University of Barcelona

Faculty of Philosophy

Department of Logic, History and Philosophy of Science

THE SEMANTICS OF IMPLICIT CONTENT

Dan Zeman

Ph.D. program: Cognitive Science and Language

Supervisors:
Genoveva Martí
Josep Macià i Fabrega

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To my mother.
To the memory of my father.

CONTENTS

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Introduction

Implicit Communication and Implicit Contents

Gottlob Frege, one of the founding fathers of analytic philosophy, made the following observation more than one century ago:

> [T]he contents of a sentence often go beyond the thoughts expressed by it. But the opposite often happens too, that the mere wording, which can be grasped by writing or the gramophone, does not suffice for the expression of the thought. (Frege, 1956: 296)

The two-sided phenomenon Frege is pointing to above is that there is a discrepancy between the words one utters or writes and the content ("the thought") expressed by those words. Examples of the first case, in which the words go beyond the content expressed by them are relatively easy to find (although not entirely uncontroversial): when one utters, for example, the sentence "It is indeed raining outside" it is intuitive to think of the content expressed by that utterance as being simply that it is raining outside. "Indeed" is not part of the content expressed by the utterance, although it could certainly play a role in communicating something else to the audience – most likely that the speaker has some kind of confirmation that it is raining outside. Similarly, the content of an utterance of the sentence "Honestly, John should watch his cholesterol level" is that John should watch his cholesterol level; "honestly" is not part of the content expressed by the utterance, although it could certainly play a role in communicating something else to the audience – most likely that the speaker has expressed her honest belief. In the philosophers' jargon, in the examples above "indeed" and "honestly" don't have any truth-conditional import, where a certain word has a truth-conditional import only if its presence in a sentence makes a difference to the content expressed by an utterance of that sentence.

Frege's second claim, "the opposite", points to a phenomenon that has attracted quite a lot of attention in contemporary philosophy of language. Although what Frege had in mind in the quote were indexical expressions like "I", "here", "there", "today", "yesterday" or the tenses of verbs, the phenomenon comprises many other cases – as most twentieth century philosophers of language have been eager to point out. The following examples will help to illustrate the point (where the material in square brackets represents information that is

communicated along with that which is retrieved from the linguistic items present in the sentence):

(1) Steel isn't strong enough [to hold the roof].
(2) That lamp is cheap [for an antique item].
(3) Tipper is ready [for his swimming lesson].
(4) The king has arrived [at the airport].
(5) I have had a huge breakfast [today].
(6) You are not going to die [from that cut].
(7) The [customer who ordered the] ham sandwich has left without paying.
(8) It is raining [in Paris].
(9) Avocado is tasty [for me].

In all these examples, it seems, the sentence uttered "does not suffice for the expression of the thought" – or, to put it differently, the information communicated comprises more elements than those that could be retrieved from the expressions in the sentence. The information communicated has to be retrieved from somewhere, and it is the extra-linguistic context in which the sentence was uttered which plays a crucial role in providing it.

I take the phenomenon pointed out by Frege and exemplified with the sentences above to be representative for a certain modality of what I will call in this work *implicit communication*. Implicit communication is a form of communication, so a few words about what communication is are in order. Two essentially distinct models of communication have been proposed. According to the first, "the code model", communication is a matter of a sender and a receiver sharing a common code (a language) and a channel; the sender encodes the message and sends it through the channel to the receiver who decodes it using the shared code. On this model communication is successful if the sender and the receiver know the code and the channel is not defective in any way. According to the second model, mostly originating in Paul Grice's work, communication involves as an essential step the recognition of communicational intentions of a speaker, which is not a matter of following conventional rules. The conventional meanings of the words used ("the code" in the previous model) are just a helpful resource for the audience in retrieving the information communicated, and communication is successful if the audience has recognized the communicational intentions of the speaker. It is not my purpose to enter here a debate about which of these two models is the right one (it might turn out that they are not really incompatible, or that we need an account

that draws on element to be found in each model); let me instead note its connection to a central issue in philosophy of language, namely that of the role of context in establishing what is communicated with a certain utterance. One crucial difference between the two models presented above is the extent to which context plays this role: according to the first model, context consists in objective factors about the environment in which a expressions are uttered (what philosophers have called "narrow context"), while according to the second model, context includes the communicative intentions of the speaker, as well as information related to the beliefs of the participants in the conversation (what philosophers have called "broad" or "wide context"). As we will see, the role of context will be one of the issues I will be concerned with in this work in connection to implicit communication, and I will end up proposing a certain view about what that role is.

Now, it is a fact about our communicational practice that there are many situations, especially within our day-to-day communicational activities in which what we communicate (or at least intend to communicate) goes beyond mere grasping the conventional meaning of the words used. Implicit communication is accomplished by means of communicating certain informational elements that go beyond the information retrievable from the conventional meaning of those words. In what follows I will call such informational elements *implicit content*. There are many ways in which a speaker can implicitly communicate. For example, one could utter a certain sentence in order to convey something else over and above the content of the utterance of that sentence. Thus, imagine that (10) is uttered by a father who wants to convey to his kinds that it is bed time:

(10) It is time to brush your teeth.

The father thus uses (10) to convey that the kids should go to bed without explicitly urging them to do so. The kids rely on contextual information (such as the fact that brushing their teeth is the last thing they are allowed to do before going to bed) in order to retrieve the information conveyed by their father. Another way to implicitly communicate is to use words in a non-literal sense. For example, commenting on John's unfriendly behavior, one could ironically utter

(11) John is a good friend

to convey the precise opposite, namely that John is not a good friend. The audience relies on contextual information (such as the fact that John misbehaved) in order to retrieve the information conveyed by the speaker. Now, the type of implicit communication that I tried to exemplify with sentences (1)-(9) is harder to pin down, but one thing that could be noted is that in all those cases the speaker is using less linguistic material than she could use in order to communicate the same information. Consider, for example, sentence (8). One might communicate that it is raining in Paris by uttering the sentence "It is raining in Paris", but the same purpose could be served by the speaker uttering (8) instead. As we have seen above, in order for the communicational act to be successful – that is, for the audience to grasp what the speaker intends to communicate – some conditions need to be met. For example, if both the speaker and the hearer are in Paris, or if the speaker is in Paris and the hearer is in a different location but recognizes the speaker's intention to communicate that it is raining in Paris, the communicative act would have been carried on successfully. The same happens with the other examples.

There have been a number of theories that try to account for the phenomenon of implicit communication. The most famous is Paul Grice's (1975) theory of implicatures. Grice's idea was to model implicit communication as comprising an inferential process on the part of the audience which started from the information that could be retrieved from the literal meaning of the sentences uttered by the speaker ("what is said") through the application of certain conversational maxims to retrieve the information that the speaker intends to communicate ("what is conveyed"). The kind of implicit content that is arrived at at the end of the process is called an *implicature*. Grice's theory is tailormade to account for implicit communication in the case of sentences such as (10), but it is not obvious that the Gricean strategy could be used to account for all types of implicit communication, particularly in the case of sentences (1)-(9). And as a mater of fact, some authors have argued that this is not the case. True, some of those examples might be more or less amenable to a treatment in terms of implicatures, but, on the face of it at least, it seems that not all of them are. Here is an example from that shows the inadequacy of the Gricean strategy. Consider sentence (5) above, as used in the following dialogue

(12) A: Do you want to have lunch?
B: I have had a huge breakfast.

B's answer in (12) doesn't, in itself, constitute an answer to A's question. However, according to the Gricean picture, although B doesn't explicitly say that she doesn't want to have lunch, she generates an implicature to that effect, and her uttering her line is the starting point of A's reasoning to arrive at the implicated content. But note that B's line, taken in its conventional meaning, is not strictly speaking enough for A to derive the implicature; for what B literally says is that she had a huge breakfast at some point in the past, and not that very morning. It is this last information that A needs in order to start deriving the implicature, and not the information that B has had a huge breakfast at some point in her life. But it is not plausible that that information will be retrieved also as an implicature, since that would amount to a multiplication of implicatures. What seems more plausible is that the information that B has had a huge breakfast the very day in which the conversation takes place is arrived at by other processes than Gricean implicatures. And this seems to be the case for most of the sentences in (1)-(9).

If it is true that the Gricean strategy is implausible, how are we to account for implicit communication in cases such as our sentences (1)-(9)? Many philosophers felt that the way to go is to model the modality of implicit communication exemplified by those sentences without appeal to pragmatic processes of the Gricean sort. In other words, the idea was that the information to be retrieved pertains to the level of "what is said" and not to the level of "what is conveyed". However, even if this is agreed upon, there still remains plenty of room for disagreement: philosophers have given different answers to questions such as what exactly are the elements that would be included in "what is said" by an utterance of a sentence, what are the mechanisms by which this inclusion is performed, what is the role of context in communication, etc. These questions are all important, and they are tightly connected with more general issues in semantics, such as what is semantic content, how context should be conceived of, where should we draw the dividing line between semantics and pragmatics, and so on. The particular issue I want to focus on in this work is how implicit content are to be, if at all, represented – an issue that will have some repercussion on the other issues mentioned.

Now, from all the philosophical notions employed in dealing with the phenomenon of implicit communication and in tackling the issue of how implicit content is to be represented there is one that stands out as the most relevant – namely, the notion of an "unarticulated constituent". The notion has been first employed by Perry (1993) in order to give an account of "selfless" thoughts, but shortly enough it got a life of its own. An unarticulated constituent, in Perry's sense, is an element that is part of the truth-conditions of an utterance of a sentence (the truth-conditions of an utterance comprise all the elements that are relevant for

establishing the truth value of that utterance) *without there being an explicit expression in the uttered sentence that corresponds to it.* It is thus easy to see how this is connected to the issue of implicit content and implicit communication: the suggestion to be taken was that one could model implicit content using the notion of "unarticulated constituent". Perry's article has sparked the contemporary debate surrounding unarticulated constituents, focusing on questions like the following: Are there any unarticulated constituents? What is the relevant level of representation at which those elements should be articulated? What exactly is the semantic role of unarticulated constituents? This is the debate I will be concerned with in this work.

Since the notion of "unarticulated constituents" is central to this debate, I will dedicate the entire chapter 1 to its analysis. In the debate surrounding unarticulated constituents alluded to above, philosophers have often employed the notion by giving it different meanings, and part of my aim in this chapter will be to disentangle those meanings by reviewing several distinctions found in the literature. This analysis will pave the way to giving a definition of the notion of an "unarticulated constituent" and to pin down the idea of unarticulatedness. Based on this definition and the careful distinction between three different levels of representation (the linguistic level, the level of logical form and the level of thought) I will provide a map of possible positions that compete to provide the best account of implicit content which, as we have seen above, plays a crucial role in the kind of implicit communication dealt with in this work. From these positions, I will single out three main views that have been in the spotlight of contemporary debates, views that will be my focus in the chapters to come. What distinguishes these three views is a claim regarding the level at which the elements of the truth-conditions of utterances need to be represented; thus, according to *truth-conditional semantics*, the elements of the truth-conditions of an utterance need to be represented at the level of the logical form of sentences; according to *truth-conditional pragmatics*, those elements need not be represented at the level of the logical form of sentences, but instead at the level of though (where a thought will be defined as a mental episode that has a certain content – the semantic content of utterances); finally, according to *relativism*, the elements in the truth-conditions of utterances need not be represented at any of the two levels mentioned before, but be relegated instead in the circumstances of evaluation with respect to which utterances are to be evaluated. In the final part of chapter 1 I will take up the issue of providing a firm criterion for when a certain element is an unarticulated constituent of the truth-conditions of an utterance and investigate two criteria that have been

proposed to this end – Recanati's (2002) Optionality Criterion and Stanley's (2000) Binding Criterion. I will show that both criteria are inadequate, both being prone to overgeneralize.

Starting with chapter 2, I will focus on the debate between the three main positions mentioned above. Thus, in chapter 2, I will deal with simple, unembedded sentences such as "It is raining". My focus will be a certain scenario originally devised by Recanati (2002) in order to support truth-conditional pragmatics. According to Recanati, the scenario is supposed to buttress a certain interpretation of the sentence "It is raining" – the interpretation according to which the sentence is true if and only if it rains at a location or another; in other words, the sentence, as used in that scenario, has an indefinite reading. The fact that the sentence has such a reading is important in the debate I entered because it provides a basis for arguing that the location of rain need not be represented at the level of logical form of the sentence "It is raining". Since indefiniteness means the lack of any need to provide a particular location in the interpretation of the sentence "It is raining" in scenario mentioned, the location of rain seems thus to be optional. Since, in turn, optionality is a mark of unarticulatedness (or, at least, so I will assume for the purposes of this chapter), the fact that the sentence has an indefinite reading supports the truth-conditional pragmatist, who claims that the location of rain need not be represented in the logical form of the sentence "It is raining". But the point to be taken is actually more general: namely, that the fact that "It is raining" has an indefinite reading in the scenario mentioned offers intuitive support to any view denying that the location of rain needs to be represented at the level of logical form of the sentence. However, this advantage is preserved only in case other views (especially truth-conditional semantics) yield negative unintuitive results with respect to the interpretation of the sentence in that scenario. Thus, I will further investigate whether the reading the sentence "It is raining" has in that scenario is available to proponents of other views, such as the view holding that the location of rain is always articulated at the level of logical form. I will attempt to show, by rehearsing some arguments given by Recanati and by offering others myself, that all the alternative views have troubles accounting for the particular reading of the sentence in the scenario mentioned, and thus that the truth-conditional pragmatist view is better situated to account for the relevant reading. (And, for that matter, any view denying that the location of rain must be articulated at the level of logical form of "It is raining".) This, however, constitutes only one victory on the part of the truth-conditional pragmatist, since many arguments offered by the truth-conditional semanticists against her opponents are not yet considered. This is why, in the last part of chapter 2, I will lay out what I take to be the most powerful argument against truth-conditional pragmatics and in favor of truth-conditional

semantics: an argument originally proposed by Stanley (2000), known as "the argument from binding" (the Binding Argument, as I will call it). In essence, the Binding Argument is an argument to the effect that if an element needs to be represented at the level of logical form in complex sentences embedding simpler sentences, then that element needs to be represented as well at the level of logical form of the simpler sentences taken in isolation. For the specific case of locations, the one I will be concerned with in chapters 2 and 3, the argument's conclusion is that the location of rain needs to be represented in the logical form of "It is raining" just because it needs to be represented in the logical form of more complex sentences embedding it, such as "Every time John lights a cigarette, it rains".

In chapter 3 I continue the debate between truth-conditional semantics and truth-conditional pragmatics about locations by focusing on the complex sentence mentioned above as used in the particular instance of the Binding Argument for locations that I will focus on. The chapter's aim is to show how the truth-conditional pragmatist (and, by extension, the proponent of any view denying that the location of rain needs to be represented at the level of logical form of the sentence "It is raining") can escape the conclusion of the mentioned instance of the Binding Argument for locations. Before presenting the solution I favor, inspired by Recanati's employment of "variadic functions", I will survey a number of answers to the argument which could be found or extracted from the literature. Thus, I will present and criticize four views that have in common the idea of replacing quantification over locations with quantification over other, more encompassing entities. These views differ from each other in the types of entities they propose to replace quantification over locations with, but there is also another important difference between them – namely, the level at which quantification takes place. Thus, two of these views situate quantification in the meta-language: Pagin's (2005) proposal is to quantify over contexts, whereas Lasersohn's (2008) is to quantify over indices. The other two views locate quantification in the object language: in an account inspired by Elbourne (2005), quantification is done over situations; in Cappelen and Hawthorne's (2007) view, it is done over events. The latter two theories are thus closer to quantifying over location in the object language (the truth-conditional semantic view) than the former two. However, I will try to show that all of them are problematic or give rise to some unwanted predictions. But I will not take my criticisms of these views to be crucial; the main advantage of my preferred solution will be that it is more orthodox: it preserves quantification over locations instead of replacing it with quantification over more encompassing entities. One might have independent reasons to make this substitution (or even to give up variables entirely – the existence of variable-free frameworks such as Jacobson's (1999) semantics

being a witness of such a tendency), but I think more conservative solutions should be at least considered before doing so. Thus, the remainder of chapter 3 is dedicated to presenting and substantiating a solution to the Binding Argument for locations that has been originally proposed by Recanati (2002).

Recanati's main idea is to treat locational expressions such as "in Paris" as having the semantic effect of adjuncts, and not of arguments. Recanati's proposal is to construe such expressions by appeal to "variadic operators", operators that have the semantic effect of creating a new predicate that differs from the predicate they apply to by its increased adicity. Expressions such as the one mentioned will contribute both the variadic operator *and* the value for the extra argument place of the newly-created predicate. Recanati's further claim is that both in the case of simple sentences such as "It is raining" and in the case of more complex ones such as "Every time John lights a cigarette, it rains" what context contributes to the truth-conditions of those sentences is a variadic operator of the kind described, an operator that is unarticulated in the logical form of those sentences. The conclusion of the instance of the Binding Argument dealt with is avoided because the location of rain is introduced in the truth-conditions of complex sentences via the unarticulated variadic operator, and not represented in the logical form of those sentences. So, strictly speaking, the argument doesn't get off the ground, thus leaving open the possibility of not having to represent the location of rain in the logical form of simple sentences either. One of my aims in this chapter is to explore two implementations of this approach in the case of simple and complex sentences like the ones mentioned above. According to the first, the preposition (in the example above, "in") combines first with the verb phrase and then with the noun phrase (in the example above, "Paris"); according to the second, the preposition (again, "in") combines first with the noun phrase ("Paris") and then with the verb phrase. I will then present an argument that the second implementation of the view is preferable to the first. Perhaps more importantly, I will make clear how my view differs from Recanati's. For example, while I subscribe to Recanati's idea that locational expressions such as "in Paris" should be treated as adjuncts and not as arguments (as variadic operators, as Recanati would have it), I disagree with the claim that the variadic operators are contributed by context and thus unarticulated both in the case of simple and complex sentences. I will therefore claim that in complex sentences such as "Every time John lights a cigarette, it rains" (and in all bound readings of quantified sentences) the variadic operator is represented in the logical form. Since this claim raises the challenge to account for various readings of quantified sentences, I will close the chapter with showing how this could be done.

After showing how the Binding Argument for locations can be avoided in a more conservative framework that does not replace quantification over locations with more encompassing entities, in chapter 4 I will focus on a different type of expressions – expressions known as predicates of personal taste. As with meteorological predicates such as "rain", predicates of personal taste like "tasty", "fun", "disgusting", "sexy", "cool", etc. can be part of sentences that can be used as instruments for implicit communication. When someone utters for example, the sentence "Avocado is tasty", one of the things that she could communicate is that avocado is tasty for *herself*, or that she finds avocado tasty. This is an instance of implicit communication in which a certain implicit content is communicated – namely, the content that avocado is tasty for the speaker. As specified in the beginning of this introduction, the main aim of this work is to have a glance at how implicit content should be represented in a semantic theory. The aim of chapter 4 is to offer a way to capture implicit content connected to judges, with respect to predicates of personal taste as those mentioned above.

Thus, starting with chapter 4, the focus of my research will not only move from meteorological predicates and locations to predicates of personal taste and judges, but also to a different debate that has loomed large in contemporary semantics: that between contextualism (understood here as comprising both truth-conditional semantics and truth-conditional pragmatics) and relativism. I will start the discussion with answering a specific instance of the Binding Argument for judges, an argument similar to the original instance of the Binding Argument for locations that has been the focus of chapter 3. Although no one to my knowledge has used a version of the argument against relativism about locations, in the case of predicates of personal taste and judges the argument has been recently employed by supporters of truth-conditional semantics such as Schaffer (forthcoming). Thus, after presenting the argument, I offer an answer similar to that offered in the case of locations, by showing how the relativist can use the variadic functions approach to avoid the argument's conclusion. As in the case of location, where the solution proposed involved a certain treatment of locational prepositional phrases such as "in Paris", the solution to the instance of the Binding Argument for judges dealt with in this chapter involves a certain treatment of benefactive prepositional phrases such as "for John", as they appear in locutions such as "Avocado is tasty for John". Unsurprisingly, the treatment consists in construing expressions such as "for John" as adjuncts and not as arguments of predicates such as "tasty". In the same chapter I compare this treatment with two other views on expressions such as "for John": according to one (proposed by Kölbel 2009)), such expressions are intensional sentential

operators; according to the other (proposed by Lasersohn (2008)), such expressions are intentional predicate operators. I argue against these treatments. I further consider some objections to the account given, having to do with the way in which the proposed view treats quantification, and answer a very important objection – that of overgeneration. Finally, without arguing for relativism in these particular cases, I briefly show how the account could be extended to other cases about which the debate between contextualism and relativism has been carried on – including time, epistemic modals and knowledge attributions.

In chapters 3 and 4 I focused on a certain way to answer one of the most powerful arguments used against both truth-conditional pragmatics and relativism by supporters of truth-conditional semantics. This in itself is not enough to show that those views are to be preferred to the latter. However, chapter 5, although not singling out any view as the best option to account for implicit contents and implicit communication, will provide some positive arguments against truth-conditional semantics. I offer three different arguments. The first is a variant of a traditional argument in favor of relativism that has figured prominently in Kaplan (1989) defense of the view that circumstances of evaluations or indices comprise more parameters than the possible world parameter – the argument know as the Operator Argument. After dispelling some objections to the effect that no form of the Operator Argument can be used to argue for relativism, by following closely Cappelen and Hawthorne's (2009) regimentation of the argument, I show that, treating expressions such as "for John" as adjuncts ("variadic operators", to use Recanati's phrase), a certain version of the argument holds in the case of predicates of personal taste. Then I investigate a second argument that has been usually brought to support relativism, both in the case of predicates of personal taste and in other cases: the argument from faultless disagreement. I will place less weight on this argument since I'm not convinced that relativism itself can account for this phenomenon; however, my main aim is to point out that truth-conditional semantics is in an worse situation than the other two views, and that contemporary authors have sometimes underestimated a the additional theoretical cost that comes with postulating semantic blindness in the truth-conditional semantic account of faultless disagreement. Finally, the third argument against truth-conditional semantics that I consider is what I call "the argument from innocence": building on some ideas expressed by Recanati (2007b) in connection to time, I claim that truth-conditional semantics is ill-situated to preserve what one could call "judge-innocence": the fact that we make claims involving predicates of personal taste without the need to specify a judge. However, all three arguments given will prove to be consistent with truth-conditional pragmatics. Thus, the conclusion of the chapter will be not

that relativism is the best position to account for implicit content and implicit communication in connection to predicates of personal taste and judges, but that truth-conditional semantics is not the view that one should take when accounting for such phenomena.

However, besides recapitulating the issues and arguments dealt with in this work, in the Conclusions I will point to one reason why relativism should be preferred to truth-conditional pragmatics when it comes to giving the semantics of implicit contents and implicit communication of the sort dealt with in this work. The reason is that relativism doesn't have to deal with a certain very general, but fundamental objection to truth-conditional pragmatics: namely, that the latter makes systematic semantic theorizing impossible. The fact that relativism doesn't have to address that fundamental objection, while providing everything that truth-conditional pragmatics provides for is, in my opinion, a clear point in favor of relativism. The upshot thus will be that relativism is a more conservative option and it should thus be preferred to truth-conditional pragmatics – at least in the case of locations and judges, the cases investigated here.

The issue of implicit communication is part and parcel of a complete account of linguistic communication. An account of implicit content should be part of a complete semantic theory. In this work I will try to offer one such account by answering the central issue of how implicit content should be represented. My hope is that even if one does not ultimately agree with my own view on the matter – that is, if one does not want to adhere to relativism – one will find the discussions in this work to shed some light on important issues pertaining to semantics in general, and to the semantics of implicit contents in particular.

Chapter 1
The Idea of Unarticulatedness

In his seminal paper "Thought without Representation", Perry tells the following story:

> It is a rainy Saturday morning in Palo Alto. I have plans for tennis. But my younger son looks out the window and says, "It is raining." I go back to sleep. What my son said was true, because it was raining in Palo Alto. There were all sorts of places where it was not raining: it does not just rain or not, it rains in some places while not raining in others. In order to assign a truth-value to my son's statement, as I just did, I needed a place. But no component of his statement stood for a place. The verb "raining" supplied the relation *rains(t, p)* – a dyadic relation between times and places, as we have just noted. The tensed auxiliary "is" supplies a time, the time at which the statement was made. "It" does not supply anything, but is just syntactic filler. So Palo Alto is a constituent of the content of my son's remark, which no component of his statement designated; it is an *unarticulated* constituent. (Perry, 1993: 206)

Perry's aim in this paper was to give an account of "selfless" thoughts, thoughts that a person has about aspects of her surroundings without the need to represent herself as being the perceiver of those surroundings. Whether or not Perry's account of "selfless" thought was successful, what can be said with certainty is that his paper has managed to spark a debate that continues with insistence even today, after almost twenty five years: the contemporary debate about "unarticulated constituents". Reactions both to Perry's view on the matter and to unarticulated constituents itself varied greatly, ranging from giving them a central role in certain contemporary semantic views (Recanati (2002, 2004)) to unmasking them as sheer mythical entities (Cappelen and Lepore (2007)). It is not my aim here to discuss Perry's theory of unarticulated constituents, nor to assess the reactions to it found in the literature; let me note, instead, that the notion has become so crucial to certain semantic debates that not mentioning it is practically impossible. Issues such as what is semantic content, what is the role of context in establishing it, what is the nature pragmatic processes, how to draw the line between semantics and pragmatics, to name but a few, have become intimately connected with the notion of "unarticulated constituents". Some of these issues will, indirectly, be my concern in this work, through an investigation of implicit communication and implicit

contents. Since the notion of "unarticulated constituents" is central to these issues, engaging with them would be impossible without first getting a clearer idea of what an unarticulated constituent is. The quote above is supposed to make this notion intuitive. The aim of this chapter is to make some steps towards a fuller understanding of it.

I will thus start with presenting some distinctions that have been made in the literature, distinctions which will help us demarcate the phenomenon of an element being unarticulated. Although important in themselves, these distinctions will also prove useful for fulfilling two related tasks: to provide a definition of the notion of an "unarticulated constituent" (section 1.1.) and to lay out the logical space of positions that make appeal, in one way or another, to unarticulated constituents (section 1.2.). However, even if armed with a definition, it is not always easy to establish whether a certain element is an unarticulated constituent or not. For this reason, in section 1.3. I will take up the issue of providing criteria for (un)articulatedness, and to this aim I will investigate two criteria that have been offered. This investigation will also have the role of introducing the first big topic of this research, which will be the focus of the following chapter: locations.

1.1. Ways of being unarticulated: some distinctions and a definition

In this section I will review some distinctions made in the literature on unarticulated constituents and on the phenomenon of unarticulatedness. Presenting these distinctions will make it clear what type of unarticulatedness I'm interested in in this work, and allow me to offer a working definition of the term "unarticulated constituent".

Let's start with a very general distinction that has been proposed by Taylor (2001), Recanati (2002), Martí (2006), Sennet (2008), among others – namely, that between an element of truth-conditions being unarticulated in a *metaphysical* sense and an element of truth-conditions being unarticulated in a *communicational* sense. The first sense of unarticulatedness could easily be understood by considering the following: a verb such as "dance" expresses an event; as a metaphysical necessity, each event takes place at some location or another; but the location of the event need not be made explicit by the speaker[1] in order for the audience to understand what has been communicated. In a sentence such as "Mary danced", for example, the event that is Mary's dance surely took place at some location, but that location is not made explicit, nor is the location of Mary's dance needed in order for the audience to fully understand the sentence. This is the sense in which the location

[1] Nor does it have to be articulated at other levels of linguistic representation introduced below.

of Mary's dance is a metaphysical unarticulated constituent of an utterance of "Mary danced". Apparently, this is so even if the speaker or the audience is not aware of the metaphysical fact underlying the use of certain expressions: for example, as Perry (1993, 1998) notes, a similar situation can be found with respect to time zones or inertial frames. When uttering "It is 3 o'clock" after being asked what time it is, a speaker doesn't need to mention the time zone in order for the audience to understand what has been communicated, but neither speaker nor audience need to be aware of the existence of time zones (imagine that the dialogue takes place between children). Nevertheless, it is a metaphysical fact that measurement of time is relative to time zones, and thus time zone is a metaphysically unarticulated constituent of an utterance of "It is 3 o'clock".

On the other hand, a communicational unarticulated constituent is essentially tied to certain intentions of the speaker to communicate a specific piece of information, so that when that specific information is not retrieved by the audience, there is a failure in grasping what has been communicated. As Recanati puts it,

> [a]n unarticulated constituent belongs to the communicational variety to the extent that it is part of the interpretation of an utterance and, as such, it is "available" to whoever fully understands the utterance. (Recanati, 2002: 305).

Also:

> [f]or something to count as an unarticulated constituent in the communicational sense, it lust be part and parcel of what the speaker means by his or her utterance. (Recanati, 2002: 306).

To take the same example as above, if a speaker wants to communicate that Mary danced at a specific location (which is perhaps highly salient in the context, so there is no need to be mentioned) by uttering the sentence "Mary danced", then the location of Mary's dance is an unarticulated constituent in the communicational sense (besides being one in the metaphysical sense). In such a case, the audience will not understand what has been communicated if they don't grasp the location the speaker says Mary's dancing took place. Thus, whether a certain element is a communicational unarticulated constituent or merely a metaphysical one depends on the communicative intentions of the speaker.

Now, within the communicational variety of unarticulatedness there are a number of distinctions that have been made and which are important for the discussions to come. The first important distinction is that between an element of truth-conditions[2] being unarticulated at the linguistic level (or phonetic level) and being unarticulated at the level of logical form. An element in the truth conditions of an utterance is articulated at the linguistic level if there is a linguistic expression in the uttered sentence that corresponds to, stands for or represents that element. (Using a phrase that will appear later, we could say that the element in the truth-conditions is the semantic value of the linguistic expression at stake.) An element in the truth conditions of an utterance is unarticulated at the linguistic level if there is no linguistic expression in the uttered sentence that corresponds to, stands for or represents that element. On the other hand, an element in the truth conditions of an utterance is articulated at the level of logical form if there is an expression in the logical form of the sentence that corresponds to, stands for or represents that element. In contrast, an element in the truth conditions of an utterance is unarticulated at the level of logical form if there is no expression in the logical form of the sentence that corresponds to, or which stands for, that element. Now, an elements of the truth-conditions of an utterance being unarticulated at the linguistic level is of course compatible with that element being articulated at the level of logical form. Indeed, this happens in many cases; one example, used by Sennet (2008), is that of the element PRO in the so-called "pro-drop" languages. In a sentence such as "Two people want to leave", the verb "to leave" requires a subject; the unpronounced PRO fulfills this role: the logical form of the sentence is "Two people want [PRO] to leave". Many of the examples of implicit communication and implicit content of the kind I will be concerned with in this work are said to be of this kind. For example, for an utterance of the sentence "It is raining" the location of rain is unarticulated at the linguistic level (compare with "It is raining in Paris" or with "It is raining here"), but, according to some views (to be presented in section 1.3.) it is articulated at the level of logical form. Of course, this is a controversial claim, and it has been denied by authors according to which the location of rain, besides being unarticulated at the linguistic level is also unarticulated at the level of logical form (see, again, section 1.3. for more details). I will not enter here in this debate (most, if not all, examples of implicit content dealt with in this work are the topic of similar debates); my aim in using this example is just to make the distinction between unarticulatedness at the linguistic level and unarticulatedness at the level of logical form more vivid.

[2] I take truth-conditions to be identical with the semantic contents of utterances. However, my use of "truth-conditions" is slightly different from the usual sense in which it was used. For details, see footnote 20.

Now, in making the distinction just illustrated I have retorted to a notion that some might find unclear: the notion of logical form. This is a notion which has been used in a great number of senses. An exploration of those senses would no doubt be a worthy endeavor, but that is not my aim here; rather, it is to give the reader a very general idea of how I will use the term. Thus, "logical form" has been used by authors from different fields in three main senses: in the logical sense, in the philosophical sense and in the sense employed by linguists. Now, from these three the one I'm interested here is the sense in which "logical form" has been employed by linguists. Again, I will not pause to survey all the different notions to be found in the field; rather, I will point towards a minimal sense the notion has been given. This minimal sense is the following: *"logical form" refers to that level of syntactic representation that serves as input to semantic interpretation*. By "semantic interpretation" here is meant the assignation of semantic values to expressions, which according to most authors must be a process that meets certain constraints, for example that it is compositional. A related question in this connection is whether what is meant by the term refers to an actual structure in the minds of people, which is realized in the brain (in other words: a structure that is psychologically real) or whether it is a mere convenient way of speaking, a tool used in our theorizing about language. There are many things to be said for each of these views, but here I want to remain totally neutral on this issue. Nothing I will say in what follows, I hope, will require one or the other of these ways of conceiving logical form.

