semantics/pragmatics interface, similar to the one outlined e.g. in Carston (2008).

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A Partially Ordered Set of Individuals for Quantificational Singular NPs

A partially ordered set of individuals for quantificational singular NPs

This paper provides a uniform type e analysis of the semantics of both referential and quantificational singular NPs. The analysis extends Link's (1983) lattice structures for plural and mass terms to singular quantificational NPs (QNPs).

Using first order Predicate Logic, we can represent the semantics of *Meg smokes* as '$smoke'(meg')$,' which is true iff the individual denoted by the argument term meg' is a member of the set denoted by the functor term $smoke'$. The semantics of quantificational NPs such as *every boy* cannot be easily represented in this way, since the standard semantic model does not have an individual object that the expression *every boy* can denote. Thus, the first order form '$\forall x(boy'(x) \rightarrow smoke'(x))$' is used instead. However, this semantic analysis has several problems. It fails to assign a uniform semantic type to all the NPs and fails to maintain the uniform functor-argument relation between the subject NP and the VP. With this analysis, it is harder to compositionally derive the sentential meanings from the lexical semantics. Most importantly, if we use explicit quantification in the logical forms, our formal models of spontaneous inferences run less efficiently, since whenever a proposition in the form of '$\forall x.P(x)$' appears as a premise, we need to check for each individual x in the domain of individuals if '$P(x)$' holds. Applying adequate domain restriction alone does not reduce this efficiency problem. Relatedly, from the viewpoint of cognitive science, it is not clear if this exhaustive check with regard to each individual in the domain captures our interpretations of natural language QNPs in an adequate manner. We may assert that every Japanese can read Chinese characters without knowing many Japanese individuals.

Using higher order type logical expressions such as '$(every_{(et)((et)t)}\ boy_{et})smoke_{et}$' together with Barwise and Cooper's (1981) Generalized Quantifier analysis as their interpretations can solve some of these problems. However, such an analysis involves some form of generalized type raising in the syntactic mapping of phonological strings to higher order logical expressions and this may make the grammar undecidable. Also, using a higher order logic in modeling our spontaneous inferences poses a serious efficiency problem.

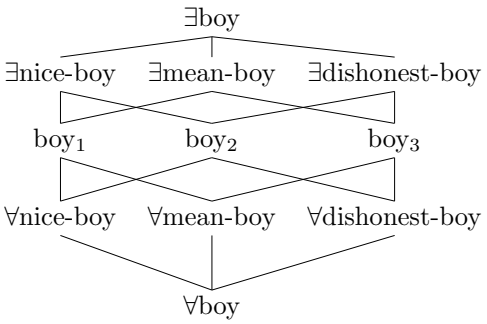
To solve these problems, we propose abstract semantic models in which both quantificational and referential singular NPs denote individuals. In such a semantic model, the individuals for the singular NPs *a boy*, ... ,*every boy* form a lattice as in (1).

(1) a. A singular quantificational lattice QB is a set of singular individuals that are partially ordered by way of '$\leq$.'
b. $QB = \{\forall$boy, $\forall$mean-boy, ..., boy$_1$, ...,boy$_n$,...,$\exists$mean-boy, $\exists$boy $\}$
c. For any predicate P that denotes a set of individuals and for any two members $x, y \in QB$, if $x \leq y$, then $Px \rightarrow Py$.
d. $\forall x \in QB$: $\forall$boy$\leq x$ & $x \leq \exists$boy.

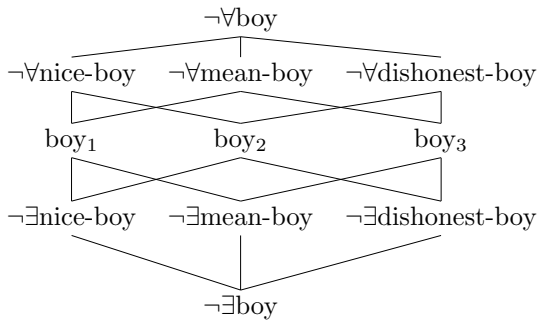
'$\forall$boy' denotes the individual for *every boy* and '$\exists$boy' for *a/some boy* ('$\forall$' and '$\exists$' are used for notational convenience only). The partial order '$\leq$' in (1-c) maintains the 'left-upward-monotonicity' of the indefinite (i.e., 'A mean boy smokes' entails 'A boy smokes,' where 'mean boy' denotes a subset of the set denoted by 'boy') and the 'left-downward-monotonicity' of the universal (e.g., 'Every boy smokes' entails 'every mean boy smokes,' given the subset relation just mentioned.). The terms '$boy_1, ..., boy_n$' indexed with numbers $i \in \mathbb{N}$ in (1-b) represent the atomic individuals which correspond to the individuals that may be denoted by names such as *Bob*, though this does not mean that the language user needs to know which boy_i denotes the individual Bob. The lattice containing the individuals for *a boy* and *every boy* is graphically represented in (2b).

(2) a. $x \leq y$ if $x = y$ or we can reach y from x by going up the lattice.

b.



c.



'∃boy' is the top and '∀boy' is the bottom element in (2b). We can use any analysis that is adequate for intersective adjectives to compute the adequate order '$\leq$' in the lattice, such as '∀boy $\leq$ ∀nice-boy.' For singular NPs involving non-intersective adjectives, we put singular individuals such as '∀alleged-criminal' and '∀criminal' in different lattices.