Now, in addition to the distinction above between unarticulatedness at the linguistic level and unarticulatedness at the level of logical form, there is another one that has been, at least implicitly, made. We have seen above what it means that an element of the truth-conditions of an utterance is unarticulated at the level of the logical form. But if that element is to have an effect on the truth of the utterance (in other words, if it really is an element in the *truth*-conditions of the utterance), then, naturally enough, it should be articulated at some level of representation. Now, the level at which that element is articulated is, according to some authors (see section 1.2. for details), the level of thought. Thus, an element in the truth conditions of an utterance is articulated at the level of thought if there is a component of the thought that corresponds to, stands for or represents that element. Now, the claim that, in order for an element in the truth-conditions of an utterance to have an effect on the truth of the utterance, it needs to be articulated at the level of thought has been challenged. According to some authors (see, again, section 1.2. for details), it is possible for an element in the truth-conditions of an utterance to have an effect on the truth of the utterance even if it is unarticulated at the level of thought. The definition of such an element is the following: an

element in the truth conditions of an utterance is unarticulated at the level of thought if there is no component of the thought that corresponds to, stands for or represents that element. We have here a distinction between unarticulatedness at the level of logical form and unarticulatedness at the level of thought.[3]

The idea of an element being unarticulated at the level of thought might be harder to understand, so let me use an example to illustrate. In "Thought without Representation", Perry introduces the Z-landers,

> (…) a small isolated group, living in a place we call Z-land. Z-landers do not travel to, or communicate with, residents of other places, and they have no name for Z-land. When a Z-lander sees rain, he will say to others not in a position to look outdoors, *It is raining.* His listeners then act appropriately to there being rain in Z-land: they close the windows in Z-land, cancel plans for Z-land picnics, and grab umbrellas before going into the Z-land out-of-doors. They have no other use for "It is raining." They do not call their sons in far-off places, or listen to the weather news, or read newspapers with national weather reports. (Perry, 1993: 212)

Perry claims that the best way to represent the Z-landers' cognitive situation is to avoid including the location in the thought they entertain. Thus, the location of rain (Z-land) is an element in the truth-conditions of the Z-landers' utterances of "It is raining", without being articulated in their thoughts about weather. Z-land is thus a constituent that is unarticulated at the level of thought. We are moving on controversial terrain here, but the example is not used to argue in favor or against any view; its sole purpose is to give a clearer idea of what a constituents that is unarticulated at the level of thought might amount to.

The idea of an element of truth-conditions being articulated or unarticulated at the level of thought no doubt raises a number of questions. An obvious one is: what is a thought? There are many things that could be meant by this notion, but one way of conceiving "thought" (one which strikes me as quite plausible and which I will adopt in this work) is as being a particular, dated mental episode – an episode of thinking, as it were – which (if one is

[3] The case in which an element is unarticulated at the linguistic level but articulated at the level of logical form and the case in which an element is unarticulated at the level of logical form but articulated at the level of thought correspond to Recanati's (2002) distinction between "B-type" unarticulation and "A-type" unarticulation. For Recanati, the hallmark of truly unarticulated constituents is that they are never mandatory. Such unarticulated constituents are of the A-type. In contrast, B-type unarticulated constituents are triggered by linguistic material in the sentence, and their absence results in failure to understand the sentence uttered. B-type unarticulated constituents are thus mandatory and, in Recanati's (2002) view, not truly unarticulated.

a materialist) is instantiated in the brain. Now, thoughts (as opposed to other mental episodes) have many properties, but the relevant one for me here is that they *represent*. Representation is a relation between a certain mental episode and the content of that mental episode. Thus, mental episodes *have* content, rather than being contents themselves. A theory of mental content should provide us with an understanding of how certain mental episodes (the ones we call "thoughts") are able to represent; moreover, a theory of content should provide us with necessary and sufficient conditions for a representation to be accurate, that is, to represent reality.

Now, from a semantic point of view, thoughts are often conceived as the semantic contents of utterances. But if what I have said above is on the right track, then this is not strictly speaking true: as we have seen, thoughts are not contents, but mental episodes that have contents. A separate issue is what exactly the semantic contents of our thoughts are. This is an issue that lies at the center of semantic inquiry, and parts of this work will be dedicated to exploring and proposing certain hypotheses about the semantic content of certain expressions. However, several general remarks regarding semantic content are in order.

Traditionally, the most successful candidates for being the semantic content of utterance were thought to be *propositions*. In the traditional sense, a proposition is a certain content that is evaluable for truth. But with the advent of modal logic, "proposition" has been thought of as referring to a certain content that could get a truth value only relative to a possible world. Propositions, however, are controversial entities. Leaving aside skeptics about propositions such as Quine and Davidson, according to which there is no place for such entities in our semantic theories, there is a huge debate surrounding propositions even among those who accept them. One matter of debate, for example, has been the nature of propositions. Philosophers influenced by modal logic have thought of propositions as sets of possible worlds (prominently Stalnaker (1970)); others, with more Russellian proclivities (Soames (1989), King (2007), for example), have construed them as structured entities of sorts, closely resembling the structures of the sentences used to express them. New views have surfaced in the debate, such as the structured intensions view (chiefly represented by Cresswell (1990)), or the algebraic view of propositions, which takes them as primitive (Bealer (1998)). Although this debate is crucial for settling the nature of propositions, it is not my focus here. Let me just note that, if one would take propositions, in the sense employed here, as the semantic values of utterances, one could ask whether the way in which propositions are conceived has any relevance for the issue of unarticulatedness. As many authors have noted, for example Stanley (2000), talk of unarticulated constituents makes more

sense within a Russellian view according to which propositions are constituted out of objects, properties and relations, but nothing hinges on adopting that talk. Ultimately, I think that talk of unarticulated constituents could be rephrased in talk of, say, structured intensions.

But the claim that propositions, conceived as sets of possible worlds, are suited to be the semantic content of utterances (or the only semantic content of utterances) has been called into question. For example, Lewis (1998) has argued that we need other kinds of semantic contents than propositions to account for compositionality. Such semantic contents need not only be relative to possible worlds, but to other parameters as well, for example (in Lewis' view) time, location or standards of precision. If compositionality is important for the semantic values of utterances (as most philosophers think it is), then the supremacy of propositions as fulfilling that role is endangered. They are still suited to play certain roles (such as, for example, to be the objects of attitudes, bearers of modal properties, etc.), but they are not the only semantic contents needed in our semantic theory. This tendency to appeal to different kinds of semantic contents has been augmented recently by the apparition of various relativist views, which argue for the need of semantic contents that need to be relativized to even more parameters than the ones advocated by such philosophers as Lewis and Kaplan (relativism, in its various form, will be presented below in section 3.2.). Now, as Kaplan (1989) has noted, we could call these other semantic contents "propositions", but that would rather be to use the term in a deviant, gerrymandered sense. In this work I will refrain from calling those semantics contents "propositions" and reserve the term just for those semantic contents that get truth values only relative to possible worlds. Thus, since relativism will play a large role in the following chapters, I think that semantic contents should *not* be thought of as propositions, in the sense of being relative to possible worlds only. To do that would be simply to prejudge the issue of what semantic content is before even entering the debate.

Now, the moral that I want to draw from the two distinctions made (that between unarticulatedness at the linguistic level and unarticulatedness at the level of logical form and that between unarticulatedness at the level of logical form and unarticulatedness at the level of thought) is that care needs to be taken when speaking of unarticulated constituents, in that when claiming that a certain element is an unarticulated constituent of the truth-conditions of an utterance one should specify *the relevant level of representation* at which the element is said to be unarticulated. Synthesizing the distinctions above, I will thus distinguish between three levels of representation: *the linguistic level* (consisting in linguistic expressions, elements pronounced or written), *the level of logical form* (consisting in the syntactic structures of the sentences uttered which are relevant for semantic interpretation) and *the level*

of thought (consisting in mental episodes that have semantic content)[4]; correspondingly, I will distinguish between three senses of unarticulatedness. An unarticulated constituent could thus be articulated at certain levels of representation, and unarticulated at other, as in the examples given above. Bearing in mind this tripartite distinction between various levels of representation we could attempt to give a more formal definition of the notion of an "unarticulated constituent". Philosophers have not shied away from attempting to define this notion, and I will work my way towards the definition I want to propose starting from such an attempt. Thus, one of the most used definitions in contemporary debates involving unarticulated constituents has been that given by Stanley (2000). The definition is the following:

> *x* is an unarticulated constituent of an utterance *u* iff (1) *x* is an element supplied by context to the truth-conditions of *u*, and (2) *x* is not the semantic value of any constituent of the logical form of the sentence uttered. (Stanley, 2000: 410)

Neale (2007) has objected to this definition that it is strictly speaking inaccurate, since the notion of an unarticulated constituent of an utterance does not make much sense. According to Neale, an utterance consists in the production of some sounds or marks, in *articulating* them, so in that sense there cannot be an element that is unarticulated in an utterance. But I think it is fair to say that Stanley should be understood as talking about an unarticulated constituent *of the truth-conditions* of an utterance. Moreover, talking in this context about truth-conditions of *utterances*, and not, say, of sentences, seems to me to be the right way to approach the issue of unarticulatedness, since unarticulated constituents could only kick in when a certain sentence is used in a context. Neale makes this point himself:

> *a* cannot just be an unarticulated constituent of a proposition. (…) *a* is an unarticulated constituent (…) relative to some representational entity X (e.g., a sentence), more accurately, relative to some particular tokening or instance X^u of X (e.g., a use, utterance, occasioning or what-have-you of a sentence). (Neale, forthcoming)

Now, even if this minor problem is fixed in the way proposed, Stanley' definition still lacks the level of generality we are after. Stanley's definition may be fine if the issue is

[4] See also Dokič (2006) and Clapp (2010) for a clear distinction between these three levels of representation.

whether a certain element of truth-conditions is unarticulated or not at the level of logical form, but what we are after here is a more general definition. However, it is not difficult to arrive at a more general definition starting from Stanley's definition above: what we have to do is simple abstract away from the specific level of representation that Stanley refers to. Factoring in the moral of the discussion above, we arrive at the following definition:

> **Definition:** *x* is an unarticulated constituent of the truth-conditions of an utterance *u* relative to level of representation *L* iff (1) *x* is an element supplied by context to the truth-conditions of *u*, and (2) *x* is not the semantic value of any constituent at the level of representation *L* of the sentence uttered.

To repeat, the most important point that follows from this definition is that one can speak about an element of the truth-conditions of an utterance only relative a certain level of representation. This has been obvious also in the less general definitions given above: for example, in Stanley's definition the relevant level was that of logical form, whereas in Perry's story with the Z-landers presented above, the relevant level was that of thought.

1.2. Laying out the logical space

Above I distinguished between three levels of representation and I claimed that the notion of "unarticulated constituent" itself only makes sense if understood as relative to one of these levels. Now, this tripartite distinction allows a partitioning of the logical space according to whether an element of the truth-conditions of an utterance will be articulated or unarticulated relative to each of these levels. Since there are three levels of representation and two ways in which a certain element of the truth-conditions of an utterance could turn out to be (articulated or unarticulated) we will end up with eight possible views. In what follows I will survey all eight possibilities, assess whether each of them amounts to a viable view and see whether any of the possibilities correspond to views explicitly defended in the contemporary debates about unarticulated constituents. The survey will be schematic and general, in the sense that I will pay no attention to the particularities of the types of expressions the possible views purport to apply (although I will sometimes exemplify the views by appealing to certain types of expressions for which they have been proposed). I will thus speak using general terms such as "the relevant elements of the truth-conditions" and "target sentences". The possibilities are exhibited in Table 1 below:

	Language	**Logical Form**	**Thought**	**View**
1	Articulated	Articulated	Articulated	GEV or IV
2	Articulated	Articulated	Unarticulated	?
3	Articulated	Unarticulated	Articulated	?
4	Articulated	Unarticulated	Unarticulated	(dummy el.)
5	Unarticulated	Articulated	Articulated	TCS
6	Unarticulated	Articulated	Unarticulated	?
7	Unarticulated	Unarticulated	Articulated	TCP
8	Unarticulated	Unarticulated	Unarticulated	Relativism

Table 1

Let us thus start with possibility 1. According to such a view, all the relevant elements in the truth-conditions of utterances of the target sentences are articulated at all the levels distinguished before; in other words, there are no unarticulated constituents at all. I don't know of many philosophers holding such a view, but here is a possible way to flesh it out. It consists in claiming that despite the target sentences seeming to be incomplete, and thus seeming to host unarticulated constituents at the linguistic level, they are actually elliptical for other, more complete sentences in which all the elements are articulated. Call such a view the Generalized Ellipsis View (GEV). (Neale's (1990) treatment of incomplete definite descriptions seems to conform to such a way to implement possibility 1.) In order to get clear on what such a view would amount to, a look at the debate surrounding what some philosophers have called "non-sentential assertions" (e.g., Stainton (1995)) will be useful. The case of non-sentential assertions (indeed, a special case of them, as we will see shortly) have been thought to support the view that there are unarticulated constituents of a certain kind. In the following dialogue:

(1) Bob: James will jump.
Ann: John won't,

Ann's response is a non-sentential assertion. However, in such a case, Ann's line is interpreted as a case of syntactic ellipsis, since for her line to make sense it needs to be completed with previous linguistic material – in this case, the expression "jump". Thus, what

is crucial for syntactic ellipsis is the presence of previous linguistic material with which the expression constituting the non-sentential assertion needs to be completed in order to make a complete sentence.

Defenders of unarticulated constituents agree that such cases are cases of syntactic ellipsis, but deny that all cases of non-sentential assertions could be interpreted as cases of syntactic ellipsis. To this end, they have brought to the fore a special case of non-sentential assertions, namely discourse-initial non-sentential assertions. Consider the following case: Ann and Bob are at an academic party where a certain person attracts a lot of attention. Bob quizzically raises his eyebrows and gestures towards the person in question. Ann answers by uttering

(2) A world famous topologist.

It is clear that in this case there is no previous linguistic material with which the expression constituting the non-sentential assertion could be completed in order to make a complete sentence. Such a case cannot thus be one of syntactic ellipsis. The missing material is thus supplied by context, and in that sense it is an unarticulated constituent of the truth conditions of the discourse-initial non-sentential assertion.

The answer to this kind of cases, given for example by Stanley (2000), has been to insist that such cases are really cases of syntactic ellipsis. What such an answer needs to explain, however, is how the ellipsis proceeds in the absence of any previous linguistic material. Stanley's way to deal with this problem is to allow extra-linguistic context to contribute linguistic elements with which the expression constituting the non-sentential assertion needs to be completed in order to make a complete sentence. Thus, the notion of context relevant for ellipsis will now encompass not only the linguistic context of the utterance, but also intentions of the speakers. As Stanley puts it,

> (…) explicitly providing a linguistic antecedent by mentioning it is only the simplest way to provide it. There are other methods for raising linguistic expressions to salience in a conversation without explicitly using them. (Stanley, 2000: 404)

The interlocutors in the situation described above are both aware of the details of the situation, so the relevant features are made salient without anything being uttered. The

discourse-initial non-sentential assertion above is treated as being basically elliptical for the complete sentence

(3) She is a world famous topologist.

In this way Stanley avoids the need to postulate unarticulated constituents in the case of discourse-initial non-sentential assertions.

Whether this answer is ultimately convincing or not is not something that I will set out to settle here.[5] Although the issue of discourse-initial non-sentential assertions has been part of the more general debate surrounding unarticulated constituents, I will set it aside in what follows.[6] The sole purpose of bringing up this issue was to illustrate how one could construct the view labeled above the Generalized Ellipsis View. And here is how: by generalizing Stanley's strategy to *sentential* assertions. In the cases in which there is previous linguistic material to be drawn upon, the sentence constituting the sentential assertion will be elliptical for the sentence completed with previous linguistic material; in the cases in which there is no previous linguistic material, the sentence that constitutes the sentential assertion will be elliptical for the sentence completed with linguistic material salient in the (broader, extra-linguistic) context. Thus, in all cases the proponent of the GEV could claim that not only non-sentential assertions, but also sentential assertions, are in fact elliptical for sentences in which the seemingly unarticulated constituents are actually articulated at the linguistic level – even in the absence of previous linguistic material for the ellipsis to draw upon. Whether or not such a position is ultimately tenable, is also a question I will not pursue here.

Another way to flesh out the view that the relevant elements in the truth-conditions of utterances of the target sentences are articulated at all the three levels of representation distinguished is to claim that all the articulated elements in the sentence are indexicals. Call such a view the Indexicality View (IV). What is specific to indexicals is not only that their

[5] There is a doubt that in allowing extra-linguistic context to play such a big role Stanley allows something that doesn't square well with his own views about context as being limited to the resolution of indexicals, demonstratives or pronominal elements. Even if he might agree that for the resolution of such expressions a wider notion of context, comprising intentions of speakers is needed, there still seems to be a gap between that concession and the type of intentions exhibited in the case of discourse-initial non-sentential assertions. Also, as Clapp (2002) has shown, Stanley's view about the role of extra-linguistic context in providing linguistic material leads to indetermination: which one from the many available choices of linguistic material is selected by the ellipsis? I won't pursue this issue here, but see also Hall (2009) for a critical discussion of Stanley's view on this matter.

[6] Clapp (2002) contains a discussion of how the phenomenon of non-sentential assertion constitutes a threat to truth-conditional semantics by undermining the compositionality principle that lies at its hart. Although I acknowledge that compositionality is an important issue, I will pay little attention to it in this work.

semantic contents changes from context to context, but also, as Kaplan (1989) has noted, they are associated with a *character* providing instructions how to get to their contents in any context. Character should thus comprise all the relevant information about how to arrive at an indexical's semantic content in a given context. In Kaplan's view, each expression is associated with a character, but for context-insensitive expressions their character is stable (that is, the expression's semantic content does not vary from context to context). Now, one might associate an unstable character with the target expressions. Although that would result in those expressions being context-sensitive, their character will comprise all the relevant information about how to arrive at their semantic contents in all contexts. In the case of the sentence "It is raining", for example, "rain" will be treated as an indexical whose character will provide instructions about how to get to the semantic content of an utterance of the sentence – including the provision of a salient location. The location of rain is thus part of the semantic content of an utterance of the sentence, but the way in which it has gotten there is not by way of some unarticulated constituent for location, but as a way in which the expression "rain" works. Such a treatment would be similar to Rothschild and Segal's (2009) treatment of color expressions such as "green", their claim being that such expressions are "indexical predicates". Whether this view could cover all the interesting cases or is ultimately tenable is, again, an issue that I will not pursue here.

Possibility 4 leads to a view according to which the relevant elements in the truth-conditions of utterances of target sentences are articulated at the linguistic level but unarticulated both the level of logical form and at the level of thought. Are there such elements? The only example I can think of is the presence in sentences of such locutions as "it", as in "It is raining" – elements called dummy subjects. It is quite plausible that such elements are not represented at a deeper level, and their presence at the linguistic level is due solely to accidents pertaining to specific languages (in the case of the example given, the fact that English sentences cannot appear without a grammatical subject.) Moreover, these elements seem to play no role whatsoever in fixing the truth conditions of any utterance in which they appear, and they are limited to uninteresting cases such as "it". We can thus safely ignore them in what follows.

Possibility 3 seems to me to be a nonstarter. It leads to a view according to which the relevant elements in the truth-conditions of utterances of target sentences are articulated at the level of though, unarticulated at the level of logical form, and again articulated at the linguistic level. As we have seen in connection to possibility 4, the only elements that are articulated at the linguistic level but unarticulated at the level of logical form are dummy

subjects. Related to such elements, it would be certainly odd to claim that, although such elements are not articulated at the level of logical form, they are nevertheless articulated at the level of thought. But again, even if possible, such cases are not interesting ones; I will thus leave them aside in what follows.

Possibility 5 leads to a view stating that the relevant elements in the truth-conditions of utterances of target sentences are unarticulated at the linguistic level, but articulated both at the level of logical form and at the level of thought. Such a view would have it, for example, that the logical form of the target sentences contains variables for elements that are not articulated at the linguistic level, variables that are given values by the context in which they are uttered. A particular instance of this view, one which will play an important role in following chapters, is Stanley's version of truth-conditional semantics (TCP). As widely known, Stanley's main claim is that

> any contextual effect on truth-conditions that is not traceable to an indexical, pronoun, or demonstrative (…) must be traceable to a structural position occupied by a variable. (Stanley, 2000: 401)

Thus, for Stanley, since the level of thought doesn't contain any elements of the truth-conditions of an utterance that are unarticulated at the level of logical form, the truth-conditions of the utterance could be read off the logical form of the sentences uttered. As it happens, I will argue that a view like Stanley's, as applied to certain expressions such as locational expressions and predicates of personal taste, is wrong.

Possibility 7 leads to a view according to which the relevant elements in the truth-conditions of utterances of target sentences unarticulated at the linguistic level, unarticulated at the level of logical form, but articulated at the level of thought. According to such a view, context plays a big role in establishing the truth-conditions of utterances. There are several extant views on the market that argue that context has this role for most, if not all, expressions. All these views fall under the umbrella-term "truth-conditional pragmatics" (TCP), covering positions such as those defended by Sperber and Wilson (1986), Recanati (2002, 2004), Carston (2002), Bezuidenhout (2002), etc. The main claim of these views is that the mechanisms by which the relevant elements get into the truth-conditions of utterances are essentially pragmatic, and not syntactically driven, as in the opposite view, truth-conditional semantics. What these mechanisms are, and how they function, we will see in following chapters (especially chapter 2), in connection with Recanati's version of the view.

I'm not sure whether possibilities 2 and 6 could lead to a coherent view. What they have in common is the claim that the relevant elements in the truth-conditions of utterances of target sentences are unarticulated at the level of thought, but articulated at the level of logical form. While the converse case leads to a widespread position (indeed, one of the main contenders in the debate – truth-conditional pragmatics), this possibility doesn't seem to be of that much interest. As an example of this kind of view that comes to mind is the following: some semanticists, for example Heim and Kratzer (1998) introduce indices (i.e., numbers) as nodes of logical form of sentences. Are those elements present at the level of though as well? Regardless of the answer to this question, such elements are not of the same type as those that I'm interested in in this thesis, and could therefore be left aside. Nothing of importance hinges on considering what happens at the linguistic level: whether it is possible to have an element as described above that is articulated at the linguistic level (possibility 2) or unarticulated at the linguistic level (possibility 6), the same point remains.

Finally, possibility 8 leads to a view according to which the relevant elements in the truth-conditions of utterances of target sentences are unarticulated at all three levels of representation distinguished above. Perry's position with respect to the location of a rain in the Z-landers story, including his additional claim that "there is a little of the Z-lander in the most well-traveled of us" (Perry, 1993: 216), seems a good example. Temporalism, as promoted in the works of Arthur Prior and other philosophers, is another example (although here the unarticulated elements are masked by the obligatory presence of tense). Also, various versions of Relativism that have been recently proposed belong here. Since relativism will play a major role in the following chapters, and since in contemporary philosophy of language the label "relativism" has been used for quite a number of different positions, a bit of disentangling is necessary.

The best way to get clear on the matter is to start from the Kaplanian framework. As it is widely known, according to Kaplan's (1989) picture of semantics the assignment of a truth value to an utterance is done in two stages. At stage one, the utterance gets a content, by the resolution of indexicals and other context-sensitive expressions in the context of utterance; at stage two, that content is evaluated with respect to the circumstance of evaluation of the context. Thus, in Kaplan's view, context plays a double role. On one hand, it provides elements that get into the content of utterances. Call this, following John MacFarlane (2009), the *content-determinative* role of context. On the other hand, context provides elements in the circumstances of evaluation with respect to which utterances are to be evaluated. Call this the *circumstance-determinative* role of context. Now, although context has this double role, when

it comes to one specific parameter, context can only play one of these two roles. This idea, accepted by many semanticists, is nicely captured by the following principle:

> ***Distribution***: The determinants of truth-value distribute over the two basic components truth-evaluation involves: content and circumstance. That is, a determinant of truth-value (…) is either given as an ingredient of content or as an aspect of the circumstance of evaluation. (Recanati, 2007b: 34).[7]

Now, in Kaplan's view, the circumstances of evaluation comprise a possible world parameter and a time parameter. (Kaplan considers locations as well as parameters in the circumstances, but eventually they are not construed as such in his formal system.) From this framework to some of the recent versions of relativism is just a small step. It consists in introducing other parameters, such as perspectives, judges, standard of knowledge, epistemic bases, etc. – each corresponding to a type of expressions for which relativism is proposed. A traditional argument given by Kaplan (1989) and Lewis (1998) for the introduction of unorthodox parameters in the circumstance (index, for Lewis) has been the existence of expressions in natural language that behave as circumstance-shifting operators in natural language. However, this argument, known as "the operator argument" has been heavily criticized (King (2003), Cappelen and Hawthorne (2009)) by rejecting the claim the natural language expressions in question are best interpreted as circumstance-shifting operators. I will discuss in detail the operator argument in chapter 5, but the point to be made here is that the operator argument is not the only argument adduced by proponents of relativism in support of their view. Thus, proponents of relativism have retorted to certain patterns of data such as disagreement or retraction (Kölbel (2003), Lasersohn (2005), Egan, Hawthorne and Weatherson (2005)), embeddings under propositional attitude verbs (Lasersohn (2009)), considerations having to do with logical validity (Predelli, forthcoming), among others. This is not to say that these arguments are uncontroversial themselves, but I will not attempt to discuss them here (the issue of disagreement will be taken up in chapter 5). The important point in the present context is that, given sufficient motivation, the introduction of unorthodox parameters in the circumstances of evaluation is a small departure from the Kaplanian framework.

A more radical departure from the Kaplanian framework towards a relativistic one can be found in MacFarlane's (2003, 2005a, 200b, 2007, 2009, forthcoming a, forthcoming b)

[7] I will discuss some challenges to ***Distribution*** in chapter 5.

works. In Kaplan's view, truth of sentences is both relative to contexts of use and circumstances of evaluations; truth of utterances, on the other hand, is absolute. This is because the truth value of utterances is to be arrived at by evaluating them with respect to the circumstances *of the context of use*.[8] (This is clear in Kaplan's definition of truth in a context (Kaplan, 1989: 522), although truth is defined there not for utterances but for occurrences of sentences of context.) The context of use determines, in an absolute manner, the circumstances with respect an utterance has to be evaluated. In contrast, in MacFarlane's view, truth of utterances is itself relative to what he calls "contexts of assessment", which basically are any situations in which an utterance is evaluated for its truth. Thus, for MacFarlane truth of sentences is relative to contexts of use and contexts of assessment, but the context of use does not determine the circumstances needed for the utterance's evaluation. These circumstances are determined by the context of assessment, and thus truth of utterances is relative to it. Although this view partially uses the Kaplanian framework, it nevertheless consists in a more radical departure from it than the other way of spelling out relativism.

Now, both these two ways of cashing out relativism, although different, have the following thing in common: according to both, in connection to specific elements, context has a circumstance-determinative role rather than a content-determinative one. The difference stems from which context is the one that determines the value of the parameters in the circumstances of evaluation: according to the first way of cashing out relativism, it is the context of utterance; according to the second, it is the context of assessment. However, for the purposes of this thesis, those differences will not matter. I will thus use "relativism" in order to refer to *any view according to which context has a circumstance-determinative role*. When relevant, the differences between the two ways will be taken into consideration.

One might ask what the connection between relativism and the idea of unarticulatedness is. It is helpful here to appeal to some observations made Recanati in this respect. Talking about evaluating utterances with respect to possible worlds, Recanati says:

> (…) the possible worlds relative to which propositions are evaluated are not themselves represented in, or an aspect of, the propositions in question. Thus "Brigitte Bardot is French" is true, with respect to a world *w*, iff Brigitte Bardot is French in *w*;

[8] This does not mean that the circumstances that an utterance needs to be evaluated are *always* those of the context of use: if the sentence uttered contains circumstance-shifting operators (for Kaplan, modal and temporal expressions), then it is those shifted circumstances that matter. However, this does not undermine the point that the context of use determines the relevant circumstances: the circumstance-shifting operators are part of the sentence uttered, and thus pertain to the context of use.

> but the sentence "Brigitte Bardot is French" only talks about Brigitte Bardot and the property of being French. The world of evaluation is not a constituent of the content to be evaluated.[9] (Recanati, 2007b: 65-66)

If we understand the propositions as the semantic content of thoughts, it follows that there are elements that are essential in evaluating for truth a certain utterance that need not be articulated in the thoughts themselves. Those elements are unarticulated at the level of thought.[10]

One might wonder whether the eight possibilities laid out above exhaust all the possible views in the debate surrounding unarticulated constituents. One important view that has been on the market for quite some time now is minimalism (defended in Cappelen and Lepore (2005) and Borg (2004)), and none of the possibilities mentioned has been related with it. This is because minimalism has no place in the schema I have proposed, for the following reason. Minimalism claims that utterances express minimal propositions, propositions that are simply obtained by taking the sentence at face value, as it were, their truth conditions being given by the T-schemas associated with them. This feature of the view could suggest categorizing minimalism under possibility 1 (articulation at all three levels), but the fact that the propositions expressed by utterances according to minimalism are minimal propositions rules out elements that at least intuitively are part of the truth conditions of such utterances (and are agreed to be so by all the contributors in the debate). To be sure, minimalists don't deny that there are elements that play a role in establishing the truth conditions of what a speaker *conveys* with a use of a sentence, but those elements don't influence the semantic content of that sentence (which is the minimal proposition). The fact that there are other propositions expressed by an utterance of a sentence besides the minimal one comes from the adoption of the thesis of speech act pluralism that accompanies some minimalist theories, such as that of Cappelen and Lepore (2005). On the other hand, minimalists also reject that there are elements in the truth conditions of utterances that are unarticulated in the sense I defined above, thus precluding the assimilation of the view under possibility eight. Although I acknowledge that minimalism has played an important role in

[9] This is reminiscent of the distinction drawn by Perry (1993) between *being about* and *concerning*.

[10] Related to this issue, a word about my use of "truth-conditions" in this work. Usually, truth-conditions are identified with the semantic content of utterances. Here, however, I will use the term in a broader sense, namely that of whatever is relevant for the truth evaluation of an utterance. In this way, elements in the circumstances of evaluation of an utterance are part of the truth-conditions of an utterance without being part of the semantic content proper of that utterance.

shaping the debate about semantic content (though mainly by eliciting negative reactions towards it) I will not be concerned with it in the following chapters.

The main views that I will be concerned with in the following chapters are truth-conditional semantics, truth-conditional pragmatics and relativism. Starting with chapter 2 I will investigate the debate as to whether certain elements of truth-conditions of certain utterances should be articulated or not at the level of logical form, as well as the debate as to whether that those elements should be articulated or not at the level of thought. I will focus mostly on locations, in connection to meteorological predicates such as "rain" and on judges, in connection to predicates of personal taste such as "tasty". To get the gist of what follows, in the following table I summarize the main claims the three views make regarding how the location is contributed to the truth-conditions of a certain utterance of the sentence "It is raining". Imagine, thus, that the sentence is uttered in Barcelona on the 1st of March 2011, at 3 pm; *t*, *l* and *w* are variables for times, locations and possible worlds, respectively.

View	Semantic content	Logical form	Circumstance	Mechanism
TCS	It is raining in Barcelona on 1.03.2011 at 3 pm.	rain (*t*, *l*)	*w*	syntactic
TCP	It is raining in Barcelona on 1.03.2011 at 3 pm.	rain (*t*)	*w*	pragmatic
Relativism	It is raining on 1.03.2011 at 3 pm.	rain (*t*)	*w*, *l*	evaluation

1.3. Two criteria for (un)articulatedness

I will end this chapter with a detailed discussion of two criteria that have been proposed for (un)articulatedness: Recanati's ***Optionality Criterion*** and Stanley's ***Binding Criterion***. The core of the debate between the two authors concerns the issue whether elements in the truth conditions of utterances are articulated at the level of logical form or not. Both authors agree that the elements in question are articulated at the level of thought, but while Stanley claims that these elements are also articulated at the level of logical form, Recanati holds the view that they are unarticulated at the level of logical form. Now, in following chapters I will discuss in detail Stanley's main argument against Recanati's view in the case of locations, but here my aim is to asses whether the two criteria are viable. This discussion will show that, despite being thought by some to be a pervasive phenomenon, unarticulatedness is hard to pin down, at least in the sense of being able to provide a clear-cut problem-free criterion for it.

Second, the discussion sets the stage for the considerations of chapter 2, in which the specific case of location in meteorological sentences such as "It is raining" is taken up. Since this kind of sentences has played a big role in the formulations of the two criteria to be investigated, the discussion of the criteria will serve as a partial introduction in the details of the cases involving location.

The criterion proposed by Recanati in order to decide whether a certain element of truth-conditions (what he calls below "a contextual ingredient of content") is unarticulated is the following:

> ***The Optionality Criterion***: Whenever a contextual ingredient of content is provided through a pragmatic process of the optional variety, we can imagine another possible context of utterance in which no such ingredient is provided yet the utterance expresses a complete proposition. (Recanati, 2004: 101)

On the other hand, Stanley has proposed the following criterion for when a certain element of truth-conditions is articulated:

> ***The Binding Criterion***: A contextual ingredient in the interpretation of a sentence S [is articulated] if it can be "bound", that is, if it can made to vary with the values introduced by some operator prefixed to S. (Stanley, 2005a)

Let us first discuss Recanatis's criterion. Before showing how the criterion is supposed to work by illustrating with an example, it is worth pointing out a problem pertaining to the formulation of the criterion above. As Stanley (2005a) has observed, the ***Optionality Criterion*** as formulated above cannot serve as a criterion for unarticulatedness, because it doesn't exclude the possibility of providing the contextual ingredient by other means than the kind of pragmatic processes that Recanati postulates. If the criterion is interpreted as an universally quantified conditional, as Stanley does, then in applying the criterion Recanati simply makes the mistake of affirming the consequent. Indeed, even if the situation described by the antecedent of the criterion obtains (that is, if a contextual ingredient of content is provided through a pragmatic process of the optional variety), this doesn't preclude imagining a possible context in which the ingredient is provided by a process that is *not* of the optional variety. What Recanati needs is to argue from the other direction; for the criterion to work, he needs to say that whenever we can imagine another such possible context of utterance, the

contextual ingredient of content is provided through a pragmatic process of the optional variety. Thus, on Recanati's behalf, Stanley proposes a correction, the criterion becoming

> ***The Optionality Criterion****: Whenever a contextual ingredient of content is provided, and we can imagine another possible context of utterance in which no such ingredient is provided yet the utterance expresses a complete proposition, then the contextual ingredient of content is provided by a pragmatic process of the optional variety. (2005a)

Let us see how the revised version of the criterion is supposed to work.[11] As an example, consider the sentence "It is raining". According to the criterion, in order to establish that that there is no argument place for the location of rain in the logical form of this sentence (and, thus, that the location of rain is an unarticulated constituent at the level of logical form of the truth-conditions of an utterance of it) all we have to do is to find a context in which the sentence could be uttered in such a way as to express a complete proposition, without the context providing the location. And here is such a context: Imagine that rain has become extremely rare on Earth, and humans have put rain-detectors all over the surface of the planet. One day, the bell in the monitoring room rings, signaling the presence of rain on the surface of Earth, and the weatherman on duty shouts: "It is raining!" (Recanati 2002, 2004). For this use of the sentence, Recanati claims, the context supplies no ingredient, yet the utterance expresses a complete proposition. Since there are uses in which the sentence expresses a complete proposition, yet no contextual ingredient is provided, according to the ***Optionality Criterion**** the sentence does not contain any argument place for the location in its logical form. Thus, whenever the location of rain is part of the truth-conditions of an utterance of the sentence "It is raining", it gets there through a process of the optional variety (e.g., free enrichment).