The lattice in (2c), which is the dual of (2b), captures the semantics of negative sentences such as *Not a boy smokes* and *Not every boy smokes* in which the negation takes the wide scope. The reversed order $\leq_{op}$ corresponds to the reversed entailment relation., i.e., '$smoke'(\neg\exists boy)$' entails '$smoke'(\neg\forall boy)$' for the above two sentences. To represent a proposition in which the quantifier takes wide scope over the negation, we use the explicit propositional negation. For example, '$\neg smoke'(\forall boy)$' for *every boy did not smoke* ('$every > not$') entails '$\neg smoke'(\exists boy)$' for *A boy did not smoke* ('$a > not$'). Here, we can use the normal lattice in (2b) to capture the correct entailment relation.

We deal with scope ambiguity with multiple QNPs by way of the dependency of the indefinite individual term as in (3). '$dependOn'(x, y)$' means 'x depends on y.'

(3) *A girl likes every boy* (scope: '$a > every$' or '$every > a$').

a. Indefinite wide scope: $like'(\exists girl, \forall boy)$ & $dependOn'(\exists girl, ?w)$

b. Indefinite narrow scope: $like'(\exists girl, \forall boy)$ & $dependOn'(\exists girl, \forall boy)$

In (3-a), we let the term $\exists girl$ depend on the evaluation world variable '$?w$' for convenience, without explaining the exact identity of this variable. The essential point here is that the indefinite term depends on some element that is independent of the universal singular term. We could let the term '∀boy' depend on '∃boy' in (3-a) instead, but we prefer the current analysis since scope ambiguity data normally involve the dependency of some sort of indefinite on another scope-bearing element. For example, *No students read every book* is unambiguous whereas *No students read a book* is scopally ambiguous.

We treat pronominal binding by creating sets 'on the fly' during our left to right parsing of the phonological strings. For example, for *Every boy said that he likes Meg*, we generates a set of individuals who like Meg in our first order representation. This spontaneous set formation may interact with the above dependency relation of an indefinite, as in *Every boy ran at a different time*, where *a different time* is taken to be the indefinite time denoting term.

Finally, we also briefly discuss how our lattice structures interact with Link's lattices for plural individuals with regard to the semantics of *most boys*. Treatment of the reciprocal reflexive *each other* involves some use of Link's individual sums (Isums) as well.

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Hypostatized Events and Grammatical Aspect

HYPOSTATIZED EVENTS AND GRAMMATICAL ASPECT

(SPECIAL SESSION 1)

In the philosophical and linguistic literature, the discussion of Meinongian principles usually centers on nonexistent *objects* such as the Golden Mountain or the present king of France, and the possibility of referring to nonexistent *events* virtually goes unnoticed. Although such cases are harder to recognize, we can argue that they nevertheless exist and play a fundamental role in the aspectual mechanisms of natural language, especially those of the progressive aspect. For example, consider the following sentence:

(1) Mary was writing her thesis when the computer crashed.

Owing to the use of progressive aspect in the main clause of the sentence, sentence (1) describes an interrupted event, and has implicit reference to a complete, though possibly never realized, event, that of Mary's successfully completing her thesis. The fact that competent speakers can correctly categorize a situation as a partial realization of an event that does not actually exist calls for an explanation, and the problem has become known in the linguistic literature as the "imperfective paradox" (Dowty 1977).

The most popular proposals to cope with the imperfective paradox are based on the assumption that, since the event of Mary's writing her thesis does not get accomplished in the *actual* world, the complete event is to be found in some *other* possible world (or worlds) such that the event fragment in the actual world is a part or a "stage" of *that* event. The appropriate possible worlds suggested by various authors are, among others, those in which events develop "inertially" (Dowty 1979), or without the "reasonably eliminable" interrupting factors (Landman 1992). The precise content of these notions, however, have proved notoriously hard to define in unequivocal terms, and recently the viability of a modal solution itself has been called into question (see, e.g., Gendler Szabó (2004) and Wulf (2009)).

Thus, rather than adopting the approach taken by the modal strategy, I will argue that the central assumption of the modal strategy is based on the category mistake of treating the hypostatized (or intentional) event implicitly referred to in progressive sentences like (1) as an ordinary event token (an event particular), albeit one shifted to non-actual possible worlds. I will suggest instead that these hypostatized events should be treated as "poles of property attribution," which I call "eventoids," *characterized* by various properties; for example, in the case of (1), by the properties of Mary's correlated actions in her working toward the completion of her thesis.

Importantly, the characterization of an eventoid is not necessarily total: if Mary gives up her efforts to write a thesis, the eventoid in (1) remains a purely hypostatized, partially characterized, but non-existent, event. On the other hand, if Mary does complete her thesis despite all hardships, the eventoid in (1) is in fact identical with an existing event. Both of these possibilities can be represented in a uniform manner by treating the characterization of eventoids as special sets of

properties, namely, *principal filters*. Then completed events are characterized by *maximal* principal filters (also known as *principal ultrafilters*), whereas interrupted events are characterized by non-maximal principal filters.

This approach resolves the imperfective paradox in a natural way: since the interruption prevents the eventoid from becoming totally characterized, and existing events, as particulars, are totally characterizable *per se*, interrupted events do not exist in the domain of events. Nevertheless, as hypostatized events serving to "keep together" the correlated properties, they can be the target of various referential acts; for example, (1) can be followed by (2) in which the pronoun *it* may refer to the whole enterprise of Mary's writing a thesis:

(2) Ultimately despaired, she gave it up.

The assumption that interrupted events are the "reification" of non-maximal principal filters but do not exist as fully specified particulars—not even in a "counterfactual sense"—may shed a different light on other puzzling facts about the progressive as well. For example, it is an interesting feature of the opacity of verbs of creation in the progressive that, while the inference from (3) to (4) is not valid, that of (3) to (5) appears to be so (Moltmann 2008, p. 243):

(3) John is building a house.