Some authors (Stanley (2005a), Martí (2006), Neale (2007)) have argued that in the case presented, contrary to what Recanati claims, context *does* provide a location that makes it into the truth-conditions of the utterance of the sentence: namely, a maximally large domain. I will take up this objection in detail in the next chapter, where I will investigate the case of location more closely, so I will not pursue this line of response here. However, even if granting that context in the case considered does not provide a maximally large domain, it

[11] This is an anticipation of the discussion involving "It is raining" in the next chapter.

seems that the criterion does achieve too much. For it is easy to come up with similar cases in which the context doesn't provide any element, yet we won't be pushed to claim that that element as articulated at the level of the logical form of the sentences in question. Here is an example: take the verb "kiss". "Kiss" is a two-place predicate standing for a relation between a kisser and the object kissed. Nevertheless, we could construct a context in which someone would utter the sentence "He kissed", expressing a complete proposition and without the context providing the object kissed, as in Recanati's weatherman context. Suppose, for example, that Danny, who is soon to become a teenager, has never kissed a girl. The parents, who are top scientist working for the Government, and who are away from home most of the time, are troubled that the absence of such a deed might affect Danny's maturation process. As a consequence, they install a microscopic device on Danny's lips that could easily detect the texture of human lips. One day, when the parents are working in their laboratory, Danny makes the crucial step. The mother, looking at the flickering light on the monitor for the device implanted in Danny's lips, utters with great joy and relief: "He kissed!" Does this mean that "kiss" is really a one-place predicate? I don't think so. Recanati could argue that what we have here is a case of ambiguity between "kiss" as a two-place predicate and "kiss" as a one-place predicate, as in the case of "eat". But, given that there are no regular uses of "kiss" as a one-place predicate, this reply doesn't have much force. The result is thus that Recanati's criterion urges us to treat more elements as unarticulated than we are, at least intuitively, willing to treat as such.

Let us now turn to Stanley's criterion. The main objection that the criterion has been subjected to is that of overgeneration of variables in logical form: if the ***Binding Criterion*** were right, we would end up postulating variables in a much bigger number of cases than expected. One attempt to show this was Recanati's (2002) example

(4) John is an anorexic, but whenever his father cooks mushrooms, he eats,

in which the intuitive truth conditions of the second sentence are that whenever John's father cooks mushrooms, John eats *the mushrooms his father has cooked*. According to the ***Binding Criterion***, "eat" will need to have an argument place for the food eaten. But this cannot be, Recanati argues, since "eat" is used here intransitively. Therefore, Stanley's criterion yields the wrong result: namely, that "eat" has an argument place for the food.

However, Stanley (2005a) has replied to this example by rejecting that the intuitive truth conditions of the sentence are those that Recanati claims them to be, maintaining instead

that the natural reading of "Whenever his father cooks mushroom, he eats" is that whenever John's father cooks mushroom, John eats *something*. To support this claim, Stanley appeals to a linguistic test proposed by Martí (2006), named by Cappelen and Hawthorne (2007) "the negation test". The test functions by looking at how the negation of a sentence is performed, and then by drawing some conclusions from its (in)felicitousness. For the sentence we are concerned with, the test would be following:

(5) A: Whenever John's father cooks mushrooms, he eats.
#B: No, he doesn't – he eats broccoli instead.

B's reply above is infelicitous, and this is enough to show that the intuitive reading of the problematic sentence cannot be that which Recanati had in mind: if it would, B's response would have been felicitous. So, Stanley avoids the charge that his criterion would postulate an argument place for the food in the intransitive verb "eat". Since Recanati's argument depended on the example having the reading he ascribed to it, and since this reading is rejected by Stanley by means of the negation test, the example has no force and thus the ***Binding Criterion*** has not been shown to overgenerate.

A different attempt to show that the ***Binding Criterion*** overgenerates belongs to Cappelen and Lepore (2004). They ask us to imagine Sally, a confused mathematical anthropologist who sets out to find out whether arithmetical truths hold in all locations. After traveling to a great number of locations, Sally summarizes her findings by uttering

(6) Everywhere I go, 2 + 2 = 4.

According to Cappelen and Lepore, the intuitive truth-conditions of this sentence are that for every place that Sally goes to, 2 + 2 = 4 *at that place*. Given these truth-conditions, according to Stanley's criterion we should claim that the embedded sentence "2 + 2 = 4" has an argument place for locations. But this is implausible. Therefore, the ***Binding Criterion*** overgenerates.

Stanley (2005b) has responded to Cappelen and Lepore's attempt to undermine the ***Binding Criterion***. As far as I understand Stanley's answer, it consists in distinguishing three senses in which one could use the criterion, and then argue that Cappelen and Lepore have taken Stanley to use the criterion in the wrong sense. Specifically, Stanley objects to the two authors that they frame the issue in terms of grammaticality, and points out that the way he

used the criterion was never connected to grammaticality, and thus that their objection doesn't get off the ground. But I don't think that this answer is fully satisfactory, since one could easily claim that the issue the example raises is not one of grammaticality, but has to do with the semantic content of the sentence in question and the way in which it is represented. A more convincing move on Stanley's part would be, I think, to claim that Cappalen and Lepore are mistaken about the truth-conditions of their example. This is precisely the line taken by Cohen and Rickless (2007), who give a more straightforward answer to Cappelen and Lepore's challenge by noting that in the case of (6) the location is not relevant for the truth-conditions of the embedded sentence "2 + 2 = 4". Thus, they claim, in my opinion rightly, that the truth-conditions of (6) are not

(7) For every place *x*, if Sally goes to *x*, then 2 + 2 = 4 at *x*,

but

(8) For every place *x*, if Sally goes to *x*, 2 + 2 = 4,

where, although there is a variable for locations, it does not figure in the embedded sentence and therefore there is no binding of the location in "2 + 2= 4". They diagnose Cappelen and Lepore's mistake as stemming from a wrong conception of binding: according to Cohen and Rickless, if an embedded sentence is bound by a quantifier then the interpretation (or truth-conditions) of that sentence is systematically affected by the quantifier, so that replacing the quantifier with particular values of the variable bound by that quantifier changes truth-conditions. This does not happen in (6). Therefore, the example does not show that the ***Binding Criterion*** overgenerates.

Nevertheless, it seems to me that it is not that hard to come up with examples that pass both the negation test and Cohen and Rickless' constraint, and still give the wrong results for the ***Binding Criterion***. One such example belongs to Sennet (2008: 150):

(9) Everywhere Janie went, she danced.

This sentence passes the negation test, as it is shown below:

(10) A: Everywhere Janie went, she danced.

B: No, she didn't – she only danced in a few places.

The fact that the example passes the negation test precludes an answer from Stanley's part, as in the case before, that the intuitive truth conditions of (9) are that Janie danced *in some place or another*. The intuitive truth conditions of the sentence are that Janie danced *in all the places she went*. The example is conclusive, I think, because it is a generally agreed datum that the verb "dance" doesn't have an argument place for location (see Taylor (2001) for details). Also, the example meets Cohen and Rickless' constraint, in that the place at which Janie dances *is* relevant for the truth-conditions of the sentence. Another example involving location that might be used against Stanley's criterion is the following:

(11) Wherever John goes, he wears a hat.

That (11) also passes the negation test is shown below:

(12) A: Wherever John goes, he wears a hat.
B: No, he doesn't – he wears a hat only when he goes to the cinema.

Although neither example is exactly analogous with the more complex examples of binding that Stanley has provided (one of which will be my focus in chapter 3), it seems that nevertheless binding does occur in these cases. In conformity with his proposed criterion, then, Stanley would have to say that the sentences "Janie danced" and "John wears a hat" have an argument place for location in their logical forms. And, as before, this example meets Cohen and Rickless' constraint, since, again, the location at which John wears a hat *is* relevant for the truth-conditions of the sentence. If the orthodox view about "dance" is correct, then this is an unwanted result for Stanley. Moreover, this conclusion is not limited to locations. There are examples that can be used against Stanley's criterion in which what is intuitively bound is something else than location. One such example, involving again "dance", is

(13) Whatever dress she wears, Janie dances.

Here the result will be (given that (13) also passes the negation test, as can easily be verified, and meets Cohen and Rickless' constraint) that "Janie dances" needs an argument place for

Janie's dress. But this seems to be incorrect; the criterion does indeed achieve too much by postulating too many variables in the logical form of sentences.

In this chapter I focused on the idea of unarticulatedness and on the notion of "unarticulated constituents" with the explicit aim to distinguish between several ways in which philosophers have used this notion. Based on the distinction between three levels of representation, I gave a general definition of "unarticulated constituent", noting that one of crucial aspects is that it makes sense only relative to level of representation. Also based on the aforementioned distinction I surveyed the logical space and singled out the views that will be my concern in the following chapters. In the final part I assessed two criteria for (un)articulatedness and concluded that they both overgeneralize. In the following chapter I will focus on a specific scenario – "the weatherman scenario" – and survey a number of its interpretations corresponding to several views on the semantics of "It is raining". I will defend the view according to which the location of rain need not be represented at the level of logical form of such sentences.

Chapter 2
The Battle over Location

In this chapter I will focus on location as a particular case of an unarticulated constituent in one of the senses clarified in the preceding chapter. The discussion will revolve around the predicate "rain" and the sentence "It is raining", but the predicate should be considered as representative of a larger category, namely that of weather predicates (and, as we will see in chapter 4, of other predicates as well). Sentences such as "It is raining" have been at the center of discussions about unarticulated constituents since Perry's (1993) seminal article, and they still continue to attract a lot of attention many years later.

The particular issue that I will take up in this chapter is whether the location of rain should be represented at the level of the logical form of the sentence "It is raining" or should be contributed by context as an unarticulated constituent in the truth-conditions of the sentence. The relevant level at which location is said to be an unarticulated constituent is thus the level of logical form. The debate between views holding that the location of rain should be represented at the level of logical form in sentences such as "It is raining" (truth-conditional semantic views) and opposed views is a debate that I will be concerned with in the following chapters as well. However, in the present chapter I will focus entirely on the various interpretations of the sentence "It is raining" in a certain scenario devised by Recanati (2000) ("the weatherman scenario") in order to support the version of truth-conditional pragmatics he favors. I will start with summarily presenting Recanati's view and show how a particular interpretation of "It is raining" in the mentioned scenario helps his case. Then I will analyze five different interpretations of the sentence in the same scenario, interpretations corresponding to alternative views to Recanati's: two of those views claim that the location of rain needs to be represented at the level of the logical form of the sentence "It is raining"; the other three agree with Recanati in holding the opposite claim, but deny that the need to employ the kind of pragmatic mechanisms that Recanati is appealing to. Using both Recanati's arguments and my own, I will show that those views are either inadequate or they don't differ significantly from Recanati's view. In the final section, however, I will present an argument put forward by Stanley (2000) against the truth-conditional pragmatic view that will be addressed in chapter 3. I will show how this argument could be extended so that to apply to other views than truth-conditional pragmatics, such as relativism about locations.

Before moving on, let me clarify the aim of this chapter and its position in the overall scheme of the thesis. The final lines of the preceding paragraph could create the impression that my general aim is to argue in favor of a truth-conditional pragmatist account of location. But this is not so. It is true that in this chapter I will be defending Recanati's truth-conditional pragmatist view based on a certain interpretation of the sentence "It is raining" in the weatherman scenario. But that view is not the only one that could be defended by insisting on that particular interpretation; indeed, any view holding that the location of rain need not be represented at the level of the logical form of the sentence "It is raining" could get support from it (for example, relativism about location). Thus, rather than defending Recanati's truth-conditional pragmatist view in itself, the purpose of this chapter (and the next) is to show that a view claiming that we don't need to postulate an argument place for location in "It is raining" is tenable. In this sense then, the defense of Recanati's view in the first part of this this chapter is just an intermediary step towards expounding my own view (also inspired by Recanati), which I will present in detail in the chapters to come.

2.1. The weatherman scenario and its interpretations

I will start with giving a quick characterization of Recanati's version of truth-conditional pragmatics. The core idea of Recanati's view is the claim that pragmatics intrudes in a quite thorough way into what has been traditionally thought of as being exclusively the task of semantics: that of giving the truth-conditions of utterances, starting from the linguistic meaning of simple expressions and the way they combine to yield the meaning of more complex expressions. This claim is the distinguishing mark of the general orientation in contemporary philosophy of language known as truth-conditional pragmatics[1]. In order, however, to understand the details of the particular version of truth-conditional pragmatics that Recanati favors, we need to attend to some distinction that he makes.

One such important distinction is between primary and secondary pragmatic processes. The distinction has to do with the ways in which context intervenes in order for the speaker to get across what he wants to communicate to the hearer. As we know from Grice (1975), a speaker can communicate something over and above what has been literally expressed by means of pragmatic processes in which the background knowledge of the interlocutors plays a crucial role (one such process is the one by which the hearer derives an

[1] This label first appeared in Recanati (1993). Main proponents of the view include, but are not restricted to, Travis (1985, 1997), Sperber and Wilson (1986), Bezuidenhout (2002), Carston (2002) and, of course, Recanati (1993, 2001, 2002, 2004, 2010a).

implicature). Those processes, according to Recanati, are secondary pragmatic processes. Their main characteristic is that their input is something fully propositional. For example, in order to derive an implicature, we need to start from a proposition; nothing short of that will be enough. Primary pragmatic processes, in contrast, take as their input less-than-propositional elements. The main characteristic of primary pragmatic processes is thus *locality*: the fact that their input, as well as their output, is a less-than-propositional element that gets then computed in the usually way to yield the meaning of the more complex expression it belongs to. After the local effect of primary processes has taken place, we finally have something fully propositional that could then be used as input by the secondary pragmatic processes.[2]

Now, within primary pragmatic processes there is another distinction that is crucial for understanding Recanati's view. This is the distinction between the primary pragmatic process of saturation and that of modulation. What is characteristic of saturation is that a linguistic element requires (or, as Recanati's puts it, "triggers") a certain completion, one that is mandated by linguistic rules associated with the element in question. The interpretation of that element is entirely constrained by its literal meaning. Straightforward examples of saturation include the provision of a value for free variables (under an assignment) and indexicals. In modulation, on the other hand, a linguistic element doesn't require any completion, and thus the interpretation of that element is not constrained by its literal meaning: in the sentence "There is a lion in the plaza", the word "lion" in itself does not constrain the hearer to interpret the sentence as communicating that there is a statue of a lion in the plaza, as, for example, the word "I" in the sentence "I am hungry" requires the hearer to interpret the sentence as communicating that the speaker is hungry. Of course, the interpretation of a certain linguistic element is constrained by the communicative intentions of the speaker, but the point here is that this constraint doesn't come from its literal meaning. The crucial characteristic of modulation, then, is that it is an optional process, in contrast with saturation which is entirely mandatory.

The last aspect of Recanati's view that I consider concerns the ways in which modulation works. There are many results of the modulation process: metonymical transfer, strengthening or loosening, metaphor, free enrichment, etc. One such result, the one which

[2] The principled way in which Recanati draws the difference between primary and secondary pragmatic processes rests on the alleged fact that the input to the secondary processes are consciously available, while those to the primary processes are not. This idea has been expressed in what Recanati (2001, 2004) calls "the Availability Principle". This principle, however, has been severely criticized by most of Recanati's commentators. It is not my aim to address this issue here, but see Taylor (2001) and García-Carpintero (2001) for some pertinent comments.

this thesis focuses on, is the provision of unarticulated constituents. A case could be made, I think, that all the various effects of the modulation process could be cast in terms of the provision of unarticulated constituents (for example, interpreting the sentence "There is a lion in the plaza" as communicating that there is a statue of a lion in the plaza, "a statue of" might be conceived as un unarticulated constituent of some sort), but for my purposes here such a claim need not be sustained. It is sufficient for the discussions to come that some effects of the modulation process result in the provision of unarticulated constituents.

Moving now to the topic of this chapter, for Recanati one example of the intrusion of pragmatics into semantics in the sense discussed above involves the location of weather predicates such as "rain". As we have seen above, for Recanati the true mark of unarticulated constituents is that they are not mandatory.[3] Thus, in order to show that the location of rain is an unarticulated constituent of a sentence, all we have to do is to find one context in which the sentence communicates a full proposition, without the context providing a (definite or indefinite) location. To this end Recanati devises the following scenario, which I will refer to as *the weatherman scenario*:

> I can imagine a situation in which rain has become extremely rare and important, and rain detectors have been disposed all over the territory (whatever the territory – possibly the whole Earth). In the imagined scenario, each detector triggers an alarm bell in the Monitoring Room when it detects rain. There is a single bell; the location of the triggering detector is indicated by a light on a board in the Monitoring Room. After weeks of total drought, the bell eventually rings in the Monitoring Room. Hearing it, the weatherman on duty in the adjacent room shouts: 'It's raining!' His utterance is true, iff it is raining (at the time of utterance) in some place or other. (Recanati 2002: 317)

Here, we are told, the location of rain is not provided by context, yet a full proposition is expressed: the proposition that it is raining. This shows that there is at least a context in which provision of a location by context is not mandatory. This supports the further point that, in cases in which a location is provided by context (for example, in scenarios different from the one we are just considering – call them "non-weatherman scenarios"), it is also not

[3] In this chapter I will simply ignore the fact that Recanati's ***Optionality Criterion*** (discussed in section 1.3. of the previous chapter) overgeneralizes, and thus that it hasn't been established that unarticulation is a matter of optionality. This is consistent with the stance taken on the weatherman scenario and its lessons, expressed at the beginning of the chapter.

mandatory. Since optionality is the mark of true unarticulatedness, it follows that the location of rain in a sentence like "It is raining", when contributed by context, is an unarticulated constituent that is contributed via a process "of the optional variety" – namely, free enrichment.

Now, it is clear from the discussion above that, in order to draw the conclusion that for a sentence like "It is raining" in non-weatherman scenarios the location of rain is provided via free enrichment, Recanati has to be right that the interpretation of the weatherman scenario really is the one he wants us to believe it is. It is crucial for this interpretation that the scenario is judged so that context does not provide a specific location for the rain to take place, thus making the case for the optional character of the provision of a location. That we get an existential, indefinite reading of "It is raining" in the weatherman scenario is one of Recanati's core claims, and it could be checked by employing the following test. The felicity of the dialogue below could be used as in indication that A's initial statement is meant to communicate that it is raining at some location or another:

(1) A: It is raining!
B: Great! Where exactly?
A: I don't know, but we can check.[4]

However, several alternative interpretations of the weatherman scenario have been proposed, interpretations that are compatible with a wide range of views about the semantics of "It is raining". Some of those interpretations correspond to views that postulate an argument place for location in "It is raining". Two such "location variable-friendly" views[5]

[4] Recanati (2007a) mentions a similar test to show that there is a difference between "rain" and "dance". He asks us to compare the following dialogues:

A: Mary danced.	A: It is raining.
B: Where did she dance?	B: Where is it raining?
A: I have no clue.	#A: I have no clue.

The fact that A's reply in the case of "rain" is infelicitous is evidence enough that "rain" requires a specification of the location, in a way in which "dance" does not. However, as Recanati himself agrees, the dialogue becomes perfectly felicitous in the weatherman scenario. Thus I take the felictiousness of the dialogue as a test for the availability of an existential, indefinite reading.

[5] Neale (forthcoming) raises a number of syntactic and semantic questions that such views need to address:

> [S]ome non-trivial decisions would have to be made. (i) Is α [the postulated element in the logical form – my note, Dan Zeman] a noun phrase, on the model of 'Paris'? Or a prepositional phrase, on the model of 'in Paris'? Or a phrase of the category that 'here' belongs to (if it is not a prepositional phrase)? Or some altogether different phrase, perhaps one that doesn't have phonic instances? Where does α occur in ["It is raining"]? What are its sister nodes? What node immediately dominates it? Is α also present in the following sentences, or is it overwritten, as it were, by 'here' or by 'in Paris'?
>
> [(A)] It's raining (/midnight/winter) here.
>
> [(B)] It's raining (/midnight/winter) in Paris.

will be investigated in sections 2.2. and 2.3. In section 2.4. I will then investigate three other views that are not location variable-friendly, but which reject Recanati's analysis by denying the need to appeal to pragmatic processes such as free enrichment.

Before moving on to the alternative interpretations of the weatherman scenario, in order to provide a framework within which to conduct the discussion I will need to set up some technical apparatus. Thus, in the remainder of this section I will introduce the basic notions of the line of semantic inquiry known as "event semantics". The core idea of event semantics is that verbs are predicates of events, an idea that is semantically realized by postulating an event variable in the logical form of sentences. The idea, of course, has its source in Donald Davidson's work, specifically in his paper "The logical form of action sentences". Davidson (1967) argued that the main virtue of event semantics is that it offers a very neat and intuitive way of capturing the inferences between sentences, something that the competing accounts had problems with. Since the times of Davidson, event semantics has developed in a complex semantic theory with many applications and ramifications. In contemporary linguistics event semantics has been coupled with the theory of thematic roles, or theta-roles, a theory dedicated to uncovering and investigating the argument structure of expressions and the way they combine with other expressions. For our purposes here, however, a rough and ready presentation will suffice.

The main idea of event semantics combined with a theory of thematic roles is that any expression combining with a verb realizes a certain thematic role. Thematic roles encode certain features that the denotation of the expressions combining with the verb have. For example, Parsons (1990) identifies as thematic roles the role of AGENT (the performer of an action), the role of THEME (the undergoer of an action), the role of GOAL (the direction of an action), INSTRUMENT (the object used to carry out an action), BENEFACTOR (the person for whose benefit an action is carried out), EXPERIENCER (the person having an

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> [(C)] It's raining (/midnight/winter) here in Paris.
>
> If α *is* overwritten, we need to know the mechanics of overwriting. If it is not, we need to know *where* α occurs in these sentences, what its sisters nodes are, and what node immediately dominates it. These are important questions about the syntactic structures of [(A)-(C)]. There are also semantics questions to answer. How does α function semantically? Not as an aphonic version of the proper name-involving PP (prepositional phrase) 'in Paris', for otherwise S could never use ["It is raining"] to say that it's raining (/midnight/winter) in London; not as an aphonic version of the indexical 'here', for otherwise S could never use ["It is raining"] when he is in London to say that it's raining (/midnight/winter) in Paris, and not as an aphonic version of the indexical 'there', for otherwise S could never use ["It is raining"] when he is Paris to say that it's raining (/midnight/winter) in Paris; and not as an aphonic version of the description-involving PP 'in the capital of France', for otherwise S could never use ["It is raining"] to say it's raining (/midnight/winter) in London, or to say it's raining (/midnight/winter) in the capital of England. (Neale, forthcoming.)

Important as these questions are, I will not address them here, since I will not be defending a "variable-friendly" view. I will, however, answer some similar questions that could be raised for the view I defend in chapter 3.

experience), etc.[6] The expressions realizing the verb's thematic roles are conceived as predicates of events or as relations holding between events and other entities, predicates or relations that are represented in the logical form of sentences as conjuncts. Let me illustrate using the sentence "Brutus stabbed Caesar with a knife". Ignoring tense, the logical form of this sentence in the present framework will be the following:

(2) $\exists e$ [Stabbing (e) & AGENT (e, Brutus) & THEME (e, Caesar) & INSTRUMENT (e, the knife)].

Let me also note that more important for our purposes in this chapter is the existence of the thematic role LOCATION, which encodes the location where an action occurs. The sentence "Brutus stabbed Caesar with a knife in the kitchen" will have the same logical form as above, with an extra conjunct for the LOCATION thematic role:

(3) $\exists e$ [Stabbing (e) & AGENT (e, Brutus) & THEME (e, Caesar) & INSTRUMENT (e, the knife) & LOCATION (e, in the kitchen)].

This framework gives a way to show how various views will represent the sentence "It is raining" and what they claim to be the lexical entry for "rain". In Recanati's view, for example, "rain" will have following lexical entry (an expression within double square brackets signifies the embedded expression's semantic meaning):

(4) [[**rain**]] = λe [RAINING (e)][7],

whereas "It is raining" in the weatherman scenario will be represented as

(5) $\exists e$ [RAINING (e)].

[6] The issue of what thematic roles should be admitted in semantic theory is vexed. There have been many attempts to solve this issue, including Dowty (1979), Jackendoff (1990), Levin and Rappaport-Hovav (1995), Reinhart (2000) – to name just a few. Skeptical voices have been also heard, claiming that the goal to provide a complete list of theta-roles is beyond the powers of linguistic theory (Haiden (2005)). This important issue, however, is not my concern here. I will be using events semantics and theta theory as an easy way to illustrate the points to be made, and for such a limited purpose I think such fundamental issues could be left aside.

[7] Since the representation of time is not my concern here, I will leave temporal reference aside in giving lexical entries of expressions, as well as in representing the truth-conditions of sentences, both in this and in following sections.

Now, one aspect of thematic roles that is relevant for the present discussion of the relation these have with syntactic representation. This relation has been the object of many debates in linguistics. One relevant principle that I will assume here is the following, in its most used formulation:

> **THETA CRITERION** Each argument bears one and only one theta-role, and each theta-role is assigned to one and only one argument. (Chomsky, 1981: 36)[8]

With these tools in hand, we can now move on to investigate alternative interpretations of the weatherman scenario. The most widespread alternatives to Recanati's interpretation of the weatherman scenario correspond to two alternative theories to the pragmatic view which both claim that "rain" has an argument slot for location. Recanati describes the two theories as follows:

> According to [one] theory, which is an instance of the standard view, the slot must be contextually filled with a specific location; and a specific location is indeed provided in the weatherman example, namely the Earth. The existential force of the weatherman example is accounted for by interpreting the location relation in the broad sense. According to [the other] theory, the argument slot need not be filled with a specific location; it may be bound by a covert existential quantifier, and that is what happens in the weatherman example. (Recanati, 2007a: 141)

2.2. Raining on Earth/in the territory

I have remarked above that in order for the weatherman scenario to lend support to Recanati's view, the sentence "It is raining" should have an interpretation according to which there is no contextually provided location and that the truth-conditions of the sentence should be that it is raining at some location or another – that is, the sentence should have an existential, indefinite, reading. But this interpretation of the sentence in the envisaged scenario has been questioned: some authors have claimed that in the weatherman scenario there actually is a contextually provided location. Those authors have pointed out that what the context provides is a *maximal* location: "the territory" (Martí (2006)), the whole Earth (Stanley (2005a) and Neale (2007)). Thus, for example, Martí states that

[8] There is a huge literature surrounding the **THETA CRITERION**. Although there are authors that reject it (for example, Heim and Kratzer (1998)), I take it that the criterion, or at least some variant of it, is still tenable.

> I do dispute that, in the weatherman example (…), there is no place that is contextually salient; there *does* seem to be a place that is contextually provided in that example, namely, *the territory*. That is, (…) the unarticulated place of rain is provided contextually, and the weatherman's sentence just means 'it's raining in the territory'. This means that there is no example that suggests that rain gives rise to the existential interpretation, and hence I conclude that it doesn't. (Martí, 2006: 153-4)

Stanley (2005) also concurs in this interpretation of the weatherman scenario:

> For in Recanati's envisaged example, it does seem like a location is provided. The location that is provided is *the whole earth* (not even the whole universe). So in order to make sense of his example, there does need to be a contextually provided location. Furthermore, even if rain detectors were set up everywhere in the universe, it is not clear whether the relevant utterance of "It's raining" would have the whole universe supplied as the value of a contextual variable, or express a complete proposition in the absence of a contextually supplied location. (Stanley, 2005a)

Before addressing head-on the problems raised by such an interpretation, let me spend some time on the conclusion drawn by Martí in the quote above. The idea I want to stress here is that one may agree with the interpretation of the weatherman scenario and still reject the conclusion Martí draws. For, it seems that even if in the weatherman scenario context provides a location (the territory/the whole Earth), there still could be an existential interpretation of the sentence.[9] As Martí herself acknowledges (she attributes the point to Orin Percus (Martí, 2006: 154, footnote 10)), "It is raining" in the weatherman scenario could mean that it is raining somewhere in the territory. That this is a possible reading could be seen by employing the same test as in (1) above:

(6) A: It is raining [in the territory/on Earth]!
B: Great! Where exactly?

[9] Neale is quite explicit about this. Commenting on the scenario he himself devises in order to argue against Recanati's interpretation of the weatherman scenario (one involving "the island of Recanto, a republic located a few hundred miles off the coast of northern California"), and in which the same things happen as in the original scenario, Neale interprets the weatherman's sentence "It is raining" as expressing "the proposition that it is raining somewhere or other on Recanto" (Neale, 2007: 302).

A: I don't know, but we can check.

The dialogue seems perfectly fine to me, and thus we shouldn't rule out the existential interpretation of the sentence. However, Martí's reason for resisting this interpretation is the claim that with a sentence like

(7) It is raining in Paris

the existential interpretation is harder to get. But this is simply not true. As Recanati shows (on behalf of his objector), there are situations in which it rains in some sub-locations of Paris (say, the V^{eme} and the VI^{eme} arrondisments), and not in the others, and we could still rightfully say, in come contexts, that it is raining in Paris. This kind of situations is such that, as Recanati puts it, the sub-locations are significant for the location mentioned in the sentence. So, Martí's conclusion doesn't follow: the example could be construed precisely as giving rise to an existential interpretation (within the contextually provided location).

Where does this leave us? Dialectically speaking, Recanati is thus right in that we could get an existential interpretation of the sentence "It is raining" in the weatherman scenario. But his objectors are also right in that in the weatherman scenario a location is provided by context: the territory or the whole Earth. At this point talk about sub-locations and their relation to the location they are sub-locations of becomes highly relevant. This leads to a distinction between two senses of the phrase "the location of rain":

> in the *narrow sense*, the place of rain is the place which rain actually fills; in the *broad sense*, the place of rain can be any place that includes the narrow-place-of-rain as a sub-location. If it rains in some place (in the narrow sense) then (in the broad sense) it rains in any place including it. (Recanati, 2007a: 137-138)

I will use LOCATION$_B$ to signify location in the broad sense, and LOCATION$_N$ to signify location in the narrow sense. The relation between LOCATION$_B$ and LOCATION$_N$ is spelled out by Recanati as follows (the "<" symbol represents the sub-location relation):

(8) $(e)\ (l)\ [\text{LOCATION}_B\ (l, e)$ iff $\exists l'\ (\text{LOCATION}_N\ (l', e)\ \&\ l' < l)]$.

According to the view that the location of rain in the weatherman scenario is the maximal location, then, the lexical entry for "rain" would be

(9) [[**rain**]] = $\lambda l\, \lambda e$ [RAINING (e) & LOCATION_B (l, e)],

whereas "It is raining" in the weatherman scenario (interpreted as meaning that it is raining in the territory/on Earth) will be represented as

(10) $\exists e$ [RAINING (e) & LOCATION_B (the territory/the Earth, e)].

Now, Recanati's move is to question the interpretation of the weatherman scenario as involving location in the broad sense, LOCATION_B. The problem Recanati sees with this interpretation is one of coherence with the commitments of the truth-conditional semantic view. Recanati's complaint is that by using broad location in the semantics of "It is raining", the difference between "rain" and "dance" is lost, a difference wholeheartedly advocated by truth-conditional semanticists. The following quote nicely makes the point:

> [n]othing prevents us from analyzing 'dance' the way we have analyzed 'rain', i.e. as involving a covert reference to some location, possibly the Earth, understood as the broad location of the dancing event. To say that Mary danced, on that analysis, is to say that there is (on Earth) some sub-location *l'* where she danced. This captures the standard, location-indefinite reading of 'dance'. In other words, that defense of the standard view weakens it so much that the original intuition is lost. The original intuition was that 'rain' sentences involve some form of reference to some specific location of rain, in the narrow sense of 'location'. By conceding that this need not be the case, one accepts my point that the contrast between 'rain' and 'dance' is ill founded, or at least exaggerated. (Recanati, 2007a: 143-144)

This has the result of "rain" "changing sides", as it were: it is now in the same ballpark as "dance" – whereas according to truth-conditional semantics the two expressions are different (precisely in that "dance" does not have an argument slot for location, whereas "rain" was thought to have such a slot). This can be easily seen by comparing both expressions with "arrive". Many authors, Recanati included, take it as an uncontroversial fact that "arrive" has

an argument slot for the destination, as could be seen from the infelictitousness of A's answer in the following dialogue:

(11) A: John has arrived.
B. Where did he arrive?
#A. I have no clue.

If both "rain" and dance" are treated as involving location in the broad sense, they will both differ from "arrive". The difference between "arrive", on one hand and "rain" and "dance" on the other is easily seen in the proposed lexical entries for the three expressions compared in (12), the first two involving location in the broad sense, while the third location in the narrow sense:

(12) [[**rain**]] = $\lambda e\, \lambda l$ [RAINING (e) & LOCATION_B (l, e)]
[[**dance**]] = $\lambda e\, \lambda a\, \lambda l$ [DANCING (e) & AGENT (a, e) & LOCATION_B (l, e)]
[[**arrive**]] = $\lambda e\, \lambda a\, \lambda l$ [ARRIVING (e) & AGENT (a, e) & LOCATION_N (l, e)].

What the view under scrutiny would predict, then, would be that instead of "rain" patterning with "arrive", as traditionally thought, it patterns with "dance".

One could remark at this point that the fact that "arrive" involves location in the narrow sense is not as uncontroversial as it is traditionally thought to be. Indeed, it doesn't seem hard to find contexts in which the location for "arrive" needs to be a location in the broad sense. Saying, for example, that John has arrived in Germany by plane means, of course, that he has arrived at a certain airport situated close to or in a certain German city (at least assuming that John is not an adventurous pilot who likes to land on wild spots). This use of "in Germany" is a use of a location in the broad sense. If so, it is not sure that the kind of contrast drawn by Recanati between "rain" and "dance", on one hand, and "arrive" on the other could be really sustained. However, this is of no help for the proponent of the view analyzed here: for, if one were to treat "arrive" as having an argument place for a broad location, then there will not remain any difference between "rain", "dance" and "arrive" at all (except the different number of argument places, of course). The initial contrast is, again, lost, and this time even more dramatically than before. This result, I take it, is unpalatable for the proponent of the view that "rain" has an argument slot for locations. I thus conclude that the

interpretation of the weatherman scenario according to which context provides a maximal location (the territory/the Earth) is not convincing.

2.3. Raining at some place or another

One of the alternative interpretations of the weatherman scenario corresponds to the view that "It is raining" has an argument place for location, but that in certain cases when a specific location is not mentioned the variable is bound by a covert existential quantifier. This will take care of the existential reading of the sentence "It is raining" in the weatherman scenario: according to the view, the sentence simply means that it is raining at some location or another. Using the event semantics framework introduced above, according to the proposed view the lexical entry for "rain" would be

(13) $[[\textbf{rain}]] = \lambda l\, \lambda e\, [\text{RAINING}\,(e)\ \&\ \text{LOCATION}\,(l, e)]$,

whereas "It is raining" in the weatherman scenario (interpreted as meaning that it is raining at some location or another) will be represented as

(14) $\exists e\, \exists l\, [\text{RAINING}\,(e)\ \&\ \text{LOCATION}\,(l, e)]$.

However, this does not mean that in order to capture this reading we need to postulate a location variable for "rain" that gets bound by a covert existential quantifier in the weatherman scenario. For one, such a view will have some commitments that may not be totally harmless. For example, such a view will need to postulate variables that could both i) get a definite value – such as when, for example, one says "It is raining" and wants to communicate that it is raining in some specific place and ii) undergo existential closure in cases such as the weatherman scenario. In this connection it is important to note that pronouns, considered by many authors the paradigm of variable-like behavior, cannot undergo existential closure. As both Recanati and Martí observe, in a sentence such as

(15) He is tall,

"he" cannot simply refer to an individual or another. Without the provision by context of a salient individual to serve as reference for "he", the sentence in question has no chances to be

understood[10]. Thus, the proponent of the view under consideration need to claim that the variables that fulfill both condition i) and ii) are of a different type than pronoun-like variables, on pain of running afoul of some very obvious facts.[11]

Secondly, Recanati offers a more complex argument against the view that the location of rain is bound by a covert existential quantifier in the weatherman scenario. He argues that the view allows a reading that should not be allowed. The reading Recanati talks about can be brought to the fore by considering a reverse variant of the weatherman scenario, one involving the sentence "It is not raining". The scenario Recanati constructs is the following:

> Imagine a situation in which the absence of rain has become extremely rare and important (it rains almost everywhere and everytime). All over the territory detectors have been disposed, which trigger an alarm bell in the Monitoring Room when they detect the absence of rain. There is a single bell; the location of the triggering detector is indicated by a light on a board in the Monitoring Room. After weeks of flood, the bell eventually rings in the Monitoring Room. Hearing it, the weatherman on duty in the adjacent room shouts: 'It's not raining!' (Recanati, 2007a: 141)

The problem that this scenario poses for the view that the location associated with "rain" undergoes existential closure is the following. Since we have existential quantification and negation, scope ambiguities should arise. The interaction between negation and the existential quantifier should result in two readings of the sentence in the reverse weatherman scenario: one according to which "It is not raining" means that at some location or another, it is not raining (the quantifier taking wide scope over negation); another according to which the sentence means that it is not the case that it is raining at some location or another (negation taking wide scope over the quantifier). The view under consideration predicts that both readings are possible; however, on the second reading, the sentence "It is not raining" is false, since it is the case that it is raining at some location or another. This leaves the first reading as the interpretation of the sentence "It's not raining" in the scenario above; but this interpretation of the sentence in the scenario given is, Recanati claims, hard (if not

[10] That is not to say that one cannot associate with the expression "he" some descriptive material that would constitute a certain level of meaning – for example, the description "the salient male in the present context" (which comes close to what Kaplan (1989) has called "character"). At that level of meaning the hearer can grasp some proposition – maybe properly called a "descriptive proposition". But the point remains that, when it comes to the "official proposition" expressed by (15), failure to identify the person referred to by "he" results in failure to grasp that official proposition. For a discussion of various layers of meaning associated with an utterance, see, among others, Perry (2001).

[11] Thus Recanati (2002, 2007a) calls them "optional variables".

impossible) to get. Thus, the view allows a reading that should not be allowed. Things are rather tricky here, because one might think that the remaining interpretation (the one according to which "It's not raining" means that at some location or another, it is not raining) is exactly the right interpretation of the sentence in the scenario given. But, as far as I understand it, I think Recanati's point is that the sentence simply cannot be used to convey what the weatherman wants to convey. But there is nothing in the view that location should undergo existential closure in certain cases that should prevent the sentence to be used such that to allow the weatherman to convey what he wants to convey. So the view under scrutiny is in trouble.

To be sure, as Recanati (2010) himself agrees, things are not that simple. For what would rule out the undesired reading is appeal to some independently motivated principle about the interaction of existential quantification and negation, one that would rule out that, for a certain class of implicit variables, existential quantification cannot take wide scope over negation. Such attempts exist, although not for the specific case of location variables. Recanati's point, however, has been that the proponent of the view under scrutiny owes us an explanation of why this cannot happen for the class of variables associated with predicates such as "rain". This burden of explanation *per se* already constitutes a point against the view, given that there are other options according to which no such explanation is needed, since the undesired reading is not even generated.[12]

I thus conclude that the view according to which "It is raining" has an argument place for location that is bound by a covert existential quantifier (binding that takes care of the interpretation of "It is raining" in the weatherman scenario as meaning that it is raining at some location or another) is at best problematic, if not downright incorrect.

2.4. Other views

The main aim of this chapter was to defend Recanati's truth-conditional pragmatist view against interpretations of the weatherman scenario that would support truth-conditional semantic views claiming that the location of rain has to be represented at the level of the logical form of "It is raining". I have investigated two such views above and shown that they cannot account for the indefinite reading "It is raining" has in the weatherman scenario. So, strictly speaking, the goal of the chapter has been achieved. However, there are other views

[12] For making the point that there are other views that don't have troubles with the reverse weatherman scenario (Recanati's own view presented above and the view, analyzed below, that "rain" has an argument slot for location understood in a broad sense), see Recanati, 2007a: 142.

about the semantics of "It is raining" that agree with Recanati that the location of rain need not be represented at the level of the logical form of "It is raining", but reject the pragmatic mechanisms by which Recanati claims the location enters the truth-conditions of the sentence. In this section I will investigate three such alternative views: Taylor's (2001, 2007) "parametric minimalism", the "optional variables" view proposed by Martí (2006) and the "event-based approach" put forward by Cappelen and Hawthorne (2007). I will conclude that none of these views endangers Recanati's position.

2.4.1. Parametric minimalism

Taylor characterizes parametric minimalism as

> the view that a sentence typically sets up a semantic scaffolding which constrains, without determining, its own contextual completion. The sentence does so by containing a variety of parameters the values of which must be contextually supplied in some more or less tightly constrained way. Sometimes the to-be-contextually-evaluated parameter is explicitly expressed in the syntax of the sentence. (…) Sometimes, however, the to-be-contextually-evaluated parameter is "suppressed" or hidden. (Taylor, 2001: 53)

The "hiding place" of such parameters is what Taylor calls "the subsyntactic basement of suppressed verbal argument structure" (the lexical level), and the location of "rain" is an example at hand. Taylor's favorite view about "rain" is that the subatomic structure of the verb explicitly marks raining as a kind of change that locations undergo – that is, in the framework of event semantics, "rain" has a lexically specified argument slot for location that plays the THEME role. The existence of the location of rain at the lexical level of "rain" is responsible for the need to specify a location for the rain event for sentences like "It is raining", for without such a specification the sentence cannot be evaluated for truth. This need for a specification leads Taylor to the conclusion that "It is raining", although syntactically complete, is not semantically complete. Things are not the same with "dance", however. The difference between "rain" and "dance" is explained by Taylor in the following paragraph:

> The answer, I think, has to do with how 'to dance' and 'to rain' relate to the places where rainings and dancings happen. 'To dance' does not mark the place where a dance happens as the undergoer of the dance. The theme or undergoer of a dancing is

> the dancer herself. The place where a dancing "takes place" is merely the place where the dancer dances. When Laura is dancing in a place, it is not the place that undergoes the dancing. This, I think, is what explains why, despite the fact that one cannot dance without dancing somewhere or other, a sentence containing 'to dance' can be semantically complete, even if the place where dancing happens is not contextually provided. That a dancing must take place somewhere or other is a (mutually known) metaphysical fact about the universe – a fact that supervenes on the nature of dancing and the structure of space-time. But that metaphysical fact is not explicitly reflected in the subsyntactic structure of the lexicon. (…)Things are quite otherwise with the verb 'to rain'. I take the verb itself, and its subsyntactic lexical structure, to be the source of the felt need for the contextual provision of a place or range of places where a raining happens. Facts about the subsyntactic lexical structure of the verb directly entail that nothing fully propositionally determinate has been expressed by an utterance of a sentence like ["It is raining"] unless a place is contextually provided. (Taylor, 2001: 54)

Parametric minimalism might be a coherent view, but the treatment given to the predicate "rain" does not seem right to me. Taylor's proposal is to modify the lexical entry for "rain" so that the location of rain is treated as playing the THEME role, instead of the LOCATION role as assumed so far. That is, according to Taylor, the lexical entry for "rain" would be:

(16) [[**rain**]] = $\lambda e\, \lambda l$ [RAINING (e) & THEME (l, e)].

One question that arises immediately arises is: how would time be treated in Taylor's view? Although Taylor does not give anywhere an answer to this question, a good guess would be that he would treat time as THEME as well.[13] In case the answer is positive, then what we have here is a clear negation of the **THETA CRITERION**: there is more than one argument playing a certain theta role. If the answer is negative, then Taylor owes us an explanation why location and time are treated differently. It would seem, at least, that time is the undergoer of the rain event in the same sense in which location is. Of course, such an explanation may be forthcoming, but the burden of explanation is on Taylor's shoulders.

[13] What about the manner of raining? Would that be treated also as THEME? If not, why not?

A second observation related to Taylor's view is simply that there are uses of "rain" in which the THEME role is played by other expressions. For example, in the sentence "It is raining cats and dogs", the expression "cats and dogs" is most likely treated as playing the THEME role. One could object that this is not really the case: that, in the sentence given, the cats and dogs are not the undergoers of the raining event, so that they could not play the THEME role. I don't want to enter into metaphysical debates here, but it seems to me that there is a sense in which the cats and dogs are precisely the undergoers of the event. A raining event involves an up-down movement of some matter; since that matter is the thing that moves, it is the undergoer of the movement. It would thus seem that, after all, the cats and dogs are the undergoers of the event. Another objection to the example given could be that it belongs to figurative speech, and thus cannot be accounted for by usual semantics mechanisms. This, however, presupposes that different mechanisms are in play in literal and figurative speech, and that these mechanisms are exclusive (and not, as may seem appealing, complementary). But even if this particular example is no good, there are other examples in which the charge of figurativity cannot be leveled: take, for example, the sentence "Once in antiquity it rained blood". Here "blood" in used literally and it has all the chances to be interpreted as playing the THEME role. Now, the take-home point is that related examples could be provided in which a location is explicitly mentioned, as in "It is raining cats and dogs in Boston" or "Once in antiquity it rained blood in Alexandria". Given that only one entity can play a given Theta role (by the **THETA CRITERION**), the location of rain cannot be interpreted as playing the THEME role. Therefore, Taylor's suggestion is incorrect.

Now, there is at least one move that Taylor could make in answer to the objections above. It consists in claiming that there are several thematic sub-roles that could be subsumed under the general thematic role THEME. Thus, for example, the undergoer of an event could realize the thematic sub-role THEME_1, whereas other features related to the event could be captured by other sub-roles. The location of rain, Taylor could claim, realizes one of those sub-roles – say, the sub-role THEME_n. However, such a take on the issue would require a careful analysis of the nature of the different sub-roles associated with the general thematic role THEME. But nothing like that is present in Taylor's papers, and the burden of proof is, again, on his shoulders.

2.4.2. The optional variables view

A different view about the semantics of "rain" that I investigate is that of Martí (2006). Martí's aim is "to argue that there is a middle ground between [Recanati and Stanley's

positions] which is more satisfying than either of them in a number of crucial respects" (Martí, 2006: 135-136).[14] She starts by noting that "rain" has similar behavior to pronouns like "he", adjectives like "tall" or relational expressions like "local": all of these expressions exhibit both bound-variable and free-variable behavior. This, Martí claims, is accounted for by postulating a variable for location in "rain". But "rain" also gives raise to an existential interpretation, and Martí concedes to Recanati (without ultimately agreeing with him in this) that in the weatherman scenario the sentence "It is raining" is interpreted as raining somewhere or another. In order to capture this reading, however, Martí does not appeal to a covert existential quantifier (as we have seen in section 2.2. that it could be done), but invokes instead the distinction between metaphysical unarticulatedness and communicational unarticulatedness introduced in chapter one (section 1.2.). The claim is that, since by metaphysical necessity a raining event is bound to take place at a certain location, we don't need to articulate the location in the weatherman scenario: we get the (indefinite) location for free, as it were. The novelty of Martí's proposal thus consist in accounting for the bound- and free-variable behavior of "rain" by postulating a location variable in "rain", but at the same time accounting for the existential readings of "It is raining" sentences that we get in the weatherman scenario without doing so. In Martí's view, then, the location variables are optionally generated[15], that is, the variables are adjuncts, rather than arguments. This characteristic of the location variables allows her to account for all the readings (bound, free and existential) without appealing to pragmatic mechanisms of the kind Recanati appeals to, such as free enrichment.

Although Martí's analysis does not make appeal to free enrichment, in my opinion it is still very close to Recanati's view. As she herself acknowledges, the view she proposes uses part of the apparatus proposed by Recanati – for example, the technical device called "variadic functions". I will talk about variadic functions at length in the following chapters. Let me note for now that Martí's view has all the ingredients of Recanati's view (variadic functions, the distinction between metaphysical and communicational (un)articulatedness, etc.) – yet she draws a different conclusion. But how different is this conclusion from Recanati's is not clear. It is true that one important consequence of Martí's view, as she is

[14] Actually, Martí proposes this view as an alternative to Recanati's, but without fully endorsing it. In proposing the view to be presented, she operates on the assumption that Recanati's interpretation of the weatherman scenario is correct. As we have seen above (section 2.2.), her view is that in the weatherman scenario context supplies a location to the interpretation of the sentence – namely "the territory". In suing the phrase "Martí"s view" in this subsection what I will really mean is "the view she proposes under the assumption that Recanati's interpretation of the weatherman scenario is correct".

[15] Not to be conflated with the type of variables that Recanati calls "optional" – see footnote 11 above.

keen to stress, is the rejection of the need to appeal to free enrichment in accounting for the three readings. But it seems to me that what Martí does is just trade one locus of optionality with another: instead of situating optionality in the pragmatic processes themselves (so that the location of rain could but need not be provided in certain contexts, such as the weatherman scenario), she situates it in the generation of variables themselves (which can but need not to be generated in a certain contexts, such as the weatherman scenario).[16]

Another worry that one might have in connection to Martí's proposal relates to precisely this point. The crux of the view is the claim that the location variables can be optionally generated. This claim is, at best, controversial. What needs to be explained is precisely why and when these variables are optionally generated. The appeal to metaphysical unarticulatedness in those cases in which the variables are not generated (the weatherman scenario) doesn't seem to me to be enough to explain this kind of optionality for the location variables. After all, it is also a metaphysical necessity that an event of arriving, for example, is an arriving at some location, and yet, as most semanticists agree, "arrive" *does* have an argument place for location. So, metaphysical unarticulation alone won't do. Moreover, Martí doesn't address what I take to be the most important argument in favor of postulating an argument place for "rain": Stanley's Binding Argument (to be presented in the next section), according to which if we have a variable for location in the bound cases, we should have it as well in the unbound cases, including the weatherman scenario. True, Martí states that she does not agree with Stanley's ***Binding Criterion*** (presented in section 1.3. of chapter 1), but, as I will show at the beginning of chapter 3, one could reject the ***Binding Criterion*** and still hold that in some cases the best explanation of bound readings of sentences is the postulation of a variable at the level of logical form of simple, unembedded sentences. Although things will become clearer after my discussion of a particular instance of the Binding Argument in chapter 3, I tentatively conclude that Martí's proposal is not fully convincing since a suitable treatment of (certain instances of) the Binding Argument is missing from her view.

2.4.3. "The event-based approach"

The last alternative view to Recanati's version of truth-conditional pragmatics that I investigate is the one found in Cappelen and Hawthorne (2007). Also operating within the framework of event semantics, Cappelen and Hawthorne side with Recanati in claiming that

[16] This, in itself, is not such a bad thing. My view, to be presented in the next chapter, could also be construed as an alternative to Recanati's way of situating optionality. However, see the following paragraph for more substantial reasons to not embrace Martí's view.

"rain" does not have an argument slot for locations, in this respect "rain" being on the same par with "dance". The semantics the two authors offer for "rain", "dance" and other expressions (both in bound and unbound cases) is what they call "the event-based approach": basically, the view that at the semantic level those expressions are predicates of events, events that are subjected to domain restrictions by context (in the case of bound readings by the linguistic context, in the case of unbound readings by the extra-linguistic context[17]). Thus, although they are not explicit about this, in their view, the lexical entry for "rain" will be something like the following:

(17) [[**rain**]] = λe [RAINING $f(e)$],

where "$f(e)$" is a function that takes care of the domain restriction of the event e, precluding thus the need to postulate an argument slot for location in "rain". In the weatherman scenario, they would claim, the domain of the event remains unrestricted (or, if there is a restriction, it is to the whole domain: the Earth/the territory). What needs to be explained further, however, is why there is such a felt difference between a sentence like "It is raining" (as uttered in non-weatherman scenarios) and a sentence like "She dances": we feel the need for a location to be specified when encountering the first, but we are content without such a specification when encountering the second. The explanation Cappelen and Hawthorne offer is a pragmatic one, having to do with the informativeness of the two sentences. In their own words:

> [W]hat explains the difference between [a sentence like "It is raining" and a sentence like "She dances"] is not a general semantic contrast between the verbs 'to rain' and 'to dance', but rather the need for a specific location in order to achieve the appropriate level of informativeness. Put within the framework of the event-based approach: it is true enough that there is typically domain restriction on the raining events in 'It was raining yesterday' but not so typically such a restriction in 'Nina danced with Joseph yesterday', yet this can be explained without positing any special structure that divides 'rain' from 'dance'. (Cappelen and Hawthorne, 2007: 102)

The first thing to note is that Cappelen and Hawthorne's account is perfectly compatible with a truth-conditional pragmatic approach to the phenomena. As we have seen

[17] I will deal with the bound cases, and the way Cappelen and Hawthorne answer the Binding Argument in chapter 3 (section 3.1.4.).

above, Recanati's view could easily be cast in an event semantics framework. The only difference concerns the domain restriction element. Now, Recanati has explicitly expressed agreement with this kind of approach: as he puts it, an alternative to his way of seeing things would be "to think of the pragmatic enrichment at issue in terms of a contextual restriction on the domain of the event quantifier, rather than in terms of an extra conjunct in the scope of that quantifier" (Recanati, 2007a: 134).[18] Of course, this opens up the question of how domain restriction itself is treated – basically the same options as the ones investigated in this chapter in connection to location are possible. This thesis, however, is not concerned with domain restriction, and so I will not further investigate whether a truth-conditional pragmatic view about domain restriction is ultimately acceptable. The point I'm making is that nothing Cappelen and Hawthorne say is in tension with the event semantics framework provided by Recanati and adopted here. Thus, without any other arguments specifically directed towards it, Cappelen and Hawthorne's view (at least as presented in their (2007) paper) does nothing to undermine a truth-conditional pragmatic view of the sort advocated by Recanati for locations.

The conclusion of this section is that the alternative interpretations of "It is raining" in the weatherman scenario investigated up to now are not solid enough to undermine Recanati's truth-conditional pragmatist view – neither the ones claiming that the location of rain needs to be represented at the level of the logical form, nor the ones denying this claim but which reject the need to appeal to the kind of pragmatic mechanisms postulated by Recanati. However, there is another argument that I think puts truth-conditional pragmatics in serious trouble, and this is Stanley's (2000) Binding Argument. The next section is dedicated to presenting the argument. The next chapter will then investigate a number of answers to it.

2.5. The Binding Argument for locations

I take the considerations in sections 2.2., 2.3., and 2.4. above to provide more or less satisfactory answers to the objections leveled against Recanati's interpretation of the weatherman scenario mentioned in section 2.1. This has the consequence that a pragmatic treatment of sentences such as "It is raining" is still standing. However, what I take to be the most powerful argument against such a treatment has not yet been considered: the argument given in Stanley (2000), known as "the argument from binding" ("the Binding Argument", as

[18] It is not clear to me whether Recanati was aware of Cappelen and Hawthorne's proposal (both articles appeared in 2007), so that the option Recanati mentions directly refers to their approach, or it is a pure coincidence.

I will call it). In this section I will just present the argument, in order to set the stage for the answers to it I will consider in the next chapter.

Stanley's objection starts with the observation that the location of a rain event can be bound, even if there is no explicit mention of a location in the sentence. Thus, the sentence

(18) Every time John lights a cigarette, it rains,

has a reading according to which for every time *t* at which John lights a cigarette, it rains at *t* at the location in which John lights a cigarette at *t*. Of course, this is not the only possible reading of the sentence – for example, the reading according to which for every time *t* at which John lights a cigarette, it rains at *t* at the location in which the sentence has been uttered, or at some other salient location would be another possible reading. However, in this last reading the location of rain is not bound, that is, the location of rain does not vary with the quantifier "every time John lights a cigarette". Stanley's first claim is that the bound reading creates problems for the truth-conditional pragmatic view. To see why this is so, consider the semantic clause that the truth-conditional pragmatist will associate with "rain" (where "Den" signifies denotation):

(19) Den ("rains") relative to a context *c* = that function *f* that takes <*t*, *l*> to True if it is raining at *t* in *l*, where *l* is the contextually salient location in *c*, takes <*t*, *l*> to False if it is not raining at *t* in *l*, where *l* is the contextually salient location in *c*, and is undefined otherwise. (Stanley, 2000: 415)

Given this clause, the truth-conditions of the sentence "It is raining" under the truth-conditional pragmatic view will be:

(20) "It is raining (*t*)" is true in a context *c* iff the denotation of "rains" takes <*t*, *l*> to the True, where *l* is the contextually salient location in *c*.

But this analysis doesn't have enough resources to handle a more complicate sentence like (18). The only available rendering of the sentence by the truth-conditional pragmatic view is

(21) For every time *t* at which John lights a cigarette, the denotation of "rains" takes <*t*, *l*> to the True, where *l* is the contextually salient location in the context of utterance of (18),

As we have seen before, this is one possible reading, but not the one we want to capture. Note that the problem is not that the location of the raining event in the analysis above is that of the speaker; the proviso "contextually salient location in the context of utterance" allows that the location of the raining event to be a different one than that of the speaker. The problem, as it should be obvious, is that the truth-conditional pragmatic analysis can offer only one *particular* location for the raining event, whereas what we want is a range of locations that vary with the quantifier "every time John lights a cigarette". This, the analysis given cannot offer.

The dialectical situation is thus the following. The truth-conditional pragmatic view cannot account for the bound readings of "rain". Since an analysis according to which the location of rain is part of the logical form of such sentences has no problem with such examples, it should be preferred over the truth-conditional pragmatic approach. Stanley's own version of such a view is one on which (18) will be represented as

(22) Every time *t* at which John lights a cigarette, it rains <*f*(*t*), *g*(*t*)>,

where *f* and *g* are function variables. The first function

> (...) maps entities to times, and the second function maps entities to locations. Context supplies the value of the function variables '*f*' and '*g*'. In the usual case, context supplies the identity function to these function variables. (...) But in examples such as ["Every time John lights a cigarette, it rains"], context supplies a function different from the identity function to one of the higher-order variables. In the case of ["Every time John lights a cigarette, it rains"], the temporal node contains a complex variable '*f*(*t*)' and the locational node contains a complex variable '*g*(*t*)'. When ["Every time John lights a cigarette, it rains"] is evaluated with respect to a context, '*f*' is assigned

> the identity function, and 'g' is assigned a function from times to locations. (Stanley 2000: 416–17)[19]

However, this is not the end of the story. Example (18) has shown that the truth-conditional pragmatic view has problems with accounting for the bound readings of "rain", in that the resources of the theory are too poor to yield the required reading. This should be reason enough for preferring another analysis that has no such problems. We have seen that Stanley has offered such an analysis. But besides having the advantage of being able to account for the desired reading, Stanley's analysis is buttressed also with a positive argument, one that constitutes a real challenge for the proponent of the truth-conditional pragmatic view. Thus, once it has been assumed that the location of rain must be represented at the level of the logical form of (18), as it seems secure to assume, there is a straightforward argument that it must also be represented at the logical form the unembedded sentence "It is raining". This argument is an instance of a general argument schema known as "the argument from binding" ("the Binding Argument", as I will call it), and can be put as follows:

1. Truth-conditional pragmatists say that in the simple statement "It is raining", the location of rain is unarticulated.
2. In "Every time John lights a cigarette, it rains", binding occurs: the location of rain varies with the values introduced by the quantifier "every time John lights a cigarette".
3. There is no binding without a bindable variable.
4. Therefore, "It is raining" involves a variable for the location of rain.
5. It follows that the truth-conditional pragmatist is mistaken: in the simple statement "It is raining", the location of rain is articulated. It is the (contextually assigned) value of a free variable in logical form, which variable can also be bound (as in the complex sentence "Every time John lights a cigarette, it rains").[20]

As I said, I take this argument to pose a serious challenge to the truth-conditional pragmatic view. But not only that: the argument could be used to argue against other views about

[19] For misgivings about Stanley's particular way of implementing the location variable-friendly view, see for example Cappelen and Hawthorne (2007).
[20] This argument is the result of replacing the original sentence "Everywhere I go, it rains" in a similar argument given by Recanati (2002: 328-329) with Stanley's example, the sentence "Every time John lights a cigarette, it rains".

location as well. Originally Stanley intended it to work against truth-conditional pragmatics about location, but it is pretty clear that the argument can also be used to argue against other views that claim that location need not be represented at the level of the logical form of sentence such as "It is raining". Relativism about locations, for instance, is such a view.[21] For, according to the ***Distribution*** principle introduced in chapter 1 (section 1.2.), an element that is relevant for the truth-conditions of an utterance is either part of the content of the utterance or part of its circumstance of evaluation. But since the conclusion of the Binding Argument says that an element needs to be represented at the level of the logical form of the target sentence – and thus, part of its content, then, by ***Distribution***, it cannot be part of the circumstance of evaluation of an utterance of that sentence. Thus, a related instance of the argument could be used against relativism about locations, an instance that could be put as follows:

1L. Relativism about locations claims that in "It is raining", the location of rain is part of the circumstance of evaluation.
2L. In "Every time John lights a cigarette, it rains", binding occurs: the location of rain varies with the values introduced by the quantifier "every time John lights a cigarette".
3L. There is no binding without a bindable variable.
4L. Therefore, in "It is raining" there is a variable for the location of rain.
5L. Relativism about locations is mistaken, since the location of rain is articulated in the logical form of "It is raining" (and hence, by ***Distribution***, it is not part of the circumstance of evaluation).

I will talk about relativism in later chapters, but the take-home point of the present discussion is simply that the instance of the Binding Argument could be used to argue against several views about location.

Let me close this chapter with a remark about the connection between the general argument schema I called the Binding Argument and the Binding Criterion. The Binding Argument is a general argument schema that could be applied to a wide number of

[21] Relativism about locations is not supported by many philosophers today, although Lewis (1981) and Kaplan (1989) have endorsed it. (Kaplan (1989) is a special case because, although he makes some remarks that support the view, location does not actually end up in the circumstances of evaluation in Kaplan's "logic of demonstratives".) Currently, relativist views about location are held (or, at least, viewed sympathetically) by Recanati (2007b) and Lasersohn (2008).

expressions. In Stanley's (2000) original article, the Binding Argument has been applied, besides sentences containing meteorological predicates such as "rain", to sentences containing gradable adjectives, quantifiers, relational expressions etc. The various types of expressions that figure in the sentences to which the argument schema can be applied constitute thus one dimension that is responsible for the Binding Argument's wide range. Now, given that the conclusion of the argument schema states that we need to postulate in the logical form of the target sentences all kinds of variables associated with the expressions that appear in the sentences in question (e.g., variables for locations are associated with meteorological predicates, variables for comparison classes with gradable adjectives, variables for quantification domains with quantifiers, etc), a different dimension that is responsible for the Binding Argument's wide range is constituted by the various types of variables to be postulated. This is even more so if one thinks that there might be more than one type of variable that is associated with a certain expression. Thus the Binding Argument has a wide applicability and makes a large number of predictions about what types of variables we should postulate. But the thing that gives the argument schema its wide applicability is also the thing that leads to its demise. As we have seen in chapter 1 (section 1.3.), the most widespread criticism of the Binding Criterion was that it overgenerates. To understand the connection between the Binding Criterion and the Binding Argument, it is enough to see that what the Binding Criterion comes down to ultimately is an unrestricted application of the argument schema that is the Binding Argument. The Binding Criterion says that whenever there is binding, there is articulation (that is, representation at the level of the logical form); the Binding Argument shows us why we should postulate a variable every time there is binding. The cases in which the Binding Argument holds are the same as those for which the Binding Criterion would give a verdict of articulation. The objection of overgeneration raised against the Binding Criterion was precisely that there are cases in which there is binding, but we would refrain from postulating a variable, and I have tried to show that this is so using both others' examples and my own. But if the Binding Criterion fails, then the Binding Argument fails too.

Now, the following chapter is dedicated to investigating a number of answers to the Binding Argument for locations. But even restricted to locations, the argument scheme that is the Binding Argument still fails, as has been shown using the case of the predicate "dance" (section 1.3.) But if the Binding Argument for locations fails, then a legitimate question could be raised: why we should even try to answer it? Shouldn't the Binding Argument for locations just be ignored? My opinion is that it shouldn't. One way to see why not is the following

reasoning. Even if the Binding Argument for locations fails, there still might be cases in which postulation of a variable will prove to be the best way to explain the bound readings of certain sentences. It is not obvious that, for certain sentences that have bound readings, the postulation of a variable in their logical form is not the best way to go. On the other hand, it might just be obvious that, for certain sentences that have bound readings, the postulation of a variable in their logical form is not the way to go. As I have pointed out, the predicate "dance" might just be such a case: it might be obvious that an instance of the Binding Argument for locations that applies to a sentence containing the predicate "dance" won't work, for reasons having to do with what we independently think the semantics of "dance" should be (generally treated as not having an argument place for locations); but, as far as I can see, in the case of the predicate "rain" things are different. Here, it is not obvious that an instance of the Binding Argument for locations that applies to a sentence containing the predicate "rain" won't work, for what is at stake is precisely the semantics of such sentences. So, I think that if one wants to show that this particular instance of the Binding Argument doesn't work, one needs to show exactly why it doesn't, and to provide a different explanation of the bound reading. Simply saying that the Binding Argument as a general scheme fails is, in my opinion, not enough.

One consequence of this discussion is that one should refrain from speaking about the Binding Argument in general, or about the Binding Argument for locations, and instead speak about instances of the Binding Argument as applied to certain sentences. The next chapter could thus be seen as engaging with a particular instance of the Binding Argument for locations as applied to the sentence "It is raining", despite its strictly speaking inappropriate title.

Chapter 3
Answering the Binding Argument for Locations

This chapter is dedicated to surveying a number of answers to the argument presented in the last section of the preceding chapter, an argument originally offered by Stanley against a truth-conditional pragmatist treatment of meteorological sentences such as "It is raining" known as "the Binding Argument". I will first review four different ways of dealing with the Binding Argument for locations as applied to the target sentence "It is raining", ways that all purport to account for the bound reading of a complex sentence such as

(1) Every time John lights a cigarette, it rains

by replacing quantification over location with quantification over more encompassing entities, such as contexts, indices, situations or events. In what follows I will present those ways and mention some of their problems (section 3.1.). However, I will not take those problems to be fatal to the views discussed; rather, my goal is to convince the reader that an alternative way to answer the argument dealt with is available, a way that is more "orthodox", in the sense that it does not advocate replacing quantification over location with quantification over more encompassing entities of the sort mentioned. That way has been initially proposed by Recanati in his seminal paper "Unarticulated Constituents". In the second part of this chapter I will present Recanati's solution, which consists in the employment of what he calls "variadic functions" (section 3.2.). I will then substantiate the view, by presenting two ways in which it could be implemented (section 3.3.), and show that one of them is preferable to the other. I will close by specifying how exactly my preferred view departs from Recanati's original proposal (section 3.4.).