(4) There is a house John is building.

(5) There is something John is building.

This can be explained by recalling that the eventoid that "keeps together" John's correlated actions has only a partial characterization until the event is completed (if ever), so it can be underspecified in various details; in particular, its theme may, at speech time, lack the fairly specific property of "being a house." (Note that this is essentially a gradual matter: toward the end of the building process, when the theme is already specified enough to be "a house," but not yet, perhaps, to be "a two-storey house with a central staircase," (4) may become perfectly acceptable, even though the more specific description, again, is still not.) On the other hand, (5) simply claims the existence of the theme of the building activity without any further qualifications. To put it in Meinongian terms, although its *Sein* is already assumed, its *Sosein* is left completely unspecified.

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Noneism and Fundamentality

Noneism and Fundamentality

FOR SPECIAL SESSION 1

MEINONG famously held that there are three important categories of things. Firstly, there are *existent* objects, concrete things like tables, chairs, and medium sized dry goods. Secondly, there are *subsistent* objects, abstract things like numbers and universals. Lastly, there are objects that neither exist nor subsist, things like round squares and other impossibilia.

This tripartite conception blends two distinct ideas. Meinong is both an *ontological pluralist* in that he holds that there are multiple 'ways of being', and an *ontological noneist* in that he holds some things have no being at all. Distinguishing these ideas is important, since various metaphysicians have looked more sympathetically on pluralism and noneism taken in isolation than they have on their conjunction. In particular, Richard Sylvan (né Routley) and Graham Priest both defend sophisticated versions of ontological noneism. But both repudiate subsistent objects so that the only way to *be* is to *exist*. Very roughly, their noneism is Meinongianism minus the pluralism.

Noneists stand opposed to the orthodox, Quinean approach to ontology. Quine famously told us that *to be is to be the value of a variable*. But a central element of noneism is the thesis that quantification over non-existents is perfectly intelligible. In this setting, noneists will straightforwardly reject Quine's conception of ontological commitment. They are not alone.

Kit Fine argues that we need to distinguish what is *really* the case from what is just *merely* the case. We find this distinction attractive, but suspect that it is better expressed by means of a distinction between what is *fundamental* and what is *derivative*. Applied to existential statements, this gives rise to a distinction between the things that *fundamentally exist* and the things that *derivatively exist*. The project of ontology is, on this picture, not to catalogue the things which exist but rather to catalogue the things that are fundamental. Fundamentalists thus find it congenial to say things like 'sets exist, but they don't fundamentally exist' and 'tables exist, but they

are no part of fundamental reality.' On our preferred way of understanding this distinction, only the fundamental things have being; only they are part of our ontology. The derivative things are, in a certain sense, *ontological free lunches*; they have no being at all.

Fundamentalism and noneism sound very similar: both entail that there is a robust sense in which we can quantify over things that have no being. And the debate between the noneist and the fundamentalist provides the context for our talk. Our goals are two-fold.

Firstly: we shall clarify the ways in which the conceptions of ontology promoted by noneism and fundamentalism differ from the Quinean picture of ontology. We shall argue that the issue does not primarily regard the question of whether to be is to be the value of a variable. For, like the Quinean, the noneist and the fundamentalist both believe in the existence of a special language (call it ℓ) such that to be is to be the value of a variable of ℓ. But it is distinctive of Quine's approach that when we consider sentences of other languages, including natural languages, we settle questions of ontological commitment by *translating* these sentences into the special language. And this aspect of Quine's position, we argue, is the proper focus of the anti-Quinean's discontent.

Secondly: we shall clarify the ways in which the conceptions of ontology promoted by noneism and fundamentalism differ from each other. We shall argue that whilst there is a surface similarity between the two views, the methodological underpinnings of the two views are crucially different. More specifically, the noneist holds that the distinction between the objects that have being and the objects that do not is a distinction that is both motivated by, and reflecting in, ordinary uses of natural language. The fundamentalist's distinction, however, is neither motivated by, nor reflected in, ordinary usage of words like 'exists'. Her goal is *reconcilatory* in character: she wants to reconcile an independently motivated 'sparse' ontology with the edicts of common sense and ordinary language, and the distinction between the fundamental and the derivative is drawn to achieve this goal. Furthermore, fundamentalism is naturally conjoined with the idea that the debate about what exists, in the derivative sense, is somehow *superficial* and *shallow*, and that there is a sense in which we can 'postulate' things into derivative existence (cf. Fine, Williams). We find no trace of these ideas in the noneist's conception of the non-existents.

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Inertia Worlds and Other Problems of Causation for the Semantics of the Progressive

Inertia worlds and other problems of causation for the semantics of the progressive

On a modal theory of causation, embodied by Lewis 1973, the notion of an inertia world presents a problem for the semantics of the progressive. In particular, if causation is defined modally along the lines of Lewis 1973, the unwanted entailment from progressive $\models$ simple past will always obtain. After formalizing this objection to inertia worlds, I draw parallels between philosophical problems of causation (e.g. overdetermination) and semantic problems of the progressive (e.g. "the problem of continuation"). Since both problems stem from the same source, namely intuitions regarding causation, I argue for a semantics of the progressive that incorporates context-sensitive intuitions regarding causation, following a similar treatment for actual causation by Halpern and Pearl 2005.

The notion of inertia worlds in natural language semantics was first deployed by Dowty 1977 to explain the semantics of the English progressive. The progressive presents a semantic problem known as the "imperfective paradox": with predicates like accomplishments, the past progressive (1) does not entail the simple past (2).

(1) Mary was drawing a circle.