3.1. Quantifying over more encompassing entities

The answers to the Binding Argument for locations as applied to the sentence "It is raining" that I will survey in this section have in common the fact that they replace quantification over individual variables (in our case, variables for locations) with more encompassing entities, such as contexts, indices, situations or events. One way in which these views differ is, of course, in the entity they replace quantification over locations with, but there is also another important difference between them, namely the linguistic level at which the quantification is

supposed to take place. Thus, the first two views I will investigate (Pagin's (2005) and Lasersohn's (2008)) situate quantification at the meta-level, Pagin accounting for the bound reading of (1) by quantifying over contexts, while Lasersohn by quantifying over indices. In contrast, the other two views under scrutiny (a view extracted from Elbourne's (2005) work and the view proposed by Cappelen and Hawthorne (2007)) situate quantification at the object level, the first accounting for the bound reading of (1) by quantifying over situations, while the latter by quantifying over events. The last two views, then, are closer to Stanley's view, since, although, locations are replaced by situations and events, respectively, quantification is still done in the object language. However, although this difference is important, nothing will depend on it in what follows.

One should note that these answers are not the only ones possible. For example, there are semantic frameworks in which binding in general is given a treatment that doesn't involve variables at all. The framework provided by Jacobson (1999) is one such example, and its refinement in order to deal with binding by Breheny (2003) is another. These approaches are based on the essential idea of *type-shift*: an expression changing its semantic type as a function of the other expressions it interacts with. The trick is to postulate certain type-shifting rules that will mimic binding, without actually retorting to variables. Regarding the instance of the Binding Argument dealt with in this chapter, variable-free approaches will thus deny premise 3 (see the formulation of the mentioned instance of the argument in section 2.5. of the preceding chapter), which says that there is no binding without a bindable variable (for the obvious reason that the approaches in question don't postulate any kind of variables). In contrast, all the views investigated below – including the one I favor, the variadic functions approach – accept all the premises of the argument (1-3), but deny that the conclusion (4) follows from them. However, the main difference between the views to be investigated in this section and the variadic functions approach stems from the fact that the former replace variables for locations with other types of variables, while the latter keeps variables for locations, thus being more conservative.

A discussion of the merits of variable-free frameworks is beyond the reach of this work, so I will set such treatments aside in what follows. Rather, my aim is to show that within the variable-rich framework, there are several possible ways to answer the instance of the Binding Argument dealt with here. Among these views I will focus on the one I prefer, a view originally proposed by Recanati (2002), which will be substantiated in the following sections. Although I will not give knockdown arguments against the other views, I will show how by adopting Recanati's solution one could answer the mentioned instance of the Binding

Argument both within a variable-rich framework *and* without giving up variables for locations.

3.1.1. Quantifying over contexts

I will start with investigating Pagin's (2005) solution to avoid the conclusion of the Binding Argument for locations as applied to the sentence "It is raining". Pagin's proposal is to account for the bound reading of (1) by quantification over contexts in the meta-language. Contexts, for Pagin, could be modeled as "sequences of context elements, or equivalently as assignments of values to a set of context parameters. For any context c, the associated model will contain as elements, to begin with, the speaker of c, if any, the addressee, if any, the (contextually salient) time of c, the location", and, in general, "anything over and above the sentence (actually or potentially) uttered that is available and may be employed for achieving communicative success" (Pagin, 2005: 328). Sentences will be true relative only to contexts, or indices, as in Montagovian semantics. Variables for contexts are variables in the meta-language, and could be bound by quantifiers in the meta-language. Such binding in the meta-language is useful in order to handle quantifiers such as "every time" that bind context elements – in this case, time. Using this idea, a sentence containing such a quantifier could be represented as

(2) "Every time"⌢*s* is true at *c* iff for every context *c*, *s* is true at T(*c*),

where ⌢ is the concatenation sign, *s* is a sentence, *c* the utterance context and T(*c*) is the time of *c*. But the original sentence "every time"⌢ *s* could be context sensitive, and thus will be itself evaluated relative to a context. To capture this situation, "every time" will need to be construed as quantifying over contexts *c'* that differ from *c* with respect to time but not in other respects. "Every time"⌢*s* will thus be represented as

(3) "Every time"⌢*s* is true at *c* iff for every context *c'*≈ *c*/*t*, *s* is true at *c'*,

where "*c'*≈ *c*/*t*" is to be read as "context *c'* differs from context *c* at most with respect to time". Now, when it comes to sentences such as (1), in order to account for the bound reading of that sentence, we need, as a preliminary step, to let location to vary together with time in the clause for "Every time"⌢*s*. This is done in Pagin's notation as follows:

(4) "Every time" ⌢ *s* is true at *c* iff for every context *c'* ≈ *c*/*t* + *l*, *s* is true at *c'*,

where "*c'* ≈ *c*/*t* + *l*" is to be read as "context *c'* differs from context *c* at most with respect to time and location. Assuming that (1) is interpreted as a quantified conditional of the form

(5) "Every time" ⌢ "if John lights a cigarette, then it rains"

and substituting the new rendering of (1) for *s* in (4), we get

(6) "Every time" ⌢ "if John lights a cigarette, then it rains" is true at *c* iff for every context *c'* ≈ *c*/*t* + *l*, "if John lights a cigarette, then it rains" is true at *c'*.

Now, if we assume that the following holds:

(7) "if John lights a cigarette, then it rains" is true at *c'* iff (if John lights a cigarette at T(*c'*) at L(*c'*), then it rains at T(*c'*) at L(*c'*)),

where T(*c'*) is the time of *c'* and L(*c'*) is the location of *c'*, we finally get (8) as the representation of (1):

(8) "Every time" ⌢ "if John lights a cigarette, then it rains" is true in *c* iff for every context *c'* ≈ *c*/*t* + *l*, if John lights a cigarette at T(*c'*) at L(*c'*), then it rains at T(*c'*) at L(*c'*)

which gives us the desired reading.

In (8), the binding effect of the quantifier "every time John lights a cigarette" is accomplished by quantifying over contexts in the meta-language. Thus, no actual binding of any object language variable for locations takes place. Nowhere in (8) does a variable for locations appear, only variables for contexts (*c* and *c'*), which differ from each other in certain respects, and variables for context elements (*t* and *l*). In this way, the need to postulate an argument place for locations in the logical form of "rain" is avoided.

Let us see how this treatment of (1) avoids the conclusion of the particular instance of the Binding Argument dealt with in this chapter. Since there is no variable for locations in the object language, no such variable can be bound. Thus, it would seem that Pagin's account

avoids the aforementioned conclusion by denying premise 3 of the argument (namely, the premise saying that there is no binding without a bindable variable). But this is not true, since *there is* a variable that is bindable: namely, the variable for contexts, which is a variable in the meta-language. Thus, premise 3 of the argument holds. Instead, the problem with the argument is that the conclusion (namely, that the location of rain needs to be represented at the level of the logical form of "It is raining") doesn't follow: although there is a bindable variable (the variable for contexts), it is not the same kind of variable (nor does it appear at the same linguistic level) than the one the conclusion urges us to postulate.

In response to this strategy, however, Stanley (2005b) has provided some potentially problematic cases for Pagin's view. Stanley's main complaint is that in those cases the entities that need to be quantified over are not the right entities to be contexts. He exploits the familiar Lewisian idea that "features of context do not vary independently. No two contexts differ by only one feature. Shift one feature only, and the result of the shift is not a context at all" (Lewis, 1981: 86). Stanley's examples are

(9) Whenever I'm politely listening to someone speaking, it starts to rain,

with its corresponding representation in Pagin's system as

(10) "Whenever" ⌢ "if I'm politely listening to someone speaking, then it starts to rain" is true in c iff for every context $c' \approx c/t + l$, if I'm politely listening to someone speaking at T(c') at L(c'), then it starts to rain at T(c') at L(c'),

"whenever" being given the same clause as "every time", and

(11) Whenever wind blows through a mountain pass, it starts to rain.

with its corresponding representation in Pagin's system as

(12) "Whenever" ⌢ "if wind blows through a mountain pass, then it starts to rain" is true in c iff for every context $c' \approx c/t + l$, if wind blows through a mountain pass at T(c') at L(c'), then it starts to rain at T(c') at L(c').

The problem with (9) is that it requires the speaker in the utterance context *c* to be the hearer in all the other contexts *c'* quantified over. This means that those contexts differ from the utterance context in more than time and location, and thus that the restriction on the contexts quantified over (namely, $c' \approx c/t + l$) is not enough. In order to get the right truth-conditions, the contexts quantified over should not be restricted to those that differ from the utterance context at most with respect to time and location. The problem with (11) is, again, that if the restriction on the contexts quantified over (namely, $c' \approx c/t + l$) holds, then the speaker of the utterance context should be the speaker in all the contexts quantified over. But that would make the truth conditions of the sentence too strong, since (11) is true in contexts in which somebody else is speaking, or in which there is no speaker. The conclusion is, as before, that in order to get the right truth-conditions, the contexts quantified over should not be restricted to those that differ from the utterance context at most with respect to time and location.

I agree that Stanley's examples pose a serious challenge for Pagin's account. It should be noted, however, that Pagin is aware of this kind of problem. Thus, in connection to (1), he writes:

> (…) by [(8)] we only take into account contexts *c'* which share other features with *c*, such as perhaps that of having Elsa as the most salient female, a feature irrelevant to the interpretation of [(1)]. This runs the risk of getting the truth conditions of [(1)] wrong, for the relation between rain and John's lightings of cigarettes is supposed to hold also in contexts where Elsa isn't the most salient female. (Pagin, 2005: 330)

The fix Pagin proposes is to restrict the contexts quantified over to those that differ from the utterance context only in (the value of) those context elements that are irrelevant for the truth of the sentence in the utterance context. The claim that this fix is based upon is that "if the truth of *s* in *c* does *not* depend on some context element P(*c*), then *s* is true in *c* iff *s* is true in any context *c'* differing from *c* at most with respect to P. Whether the truth of *s does* depend on P is determined by the semantic clauses" (Pagin, 2005: 331). This idea is expressed in the following principle:

(I) *s* is true in *c* iff for all $c' \approx c/\mathrm{I}(s)$, *s* is true in *c* ,

where I(*s*) is the set of context elements irrelevant to the evaluation of *s* and "*c'*≈ *c*/I(*s*)" is to be read as "context *c'* differs from context *c* at most with respect to those context elements that are irrelevant for the truth of *s*".

I'm not entirely sure how (**I**) is supposed to be added to the representation of (1) (namely, (8)) so that to get the right result, but intuitively the principle's role is to relax the restriction on the contexts quantified over (namely, *c'*≈ *c/t + l*) so that to allow more contexts to be quantified over. Contrary to what Stanley claims (Stanley, 2005b: 241, footnote 11), the idea of using the irrelevance of a context element for the truth of a sentence in a context in order to allow more contexts to be quantified over might provide a good answer to at least some of the problematic cases. It seems to me that (11) is successfully handled using the idea behind (**I**): since the speaker in the utterance context *c* is irrelevant to the truth of the sentence in that context, we are allowed to quantify over contexts that differ from the utterance context in more than time and location – namely, they can also differ in the speaker. (**I**) does rule out the speaker of the utterance context as irrelevant. However, I think the problem persists in the case of (9): here the speaker in the utterance context *c is relevant* for the truth of the sentence in that context (since the sentence contains the indexical "I"), so we are *not* allowed to quantify over contexts that differ from the utterance context in more than time in location – or, at least, not over those contexts that differ from the utterance context in time, location *and speaker*. (**I**) thus cannot rule out the speaker of the utterance context as irrelevant. But in order to be able to allow more contexts to be quantified over and, thus, to get the right truth-conditions of the sentence, we need to do precisely that. So, it seems that Pagin's account remains problematic.

3.1.2. Quantifying over indices

The second answer to the current instance of the Binding Argument for locations that I consider is Lasersohn's (2008): quantification over indices. The proposal is to "quantify directly over the [location] index, setting and resetting its value in tandem with the variable introduced by a quantifier" (Lasersohn, 2008: 324). Lasersohn is primarily interested in bound cases of predicates of personal taste[1], but he applies the same solution to locations as well. I will try to give a brief characterization of Lasersohn's view without going too much into its technical details.

[1] I will take up Lasersohn's account of predicates of personal taste in the next chapter, section 4.3.

The first thing to mention about Lasersohn's view is that it is a *relativist* view about location, so one of the tenets of the view is that the circumstances of evaluation (the index, in Lasersohn's Lewisian jargon) comprise a location parameter. Thus, for Lasersohn, sentences will be true relative to a model, an assignment, a context and an index – index which comprises, besides possible worlds and other unorthodox parameters[2], a location parameter as well, so that a sentence is true in a context iff the proposition expressed by the sentence in that context is true relative to the world of the context and the location of the context (or, more precisely, the location of the speaker in the context). Now, Lasersohn's main claim is that quantifiers are able to bind both variables in the object language and parameters in the index (which are variables in the meta-language). A certain quantifier, such as "every reporter" (see example (15) below) could bind both a variable for individuals in the object language and a certain parameter in the index – say, the location parameter. For Lasersohn, quantifiers are sentence-abstract forming operators: when they bind variables in the object language, their effect could be described as in (13); when they bind variables in the meta-language – specifically the location parameter – their effect could be described as in (14):

(13) $[[\lambda n \varphi]]^{M,g,c,w,l} = \{x \in U \mid [[\varphi]]^{M,g[x/n],c,w,l,} = 1\}$

(14) $[[\pi n \varphi]]^{M,g,c,w,l} = \{x \in U \mid [[\varphi]]^{M,g[x/n],c,w,L(x)} = 1\}$[3],

where φ is a sentence, M is a model, g an assignment function, c a context, w a possible world, l a location, $g[x/n]$ is that sequence in which x is the n-th element and which agrees with g in all other positions, $L(x)$ is the location of x, U the set of individuals and λ and π are the two sentence-abstract forming operators. As (13) and (14) show, λ manipulates the assignment function (lambda-abstraction), whereas π manipulates the location parameter of the index, so that the truth of φ is dependent on the values taken by $L(x)$.

The interesting cases are those in which there is another expression in the sentence that is said to have a variable in its logical form (not to be confused with the variable for individuals in the object language bound by the quantifier), variable that is allegedly bound by a quantifier. The trick is that, by allowing quantifiers to bind parameters in the index, the

[2] Besides possible worlds, Lasersohn includes a parameter for judges in the index. Also, to be more precise, in his view the location parameter is introduced in the index via another parameter he calls "the perspective point", which is supposed to take care of all shiftable perspectival features of contexts related to the speaker, such as location and time. Since location is the only relevant parameter here, I will present the view as if location were the only unorthodox parameter of the index. Since nothing in the discussion to follow hinges on the other parameters, this simplification is harmless.

[3] I modified slightly Lasersohn's clauses to align with the simplifications made (see footnote 2). For Lasersohn's original clauses of the two operators, see Lasersohn (2008), page 313 and 331, respectively.

effect of the quantifier binding the variable in the logical form of the expressions in question could be mimicked by binding instead the parameter in the index that corresponds to those expressions. In this way, the need to postulate variables in the object language for the expressions in question disappears.

All this is very abstract and potentially confusing, so let me illustrate how Lasersohn's view is supposed to work with an example. Naturally, a relevant example in the present context would be one in which the expression that is said to have a variable in its logical form is a locational expression such as "local", which is supposed to have a variable for locations in its logical form. Thus, sentence

(15) Every reported visited a local bar,

has a reading according to which every reported visited a bar that is local *relative to the location of each reporter that visited the bar*. Now, usually this bound reading of (15) is accounted for by postulating a variable for locations in the logical form of "local", an object language variable that could be free, but could also be bound, as in (15). But this does not happen in Lasersohn's account. (15) will be represented in Lasersohn's system as

(16) [[*every reporter*] π_1 [[*some bar that* λ_2 [pro_2 *is-local*]] λ_3 [pro_1 *visited* pro_3]]],

where the quantifier "every reporter" binds both a variable for individuals in the object-language (pro_1) and the location parameter in the index. But the important point to note is that "every reporter" doesn't bind any object language variable for locations, since, as can be seen in (16), "local" doesn't have a variable for locations to be bound. Nowhere in (16) does a variable for locations appear, only variables for individuals (pro_1, pro_2 and pro_3, the first bound by "every reporter", the second by "some bar" and the third by "some bar that is local"), while π_1 (the sentence-abstract forming operator defined above) makes the evaluation of the sentence operated on by the quantifier dependent on the location of each reporter. In this way, the need to postulate an argument place for locations in the logical form of "local" is avoided.

I must confess that I find Lasersohn's view hard to understand in all its details, and I'm also not sure that he has given us solid reasons to embrace his solution. But my aim here is not to quibble about the details of the view, nor to question its motivations (although below I will raise an objection to it based to a certain prediction it makes); rather, my aim is to show

how the view deals with the instance of the Binding Argument for locations tackled in this chapter. Lasersohn doesn't tell us how sentences like (1) would be represented in his framework, but I think one could get an idea from the example above how this could be done. Here is one attempt at representing (1) using Lasersohn's apparatus:

(17) [[*every time*] λ_1 [*John lights a cigarette at* pro_1]] π_2 [*it rains at* pro_1]].

In (17), the quantifier "every time" binds a variable for times in the object language (pro_1), whereas the more complex quantifier "every time John lights a cigarette", containing "every time" as its part, binds the location parameter in the index. But the important point to note is, again, that "every time John lights a cigarette" doesn't bind any object language variable for locations, since, as can be seen in (17), "rain" doesn't have a variable for locations to be bound. Nowhere in (17) does a variable for locations appears, only a variable for times (pro_1, bound by "every time"), while π_2 (the sentence-abstract forming operator defined in (14)) makes the evaluation of the sentence operated on by the quantifier dependent on the location in which John lights a cigarette every time he does it. In this way, the need to postulate an argument place for locations in the logical form of "rain" is avoided.

Now, the way in which this treatment of (1) avoids the conclusion of the particular instance of the Binding Argument dealt with here is obvious. Since there is no variable for locations in the object language, no such variable can be bound. Thus, it would seem that Lasersohn's account avoids the aforementioned conclusion by denying premise 3 of the argument (namely, the premise saying that there is no binding without a bindable variable). But this is not true, since *there is* a variable that is bindable: namely, the location parameter of the index, which is a variable in the meta-language. Thus, premise 3 of the argument holds. Instead, the problem with the argument is that the conclusion (namely, that the location of rain needs to be represented at the level of the logical form of "It is raining") doesn't follow: although there is a bindable variable (the location parameter), and although it is of the same type, it doesn't appear at the same linguistic level than the one the conclusion urges us to postulate.

Lasersohn's solution certainly avoids the problem we seen Pagin's account has to face. The problem with the latter was that it proved quite difficult to establish how different from the utterance context the contexts quantified over in the meta-language are allowed to be so that to accommodate all problematic examples. As we have seen from Stanley's diagnosis, this problem is related to the fact that in Pagin's view there is no distinction between contexts

and indices, with the latter being supposed to take care of all the "shiftable" features of contexts. But, as we have seen, in Lasersohn's account such a distinction *is* made, so the problem does not arise. However, I think Lasersohn's account makes a prediction that, if my intuitions are on the right track, is problematic. A fully objective judgment here is hard to secure, since I will rely on intuitions about specific scenarios, but, at least according to *my* intuitions, the prediction alluded to above has the potential to turn into a problem for Lasersohn's account.

As Lasersohn himself points out, one limitation of the account he proposes is that "[b]inding the index in this way does not give us the full expressive power of standard variable binding" (Lasersohn, 2008: 325). According to the latter, it is possible that two expressions of the same type, for which the same type of parameter needs to be assigned a value, appear inside the scopes of two different variable-binding operators, each of which binds just one of the variables associated with the expressions in question. In Lasersohn's system, this is not possible, and is precisely this impossibility that creates trouble. The point will be made also in connection to predicates of personal taste and the judge parameter in the next chapter (section 4.4.), but here I will use expressions for which what needs to be provided is a value of the *location* parameter in the index, expressions such as "local" and "foreign". I will use Lasersohn's own example for illustration. Thus, for a sentence like

(18) Every man sent some woman a local dish and a foreign movie,

Lasersohn's view predicts that both "local" and "foreign" will be evaluated with respect to the same value of the location parameter. While standard variable binding "allows a reading for [(18)] in which each man sends some woman a dish that is local to him, and a movie that is foreign to her (…), an index binding analysis predicts that *local* and *foreign* should both be evaluated relative to the same location, even on the bound reading (…). My intuition is that the index binding account makes the correct prediction here" (Lasersohn, 2008: 331).

But I'm not so sure that that is the correct prediction. It seems to me that there are scenarios in which the reading of (18) that is excluded by Lasersohn's account is the one the sentence should, in fact, have. Before constructing such a scenario, let me make the point by using a different example. I will try to show that a sentence similar to (18), namely

(19) Every philosopher was treated to a local dish and a foreign movie,

has a reading according to which the movie is foreign relative to the location of each philosopher in the range of the quantifier "every philosopher" while the dish is local relative to the location of someone else, for example the speaker. To make this reading salient, consider the following scenario. Imagine that deep in the heart of Transylvania there is an outstanding research center in philosophy that has on its agenda inviting as many top philosophers as possible to give talks. For some reason, they only invite philosophers from the United States, possibly because they have an agreement with some U.S. institution that sponsors the philosophers' expensive trips to Transylvania. Now, as it happens, all these philosophers are very keen on trying the tasty Transylvanian food, but also great aficionados of European movies, especially East-European ones. Knowing this, the organizers of the talks have formed the habit of treating each invited speaker to a Transylvanian dish and a movie screening showing East-European movies. I think that in this scenario an observer – say, a student from the Transylvanian research center – could felicitously utter (19) to describe the situation.

What we have here is a scenario in which "local" and "foreign" should be evaluated with respect to different values of the location parameter Now, given Lasersohn's take on (18) presented above, it is safe to assume that the same treatment will be given in Lasersohn's account to (19) as well. That is, the reading of (19) I just tried to make salient will be excluded by Lasersohn's account. But it seems to me that that reading is the one the sentence should have in the scenario described.

Moving now to our initial target, sentence (18), here, too, a scenario could be constructed in which a certain reading that is excluded in Lasersohn's account is the one the sentence should have. Imagine, for example, a TV game in which men from all corners of the world try to entertain women from different corners of the world (such that no man and the woman he is trying to entertain reside in the same place) – for instance by sending them things that they might enjoy, such as dishes and movies. The winner of the game is, say, the man who sends the most enjoyable things to the woman he is trying to entertain (suppose that there is a precise way to test the degree to which the women enjoyed the things received – say, by comparing reports sent to the jury of the game by each woman).[4] Imagine that, as it happens, each man sends to the woman he is trying to entertain a dish that is local relative to his location and a movie that is foreign relative to the location of the woman he sent it to. (To

[4] I'm focusing here on the case in which "every man" takes wide scope over "some woman", so that each man sends things to a different woman, but nothing hinges on that choice; the example will have the same illustrative power if I would have opted for the reading in which "a woman" takes wide scope over "every man".

make things more palatable, suppose that there is an explicit rule of the game that forbids the things sent by the men to be from the very place where the woman they are trying to entertain resides.) It seems to me in this scenario someone – say, the host of the game – could felicitously utter (18) to describe the situation. We thus have a scenario in which a reading of (18) that is excluded by Lasersohn's account is actually the one the sentence should have. The scenario is more complicated than the one before, no doubt, but it is nevertheless possible. So, if my intuitions are on the right track here, the fact that under Lasersohn's analysis both "local" and "foreign" will be evaluated with respect to the same value of the location parameter of the index does not speak in its favor.

3.1.3. Quantifying over situations

A third answer to the Binding Argument, although not explicitly proposed for the case of locations[5], could be extracted from the treatment given by Paul Elbourne (2005) to donkey anaphora. The solution proposed by Elbourne involves quantification over situations. In contrast to whole worlds, situations are spatially and temporally limited parts of worlds. However, in order to get around well known objections to the traditional notion of situation (such as those in Soames (1986), having to do the view's ability to account for incomplete definite descriptions) a more fine-grained notion has been introduced: that of a minimal situation. A minimal situation s such that p is a situation that contains just enough individuals, relations and properties to make p true. Also, we need the part-of relation (symbolized $\leq$) to which situations are subject to: a situation s is part of a situation s' if and only if s' contains all the individuals, properties and relations that s does (and possibly some more). Now, in Elbourne's framework, which uses minimal situations, a sentence such as

(20) In this village, if a farmer owns a donkey, he always beats the donkey and the priest beats the donkey too.

is represented as

(21) λs_1. for every minimal situation s_2 such that $s_2 \leq s_1$ and there is an individual x such that x is a farmer in s_2 and there is an individual y such that y is a donkey in s_2 and x owns y in s_2, there is a situation s_3 such that $s_3 \leq s_1$ and s_3 is a

[5] Although Elbourne (p.c.) actually supports the idea that his account can be used to account for binding in the case of predicates such as "rain".

minimal situation such that $s_2 \leq s_3$ and the unique farmer in s_3 beats in s_3 the unique donkey in s_3 and the unique priest in s_3 beats in s_3 the unique donkey in s_3.

Like Lasersohn, Elbourne doesn't tell us how (1) could be represented in his system, but, again, the example above could give us an idea how this could be done. Thus, (1) could be represented in Elbourne's system as:

(22) λs_1. for every minimal situation s_2 such that $s_2 \leq s_1$ and there is an individual x such that x is John in s_2 and there is an individual y such that y is a cigarette in s_2 and x smokes y in s_2, there is a situation s_3 such that $s_3 \leq s_1$ and s_3 is a minimal situation such that $s_2 \leq s_3$ and it rains in s_3.

In (22), the binding effect of the quantifier "every time John lights a cigarette" is accomplished by quantifying over minimal situations in the object language, and thus no binding of any object language variable for locations takes place. Nowhere in (22) does a variable for locations appear, only variables for individuals (x, y) which are given certain values (John to x and a certain cigarette to y), and variables for situations (s_1, s_2 and s_3) among which certain part-of relations hold. In this way, the need to postulate an argument place for locations in the logical form of "rain" is avoided.

Here is how this treatment of (1) avoids the conclusion of the particular instance of the Binding Argument dealt with in this chapter. Since there is a variable that is bindable (namely, the variable for situations), premise 3 of the argument (the premise saying that there is no binding without a bindable variable) holds. But the problem with the argument is that the conclusion (namely, that the location of rain needs to be represented at the level of the logical form of "It is raining") doesn't follow: although there is a bindable variable (the variable for situations), and although it appears at the same linguistic level, it is not the same kind of variable than the one the conclusion urges us to postulate.

I have no particular argument against using situations to account for our example (1). Rather, what I want to point out is that the concept of a minimal situation has a crucial explanatory one in this account, so that the viability of the whole framework depends on the capacity of this notion to do its explanatory work. It is not clear, however, whether minimal situations are sufficient to allow an accurate representation in the situation framework of all sentences. Critics of the framework have provided examples in which appeal to minimal

situations is not helpful, either because minimal situations seem to not play any role in providing the right truth conditions of the sentences in question, or because it is impossible to retrieve the minimal situations needed. Such cases include cases of conditionals in which the antecedent consists of mass nouns (23a), negative quantifiers (23d) or certain kinds of modified quantifier phrases (23b and 23c). Below is a sample of such examples in which appeal to minimal situations fails or yields the wrong result:

(23a) When snow falls around here, it takes ten volunteers to remove it.
(23b) When a cat eats more than one can of Super Supper in a day, it gets sick.
(23c) Whenever there are between 20 and 2000 guests at a wedding, a single waiter can serve them.
(23d) Whenever nobody showed up, we canceled the class. (Kratzer, 2010)

The problem with (23a) is that it is quite hard to specify what would be a minimal situation in which snow falls: how much snow would it need to fall in a situation in order for that situation to be considered minimal? But let's suppose we answer this question. The problem is, even if we have an answer, minimal situations are not useful, since we do not quantify over theme in order to get the truth-conditions of the sentence: we don't need situations in which a certain amount of snow falls so that to deem those situations minimal, but situations in which a much bigger amount of snow falls (an amount for whose removal no less than ten volunteers are needed), and these are certainly not minimal situations in the sense defined. (Remember, a minimal situation *s* such that *p* is a situation that contains just enough individuals, relations and properties to make *p* true.) The same problems arise with (23b): how much more than one can of Super Supper in a day would a cat need to eat in order for the situation to count as minimal? But, again, let's suppose we answer this question. Now we run in the same problem as before: even if we have an answer to the above question, minimal situations are not useful, since we do not quantify over them in order to get the truth-conditions of the sentence: we don't need situations in which a certain amount of Super Supper exceeding a can is eaten by a cat in a day so that to deem those situations minimal, but situations in which a bigger amount of Super Supper exceeding a can is eaten by a cat in a day (an amount that will make the cat sick), and these are certainly not minimal situations in the sense defined. (23c) gives rise to a similar problem: a minimal situation in which there are between 20 and 2000 guests at a wedding is one in which there are 20 guests at that wedding; but in order to get the truth-conditions of (23c), we don't quantify only over situations in which there are 20 guests at the

wedding. Thus, minimal situations play no role in establishing the truth-conditions of the sentence. As for (23d), the problem is a more general one, having to do with negative constructions. As Kratzer (2010) asks, what would be a minimal situation in which nobody showed up? A minimal situation is one containing enough individuals, properties and relations that would make the state of affairs corresponding to the situation true. But for the state of affairs corresponding to the situation described in the antecedent of (23d) to be true, it seems that the situation should contain no individuals. In what sense is that a situation anymore? I take it that all these examples are problematic enough to push the proponent of the situation-theoretic approach to search for a more suitable account of the notion of "minimal situation". That is not to say that attempts at a rigorous characterization of the notion have not been offered, Kratzer (2002), among others, being a remarkable example. However, a discussion of Kratzer's view (which involves the notion of "exemplification"), or of other views, for that matter, would lead us to metaphysical issues that are well beyond the topic of this work.

3.1.4. Quantifying over events

A related approach consists in quantification not over situations, but over events. Such a treatment has been proposed for the specific case of locations by Cappelen and Hawthorne (2007). Their proposal, which they call "the event analysis", is meant to be an alternative to Stanley's (2000) treatment of sentences such as (1), and it consists in adopting a Davidsonian event semantics in combination with the idea that there are domain restrictions attached to certain phrases (for example, domain restrictions could be attached to noun phrases – an idea proposed, among others, by Stanley and Szabo (2000)). The relevant phrases to attach domain restrictions to here are verbs, which following the Davidsonian analysis should be conceived of as predicates of events. Thus, in this framework binding phenomena (such as those exhibited by the bound reading of (1)) are understood in terms of domain restriction of events where the restrictor on events is bound by a higher quantifier. The relevant type of higher quantifier here is a temporal quantifier. Let me illustrate, following Cappelen and Hawthorne, with an example. The bound reading of a sentence like

(24) Whenever Sam goes to the park, Nina is walking her dog

is represented in the event analysis as

(25) For all times *t*, if Sam goes to the park at *t*, there is an event *e* that is a walking$_{f(t)}$ of a dog by Nina at *t*,

where *f*(*t*) is a function from times to the set of events going on in the park where Sam is at those times. Function *f* thus takes care of the restriction on the domain of events associated with the verb "walk", restricting them to events that take place in the park where Sam is at the times he goes there. The important thing to note is that no variable for locations appears in (25). Unlike Lasersohn and Elbourne, but like Pagin, Cappelen and Hawthorne explicitly deal with (1). (1) is represented in the event analysis as

(26) For every time *t*, if John lights a cigarette at *t*, then there is an event *e* that is a raining$_{f(t)}$ at *t*,[6]

where *f*(*t*) is a function from times to the set of events going on at the locations where John lights a cigarette at those times. Function *f* thus takes care of the restriction on the domain of events associated with the verb "rain", restricting them to events that take place at the location where John lights a cigarette at the times he does it. Thus, the binding effect of the quantifier "every time John lights a cigarette" is accomplished by quantifying over events in the object language (which also has the result of restricting the events associated with the bound verb), and thus no binding of any object language variable for locations takes place. As with (25), nowhere in (26) does a variable for locations appear, only variables for times (*t*), for events (*e*) and for functions from times to sets of events (*f*). In this way, the need to postulate an argument place for locations in the logical form of "rain" is avoided.

This treatment of (1), as the others above, avoids the conclusion of the particular instance of the Binding Argument dealt with in this chapter. Since there is a variable that is bindable (namely, the variable for events), premise 3 of the argument (the premise saying that there is no binding without a bindable variable) holds. But the problem with the argument is that the conclusion (namely, that the location of rain needs to be represented at the level of the logical form of "It is raining") doesn't follow: although there is a bindable variable (the variable for events), and although it appears at the same linguistic level, it is not the same kind of variable than the one the conclusion urges us to postulate.

[6] Cappelen and Hawthorne represent (1) differently, by putting an event variable in the antecedent of (1), which stands for the event of John lighting a cigarette. I think this is an unnecessary complication.

As with the case of quantification over situations, I have no decisive argument against the present analysis. Examples (23a)-(23d) above might seem to create problems for the account, as they did for the situation framework, but they don't, because in Cappelen and Hawthorne's view no events appear in the antecedents of those sentences. However, other examples are not as straightforwardly accounted for by the event-based approach as it might seem. As we have seen above, the examples given by Cappelen and Hawthorne were accounted for by taking the restrictor function *f* to be a function from times to sets of events that take place at those times. But in some cases this function is not the right one; in

(27) Whenever one does a bad deed, some people will suffer later,

the suffering caused by one's bad deed takes place at a later time. In Cappelen and Hawthorne's view, (27) will be represented as

(28) For all times *t*, if one does a bad deed at *t*, there is a future event *e* that is a later suffering$_{f(t)}$ by a person at *t*.

It is not entirely clear what a future suffering is, but what this example shows is that the restrictor function *f* cannot be always a function from times to sets of events that take place at those times. No doubt, one could deny that (28) is the right representation of (27), on the grounds that the semantic effect of the future tense and the expression "later" hasn't been factored in. It is plausible to assume that, although Cappelen and Hawthorne don't discuss such cases, they have an account of how tenses and temporal expressions such as "later" behave in environments like (27). But note that the presence of the future tense or temporal expressions indicating future times is not essential for generating problematic cases. The following examples seem to me to convincingly prove the point:

(29a) Whenever John takes Ibuprofen, he gets sick.
(29b) Whenever I drink coffee, I cannot sleep.
(29c) Whenever there is a major solar eruption, the satellites orbiting the Earth break down.[7]

[7] I owe these examples to Oscar Cabaco and Paco Murcia.

In all these cases the events that are mentioned in the consequent happen at later times than the times quantified over in the antecedent, without the connection between the two times being broken. The problem thus is that, while there is a connection between the two times, the connection is *not* that the events mentioned in the consequent take place at the times quantified over in the antecedent. But, according to Cappelen and Hawthorne's analysis, those events take place at the precisely those times, so the account (at least as it stands) needs to be modified. I guess part of the problem has to do with a certain degree of vagueness in the identification of times – whether we are talking about instances or intervals, for example. But this problem has a clear effect on what kind of function *f* is (by affecting the input of the function), and, as the examples above show, the input to the function could be different in each case. The point that Cappelen and Hawthorne's account needs to be modified in order to deal with cases such as (29a)-(29c) remains.

3.2. The variadic functions approach

An alternative way of dealing with the Binding Argument for locations as applied to the sentence "It is raining" – the one I favor – is to appeal to what Recanati (2002) has called "variadic functions". A variadic function is

> a function from relations to relations, where the output relation differs from the input relation only by its decreased or increased adicity. Adding a predicate modifier (adverb or prepositional phrase) to a predicate expressing a *n*-ary relation R^n thus results in a complex predicate expressing an $n + 1$-ary relation, in which the $n^{th} + 1$ argument is a *circumstance*: a time, a location, a manner, or what not. (Recanati, 2002: 319)

Variadic functions are of two types: additive and recessive. Various alternations in English, such as the passive alternation (the operation by which we arrive from "John kissed Mary" to "Mary is kissed" by suppressing the subject of the active sentence) and the intransitive alternation (the operation by which we arrive from "John eats the apple" to "John eats" by suppressing the direct object of the verb) can be described as effects of recessive variadic functions. As an example of a formal implementation of such functions, Recanati gives Quine's (1960) derelativization operator (Der), whose effect on a predicate P could be described as follows:

(30) (Der P) $x_1 \ldots x_{n-1}$ iff there is something x_n such that P $x_1 \ldots x_n$.

The Der operator transforms the predicate P of adicity *n* into a predicate of adicity *n*-1 by existentially quantifying over one of its arguments. But, as Recanati remarks (Recanati, 2002: 320), recessive variadic functions need not have the effect of existentially quantifying over a suppressed argument of the input predicate: it is enough that the input predicate is transformed into a different predicate with a lower adicity.

So, this kind of variadic functions seems to be pretty well known. However, for our purposes we need the other kind of variadic functions, the additive ones. Additive variadic operators, as well as recessive ones, could be represented by variadic operators: we thus define a generic additive variadic operator, **Circ**, and a family of specific additive variadic operators, one for each type of argument that the operator increases the adicity of the input predicate with (what Recanati calls in the quote above "circumstance"). We will thus have an additive temporal variadic operator $\mathbf{Circ}_{\text{time}}$, an additive locational variadic operator $\mathbf{Circ}_{\text{location}}$, etc. The semantic effect of an additive variadic operator is the creation of a new predicate which, as we have seen, differs from the input predicate by its increased adicity. The semantic effect on a predicate of the generic variadic operator, **Circ**, could be described as follows:

(31) **Circ** (P ($x_1 \ldots x_n$)) = P* ($x_1 \ldots x_n, y$)[8],

where P is the input predicate, $x_1 \ldots x_n$ its arguments, P* the new predicate having as arguments all the ones P has plus the extra argument, *y*.

Having defined the additive variadic operator, Recanati's claim is that certain expressions in natural language could be interpreted by appeal to such an operator. The idea that certain natural language expressions could be interpreted by appeal to entities that play a similar role to additive variadic operators in the sense defined is not new. For example, in a paper titled "Adverbs and logical form", Sally McConnell-Ginet (1982) appeals to a similar idea in order to account for "passive-sensitive adverbs" (adverbs that make a difference to the truth-conditions of sentences in which the adverbs embed other sentences that differ from each other only in the fact that one is in the active more, whereas the other is in the passive

[8] This kind of representation is unusual, but the idea is to make explicit the effect of the variadic operator. The sign "=" is used to signify that the left side is arrived at after spelling out the effect of the operator **Circ** on the embedded expression.

more, and thus truth-conditionally equivalent). McConnell-Ginet's aim is to argue against two views that purports to explain the data, the sentential operator view of adverbs (proposed by Jackendoff (1972) and Lakoff (1972)) and the predicate operator view of adverbs (proposed by Thomason and Stalnaker (1973)), and to propose her own view, which she builds up starting from the predicate operator view. I will not pause here to survey the arguments she gives against those views; what we are interested in is the end result. McConnell-Ginet claims that a more satisfactory way to account for the semantic behavior of the adverbs in question than the views she criticizes is to conceive adverbs as modifying the verb directly – in her words, to get "inside" the verb phrase (thus making the adverbs "Ad-Verbs"). More specifically, the idea is that

> a verb denoting a predicate of order *n* is "augmented" by adding an optional argument place to create a derived order *n* + 1 predicate when the optional argument is needed (i.e. when the verb is modified). The augmented verb is itself a verb that "includes" the unaugmented verb, and also "adds" to it an additional argument place, expanding the range of its categorizations." (McConnell-Ginet, 1982: 169)[9]

Returning to Recanati, let us see what types of natural language expressions he thinks could be interpreted by appeal to additive variadic operators. Here is a quote that partially answers that question:

> [M]odifiers [such as "in Paris", "here", or "everywhere I go"] are syntactically optional. They make a predicate out of a predicate. If we start with a simple predicate, say "rain", we can make a different predicate out of it by adjoining an adverb such as "heavily" or a prepositional phrase such as "in Paris". (…) Semantically, I suggest that we construe the modifier as contributing a certain sort of function which I call a *variadic function*." (Recanati, 2002: 319)

The modifiers mentioned by Recanati are all connected to locations (the thing we are interested in here), but, as can be seen from the quote, he is willing to treat adverbs as additive varaidic operators as well. Thus he agrees with McConnell-Ginet on this score. On her part,

[9] Another view that appeals to entities whose semantic effect is similar to additive variadic operators is Keenan and Faltz's (1985) account of certain prepositions. They treat those prepositions as "verbal extensors", with the effect of creating a new pedicate that differs from the predicate they apply to by its increased adicity.

McConnell-Ginet also agrees with Recanati on applying the view to prepositional phrases such as "in Paris". The following quote, besides illustrating this point, will also give us an insight into how exactly the appeal to additive variadic functions is suppose to help in providing a semantic account of prepositional phrases:

> [Prepositional phrases] are treated just like Ad-Verbs: namely, as expressions that can have a dual role of augmenting the predicate to which they attach and of providing an argument for the augmented predicate – or (where strictly subcategorized) the single role of providing an argument for a predicate. (…) [B]oth the syntactic and semantic effects of combining [prepositional phrases] with lexical items denoting predicates are precisely the same as those of combining Ad-Verb phrases. (McConnell-Ginet, 1982: 171)

We thus see that in order to capture the semantic effect of natural expressions by appeal to additive variadic operators we need to complete the operators with specific values for the extra argument place of the new predicate created by the operator. The semantic effect of the natural language expressions will thus be twofold: they will contribute both i) an additive variadic operator of a certain sort which transforms the predicate it applies to into a new predicate with an extra argument place; ii) a value for that extra argument place of the newly-created predicate. The net semantic effect of such expressions will thus be the creation of a new predicate of the same semantic type as the input predicate, but which is more specific as a result of the new predicate combining with the expression that gives the value of the extra argument place. Since in this chapter we are dealing with locations, let us see how locational prepositional phrases and other expressions connected to locations could be represented by using the apparatus of additive variadic functions. We need to define a particular additive varaidic operator, one of the locational sort. The semantic effect on a predicate of the (still generic) locational additive variadic operator, $\mathbf{Circ}_{\text{location}}$, could be described as follows:

(32) $\mathbf{Circ}_{\text{location}}$ (P ($x_1 \ldots x_n$)) = P* ($x_1 \ldots x_n$, l),

where P is the input predicate, $x_1 \ldots x_n$ its arguments and P* the new predicate having as arguments all the ones P has plus the extra argument for locations, l. To see clearer how this works, let me illustrate with a concrete example. According to Recanati, in the sentence

(33) John eats in Paris,

the phrase "in Paris" is treated as contributing both a locational additive variadic operator which transforms the predicate "eat" into a new predicate with an extra argument place for locations (a predicate which we could symbolize as "eat_in") and the specific value for that extra argument place of the newly-created predicate (in this case, Paris). Now, (33) could be represented using Recanati's notation as

(34) $\mathbf{Circ}_{\text{location: Paris}}$ (eats (John)) = eats_in (John, Paris).

Driving the point closer to home, a sentence like

(35) It is raining in Paris,

will be represented using Recanati's notation as

(36) $\mathbf{Circ}_{\text{location: Paris}}$ (rain) = rain_in (Paris),

where "in Paris" is given the same treatment as above, only as applying to a different predicate ("rain"). Now, we have seen in the last quote from Recanati that he mentioned the expression "everywhere I go" as one that would be treated by appeal to additive variadic operators. This gives us a clue about how our sentence (1) would be treated in Recanati's account. The suggestion would be that the semantic effect of location-binding quantifiers is the same as that of prepositional phrases: namely, that of contributing both a locational additive variadic operator which transforms the predicate it applies to into a new predicate with an extra argument place for locations and the specific value for that extra argument place of the newly-created predicate. However, since quantifiers cannot deliver a specific value for the location variable, they will deliver a range of locations: in other words, they will bind that variable. Thus, the sentence

(37) Everywhere I go, it rains,

will be represented in Recanati's framework as

(38) **Circ**$_{\text{location: everywhere I go}}$ (rain) = for every place *l* that I go to (rain_in (*l*)),

where "everywhere I go" is treated as contributing a locational additive variadic operator which transforms the predicate "rain" into a new predicate with an extra argument place for locations (symbolized as "rain_in") and binding the value for that extra argument place of the newly-created predicate (in this case, the places that I go to).

Returning to (1), its treatment will be more complex, but the basic mechanism is the same. The extra complexity comes from the fact that the expression "every time John lights a cigarette" binds both the time and the location of the raining. Recanati's favorite treatment of the case is to claim that the expression "every time John lights a cigarette" should be treated as contributing both a temporal additive variadic operator, which is articulated, and a locational additive variadic operator, which is unarticulated[10]. For the sake of simplicity, I will leave time aside here and focus entirely on locations. Thus, we finally get to the representation of (1), which is

(39) **Circ**$_{\text{location: every time John lights a cigarette}}$ (rain) = for every place *l* at which John lights a cigarette every time (rain_in (*l*)),

where "every time John lights a cigarette" is treated as contributing a locational additive variadic operator which transforms the predicate "rain" into a new predicate with an extra argument place for locations (symbolized as "rain_in") and binding the value for that extra argument place of the newly-created predicate (in this case, the places at which John lights a cigarette every time he does it).

We are finally in a position to see how Recanati's view (which I will call the "variadic functions approach") answers the instance of the Binding Argument I'm concerned with in this chapter. From what we have seen, we have been given no reason to deny any of the premises of the argument. Especially premise 3 (the premise saying that there is no binding without a bindable variable) holds, because not only there is a bindable variable, it is also of the same type and it appears at the same linguistic level as the one the conclusion (that the location of rain needs to be represented at the level of the logical form of "It is raining") urges us to postulate. But, nevertheless, the problem with the argument is that the conclusion

[10] Ultimately, I don't think that the locational additive variadic operator is unarticulated, but contributed by the quantifier "every time John lights a cigarette" in the syntax of (1). I will expand on this point and the consequences of taking this line in section 3.4. below.

doesn't follow from the premises: as we can see in (39), the representation of (1) under the variadic functions approach, the predicate the quantifier "every time John lights a cigarette" applies to (namely, "rain") is not the same predicate whose argument for locations the quantifier binds (which is the newly-created predicate "rain_in"). Thus, the conclusion of the present instance of the Binding Argument is not that "rain" has an argument place for locations in its logical form, but that the newly-created predicate "rain_in" has. Therefore, the argument doesn't compel us to claim anything about the semantics of "rain", and thus it cannot conclude that the location of rain needs to be represented at the logical form of the sentence "It is raining".[11]

3.3. Making sense of variadic functions

I hope the presentation above managed to give the reader an idea of how the variadic functions approach is supposed to work and how it could be used against the instance of the Binding Argument at stake in this chapter. But the view, as outlined above, is open to different implementations. In this section I will explore two ways in which the variadic functions view could be implemented.

The first way to represent variadic operators and the expressions accounted for by appeal to them consists in taking quite literally Recanati's talk about the dual role of those expressions: that of creating a new predicate that differs from the predicate they apply to by its increased adicity and that of providing a value for the extra argument place of the newly-created predicate. The other consists in treating the expressions in question as modifiers are usually treated, as having the semantic effect of creating a new predicate that differs from the predicate they apply to in its specificity (the new predicate is more specific).

In order to illustrate these two ways of representing variadic functions and the expressions investigated, I will use the framework of event semantics presented in chapter 2. There we have seen that verbs are to be rendered as predicates of events, but for our purposes here we need to generalize this feature so that each expression in the language becomes a

[11] Recanati's diagnosis of Stanley's Binding Argument for locations as applied to a different sentence than the one focused on here, namely (37), is that Stanley commits "the binding fallacy" – that is, the argument lacks one premise in order to get through. The missing premise is the following:

> (SUP) In "Everywhere I go, it rains", the sentence on which the quantifier "everywhere I go" operates is the very sentence "It rains" which can also be uttered in isolation (and whose usual interpretation is said by some to involve an unarticulated location constituent). (Recanati, 2002: 329)

The point is, of course, that the sentence on which "everywhere I go" operates is not the same as the unembedded sentence. It is not, that is, if we treat "everywhere I go" in the way described above. The same holds for the instance of the Binding Argument dealt with here.

function from events to the expression's usual denotation. In order to capture this in the semantics, I will start from the system found in Heim and Kratzer (1998) and supplement it with variables for events, a new semantic type for those variables and a different rule for functional application (while keeping the other semantic composition rules unchanged). The definition for semantic types is the following (which is a recursive definition for infinite types):

Semantic types

a) e, t and E are semantic types.

b) If σ and τ are semantic types, then <σ, τ> is a semantic type.

c) Nothing else is a semantic type.

Also, we need a definition of semantic denotation domains associated with these types:

Semantic denotation domains

a) D_e is the set of entities (individuals, locations, times, etc.);

b) D_t is the set of truth values ({0, 1});

c) D_E is the set of events.

d) For any semantic type σ and τ, $D_{<\sigma, \tau>}$ is the set of all functions from D_σ to D_τ.

The following symbols for variables will be used:

"*f*", "*g*", "*h*"… will stand for variables for functions;

"e_1", "e_2", "e_3"… will stand for variables for events.

As for the semantic composition rules, most of the rules proposed by Heim and Kratzer (1998: 16, rules S2 to S5) will remain the same. The only modification concerns the rule for functional application, which needs to be modified so that to reflect the fact that each expression is a function from events. The new rule for functional application adopted is the following:

(**FA**) If X is a branching node having Y and Z as daughters and for some types T_1 and T_2, Z is of type T_1 and Y is of type <E, <T_1, T_2>>, then for any event *e*,

[[X]](*e*) = [[Y]](*e*) ([[Z]]) (and X is of type <E, T_2>).

With these tools in hand, we can make it clear what the semantic effect of the variadic operators and the expressions accounted for by appeal to them is. I will illustrate the two ways of substantiating the functional approach view by means of a simple sentence like (33). The expression that is accounted for by appeal to a variadic operator in (33) is the locational expression "in Paris". First, let me give the lexical entries for the expressions investigated. Thus, a simple predicate such as the intransitive verb "eat" will have the following lexical entry in this system, being of type <E, <<E, e>, t>>, and not <e, t> as in the system of Heim and Kratzer (1998)):

(40) $[[\textbf{eat}]] = \lambda e \in D_E.\ \lambda f \in D_{<E,\ e>}.\ \text{EAT}(e)\ \&\ \text{AGENT}(e) = f(e)$.

Proper names such as "Paris" and "John", instead of being of type e, will be of type <E, e>, denoting the constant function from events to the entity they stand for:

(41) $[[\textbf{Paris}]] = \lambda e \in D_E.$ Paris.

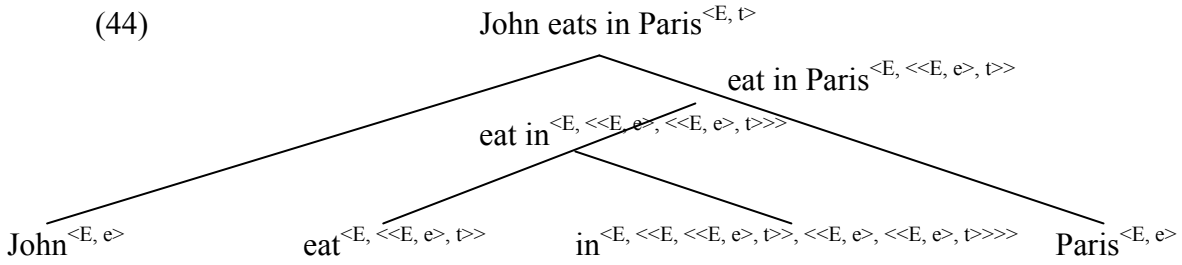
(42) $[[\textbf{John}]] = \lambda e \in D_E.$ John.

Both ways of substantiating the account agree on the lexical entries for predicates such as "eat" and proper names such as "Paris". However, divergence comes with the lexical entry for "in", which is different in the two cases. The difference stems from the fact that the two views predict the order of combination to be different. Thus, according to the first way of implementing the view, the preposition "in" first combines with the verb "eat", thus literally creating a new expression, "eat in" which has an extra argument place; this new expression combines then with the noun phrase "Paris", which fills the extra argument place. According to this first way of cashing out the variadic functions approach, the lexical entry for "in" will be the following ("in" being here of type <E, <<E, <<E, e>, t>>, <<E, e>, <<E, e>, t>>>>):

(43) $[[\textbf{in}]] = \lambda e \in D_E.\ \lambda f \in D_{<E,\ <<E,\ e>,\ t>>}.\ \lambda g \in D_{<E,\ e>}.\ \lambda h \in D_{<E,\ e>}.\ f(e, h) = 1\ \&$ $\text{AGENT}(e) = h(e)\ \&\ \text{LOCATION}(e) = g(e)$.

Employing a representational system using trees, according to this way of implementing the view, the logical form of (33) will be (ignoring tense)

(44)



where the superscripts stand for the semantic types of the corresponding expressions.

Let us see how the semantic value of (33) is computed under this implementation of the variadic functions approach. It follows from (**FA**) that for any event *e*,

[[**John eats in Paris**]](*e*) = [[[[[**in**]](*e*)] ([[**eat**]])] ([[**Paris**]])] ([[**John**]]).

Thus, for any event *e*, [[**John eats in Paris**]](*e*) = 1 iff [[[[[**in**]](*e*)] ([[**eat**]])] ([[**Paris**]])] ([[**John**]]) = 1. The computation of the right hand is given in (45) above:

(45) [[[[[**in**]](*e*)] ([[**eat**]])] ([[**Paris**]])] ([[**John**]])

= [[[[$\lambda e_1 \in D_E$. $\lambda f \in D_{<E, <<E, e>, t>>}$. $\lambda g \in D_{<E, e>}$. $\lambda h \in D_{<E, e>}$. $f(e_1, h) = 1$ & AGENT(e_1) = $h(e_1)$ & LOCATION(e_1) = $g(e_1)$](*e*)] ($\lambda e_2 \in D_E$. $\lambda i \in D_{<E, e>}$. EAT(e_2) & AGENT(e_2) = $i(e_2)$))] ($\lambda e_3 \in D_E$. Paris)] ($\lambda e_4 \in D_E$. John)

= [[[$\lambda f \in D_{<E, <<E, e>, t>>}$. $\lambda g \in D_{<E, e>}$. $\lambda h \in D_{<E, e>}$. $f(e, h) = 1$ & AGENT(*e*) = $h(e)$ & LOCATION(*e*) = $g(e)$] ($\lambda e_2 \in D_E$. $\lambda i \in D_{<E, e>}$. EAT(e_2) & AGENT(e_2) = $i(e_2)$))] ($\lambda e_3 \in D_E$. Paris)] ($\lambda e_4 \in D_E$. John)

= [[$\lambda g \in D_{<E, e>}$. $\lambda h \in D_{<E, e>}$. EAT(*e*) = 1 & AGENT(*e*) = $h(e)$ & LOCATION(*e*) = $g(e)$] ($\lambda e_3 \in D_E$. Paris)] ($\lambda e_4 \in D_E$. John)

= [$\lambda h \in D_{<E, e>}$. EAT(*e*) = 1 & AGENT(*e*) = $h(e)$ & LOCATION(*e*) = [($\lambda e \in D_E$. Paris](*e*)] ($\lambda e_4 \in D_E$. John)

= EAT(*e*) = 1 & AGENT(*e*) = [$\lambda e \in D_E$. John](*e*) & LOCATION(*e*) = Paris

= EAT(*e*) = 1 & AGENT(*e*) = John & LOCATION(*e*) = Paris

= John eats in Paris.

Therefore, for any event *e*, [[**John eats in Paris**]](*e*) = 1 iff John eats in Paris.

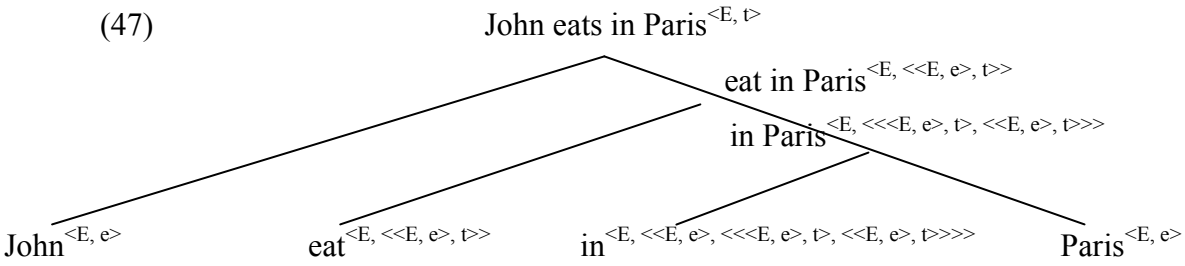
According to the second way of implementing the account, in the case of (33) the preposition "in" first combines with the noun phrase "Paris" and the result combines with the verb "eat", thus creating a new predicate of the same type, but more specific than the

predicate "in Paris" has applied to. According to this second way of cashing out the variadic functions approach, the lexical entry for "in" will be the following ("in" being here of type <E, <<E, e>, <<<E, e>, t>, <<E, e>, t>>>>):

(46) $[[\textbf{in}]] = \lambda e \in D_E.\ \lambda f \in D_{<E,\ e>}.\ \lambda g \in D_{<E,\ <<E,\ e>,\ t>>}.\ \lambda h \in D_{<E,\ e>}.\ \text{LOCATION}(e) = f(e)\ \&\ g(e, h) = 1\ \&\ \text{AGENT}(e) = h(e).$

The logical form of (33) under this approach will be (again ignoring tense)

(47)



Let us see how the semantic value of (33) is computed under the current implementation of the variadic functions approach. It follows from (**FA**) that for any event *e*,

$[[\textbf{John eats in Paris}]](e) = [\ [\ [\ [[\textbf{in}]](e)\ ]\ ([[\textbf{Paris}]])\ ]\ ([\textbf{Eat}])\ ]\ ([[\textbf{John}]]).$

Thus, for any event *e*, $[[\textbf{John eats in Paris}]](e) = 1$ iff $[\ [\ [\ [[\textbf{in}]](e)\ ]\ ([[\textbf{Paris}]])\ ]\ ([[\textbf{Eat}]])\ ]\ ([[\textbf{John}]]) = 1$. The computation of the right hand is given in (48) below:

(48) $[\ [\ [\ [[\textbf{in}]](e)\ ]\ ([[\textbf{Paris}]])\ ]\ ([[\textbf{Eat}]])\ ]\ ([[\textbf{John}]])$

$= [\ [\ [\ [\lambda e_1 \in D_E.\ \lambda f \in D_{<E,\ e>}.\ \lambda g \in D_{<E,\ <<E,\ e>,\ t>>}.\ \lambda h \in D_{<E,\ e>}.\ \text{LOCATION}(e_1) = f(e_1)\ \&\ g(e_1, h) = 1\ \&\ \text{AGENT}(e_1) = h(e_1)](e)\ ]\ (\lambda e_2 \in D_E.\ \text{Paris})\ ]\ (\lambda e_3 \in D_E.\ \lambda i \in D_{<E,\ e>}.\ \text{EAT}(e_3)\ \&\ \text{AGENT}(e_3) = i(e_3))\ ]\ (\lambda e_4 \in D_E.\ \text{John})$

$= [\ [\ [\lambda f \in D_{<E,\ e>}.\ \lambda g \in D_{<E,\ <<E,\ e>,\ t>>}.\ \lambda h \in D_{<E,\ e>}.\ \text{LOCATION}(e) = f(e)\ \&\ g(e, h) = 1\ \&\ \text{AGENT}(e) = h(e)]\ (\lambda e_2 \in D_E.\ \text{Paris})\ ]\ (\lambda e_3 \in D_E.\ \lambda i \in D_{<E,\ e>}.\ \text{EAT}(e_3)\ \&\ \text{AGENT}(e_3) = i(e_3))\ ]\ (\lambda e_4 \in D_E.\ \text{John})$

$= [\ [\lambda g \in D_{<E,\ <<E,\ e>,\ t>>}.\ \lambda h \in D_{<E,\ e>}.\ \text{LOCATION}(e) = [\lambda e \in D_E.\ \text{Paris}](e)\ \&\ g(e, h) = 1\ \&\ \text{AGENT}(e) = h(e)]\ (\lambda e_3 \in D_E.\ \lambda i \in D_{<E,\ e>}.\ \text{EAT}(e_3)\ \&\ \text{AGENT}(e_3) = i(e_3))\ ]\ (\lambda e_4 \in D_E.\ \text{John})$

= [$\lambda h \in D_{<E, e>}$. LOCATION(e) = Paris & EAT(e) & AGENT(e) = h(e)] ($\lambda e_4 \in D_E$. John)

= LOCATION(e) = Paris & EAT(e) & AGENT(e) = [$\lambda e \in D_E$. John](e)

= LOCATION(e) = Paris & EAT(e) & AGENT(e) = John

= John eats in Paris.

Therefore, for any event e, [[**John eats in Paris**]](e) = 1 iff John eats in Paris.

With this illustration of the two ways of representing variadic functions and the expression "in Paris", we can move to the cases in which we are interested in, namely those involving "rain". I will use sentence (35) for illustration. As in the case of (33), the two implementations agree on the lexical entry of proper names such as "Paris" (its lexical entry being that given in (41)), and on that of "rain", given below:

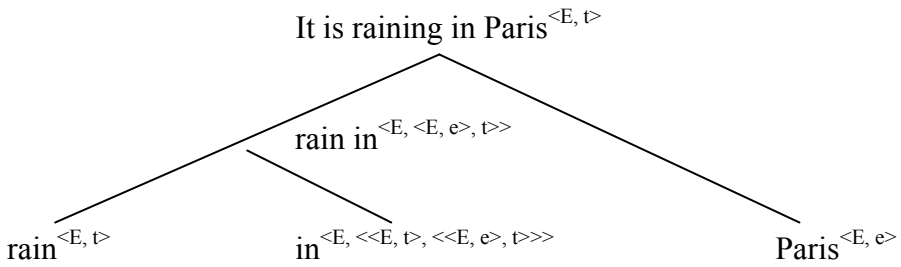
(49) [[**rain**]] = $\lambda e \in D_E$. RAIN(e)

The difference between the two implementations, as before, lies in the lexical entries for "in", and stems from the fact that the two views predict the order of combination to be different. Thus, according to the first way of implementing the view, the preposition "in" first combines with the verb "rain", thus literally creating a new expression, "rain in" which has an extra argument place; this new expression combines then with the noun phrase "Paris", which fills the extra argument place. The lexical entry for "in" (here of type <E, <<E, t>, <<E, e>, t>>>) according to this implementation will be

(50) [[**in**]] = $\lambda e \in D_E$. $\lambda f \in D_{<E, t>}$. $\lambda g \in D_{<E, e>}$. $f(e)$ = 1 & LOCATION(e) = g(e),

while the logical form of (35) will be (ignoring the tense and aspect of the verb):

(51)



Let us see how the semantic value of (35) is computed under this implementation of the variadic functions approach. It follows from (**FA**) that for any event *e*,

[[**It is raining in Paris**]](*e*) = [[[[[**in**]](*e*)] ([[**rain**]])] ([**[Paris**]]).

Thus, for any event *e*, [[**It is raining in Paris**]](*e*) = 1 iff [[[[[**in**]](*e*)] ([[**rain**]])] ([[**Paris**]]) = 1. The computation of the right hand is given in (52) below:

(52) [[[[[**in**]](*e*)] ([[**rain**]])] ([**[Paris**]])

= [[[$\lambda e_1 \in D_E$. $\lambda f \in D_{<E, t>}$. $\lambda g \in D_{<E, e>}$. $f(e_1) = 1$ & LOCATION(e_1) = $g(e_1)$](*e*)]
($\lambda e_2 \in D_E$. RAIN(e_2))] ($\lambda e_3 \in D_E$. Paris)

= [[$\lambda f \in D_{<E, t>}$. $\lambda g \in D_{<E, e>}$. $f(e) = 1$ & LOCATION(*e*) = $g(e)$] ($\lambda e_2 \in D_E$.
RAIN(*e*))] ($\lambda e_3 \in D_E$. Paris)

= $\lambda g \in D_{<E, e>}$. RAIN(*e*) & LOCATION(*e*) = $g(e)$] ($\lambda e_3 \in D_E$. Paris)

= RAIN(*e*) & LOCATION(*e*) = [$\lambda e \in D_E$. Paris](*e*)

= RAIN(*e*) & LOCATION(*e*) = Paris

= it is raining in Paris.

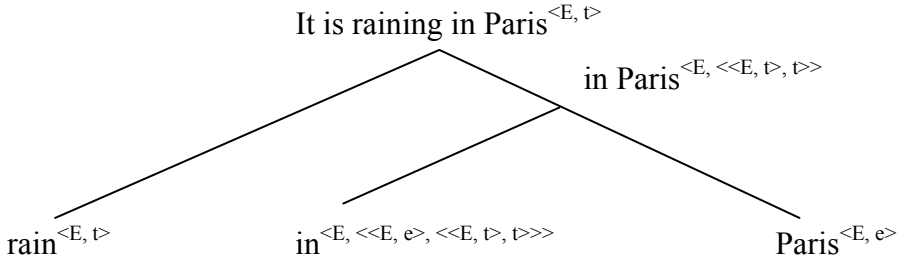
Therefore, for any event *e*, [[**It is raining in Paris**]](*e*) = 1 iff it is raining in Paris.

According to the second way of implementing the account, in the case of (35) the preposition "in" first combines with the noun phrase "Paris" and the result combines with the verb "rain", thus creating a new predicate of the same type, but more specific than the predicate "in Paris" has applied to. The lexical entry for "in" (here of type <E, <<E, e>, <<E, t>, t>>>) according to this implementation will be

(53) [[**in**]] = $\lambda e \in D_E$. $\lambda f \in D_{<E, e>}$. $\lambda g \in D_{<E, t>}$. LOCATION(*e*) = $f(e)$ & $g(e) = 1$,

while the logical form of (35) will be (again ignoring the tense and aspect of the verb):

(54)



Let us see how the semantic value of (35) is computed under the current implementation of the variadic functions approach. It follows from (**FA**) that for any event *e*,

[[**It is raining in Paris**]](*e*) = [[[[[**in**]](*e*)] ([[**Paris**]])] ([**[rain**]]).