(2) Mary drew a circle.

In order to preserve the intuitive understanding of the progressive as representing an event "in progress," Dowty introduced inertia worlds. Inertia worlds are worlds identical to the actual world up to the evaluation time, and thereafter they are the worlds in which nothing unexpected happens. Therefore, the progressive (1) is true at the actual world u just in case in all inertia worlds v for u, (2) is true. Since Dowty's analysis of the progressive, inertia worlds have been deployed in the analysis of *before* and *after* (Beaver and Condoravdi 2003), incremental change, telicity, aspect, and resultatives (Fernando 2004, 2005, 2008).

Importantly, Dowty assumes that accomplishments like (2) consist of an activity and a result, and these two are related causally (3).

(3) CAUSE[Mary draw, A circle comes into existence]

The notion of causation thus plays a central role in the conception of inertia worlds. If inertia worlds are those worlds following a "normal" course of events, then presumably these worlds obey the actual world's laws of cause and effect. Similarly, other prominent treatments of the progressive, including Landman 1992 and Portner 1998, employ some notion of "expected course of events" or "non-interrupted events" that implicitly relies on normal causal relations between an event in progress and its culmination.

As Portner 1998 notes in his criticism of Landman, using a modal notion in order to define a set of possible worlds is "suspicious" (p. 9). Therefore, if causation is itself a modal notion, as Lewis 1973 suggests, its use to characterize inertia worlds is also suspicious. Lewis 1973 provides a modal definition of (token) causation where, for events A and B, A causes B in the actual world iff some A world that is also a B world is closer to the actual world than any A world that is a not-B world, and some not-A world that is also a not-B world is closer to the actual world than any not-A world that is also a B world. The metric of "closeness" proceeds by way of a similarity measure among worlds.

Given this definition of causation, Dowty's imperfective paradox ($1 \vdash 2$) will always be true, an undesirable result. The proof proceeds along these lines: if inertia worlds follow the same (token) causal relations as the actual world, and if inertia worlds are similar to the actual world with respect to past events, then inertia worlds will be maximally similar to the actual world. Let A be true in the actual world u and let v be an inertia world. Then A causes B in u iff (1) A, B are true in v and (2) some $\neg A, \neg B$ world is closer than any $\neg A, B$ world. But if A, B are true in v, then, since the $\neg A, \neg B$ world is as close to v as u, A causes B in v. Therefore, A causes B in v iff A causes B in u.

While this equivalence might seem desirable for a definition of inertia worlds, it has the unintended consequence of validating the inference (1) $\models$ (2). The progressive in (1) is true iff in all inertia worlds for u, (2) is true. But by the equivalence just shown, (1) causes (2)[1] in inertia worlds iff (1) causes (2) in the actual world. Therefore, (1) will only be true in a situation in which Mary's drawing results in a circle; yet this is a conclusion the semantics of the progressive should explicitly avoid.

The problems for the semantics of the progressive do not only arise from a modal definition of causation, which could be repaired, but from fundamentally philosophical difficulties with the notion of causation. Two

[1] I mean to speak of events, of course, not propositions.

problems of causation discussed in the philosophical literature that echo in the progressive are the problem of overdetermination (also called preemption), and the problem of context-sensitivity. Overdetermination involves a situation in which multiple causes could have caused one effect. For example, suppose Mary is crossing the street, and a speeding truck is on a path to collide with her. One truck-length behind the first truck is a second speeding truck on the same path. Assuming a collision, Lewis's theory predicts that neither truck is the cause of Mary's death. If the first truck hadn't hit Mary, the second truck would have killed Mary. If the second truck hadn't hit Mary, Mary would still have died from impact with the first truck. Landman 1992 describes this exact situation as "the problem of continuation," in which we would assent to both (4) and (5).

(4) Mary was crossing the street, when the first truck hit her.

(5) If the first truck hadn't hit her, the second truck would have.

This is a problem for the progressive because, if (5) is true, (4) must be false, as there are no inertia worlds in which the street-crossing event culminates.

Similarly, context-sensitivity in progressives may emerge as a reflex of context-sensitivity in judgments of causation. Suppose Mary is on a plane to Boston which is hijacked and landed in Los Angeles. Mary can reasonably utter (6), and Mary can reasonably utter (7). Yet Mary cannot reasonably utter (8) in this context.

(6) I was flying to Boston.

(7) I was flying to Los Angeles.

(8) *I was flying to Boston and I was flying to Los Angeles.

The infelicity of (8) is presumably due to different contexts required for (6) and (7). Context-sensitivity also influences judgments of causation. Suppose a camper lights a campfire, but a sudden gust of wind fans the fire, and the forest burns down. In this context, it would be odd to conclude that the presence oxygen caused the forest to burn down, even though, had oxygen not been present, the forest would not have burned. On the other hand, if a scientist runs a laboratory that carefully excludes oxygen, and a malfunction allows oxygen into the lab, it is reasonable to conclude that the presence of oxygen caused the lab to burn down.

In order to capture the sensitivity of the progressive to judgments of causation, I adapt a proposal by Halpern and Pearl 2005 to capture actual causation in terms of context-sensitive models. To reduce Halpern and Pearl's treatment to its basics: they propose models that contextually restrict the domains of relevant and irrelevant variables (into sets U and V, respectively). Structural equations F then determine the value of some variable X based on the values of the variables in the contextually-restricted domains: $F_X : ((U \times V) \rightarrow X)$. In this model, an *actual cause* is a variable in the contextually-relevant set U such that changing its value will change the value of X according to F_X.