Thus, for any event *e*, [[**It is raining in Paris**]](*e*) = 1 iff [[[[[**in**]](*e*)] ([[**Paris**]])] ([[**rain**]]) = 1. The computation of the right hand is given in (52) below:

(55) [[[[[**in**]](*e*)] ([[**Paris**]])] ([**[rain**]])

= [[[$\lambda e_1 \in D_E$. $\lambda f \in D_{<E, e>}$. $\lambda g \in D_{<E, t>}$. LOCATION(e_1) = $f(e_1)$ & $g(e_1) = 1$](*e*)] ($\lambda e_2 \in D_E$. Paris)] ($\lambda e_3 \in D_E$. RAIN(e_3)

= [[$\lambda f \in D_{<E, e>}$. $\lambda g \in D_{<E, t>}$. LOCATION(*e*) = $f(e)$ & $g(e) = 1$] ($\lambda e_2 \in D_E$. Paris)] ($\lambda e_3 \in D_E$. RAIN(e_3)

= [$\lambda g \in D_{<E, t>}$. LOCATION(*e*) = [$\lambda e \in D_E$. Paris](*e*) & $g(e) = 1$] ($\lambda e_3 \in D_E$. RAIN(e_3)

= LOCATION(*e*) = Paris & RAIN(*e*)

= it is raining in Paris.

Therefore, for any event *e*, [[**It is raining in Paris**]](*e*) = 1 iff it is raining in Paris.[12]

Let us move now to the more complex case of (1). The logical form of (1) will also differ according to the two ways of implementing the variadic functions approach. As we have seen in the previous section, the quantifier "every time John lights a cigarette" will both introduce a locational additive variadic operator in the logical form of (1) and bind the extra argument of the new predicate created by the operator. Moreover, Recanati's view is that the quantifier introduces not only a locational variadic additive operator, but also a temporal additive variadic operator[13], the first being unarticulated, the second articulated. The two variadic operators will be represented below by two unpronounced prepositions, "in" and "at". As in the case of (33) and (35), the effect of the variadic operators could be represented in two ways. Both these ways agree on the lexical entries of all the relevant expressions, except that of "in" and "at" (which will have the same lexical entry under each way or implementing the view). I will simplify greatly in what follows by treating the quantifier

[12] According to each implementation of the variadic functions approach, "in" has at least two lexical entries: (43) and (50), in the case of the first implementation, (46) and (53) in the case of the second. This sort of ambiguity, however, is highly constrained by the type of predicate "in" combines with.

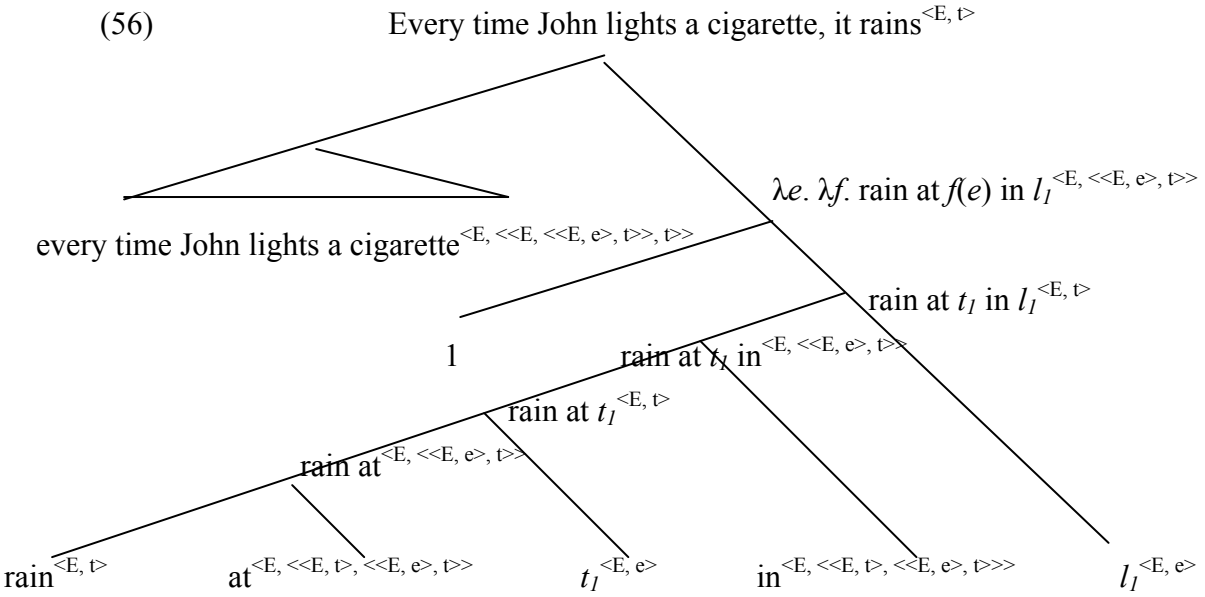
[13] See chapter 4 (section 4.6.1.) for details about how such an operator is supposed to work.

"every time John lights a cigarette" as single semantic unit of type <E, <<E, <<E, e>, t>>, t>> (and not of type <<e, t>, t>, as in Heim and Kratzer's (1998) system). t_1 and l_1 are the variables bound by the quantifier (one temporal, the other locational) while the node "1" is a node resulted from lambda-abstracting over be node below it. Since we are doing predicate abstraction, we need a predicate abstraction rule; thus, we will modify the predicate abstraction rule given in Heim and Kratzer (1998: 96) in order to reflect the fact that we are operating in an event framework. Taking a variable assignment to be a partial function from **N** (the set of natural numbers) to $D_{<E, e>}$, the new rule will be

(**PA**) If X is a branching node whose daughters are a relative pronoun or "such" and Y, and $i \in$ **N**, then for any variable assignment a, $[[X]]^a(e) = \lambda e \in D_E. \lambda f \in D_{<E, e>}. [[Y]]^b(e)$, where $b = a^{f/i}$.[14] (and X is of type <E, <<E, e>, t>>)

I will not pause here to give the lexical entries for all the expressions involved (they should be straightforward), nor to show how to calculate the semantic value of (1) under each approach, but I have given all the tools needed to do so.[15] Instead, I will rest content with providing the logical form (1) under the two implementations. Thus, according to the first way of implementing the account, (1) will have the following logical form:

(56)

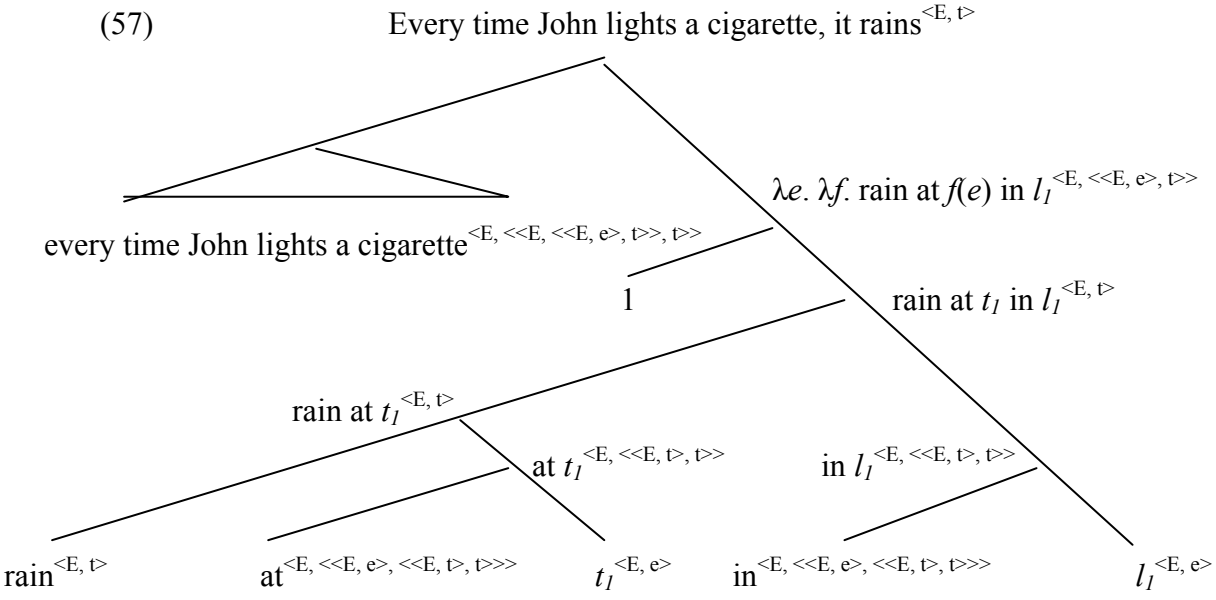


[14] $a^{f/i}$ is called a "modified variable assignment". The definition of it can be found in Heim and Kratzer (1998: 112).

[15] In addition to the modifications mentioned, we will need to modify (**FA**) as well, so that to make it sensitive to variable assignments. This could be done by giving an event semantics framework version of the definition in Heim and Kratzer (1998: 95).

According to the second way of implementing the account, (1) will have the following logical form:

(57)



As can be seen, according to both these ways of representing (1), "rain" doesn't have an argument place for locations (nor for times, but that is not important in the present context) – which is the feature of the variadic functions approach that allowed its proponent to avoid the conclusion of the instance of the Binding Argument dealt with in this chapter.

Now, one question that arises is whether these two ways of representing variadic functions and the expressions whose semantic effect is accounted for by appeal to them are equally viable. A reason to prefer the second alternative to the first comes from McConnell-Ginet. Speaking about locational phrases such as "in Paris", she notes that, despite their dual effect, such expressions form a semantic unity. The further question she raises is whether this semantic unity should be preserved at the syntactic level, and she answers in the positive. What this means, in the terms in which I described the two implementations above, is that the preposition "in" should combine first with the noun phrase ("Paris") and not with the verb. Her argument for this claim is the following. True, there are cases in which it would seem that the preposition forms a syntactic unity with the verb, one of these being

(58) This bed was slept in by George Washington.

However, these examples are cases in which the unity between the verb and the preposition has been lexicalized and has a certain meaning of its own. To see why making the verb and

the preposition a syntactic unity shouldn't be the norm, McConnell-Ginet considers sentence (59) and the related dialogue in (60):

(59) Joan lives beyond the church.

(60) Where does Joan live?
Beyond the church/*The church.

The fact that the answer to the question in (60) is only felicitous when the preposition is there signals that the syntactic unity is rather between the preposition ("beyond") and the noun phrase ("the church") and not between the preposition and the verb ("live"). This suggests that there are phrases whose syntactic unity cannot be broken. The consequence of this observation for our problem is that the second way of syntactically implementing variadic operators and the phrases that are accounted for by appeal to them "such as "in Paris" is to be preferred to the first, on the account that preserved syntactic unity when it should be preserved.[16]

3.4. Departing from Recanati's view

Above (section 3.2.), I have presented Recanati's way to answer the Binding Argument, which consisted in appeal to variadic functions. I then substantiated the view by exploring two ways of implementing it. In the case of "rain", the important thing for our purposes was to show that in none of the implementations we had to posit an argument place in its logical form (as it could be easily checked looking at the lexical entry for rain as given in (49). I then mentioned an argument showing why the second way of implementing the account is preferable to the first (section 3.3.). However, the fact that I took Recanati's view about "rain" as my starting point doesn't mean that I agree with the view in its entirety. In this section I

[16] Note that both ways to syntactically representations varaidic operators presented preserve what has been deemed the most fundamental way in which expressions combine semantically: functional application (see, for example Heim and Kratzer (1998)). Doubts that the variadic functions approach preserves functional application come from McConnel-Ginet, who makes the following remark in this connection:

> The view offered herein of LF is more complex than is usual in Montague-type grammars, in that semantic rules go beyond simple (and elegant) functional application. (McConnell-Ginet, 1982: 182)

I'm not sure whether this is true about adverbs, but it can easily be seen that it is not true about the expressions dealt with here. As could be seen in the representations of various sentences above, functional application holds all the way. Just to illustrate, consider the two ways in which I represented the sentence "It is raining in Paris": according to one, the verb combines first with the preposition and then with the noun phrase; according to the second, the preposition combines first with the noun phrase and then the result with the verb. Either way, the only way of combination appealed to is functional application. This answers also a question raised by Recanati (2002) about the account he proposes: namely, what assures the unity of proposition? The answer is, in the way I presented things here, functional application itself.

will show where exactly my own view departs from Recanati's and how to treat some cases that, prima facie at least, are easily accounted for in Recanati's view.

As we have seen in chapter 2 (section 2.1.), Recanati (2002) thinks that the location of rain enters the truth-conditions of utterances of "It is raining" in non-weatherman scenarios (that is, scenarios in which the speaker intends to communicate that it is raining at a certain particular location) via an unarticulated variadic operator that is contributed by context. In the case of (1), Recanati's claim is similar: the location of rain, which in this case is bound by the quantifier "every time John lights a cigarette", also enters the truth-conditions of utterances of (1) via an unarticulated variadic operator contributed by context. The reason Recanati makes this claim is the same in both cases: namely, the existence of indefinite, existential readings. Thus, as there is an indefinite, existential reading of "It is raining" in the weatherman scenario, there are weatherman-like scenarios in which (1) is uttered but no particular location is provided. That is, there is a reading of (1) according to which every time John lights a cigarette, it rains at some location or another. To bring this reading to the fore, imagine, for example, that one would like to comment on the fact that John's lighting of a cigarette always results in raining at some location or another (which, given that rain is quite widespread a phenomenon, is not that surprising, statistically speaking)[17]: (1) would certainly be one way to communicate that. The existence of this indefinite, existential reading of (1) in a weatherman-like scenario is taken by Recanati to be enough evidence that the location of rain need not be represented at the level of the logical form of (1). The reasoning is similar as in the case of "It is raining": since there is an indefinite, existential reading of (1), the location is optional; since the location is optional, it cannot be that it needs to be represented in the logical form (since in this case it would be mandatory); therefore, it is an unarticulated constituent of the truth-conditions of utterances of (1).

Now, in chapter 2, where I discussed in detail Recanati's view about "It is raining" in connection to the weatherman scenario and rejected several alternative views, I defended Recanati's view on the grounds that it is better situated than its competitors to explain the indefinite, existential reading of "It is raining" in the weatherman scenario. But I also noted there that one shouldn't read too much into that defense: as a matter of fact, I only defended Recanati's view insofar it is compatible with other views denying that the location of rain need not be represented at the level of the logical form of "It is raining". I supported Recanati's view only to use it as a scaffold that allowed me to be able to express the view that

[17] Of course, this could be meant to be restricted to a certain domain, or territory. The bigger the territory, the bigger the chances that the reading is true.

I favor, which is relativism about locations.[18] Thus, although I didn't flat out reject Recanati's claim that the location of rain is contributed via an unarticulated variadic operator in the truth-conditions of utterances of "It is raining" in non-weatherman scenarios, strictly speaking I didn't endorse the claim either. However, I straightforwardly reject Recanati's analysis of (1). Thus, I reject the claim that in the case of (1), the location of rain enters the truth-conditions of utterances of (1) via an unarticulated variadic operator that is contributed by context and then bound by the quantifier "every time John lights a cigarette".

One observation that could be made that supports the rejection of Recanati's treatment of (1) is that, although I agree that there is an indefinite, existential reading of (1), there still remains a disanalogy between (1) and "It is raining". The disanalogy consists in the fact that in (1) there is an element in its syntax that could be taken to contribute the location, at least when there is binding – namely, the quantifier "every time John lights a cigarette", whereas in "It is raining" no such element exists. This is not an argument that Recanati's analysis is incorrect, but it undermines his analogy between (1) and "It is raining". The real problem for Recanati is the claim that context could contribute to the truth-conditions of utterances not only particular values for existing variables in the syntax, but the variables themselves. As Recanati himself acknowledges, this poses a serious problem for his view, since it is a very well known fact that context could only contribute values for existing variables. Recanati (2002) tries to argue for the contrary view by means of some examples involving *wh*-phrases, but I have to admit that I don't see any difference between the expressions "every time" and "whenever", so I fail to see the force of Recanati's point. Moreover, even if the claim that context could contribute variables to the truth-conditions of utterances could be ultimately defended, the supporter of such a claim would be pushed hard to explain the alignment of the contribution of variables by context with the presence of the quantifier in the sentence. The fact that there is an indefinite, existential reading of (1) points to the fact that the presence of the quantifier does not guarantee the presence of a variable in the syntax, but in Recanati's view this is a connection that is never really made; it is as if the presence of the quantifier has nothing to do with the presence of a variable in the syntax and as if the variable appears there by magic. This seems to me to be an extreme view with very low credibility.

Another reason to reject Recanati's analysis of (1) pertains to a more practical issue, so to say. If the aim is to answer the instance of the Binding Argument for locations dealt with in this chapter, then Recanati's analysis if (1) is strictly speaking unnecessary, since that aim is

[18] Recanati himself defends now a relativist view about locations. See Recanati (2007b).

accomplished even if it is accepted that there is an argument place for locations in (1), instead of claiming that it is contributed via an unarticulated variadic operator. The function of the variadic operator is precisely to create a different predicate that differs from the predicate it applies to by its increased adicity with the quantifier binding the argument place of the newly-created predicate, thus allowing one to agree with premise 3 of the Binding Argument for locations (namely, that there is no binding without a bindable variable) without being forced to accept its conclusion (that the location of rain need to be represented at the level of the logical form of (1)), since the conclusion doesn't follow from the premises.

I have said that I reject Recanati's analysis of (1) and I offered some reasons above. But if one rejects Recanati's account, how does one account for the various readings of (1)? More importantly, how is the bound reading of (1), the one most relevant in this chapter, accounted for? Obviously, the answer to these questions essentially depends on the details of one's view. I have said above that my preferred view about locations is relativism. Remember, the relativist position is that location is a parameter in the circumstances of evaluation, and that context has a circumstance-determining role rather than a content-determining one. I haven't argued and will not argue for relativism in this chapter; what I want to do is to stress instead that the answer to the present instance of the Binding Argument for locations consisting in appeal to variadic functions could be used by the relativist as well as by anyone else. Indeed, this is the stance I think the relativist should take: namely, to combine her view with the varaidic functions approach to certain natural language expressions, such as "in Paris" or "Every time John lights a cigarette". Call such a view "the enhanced relativist view". Bearing this in mind, our initial question becomes: how does the enhanced relativist view account for the various reading of (1) and, in particular, for its most relevant reading, the bound reading?

Let's start with the last question. Above I have rejected Recanati's idea that the location of rain gets into the truth-conditions of (1) via a variadic operator that is contributed by context. Instead, I claim, the location of rain gets into the truth-conditions of (1) via a variadic operator *that is represented at the level of logical form* of (1). Thus, the interaction between the quantifier "every time John lights a cigarette" and the predicate "rain" results in the presence in the logical form of (1) of a variadic operator that has the semantic effect of creating a new predicate that differs from the predicate it applies to by its increased adicity. We have seen above how the variadic operator and the two expressions "in Paris" and "every time John lights a cigarette" could be represented. I have noted that the second way of representing them is preferable to the first. However, more needs to be said about how exactly

the interaction between the quantifiers and the predicate results in the presence of a varaidic operator in the logical form of (1). The conditions under which a variadic operator will occur in the logical form of a sentence like (1) could be specified positing a special binding rule which will state something along the following lines: posit a variadic operator in the logical form of a sentence only if there is a quantifier that c-commands it and has the same index as the variable introduced by the varaidic operator. In (1), this variable occupies the extra argument place of the newly-created predicate by the variadic operator – a variable for locations.

Now, since in the bound reading of (1) the interaction between the quantifier "every time John lights a cigarette" and the predicate "rain" results in the presence in the logical form of (1) of a variadic operator that has the semantic effect of creating a new predicate that differs from the predicate it applies to by its increased adicity, and since the quantifier binds the variable for location of the newly-created predicate, the location of rain is also represented at the level of the logical form of (1). By ***Distribution***, the principle I introduced in chapter 1 (section 1.2.) when presenting relativism, the location cannot be part of the circumstances of evaluation. However, if a value for the location parameter is provided by the context of (1) (that is, if the location parameter is not idle), this value is not the same as the one contributed by the variadic operator and bound by the quantifier.

What about the other readings (1) has? Above I criticized Recanati's view about (1), but I haven't denied the existence of weatherman-like scenarios in which (1) has an indefinite, existential reading. How will this reading be accounted for in the enhanced relativist view? The enhanced relativist's take on the semantics of an utterance of "It is raining" in a non-weatherman scenario is that there is no argument place for location in the logical form of the sentence, and thus that context doesn't not provide any elements to the truth-conditions of the utterance. Instead, context provides a value for the location parameter of the circumstance of evaluation, a value that is the particular location at which the speaker wants the audience to evaluate the utterance at. Now, in the weatherman scenario, the speaker (our weatherman) has no such particular location in mind. The enhanced relativist will then say that the utterance is to be evaluated at one location or another. This can be done by existentially quantifying over the location parameter in the circumstance: that is, the sentence is true in the weatherman scenario if and only if there is a location such that the sentence is true at that location.

Something similar will hold in the case of (1). As we have seen above, the relativist's take on the semantics of the bound reading of an utterance of (1) is that the interaction between the quantifier "every time John lights a cigarette" with the predicate "rain" results in

the presence in the logical form of (1) of a variadic operator that has the semantic effect of creating a new predicate that differs from the predicate it applies to by its increased adicity. Since the quantifier binds the extra argument place of the newly-created predicate, the location is part of the logical form of (1) and, thus, by ***Distribution*** (chapter 1, section 1.2.) it cannot be part of the circumstances of evaluation. If a value for the location parameter is provided by the context of (1) (that is, if the location parameter is not idle), this value is not the same as the one contributed by the variadic operator and bound by the quantifier. Now, in weatherman-like scenarios, the location of rain is not bound in (1), and therefore the interaction between the quantifier "every time John lights a cigarette" and the predicate "rain" *does not* result in the presence in the logical form of (1) of a variadic operator. Thus, in order to account for the indefinite, existential reading of (1) in weatherman-like scenarios, the relativist will say, as in the case of "It is raining" in the weatherman scenario that an utterance of (1) is to be evaluated at one location or another. This, again, can be done by existentially quantifying over the location parameter in the circumstance: that is, the sentence is true in a weatherman-like scenario if and only if there is a location such that the sentence is true at that location.

A different reading of (1) that needs to be accounted for by the enhanced relativist view is one according to which, although the quantifier "every time John lights a cigarette" is present, the location of rain is not bound by it. That is, there is a reading of (1) according to which every time John lights a cigarette, it rains at some particular location. Let's call this reading the *definite* reading of (1). To bring this reading to the fore, imagine, for example, that one would like to comment on the fact that John's lighting of a cigarette always results in raining at a particular location, say, Paris; uttering (1) could certainly be one way to communicate that. Now, the enhanced relativist will account for this reading of (1) in a similar way to that in which she will account for the definite reading of "It is raining", namely by claiming that context provides definite value for the location parameter of the circumstance of evaluation, a value that is the particular location at which the speaker wants the audience to evaluate the utterance at (in the example given, Paris). This particular location, however, could be made explicit, as in

(61) Every time John lights a cigarette, it rains in Paris.

How will this sentence be treated by the enhanced relativist? Since there is no binding, the interaction between the quantifier "every time John lights a cigarette" and the predicate "rain"

does not result in the presence in the logical form of (61) of a variadic operator. However, since the expression "in Paris" is part of the sentence, a variadic operator will nevertheless be present in the logical form of (61), although one introduced by "in Paris" and not one introduced by the quantifier. Since the location is part of the logical form, contributed by the expression "Paris", by ***Distribution*** (chapter 1, section 1.2.) it cannot be part of the circumstances of evaluation. If a value for the location parameter is provided by the context of (61) (that is, the location parameter is not idle), this value is not the same as the one contributed by the expression "Paris" – namely, Paris.

This gives a hopefully complete picture of how the various readings of (1) are treated by a relativist view combined with the variadic functions approach to locational expressions such as "in Paris". The table below summarizes these treatments, including the ones given by the enhanced relativist view to various readings of "It is raining". WS symbolizes weatherman scenarios (or weatherman-like scenarios, in the case of (1)), where we have existential, indefinite readings of the sentences in question, whereas non-WS symbolizes normal scenarios, in which the sentences are meant to communicate a specific location (what I called above "definite readings"). The particularity of the version of relativism proposed here is that in the bound reading of (1), the variadic operator and the location appear in the logical form of (1), whereas in the other readings of (1) they don't, the location being relegated to the circumstance. In the case of (61), both the variadic operator and the location appear in the logical form, but it is a different variadic operator than the one contributed by the quantifier.

Sentence	**Scenario**	**Binding**	**Location**
It is raining.	WS	no	Circumstance (existential quantif.)
It is raining.	non-WS	no	Circumstance (particular location)
It is raining in Paris.	non-WS	no	Logical form
Every time John lights a cigarette, it rains.	Non-WS	yes	Logical form
Every time John lights a cigarette, it rains.	WS	no	Circumstance (existential quantif.)
Every time John lights a cigarette, it rains.	Non-WS	no	Circumstance (particular location)
Every time John lights a cigarette, it rains in Paris.	Non-WS	no	Logical form

In this chapter I tried to substantiate a particular answer to the instance of the Binding Argument presented at the end of chapter 2, an answer consisting in the appeal to variadic functions. After surveying a number of answers found or extracted from the literature, involving quantifying over contexts, indices, situations or events instead of locations, I presented Recanati's view and showed how the appeal to variadic operators could be used to deflect the argument. I then tackled the issue of how variadic operators could be syntactically represented, and I presented two alternative ways, one of which being shown to be more preferable than the other. In the last section I made clear how relativism about locations can make use of the apparatus of variadic functions and showed how certain readings of (1) could be accommodated in a relativist framework. In the following chapter, I will show how the variadic functions approach could be extended to predicates of personal taste and other expressions.

Chapter 4
Extending the Account

In this chapter I will show how the account given to locational expressions in the preceding chapter can be extended to other expressions. My main focus in what follows will be the class of predicates known under the label "predicates of personal taste". The main aim of this chapter is to show how a certain instance of the of the Binding Argument that has been used to argue against relativism about predicates of personal taste (the one put forward in Schaffer (forthcoming)) can be answered using the variadic functions approach developed in chapter 3. In the process I will also offer a semantics for benefactive prepositions associated with predicates of personal taste such as "for *x*", where *x* stands for the judge, and contrast that semantics with two competing accounts. In the last section I will survey the prospects of extending the account to other kinds of expressions, such as temporal expressions and tenses, epistemic modals or knowledge attributions.

4.1. Predicates of personal taste

Predicates of personal taste are expressions such as "tasty", "fun", "sexy", "cool", "disgusting", "boring", etc. As their name suggests, these predicates convey information about how some aspects of the world are experienced by a certain person; that person is commonly referred to as the subject, or the judge. According to one metaphysical picture, the one I will presuppose here, such predicates stand for certain properties whose existence is conditional (or depend) on there being such a subject or judge. Call this kind of metaphysical picture "subjectivist". Predicates of personal taste could thus be said to belong to what we could call "subjective predicates", the main feature of which being that of standing for the kind of properties described above. However, I'm not particularly interested here in giving a thorough characterization of subjective predicates, nor even of predicates of personal taste. Equally, I'm also not after settling various metaphysical, epistemological or linguistic issues that could be raised in connection with these predicates. I will thus bracket in what follows metaphysical questions such as what does it mean that certain objects fall under a property whose existence is conditional on there being a judge, epistemological qualms about how exactly we relate to such properties, or linguistic issues such as which of the predicates in a language could be considered to really fall under the label "predicates of personal taste"[1].

[1] For considerations pertaining to this last issue, see Stephenson (2007), Lasersohn (2005, 2008).

What I'm interested in here is how this dependence of those properties on judges could be reflected in a semantic theory about the expressions used to refer to such dependent properties. It is not easy to characterize this reflection without exhibiting a bias towards one certain semantic theory or another, but here is my attempt: what I take to be crucial for predicates of personal taste, which gives them their special character, is that they are, from a semantic point of view, essentially connected to a judge[2], in the sense that utterances of sentences in which these appear could be evaluated for truth only if somehow a judge has been provided. This would make these predicates be context-sensitive, in a broad sense of this term. The semantic question then becomes how exactly the judge will be represented in the semantic theory.

As far as debates in contemporary philosophy of language about predicates of personal taste go, the main contenders so far have been contextualism (which includes both truth-conditional semantics and truth-conditional pragmatics) and relativism. It is not my aim to decide between these views here, but let me note that each view, in its own way, substantiates the aforementioned need to appeal to a judge: for the former, the judge is part of the content of utterances of sentences in which predicates of personal taste occur, whereas for the latter the judge is part of the circumstances of evaluation with respect to which such sentences are evaluated for truth. Now, it seems to me, both these views subscribe to the metaphysical picture I alluded to above; both contextualism and relativism could be said to be underpinned by a subjectivist metaphysics. But the subjectivist picture is not the only one possible. One could hold, for example, that an *objectivist* framework is more adequate that a subjectivist one when it comes to the properties that predicates of personal taste stand for. According to such a picture, those properties will not depend on there being subjects or judges and will be similar to, say, physical properties such as having atomic number 52. Although highly unintuitive, in my opinion, such a view is certainly possible. Now, if we were to ask how to reflect such an objectivistic view in a semantic theory, the best option seems to be to adopt a form of *invariantism*: predicates such as "tasty" and "fun" are not context-sensitive and sentences in which they occur have an established truth value once and for all. This view would have the consequence that some people (or even all people!) might be mistaken about the truth values of such sentences; it might even be that nobody will ever come to be in a position to know those sentences' real truth values. This is a very strong claim, indeed, but it is certainly not something unheard of before: compare, for example, the present case with the case of

[2] Or to a standard of taste, or to a perspective, etc. These details will not matter here.

vagueness, where some philosophers (particularly Williamson (1994)) have maintained similar claims. In any case, invariantism is not the only option for the objectivist. Some versions of contextualism or relativism might be available to the objectivist as well. For example, one could claim that predicates of personal taste are related to a judge, so that utterances of sentences in which they occur could be evaluated for truth only when a judge has been provided, but there is a certain particular judge that is privileged, so that all such utterances have to be evaluated with respect to that particular judge. Such an *absolutist* view, although not entirely objectivist, certainly has a pronounced objectivist flavor and at the same time incorporates some semantic claims that are closer to contextualism or relativism than to invariantism.[3] I will not settle here which of these views is the best semantic counterpart of objectivism; as a matter of fact, I will not be focusing on objectivism at all in this chapter. Thus, in what follows I will not engage in any debate with the objectivist, leaving it aside. The point I want to make is just that the metaphysical views about what kinds of properties predicates of taste stand for and the semantic views purporting to account for predicates of personal taste are independent from each other. This being said, let me nevertheless note that there has been a tendency in contemporary philosophy of language to couple objectivism with invariantism and subjectivism with contextualism or relativism.

A more radical view about the semantics of predicates of personal taste is *expressivism*. When I characterized them above, I've said that their special character lies in the fact that utterance of sentences in which they appear could be evaluated for truth only if somehow a judge has been provided. But, obviously, this claim presupposes that such sentences are apt to be evaluated for truth or falsity. This is exactly what expressivists deny. For expressivists, sentences such as "Avocado is tasty" or "Roller coasters are fun" simply express attitudes towards avocado or roller coasters that speakers using these sentences have. In this sense, expressivism could be said to be a subjectivist view, since it is the judge's attitudes that play a role in the semantics of these sentences; however, the crucial difference between expressivism and all the other views (contextualism, relativism and invariantism) is that for the latter sentences comprising predicates of personal taste are apt to be evaluated for truth or falsity, whereas for the former they are not. Expressivism has gained more adepts today, and I acknowledge that it is a serious contender to the views dealt with in this work (contextualism and relativism). However, engaging in a debate with expressivism would

[3] I must confess, though, that I do feel that adopting absolutism somehow goes against the original insight of both contextualism and relativism.

constitute a considerable departure from the issues I'm interested in, so it will have to wait for another occasion.[4]

4.2. Bound predicates of personal taste and the Binding Argument for judges

In the last section of chapter 2 I've pointed out several dimensions responsible for the wide range of application of the general argument schema known as the Binding Argument. I remarked then that responsible for its wide applicability is not only its capacity to apply to a great number of types of expressions, but also its ability to be used against more than one view about a single type of expressions. The argument schema reaches not only wide, but also deep. I illustrated this by showing how the original instance of the Binding Argument could be rephrased so that to be used against relativism about locations, despite the fact that Stanley's original intention was to use it against a truth-conditional pragmatic view about locations. Without fully arguing for relativism about locations, in the previous chapter I showed that the relativist could adopt the variadic functions approach in order to deal with instances of the Binding Argument used against her position.

Now, although, as far as I know, no instance of the Binding Argument has explicitly been used to argue against relativism for locations, instances of the Binding Argument *have been* used against relativism for other types of expressions. Predicates of personal taste, the focus of this chapter, constitute such a type. In his paper "Perspective in Taste Predicates and Epistemic Modals", Schaffer (forthcoming) uses an instance of the Binding Argument in order to argue against relativism both about predicates of personal taste and about epistemic modals. Schaffer uses more than one argument against these views, but my aim here is to show that the relativist about these expressions need not fear any instance of the Binding Argument that could be used to argue against her view. My claim is that the use of instances of the Binding Argument against relativism about these expressions can be answered in the same way in which Recanati answered the original instance of the Binding Argument in the case of locations. I will restrict myself only to discussing in detail predicates of personal taste in this chapter, but I will make some remarks about how the account can be extended to other expressions (including epistemic modals) in the last section.

Schaffer starts his case against relativism with the observation that predicates of personal taste are similar to other expressions in that they can be bound. For example, the sentence

[4] Among classical expressivist views one could cite Ayer (1952), Blackburn (1984), Gibbard (1990). The most solid defense of expressivism nowadays is Schroeder (2010).

(1) Everyone got something tasty.

has a reading according to which each person in the domain of the quantifier "everyone" got something tasty *for that person*. To make the case more vividly, Schaffer presents us with an elaborate background, which I reproduce here:

> [I]magine that the Smiths go out for ice cream. Ma only likes chocolate, Pa only likes vanilla, Suzy only likes rum raisin, and Billy only likes mint chip. Today they are in luck. Each finds their favorite flavor. (Schaffer, forthcoming)

Full of enthusiasm, someone from the group then utters (1). Schaffer claims that the best explanation for the bound reading of (1), and for making sense of the contrast between (1) and a sentence like

(2) Everyone got something frozen

is to posit a hidden variable for the judge in (1)'s logical form. Thus, on Schaffer's view, (1) is to be rendered as

(3) Everyone$_i$ got something tasty for x_i.