In rendering the correct truth conditions for the progressive, I propose to include Halpern and Pearl's F, U, V as contextually restricted domains (similar to the domains of quantifiers) in the model-theoretic semantics. The truth conditions for a sentence like (1) will then be as in (9).

(9) $[\![$Mary was drawing a circle$]\!] = 1$ iff the event of Mary's drawing is an *actual cause* of a circle coming into existence

This proposal does not hinge on inertia worlds, and therefore it does not require (1) $\vDash$ (2). Furthermore, I will show how Halpern and Pearl's account deals with overdetermination and context-sensitivity, and I will extend this account to the analogous problems in the progressive. I will also suggest implications of this approach for other semantic accounts dependent on causation (Bittner 1999, Kratzer 2004).

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Contest-Sensitivity and Semantic Externalism

CONTEXT-SENSITIVITY AND SEMANTIC EXTERNALISM

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Abstract

The existence of context-sensitive general terms raises some issues that have only recently begun to be addressed. One of these is the nature of context-sensitivity itself: is it a purely ("narrow") psychological phenomenon, internal to the speaker? Is it in part social? Or is it perhaps *ecological, in the sense of pertaining to the relationship between a community of speakers and their physical environment*? This paper defends the view that context-sensitivity is an ecological phenomenon, a view that I call "Ecology". I argue that certain predicates in natural language are context-sensitive (or, in some cases, are not context-sensitive) because of facts about the nature of our physical environment, such as the structure of space-time. For example, physicists tell us that simultaneity is relative to a frame of reference. It is because of this fact that 'simultaneous' and related words ('before', 'after', 'in five minutes', etc.) are frame of reference-sensitive. But the structure of space-time is a metaphysically contingent matter: it would have been possible, in the broadest sense of "possible", for the world to be Euclidean, and if the world had been Euclidean, 'simultaneous' and related words would not have been context-sensitive even though we, the users of these words, would have been intrinsically (more or less) exactly as we actually are. Not all examples are based on the relativity of simultaneity, however. If one is sufficiently imaginative, it is not difficult to conjure up examples of pairs of worlds *w* and *w'* inhabited, respectively, by communities *c* and *c'* which are intrinsically indiscernible and speak a language very much like English, such that a particular word is context-sensitive as used by c but its twin as used by c' is not, owing to differences between the laws of *w* and *w'*. I will illustrate how such examples could be constructed using location-sensitive words for times: 'summer', which is hemisphere-sensitive, and 'noon', '3 p.m.' and the like, which are time-zone sensitive.

If Ecology is true, as I maintain, some interesting consequences follow. One obvious consequence concerns the utility of various tests for context-sensitivity that have been proposed in the literature: if Ecology is true, then an expression may fail every one of the proposed tests and yet be context-sensitive. Another consequence is a puzzle for those who maintain that all context-sensitivity must be represented in logical form: since Ecology says, in effect, that context-sensitivity is not in the head, it follows that either it is not the case that all context-sensitivity is represented in logical form, or logical form itself is not in the head. I regard this as an addition to the (already quite weighty) reasons to be externalist about logical form (cf. Ludlow "Externalism, Logical Form and Linguistic Intuitions"), but I will leave the defense of LF-externalism for another paper; the puzzle alone is interesting enough.

I anticipate two sorts of objections. There are those (like Á. Pinillos) who opt for a relativistic semantics for 'simultaneous' and the like, and there will be those who simply deny what I take to be the data. I argue that the relativist solution is *ad hoc*: neither of the usual motivations for relativism – disagreement data and the "operator argument" – are present in the cases I discuss. While speakers who are unaware of the physical facts will think they are disagreeing when they report simultaneity facts from different frames of reference, what matters is whether *we*, who are aware of the physical facts, think they are disagreeing, and at least I have no inclination to attribute disagreement to such speakers (and this judgment seems widely shared). As for the "operator argument", syntactic considerations tell against the view that 'in my frame of reference' and the like are sentential operators.

The data-denier is more difficult to deal with. She will insist that (e.g.) in *both* the Euclidean and SR worlds, 'simultaneous' and the like are context-sensitive in the same way (have the same Kaplanian character), but that in the Euclidean world all speakers are in the same frame of reference, so contexts within the Euclidean world never differ with respect to the coordinate to which 'simultaneous' (etc.) are sensitive. I have two replies to this. First, it is not clear how to implement this strategy with the other examples that I claim support Ecology (consider the hemisphere-sensitivity of 'summer'). The second worry is more serious: since the data-denier maintains that the Kaplanian characters of expressions supervene on certain intrinsic ("narrow psychological") properties of their users, she must countenance a lot more hidden context-sensitivity than the advocate of Ecology does. For it is a consequence of the data-denier's supervenience thesis that if it is possible for a community of speakers to be intrinsically just like us and use a certain expression E with a Kaplanian character that is sensitive to a contextual parameter P, then E, as we *actually* use it, has a P-sensitive character. The existence of remote possibilities threatens to render our expressions sensitive to features of context we would never have imagined (and perhaps even cannot imagine) them to be sensitive to. Insofar as the data-denier is motivated by a desire to minimize non-obvious context-sensitivity, she should switch allegiances.

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Vague Expressions In Perspective: Where Does Relativity Come From?

VAGUE EXPRESSIONS IN PERSPECTIVE: WHERE DOES RELATIVITY COME FROM?

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I am concerned in the present talk with the role context plays in the interpretation of vague expressions. When I talk about vague expressions, I mostly look at gradable adjectives like "rich" or "tall". There would be hard to find someone who denies that vague predicates are context-dependent. But in which way are they context-dependent is not easy to tell. First, I go through some general considerations concerning vagueness and context dependence. Further on, I introduce disagreement cases involving vague expression. These cases seem to point to a specific form of context dependence. Then I try to make an inventory of the various ways in which context plays a role in natural language interpretation by looking at the various views proposed in the literature. I distinguish between minimalist, contextualist, and perspectival views concerning the role of context in interpretation. In the end, I hint at a version of perspectivalism that is motivated by disagreement intuitions. I present it as a form of truth contextualism, but whether that is to be qualified as relativism or as some non-standard form of contextualism is still to be settled.

The context dependence of vague predicates involves at least three factors: reference to a comparison class, reliance on a contextual standard, and dependence on conversational and other purposes. I won't say much in this paper about comparison class sensitivity. In the end I don't think it is essentially relevant for vagueness (although highly important for the semantics of gradable adjectives generally). The predicate "tall for a basketball player" is just as vague as "tall" is.

The specific cases I will look at are (seemingly faultless) disagreement cases involving vague expressions, as when Hanna says "Mary is rich." and Matti replies "No, she's not.". This case can also be reported by uttering "Hanna and Matti disagree about Mary being rich.". How do we explain the intuitions if disagreement we have with regard to examples like this? What is the disagreement about? What do we report as the object of disagreement? The intuitions concerning these cases seem to point to a form of context dependence. But in order to explain the disagreement intuitions, we need to be careful about how context dependence gets in.

We should distinguish two types of context dependence: dependence of *content* on context and dependence of *extension* of context. According to the Kaplanian picture, indexicals are expressions whose content at a context depends on features of the context. In contrast, there are expressions which are context-dependent without being indexicals, in the sense that their extension at a context depends on features of the context. I call this, following MacFarlane (2007, 2009), nonindexical context dependence. There is context dependence in determining contents from characters, and there is also context dependence in determining extensions or truth values from contents. Content context sensitivity entails truth context sensitivity, but not the other

way around. Accordingly, we have two types of contextualism: content contextualism and truth contextualism. Content contextualism is a form of indexical contextualism, while truth contextualism is a form of nonindexical contextualism. So we have two roles for the context of utterance: the content-determinative role and the circumstances-determinative role.

Vague expressions are essentially context-dependent. One commonly noted feature of vague expressions is that we can use them with different standards on different occasions. The standards of use for a predicate like "tall" can vary, meaning that the extension of "tall" can change from one context of utterance to another, even if the heights of everything remain stable. Vague predicates fail to determine precise extensions. For example, "rich" does not determine for each object whether it is in the predicate extension or not. So vagueness is characterized by extensional indeterminacy (see, e.g., Raffman 1994, 1996; Shapiro 2006; Fara 2000). It is quite plausible that the variation in the extension of vague predicates points to a change in context. But arguably it is not the content that varies with the context of use. There are a number of ways a predicate can fail to determine an extension: the predicate might be ambiguous, indexical, or its extension might vary with the circumstances of evaluation (see Kölbel 2009). I argue that the extensional indeterminacy associated to vagueness is due to circumstances of evaluation relativity (cf. Richard 2004). Vague expressions are, in this sense, perspectival. Perspectival expressions are expressions whose intension is constant, but whose extension is contextually variable in the sense that they presuppose a perspective from which matters should be evaluated. Perspectivalism is a semantic theory according to which the contents of utterances have a truth value only relative to a particular perspective determined by context. Since the perspective is determined by context, perspectival expressions are context-sensitive. In terms of framework, I make use of the semantic framework proposed by Predelli (2005*a* and 2005*b*), which is basically an amended version of the Kaplanian framework. As far as the analysis of vagueness is concerned, I aim it similar to Fara (2000) in the essential points.

A truth-contextualist view accommodates best some features of vague expressions. Most of all, it explains intuitions concerning disagreement. We can make sense of the fact that there is real disagreement between Hanna and Matti when Hanna holds that Mary is rich and Matti holds the opposite. Claiming that it is the content of a vague expression that varies with the context of use would make the disagreement not substantive: we would just disagree about which of the various senses of "rich" is at issue. But when one holds that Hanna is rich and someone else the opposite we would like to have a substantive disagreement. In fact, we really disagree about Hanna being rich; I take this as a fact of language use. On the view defended here, the disagreement is on whether Mary is in the extension of "rich" or not, and that is perspective relative. If you want to put it that way, the dispute is on the perspective we should consider in evaluating whether Mary is rich or not and not on the content of "rich".

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Dan ZEMAN

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Relativism and Binding:
The Case of Predicates of Personal Taste

Dan ZEMAN (U. of Barcelona- LOGOS)

Relativism and Binding: The Case of Predicates of Personal Taste

The main concern of the paper is one argument that has recently surfaced in the debate between contextualism and relativism about predicates of personal taste (PPTs), argument that parallels the one found in the debate between truth-conditional semantics and truth-conditional pragmatics concerning the semantics of meteorological sentences such as "It is raining". In the first section I make clear how I'm going to use the terms "contextualism" and "relativism", which given the multiplicity of positions and the different uses those two terms have received, seems a reasonable thing to start with. Thus, I use the term "contextualism" for any view in which context has a *content-determinative* role (in the terms of MacFarlane (2009)) and the term "relativism" for any view according to which context has a *circumstance-determinative* role. (Here "content" and "circumstance" have the same meaning they have in Kaplan (1989).) Section 2 introduces PPTs (expressions such as "tasty", "fun", "disgusting" and their ilk) and presents the argument against relativism that Johnathan Schaffer (ms.) has recently put forward. Schaffer starts by noting that PPTs can have bound readings, as in

(1) Everyone got something tasty.

(1) has a reading according to which each person in the range of the quantifier "everyone" got something tasty *for that person*. The best explanation for this reading, and for making sense of the contrast between (1) and a sentence like "Everyone got something frozen" is to posit a hidden variable for the judge at the appropriate level of representation. Thus, Schaffer argues, (1) is to be rendered as Everyone$_i$ got something tasty for x_i.

Section 3 draws the parallel between the argument above and the argument employed by Jason Stanley (2000) in order to argue in favor of truth-conditional semantic approaches to sentences like "It is raining" – an argument known as the Binding Argument. Stanley starts with the observation that

(2) Everytime John lights a cigarette, it is raining,

has a reading in which the location of rain is bound by the quantifier; that is, the truth-conditions for (2) are that for every time *t* that John lights a cigarette it is raining at *t* at the location in which John lights a cigarette at *t*. Since there is no binding without a bindable variable, Stanley claims that in the unembedded sentence "It is raining" a variable for locations is represented.

Section 4 surveys a number of answers to the Binding Argument that try to escape its conclusion. The first answer I consider is Peter Pagin's (2005), which consists in the claim that the bound reading of (2) could be rendered by quantification over contexts in the meta-language instead of quantification over locations in the object-language. In response, however, Stanley (2005) has provided some examples that are problematic for Pagin's view, the main complaint being that in those cases the things that need to be quantified over are not the right things to be contexts. Although I don't fully agree with Stanley's diagnosis of the cases, I nevertheless argue that Pagin's attempted solution to the problem raised is unsatisfactory.

The second answer to the Binding Argument that I survey is that given by Peter Lasershon (2008): quantification over indices. In Lasersohn's system, the quantifier "everyone" introduces both a pronomial element in the syntax and a sentence-abstract-forming operator that binds the index in the meta-language. I have much sympathy for Lasersohn's view, but I see at least two potential problems. One concerns a prediction that follows from Lasersohn's system, which is that in

(3) Each man gave a woman a fun ride and a tasty dish

there is no reading according to which the judge associated with "fun" and the one associated with "tasty" are different persons. On the contrary, I think it is quite easy to construct contexts in which the judges for "fun" and "tasty" are different persons. So, the fact that this prediction about (3) is born out in Lasersohn's system doesn't speak in its favor. The second worry is that

Lasersohn presupposes that expressions such as “for John” (as in “Avocado is tasty for John”) are best interpreted as sentential operators shifting the judge parameter in the circumstance. But the issue whether such expressions and similar ones are best interpreted as operators or as, say, quantifiers over judges (in the same way in which tenses and temporal expressions are interpreted in the debate between temporalism and eternalism) is vexed; one surely needs to give arguments for one view or another, and not simply presuppose it.

The last answer to the Binding Argument I consider is that of François Recanati (2002), consisting in appealing to variadic functions. Variadic functions are functions from predicates to predicates whose effect is that of increasing or decreasing the adicity of the input predicate. What is needed are additive variadic functions, which have a twofold role: on one hand they increase the adicity of the input predicate and on the other hand they provide the value for the newly created argument. For example, in a sentence like “John eats in Paris”, “in Paris” is treated as an additive locational variadic operator; it’s effect in the example given could be captured as follows:

[Circ$_{\text{location: Paris}}$ (eats)] (John) = eats_in (John, Paris)

For the problematic case (2), the suggestion is to treat the quantifier phrase “every time John lights a cigarette” as an additive locational variadic operator functioning similar to “in Paris” (with the notable difference that now what is provided as the value for the newly created argument is a range of location and not a specific location):

[Circ$_{\text{location: every time John lights a cigarette}}$] (rain) = rain_in (the place at which John lights a cigarette every time)

I propose that, in the same vein, one could define an additive variadic operator **Circ**$_{\text{subject}}$ (call it *subjectual*) having the same role as the additive locational varaidic operator in Recanati’s view in order to answer to the Binding Argument for PPTs put forward by Schaffer. Thus, in a sentence like “Avocado is tasty for John”, “for John” will be treated as an additive subjectual variadic operator functioning as follows:

[Circ$_{\text{subject: John}}$ (tasty)] (avocado) = tasty_for (avocado, John).

The problematic sentence (1) is rendered by construing the quantifier “everyone” as a additive subjectual variadic operator, functioning similar to “for John” (with the same qualification in place as in the previous case); formally,

[Circ$_{\text{subject: everyone}}$ (tasty)] (something) = tasty_for (something, everyone)

This treatment allows the relativist to escape the conclusion of the Binding Argument for PPTs and to claim that unembedded sentences like “Avocado is tasty” don’t have an argument place for judges at the appropriate level of representation.

In the last section of the paper I consider some common objections to the variadic function approach. One common objection is that it is ad-hoc. The reply here is to point to other cases in which similar operators have been proposed – for example, Sally McConnell-Ginet’s treatment of some adverbs. A second objection is that the view becomes partially contextualist, since by the application of the subjectual variadic operator the judge is made explicit at the appropriate level of representation. The answer to this objection is simply to accept that this is the case, while pointing out that in the simple, unembedded cases one is still free to claim that the judge is provided by context as an element of the circumstance and not as an element in the content. However, there are other objections that need to be addressed. For example, if the variadic function approach is to be adopted, one wonders what is the connection between the predicate “tasty” and the one resulting from the application of the variadic operator, “tasty_for”. The paper doesn’t provide a full answer to this problem, but gestures at a solution that would employ an event-based semantics in which what the variadic operator applies to is the state of being tasty.

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Syntactically Complex Demonstratives and Sortal Inherency

Syntactically complex demonstratives and sortal inherency

The problem of complex demonstratives concerns the semantic impact of the common noun *CN* in the expressions of the form *this CN* and the question whether the CN plays any role in determining the relevent referents.

In this talk I show that: (1) natural languages form syntactically complex demonstratives in the same way as they form other complex expressions and thus the class of complex demonstratives that one has to consider is much larger than the class usually considered, and (2) I apply some results from the generalised quantifier theory to deal with some of the above problems. I use the distinction between sortally inherent and not sortally inherent quantifiers (Keenan 2002) to show that the solution to the problem of of the role of the CN in complex demonstratives cannot be the same in both cases.

Concerning the first point recall that NLs have many possibilities to form in a systematic way complex expressions from simpler ones. In particular they use Boolean connectors and modification. It can be easily seen that the two ways to compose syntactically complex expressions of a given category apply also to demonstratives.

First, there are Boolean compounds of demonstratives: we have *this and this, this or this, this but not this* and *not this*. "Pure demonstratives" can Booleanly combine with non demonstrative NPs to hold complex demonstratives: we have *Leo and this*, *Lea but not this, some logicians but not this, most philosophers but not this one, this or most dogs*, etc. The demonstrative *this* can be modified in various ways as in the following examples: *only this, not only this, even this, also this, at least this, at most this, let alone this, in particular this*, etc. Modified demonstratives can Booleanly combine with other demonstratives or with non demonstrative NPs. Thus we have *not only not this let alone this, some students and in particular this one, this and also this but not this, this and even this*, etc.

Finally there are various complex determiners in which demonstratives occur as parts: *Every... except this (one), most ..., including this, five... in addition to this*, etc. The NP above can also be replaced by a "booleanly" complex demonstrative leading to the complex demonstrative determiners like *Most .... , including Leo and this(one)*, etc.

Among quantifiers denoted by unary NLs determiners one can distinquish two classes which form two sub-algebras of the algebra denoted by all unary determiners (Keenan 1993): the algebra INT of intersective functions (or type $\langle 1,1\rangle$ quantifiers) and the algebra $CO-INT$ of co-intersective functions (type $\langle 1,1\rangle$ quantifiers). INT and $CO-INT$ are the only conservative quantifiers *sortally reducible* (or which are not inherently sortal), that is they have two equivalent forms: with variables restricted and non-restricted. For instance (1) and (2) are equivalent:

(1) Some philosophers are logicians.
(2) Some individuals are such that they are philosophers and logicians

Thus we can eliminate the restriction on the domain of quantification imposed by the first argument and compensate it by making the second argument Booleanly more complex. Quantifiers for which such elimination is possible are sortally reducible. On the other hand quantifiers for which such elimination is not possible (like $MOST$) are inherently sortal. In fact more is true (Zuber 2005): in sentences with sortally reducible quantifiers we can always lessen (and moreover fully eliminate) the restriction on the domain of quantification (imposed by the first argument). Consider now:

(3a) This young wild cat is intelligent.
(3b) This wild cat is young and intelligent.
(3c) This cat is young, wild and intelligent.
(3d) This animal is a young and intelligent wild cat.
(3e) This (object) is a young and intelligent wild cat.

Sentences in (3) are equivalent (assuming that *this* denotes an intersective function (restricted by a pragmatic parameter). It can happen that I am pointing at something which is a wild cat but not a young wild cat. Similarly I can be pointing at something which in fact is a cat but neither wild nor young. Finally it is possible that I am pointing at something which is not a cat but obviously is "something", that is an object. So I can always find a property (corresponding to the subject CN) which the object pointed to has and modify the predicate property correspondingly in order to preserve the equivalence. This means two things: the proposition expressed by sentences with the subject of the form *this CN* does not depend only on this subject and, when the object pointed at does not have the property corresponding to the *CN* the sentence expresses the proposition (which is false).

A similar move applies to syntactically complex NPs demonstratives obtained from syntactically complex demonstrative determiners. Obviously we have to pay attention in this case whether they are sortally reducible or not. And this depends on whether the determiner with which they are formed is sortally reducible or not. For instance *No..., not even this (one), some..., including this (one), every..., except this* are sortally reducible and *most..., including this (one)* is not sortally reducible. It is important to keep in mind that in the complex noun phrase demonstratives obtained from such complex demonstrative determiners the common noun argument of the determiner and the argument of the demonstrative *this* are the same (usually replaced by *one* in the determiner). This is because examples like *Most teachers, including this student* or *Every student, except this teacher* are "internally inconsistent" (unless the person pointed at is a student and a teacher at the same time). Observe now that sentences in (4) are equivalent and thus we can analyse them in the way we analysed sentences in (3):

(4a) Some wild young cats, including this one, are intelligent
(4b) Some beings, including this one, are wild, young and intelligent cats

The above analysis does not apply in the case of sortally irreducible quantifiers. The determiner *most* and consequently the complex demonstrative determiner like *most..., including this(one)* is sortally irreducible. This means that we cannot in this case extend freely its domain of quantification (the extension of the first argument) as in the case of intersective or co-intersective quantifiers. Thus we cannot in general find a property P such that (5a) is equivalent to (5b):

(5a) Most wild young cats, including this one, are intelligent.
(5b) Most beings, including this one, are intelligent and P.

To conclude: the problem of the semantic impact of the common noun argument of a demonstrative exists for a very huge class of (complex) demonstratives. This class is composed of two formally distinct sub-classes; sortally reducible and sortally irreducible and consequently the solution of the problem cannot be the same for both sub-classes. In the case of sortally reducible demonstratives sentences for which the object pointed at does not have the property corresponding to the *CN* express a (false) proposition.

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