This, in turn, has the consequence that "tasty" in itself has an argument place for the judge, which when not explicitly mentioned is provided by context.

This last step is something that Schaffer presupposes without much argument. But in the light of the discussion in the preceding chapter, it is obvious that Schaffer intends to appeal here to an instance of the Binding Argument for judges arrived at by applying the argument scheme to sentences containing predicates of personal taste. As applied to the sentence "Avocado is tasty", and as used against relativism about predicates of personal taste, the argument could be reconstructed as follows:

1J. Relativism about predicates of personal taste claims that in "Avocado is tasty", the judge is part of the circumstance of evaluation.

2J. In (1), binding occurs: the judge varies with the values introduced by the quantifier "everyone".

3J. There is no binding without a bindable variable.

4J. Therefore, in "Avocado is tasty", there is a variable for the judge.

5J. Relativism about predicates of personal taste is mistaken, since the judge is articulated in the logical form of "Avocado is tasty" (and hence, by *Distribution*, it is not part of the circumstance of evaluation).

4.3. Applying the variadic functions approach

The move to be made in order to account for (1) and to reject the conclusion of the instance of the Binding Argument for judges just presented is similar to that made by Recanati in the case of the problematic sentence "Every time John lights a cigarette, it rains" and the corresponding instance of the Binding Argument for locations. We start by defining a particular type of additive variadic operator, a specific implementation of the generic additive variadic operator, **Circ**, introduced by Recanati (2002) and whose semantic effect is, when applied to a predicate of certain adicity, to create a new predicate which differs from the input predicate by its increased adicity. More exactly, we need to define an additive variadic operator that has the effect of creating a new predicate whose extra argument is a judge, or a subject. Let's call such an operator a *subjectual* additive variadic operator, $\mathbf{Circ}_{\text{subject}}$. The next step is to show how the semantic effect of certain natural language expressions (specifically, benefactive phrases such as "for John", where John is the judge, and judge-binding quantifiers such as "everyone") could be accounted for by appeal to subjectual additive variadic operators. As we have seen in the preceding chapter, in order to capture the semantic effect of natural expressions by appeal to additive variadic operators, we need to complete the operators with specific values for the extra argument place of the new predicate created by the operator. The semantic effect of the natural language expressions will thus be twofold: they will contribute both i) an additive variadic operator of a certain sort which transforms the predicate it applies to into a new predicate with an extra argument place; ii) a value for that extra argument place of the newly-created predicate. The net semantic effect of such expressions will thus be the creation of a new predicate of the same semantic type as the input predicate, but which is more specific as a result of the new predicate combining with the expression that gives the value of the extra argument place.

Since in this chapter we are dealing with judges, let us see first how benefactive phrases such as "for John" could be represented by using the apparatus of additive variadic

functions. The semantic effect on a predicate of the (still generic) subjectual additive variadic operator, **Circ**$_{\textbf{subject}}$, could be described as follows:

(4) **Circ**$_{\text{subject}}$ (P (x_1 … x_n)) = P* (x_1 … x_n, j),

where P is the input predicate, x_1 … x_n its arguments and P* the new predicate having as arguments all the ones P has plus the extra argument for judges, j. To see clearer how this works, let me illustrate with a concrete example. In the sentence

(5) Avocado is tasty for John,

the phrase "for John" is treated as contributing both a subjectual additive variadic operator which transforms the predicate "tasty" into a new predicate with an extra argument place for judges (a predicate which we could symbolize as "tasty_for") and the specific value for that extra argument place of the newly-created predicate (in this case, the kind avocado). Now, (5) could be represented using this notation as

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

In order to account for (1), we have to follow Recanati's suggestion in the parallel case of locational expressions that the semantic effect of judge-binding quantifiers such as "everyone" is the same as that of benefactive phrases: namely, that of contributing both a subjectual additive variadic operator which transforms the predicate it applies to into a new predicate with an extra argument place for judges and the specific value for that extra argument place of the newly-created predicate. However, since quantifiers cannot deliver a specific value for the variable for judges, they will deliver a range of judges: in other words, they will bind that variable. Thus, (1) will be represented in this framework as

(7) **Circ**$_{\text{subject: everyone}}$ (for some x (tasty (x)) = for every judge j (for some x (tasty_for (x, j)),

where "everyone" is treated as contributing a subjectual additive variadic operator which transforms the predicate "tasty" into a new predicate with an extra argument place for judges

(symbolized as "tasty_for") and binding the value for that extra argument place of the newly-created predicate (in this case, every judge).

Let's see how this treatment of (1) allows us to reject the conclusion of the instance of the Binding Argument for judges dealt with in this chapter. From what we have seen, we have been given no reason to deny any of the premises of the argument. Especially premise 3 (the premise saying that there is no binding without a bindable variable) holds, because not only there is a bindable variable, it is also of the same type and it appears at the same linguistic level as the one the conclusion (that the judge needs to be represented at the level of the logical form of "Avocado is tasty") urges us to postulate. But, nevertheless, the problem with the argument is that the conclusion doesn't follow from the premises: as we can see in (7), the representation of (1) under the variadic functions approach, the predicate the quantifier "everyone" applies to (namely, "tasty") is not the same predicate whose argument for judges the quantifier binds (which is the newly-created predicate "tasty_for"). Thus, the conclusion of the present instance of the Binding Argument is not that "tasty" has an argument place for locations in its logical form, but that the newly-created predicate "tasty_for" has. Therefore, the argument doesn't compel us to claim anything about the semantics of "tasty", and thus it cannot conclude that the judge needs to be represented at the logical form of the sentence "Avocado is tasty".

Now, in chapter 3 (section 3.3.), I have shown that there are two ways to implement the variadic functions approach to prepositional expressions such as "in Paris" and quantifiers such as "every time John lights a cigarette". The same holds for the view's application to predicates of personal taste and expressions such as "for John". The first way of implementing the variadic functions approach consists in taking literally Recanati's talk about the dual role of those expressions: that of creating a new predicate that differs from the predicate they apply to by its increased adicity and that of providing a value for the extra argument place of the newly-created predicate. The other way consists in treating the expressions in question as modifiers are usually treated, as having the semantic effect of creating a new predicate that differs from the predicate they apply to in its specificity (the new predicate is more specific).

In order to illustrate these two ways of representing variadic functions and the expressions investigated, I will appeal again to the framework of event semantics summarily presented in chapter 2 and substantiated in chapter 3. The main idea behind the approach was to treat each expression in the language as a function from events to the expression's usual denotation. In order to capture this in the semantics, I will proceed in the same way I did in chapter 3: I will start from the system found in Heim and Kratzer (1998) and supplement it

with variables for events, a new semantic type for those variables and a different rule for functional application (while keeping the other semantic composition rules unchanged). The definition for semantic types is the following:

Semantic types

a) e, t and E are semantic types.

b) If σ and τ are semantic types, then <σ, τ> is a semantic type.

c) Nothing else is a semantic type.

Also, we need a definition of semantic denotation domains associated with these types:

Semantic denotation domains

a) D_e is the set of entities (individuals, locations, times, etc.);

b) D_t is the set of truth values ({0, 1});

c) D_E is the set of events.

d) For any semantic type σ and τ, $D_{<\sigma, \tau>}$ is the set of all functions from D_σ to D_τ.

The following symbols for variables will be used:

"*f*", "*g*", "*h*"… will stand for variables for functions;

"e_1", "e_2", "e_3"… will stand for variables for events.

As for the semantic composition rules, most of the rules proposed by Heim and Kratzer (1998: 16, rules S2 to S5) will remain the same. The only modification concerns the rule for functional application, which needs to be modified so that to reflect the fact that each expression is a function from events. The new rule for functional application adopted is the following:

(**FA**) If X is a branching node having Y and Z as daughters and for some types T_1 and T_2, Z is of type T_1 and Y is of type <E, <T_1, T_2>>, then for any event *e*,

[[X]](*e*) = [[Y]](*e*) ([[Z]]) (and X is of type <E, T_2>).

With these tools in hand, we can make it clear what the semantic effect of the variadic operators and the expressions accounted for by appeal to them is. I will illustrate the two ways of substantiating the functional approach by means of sentence (5). The expression that is

accounted for by appeal to a variadic operator in (5) is the benefactive expression "for John". First, let me give the lexical entries for the expressions investigated. Thus, a simple predicate such as "tasty" will have the following lexical entry in this system, being of type <E, <<E, e>, t>>, and not <e, t> as in the system of Heim and Kratzer (1998)); but since it is not a verb, we will use *states* and not events per se to give its lexical entry (although the same variable will be used for states as for events):

(8) [[**tasty**]] = $\lambda e \in D_E$. $\lambda f \in D_{<E, e>}$. e is a state of being tasty & THEME(e) = f(e).

Further, proper names such as "John", instead of being of type e, will be of type <E, e>, denoting the constant function from events to the entity they stand for:

(9) [[**John**]] = $\lambda e \in D_E$. John.

"Avocado" will be treated here as referring to the *kind* avocado, so its lexical entry will be also a constant function from events to the kind avocado (symbolized as avocado_k):

(10) [[**avocado**]] = $\lambda e \in D_E$. avocado_k[5]

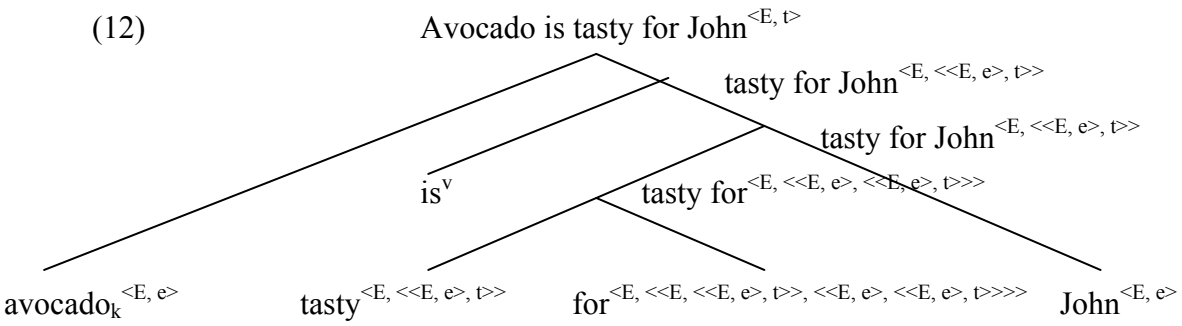
Both ways of substantiating the account agree on the lexical entries for predicates such as "tasty", proper names such as "John" and kind terms such as "avocado". However, divergence comes with the lexical entry for "for", which is different in the two cases. The difference stems from the fact that the two views predict the order of combination to be different. Thus, according to the first way of implementing the view, the preposition "for" first combines with "tasty", thus literally creating a new expression, "tasty for" which has an extra argument place; this new expression combines then with the noun phrase "John", which fills the extra argument place. According to this first way of cashing out the variadic functions approach, the lexical entry for "for" will be the following ("for" being here of type <E, <<E, <<E, e>, t>>, <<E, e>, <<E, e>, t>>>>):

[5] If you think that is not the right semantic type for kind terms, substitute it with whatever type you think kind terms should have. Presumably, the type of kind terms should be such that no type clash appears in representing sentences like (5). If you think the example is too problematic, I could have used for illustration the sentence "The avocado is tasty for John" or sentences using proper names such as "The Steel Dragon is fun for Maria", where "The Steel Dragon" is the name of the biggest rollercoaster in Japan.

(11) [[**for**]] = $\lambda e \in D_E$. $\lambda f \in D_{<E, <<E, e>, t>>}$. $\lambda g \in D_{<E, e>}$. $\lambda h \in D_{<E, e>}$. $f(e, h) = 1$ & THEME(e) = $h(e)$ & BENEFACTOR(e) = $g(e)$.

Employing a representational system using trees, according to this way of implementing the view, the logical form of (5) will be

(12)



where the superscripts stand for the semantic types of the corresponding expressions ("v" signifies that the semantic effect of "is" is vacuous).

Let us see how the semantic value of (5) is computed under this implementation of the variadic functions approach. It follows from (**FA**) that for any event e,

[[**Avocado is tasty for John**]](e) = [[[[[**for**]](e)] ([[**tasty**]])] ([[**John**]])] ([[**avocado**]]).

Thus, for any event e, [[**Avocado is tasty for John**]](e) = 1 iff [[[[[**for**]](e)] ([[**tasty**]])] ([[**John**]])] ([[**avocado**]]) = 1. The computation of the right hand is given in (13) above:

(13) [[[[[**for**]](e)] ([[**tasty**]])] ([[**John**]])] ([[**avocado**]])

= [[[[$\lambda e_1 \in D_E$. $\lambda f \in D_{<E, <<E, e>, t>>}$. $\lambda g \in D_{<E, e>}$. $\lambda h \in D_{<E, e>}$. $f(e_1, h) = 1$ & THEME(e_1) = $h(e_1)$ & BENEFACTOR(e_1) = $g(e_1)$](e)] ($\lambda e_2 \in D_E$. $\lambda i \in D_{<E, e>}$. e_2 is a state of being tasty & THEME(e_2) = $i(e_2)$)] ($\lambda e_3 \in D_E$. John)] ($\lambda e_4 \in D_E$. avocado$_k$)

= [[[$\lambda f \in D_{<E, <<E, e>, t>>}$. $\lambda g \in D_{<E, e>}$. $\lambda h \in D_{<E, e>}$. $f(e, h) = 1$ & THEME(e) = $h(e)$ & BENEFACTOR(e) = $g(e)$] ($\lambda e_2 \in D_E$. $\lambda i \in D_{<E, e>}$. e_2 is a state of being tasty & THEME(e_2) = $i(e_2)$)] ($\lambda e_3 \in D_E$. John)] ($\lambda e_4 \in D_E$. avocado$_k$)

= [[$\lambda g \in D_{<E, e>}$. $\lambda h \in D_{<E, e>}$. e is a state of being tasty & THEME(e) = h(e) & BENEFACTOR(e) = g(e)] ($\lambda e_3 \in D_E$. John)] ($\lambda e_4 \in D_E$. avocado$_k$)

= [$\lambda h \in D_{<E, e>}$. e is a state of being tasty & THEME(e) = h(e) & BENEFACTOR(e) = [($\lambda e \in D_E$. John](e)] ($\lambda e_4 \in D_E$. avocado$_k$)

= e is a state of being tasty & THEME(e) = [$\lambda e \in D_E$. avocado$_k$](e) & BENEFACTOR(e) = John

= e is a state of being tasty & THEME(e) = avocado$_k$ & BENEFACTOR(e) = John

= avocado$_k$ is tasty for John.

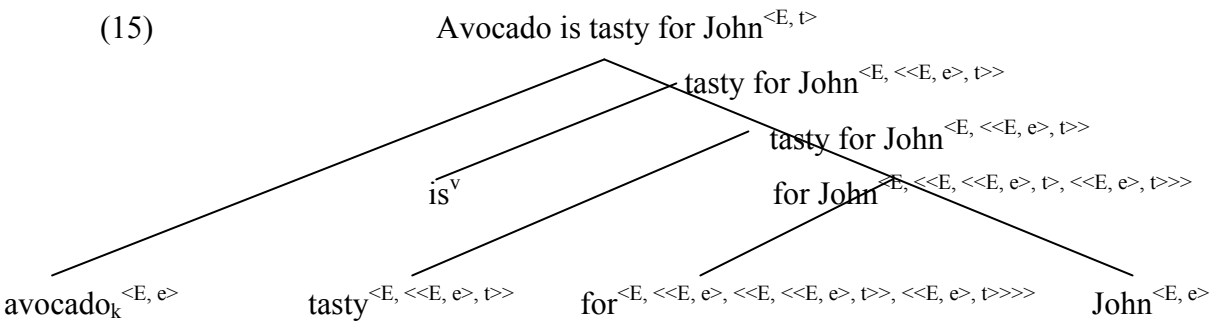
Therefore, for any event e, [[**Avocado is tasty for John**]](e) = 1 iff avocado$_k$ is tasty for John.

According to the second way of implementing the account, in the case of (5) the preposition "for" first combines with the noun phrase "John" and the result combines with "tasty", thus creating a new predicate of the same type, but more specific than the predicate "for John" has applied to. According to this second way of cashing out the variadic functions approach, the lexical entry for "for" will be the following ("for" being here of type <E, <<E, e>, <<E, <<E, e>, t>>, <<E, e>, t>>>>):

(14) [[**for**]] = $\lambda e \in D_E$. $\lambda f \in D_{<E, e>}$. $\lambda g \in D_{<E, <<E, e>, t>>}$. $\lambda h \in D_{<E, e>}$. BENEFACTOR(e) = f(e) & g(e, h) = 1 & THEME(e) = h(e).

The logical form of (5) under this approach will be (again ignoring tense)

(15)



Let us see how the semantic value of (5) is computed under the current implementation of the variadic functions approach. It follows from (**FA**) that for any event e,

[[**Avocado is tasty for John**]](*e*) = [[[[[**for**]](*e*)] ([[**John**]])] ([[**tasty**]])] ([[**avocado**]]).

Thus, for any event *e*, [[**Avocado is tasty for John**]](*e*) = 1 iff [[[[[**for**]](*e*)] ([[**John**]])] ([[**tasty**]])] ([[**avocado**]]) = 1. The computation of the right hand is given in (16) below:

(16) [[[[[**for**]](*e*)] ([[**John**]])] ([[**tasty**]])] ([[**avocado**]])

= [[[[$\lambda e_1 \in D_E$. $\lambda f \in D_{<E, e>}$. $\lambda g \in D_{<E, <<E, e>, t>>}$. $\lambda h \in D_{<E, e>}$. BENEFACTOR(e_1) = $f(e_1)$ & $g(e_1, h)$ = 1 & THEME(e_1) = $h(e_1)$](*e*)] ($\lambda e_2 \in D_E$. John)] ($\lambda e_3 \in D_E$. $\lambda f \in D_{<E, e>}$. e_3 is a state of being tasty & THEME(e_3) = $f(e_3)$)] ($\lambda e_4 \in D_E$. avocado$_k$)

= [[[$\lambda f \in D_{<E, e>}$. $\lambda g \in D_{<E, <<E, e>, t>>}$. $\lambda h \in D_{<E, e>}$. BENEFACTOR(*e*) = $f(e)$ & $g(e, h)$ = 1 & THEME(*e*) = $h(e)$] ($\lambda e_2 \in D_E$. John)] ($\lambda e_3 \in D_E$. $\lambda f \in D_{<E, e>}$. e_3 is a state of being tasty & THEME(e_3) = $f(e_3)$)] ($\lambda e_4 \in D_E$. avocado$_k$)

= [[$\lambda g \in D_{<E, <<E, e>, t>>}$. $\lambda h \in D_{<E, e>}$. BENEFACTOR(*e*) = [$\lambda e \in D_E$. John](*e*) & $g(e, h)$ = 1 & THEME(*e*) = $h(e)$] ($\lambda e_3 \in D_E$. $\lambda f \in D_{<E, e>}$. e_3 is a state of being tasty & THEME(e_3) = $f(e_3)$)] ($\lambda e_4 \in D_E$. avocado$_k$)

= [[$\lambda g \in D_{<E, <<E, e>, t>>}$. $\lambda h \in D_{<E, e>}$. BENEFACTOR(*e*) = John & $g(e, h)$ = 1 & THEME(*e*) = $h(e)$] ($\lambda e_3 \in D_E$. $\lambda f \in D_{<E, e>}$. e_3 is a state of being tasty & THEME(e_3) = $f(e_3)$)] ($\lambda e_4 \in D_E$. avocado$_k$)

= [$\lambda h \in D_{<E, e>}$. BENEFACTOR(*e*) = John & *e* is a state of being tasty & THEME(*e*) = $h(e)$] ($\lambda e_4 \in D_E$. avocado$_k$)

= BENEFACTOR(*e*) = John & *e* is a state of being tasty & THEME(*e*) = [$\lambda e \in D_E$. avocado$_k$)](*e*)

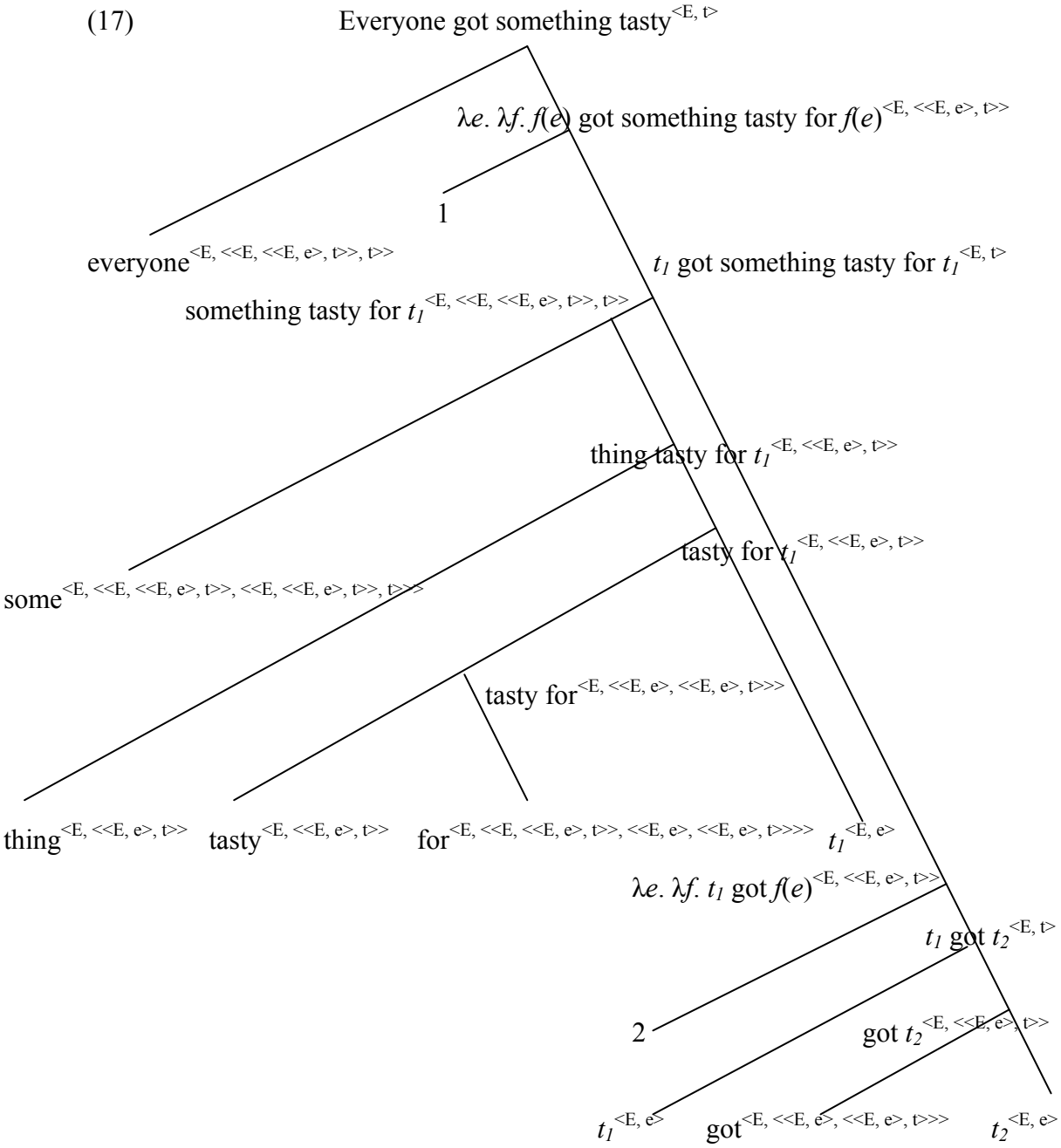
= BENEFACTOR(*e*) = John & *e* is a state of being tasty & THEME(*e*) = avocado$_k$

= avocado$_k$ is tasty for John.

Therefore, for any event *e*, [[**Avocado is tasty for John**]](*e*) = 1 iff avocado$_k$ is tasty for John.

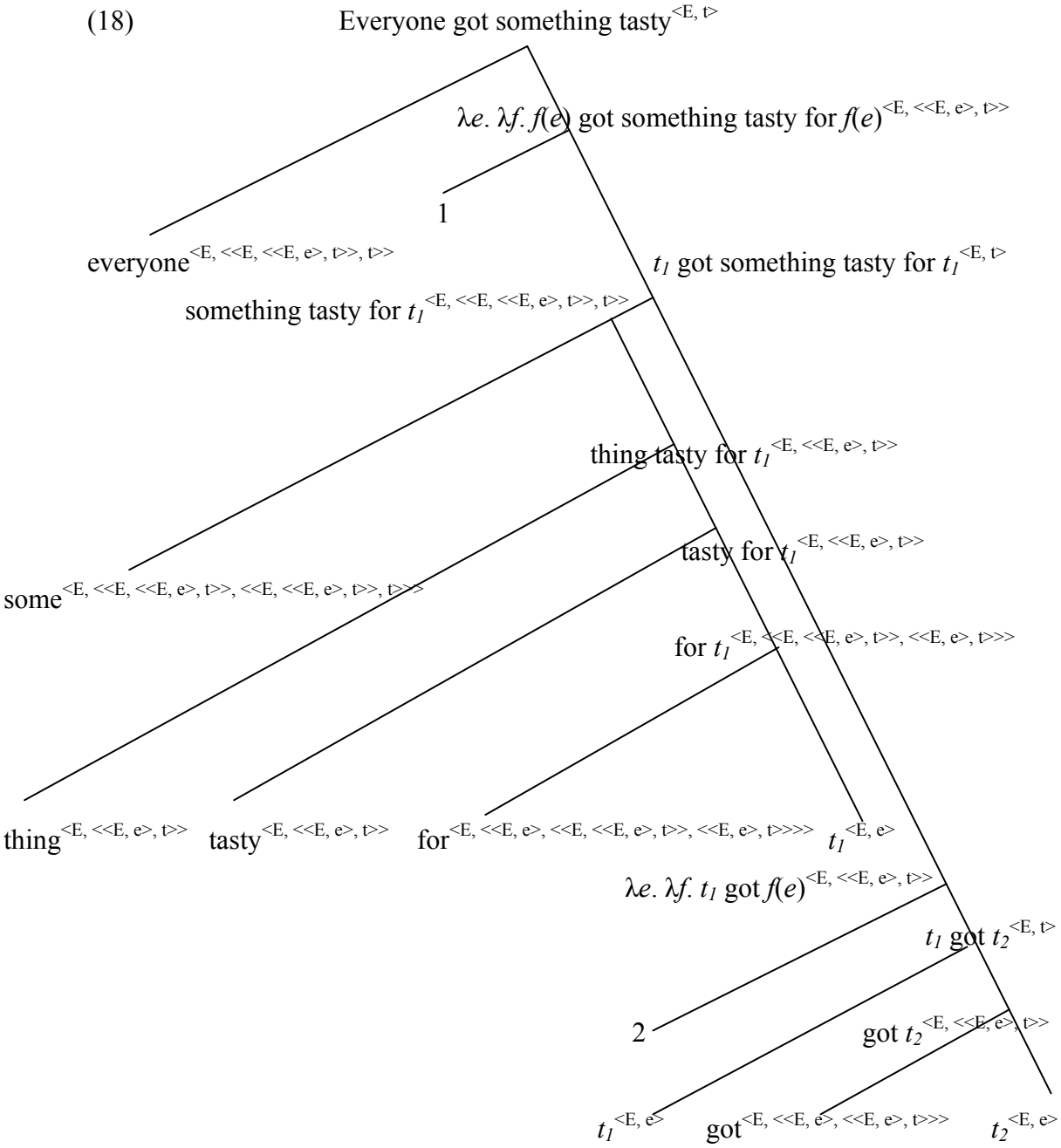
Let us move now to the more complex case of (1). The logical form of (1) will also be different according to the two ways of representing variadic operators. According to the first, (1) will have the following logical form:

(17)



According to the second way of representing variadic operators, (1) will have the following logical form:

(18)



I will not pause here to give the lexical entries for all the expressions involved (they should be straightforward), nor to show how to calculate the semantic value of (1) under each approach, but here are the modifications that need to be made to Heim and Kratzer's (1998) system in order to be able to compute it. The modifications are in fact the same as those made in chapter 3 in dealing with complex sentences such as "Every time John lights a cigarette, it rains". Since we are doing predicate abstraction (the nodes "1" and "2" result from lambda-abstracting over be nodes below them), we need a predicate abstraction rule; thus, we will modify the predicate abstraction rule given in Heim and Kratzer (1998: 96) in order to reflect

the fact that we are operating in an event framework. Taking a variable assignment to be a partial function from **N** (the set of natural numbers) to $D_{<E, e>}$, the new rule will be

(**PA**) If X is a branching node whose daughters are a relative pronoun or "such" and Y, and $i \in \mathbf{N}$, then for any variable assignment a, $[[X]]^a(e) = \lambda e \in D_E. \lambda f \in D_{<E, e>}. [[Y]]^b(e)$, where $b = a^{f/i}$.[6] (and X is of type <E, <<E, e>, t>>)

Also, since we are doing predicate modification, we need a predicate modification rule; thus, we will modify the predicate abstraction rule given in Heim and Kratzer (1998: 95) in order to reflect the fact that we are operating in an event framework. The new rule will be:

(**PM**) If X is a branching node having Y and Z as its daughters, then for any variable assignment a, if both $[[Y]]^a$ and $[[Z]]^a$ are if type <E, <<E, e>, t>>, then $[[X]]^a(e) = \lambda e \in D_E. \lambda f \in D_{<E, e>}. [[Y]]^a(e)(f) = [[Z]]^a(e)(f) = 1$ (and X is of type <E, <<E, e>, t>>).[7]

As in the case of locations, one question that arises is whether these two ways of representing variadic functions and the expressions whose semantic effect is accounted for by appeal to them are equally viable. The same kind of consideration we have seen McConnell-Ginet brings in support of the second alternative in the case of locational expressions such as "in Paris" could be brought here as well. I thus conclude that the second alternative is preferable to the first.

Let me finish this section by showing how a relativist view combined with the variadic functions approach (a view that in chapter 3 I called "the enhanced relativist view") to benefactive expressions such as "for John" accounts for the various readings of (1). I will not go though the explanation of how each reading is treated; rather, on the model of the table provided in section 3.4. for the various readings of "Every time John lights a cigarette, it rains", the following table will summarize the treatment given to various readings of (1) and, additionally, to various readings of "Avocado is tasty". WS symbolizes weatherman-like scenarios that could be constructed for sentences in which predicates of personal taste occur,

[6] $a^{f/i}$ is called a "modified variable assignment". The definition of it can be found in Heim and Kratzer (1998: 112).

[7] In addition to the modifications mentioned, we will need to modify (**FA**) as well, so that to make it sensitive to variable assignments. This could be done by giving an event semantics framework version of the definition in Heim and Kratzer (1998: 95).

whereas non-WS symbolizes normal scenarios, in which the sentences are meant to communicate a specific judge. The particularity of the version of relativism proposed here is that in the bound reading of (1), the variadic operator and the judge appear in the logical form of (1), whereas in the other readings of (1) they don't, the judge being relegated to the circumstance. In the case of the sentence in the last row, both the variadic operator and the location appear in the logical form, but it is a different variadic operator than the one contributed by the quantifier.

Sentence	**Scenario**	**Binding**	**Judge**
Avocado is tasty.	WS	no	Circumstance (existential quantif.)
Avocado is tasty.	non-WS	no	Circumstance (particular judge)
Avocado is tasty for John.	non-WS	no	Logical form
Everyone got something tasty.	Non-WS	yes	Logical form
Everyone got something tasty.	WS	no	Circumstance (existential quantif.)
Everyone got something tasty.	Non-WS	no	Circumstance (particular judge)
Everyone got something tasty for John.	Non-WS	no	Logical form

4.4. Alternative accounts

We have seen in the previous section how the variadic functions approach can be used to block a certain instance of the Binding Argument used against relativism about predicates of personal taste. The account gives a particular treatment of prepositional phrases such as "for John". But also, more controversially, the account has a particular story to tell about how binding occurs in (1), namely that the quantifier not only binds a variable, but also contributes a preposition ("for" in this case) that is responsible with creating a different predicate that differ from the quantifier applies to by its increased adicity. In this section I will investigate two alternative accounts of expressions such as "for *x*", where *x* is a judge, and a different way of explaining bound cases such as (1). Both alternative accounts of how "for *x*" works treat the expression as an intensional operator: according to one (Kölbel's (2009)), "for *x*" is a sentential intensional operator; according to the second (Lasersohn (2005, 2008)), "for *x*" is a predicational intensional operator. The alternative account of how binding occurs in sentences such as (1) also belongs to Lasersohn (2008). In what follows I will raise some problems for

Kölbel's view about "for *x*", and try to show that Lasersohn's way of accounting for binding in (1) has some undesired consequences.[8]

4.4.1. "For *x*" as an intensional sentential operator

The first view I investigate is that "for *x*", where *x* stands for a judge, or a subject, is an intensional sentential operator. The term "intensional" is meant to capture the fact that "for *x*" functions as a circumstance-shifter: its effect is to shift the judge parameter of the circumstance, to which the truth of utterances containing predicates of personal taste is relative to. The framework thus is a relativist one, according to which the circumstances of evaluation comprise a judge parameter (and possibly other unorthodox parameters, but this is an issue that is dropped for convenience when only predicates of personal taste are discussed). The term "sentential" is meant to capture the fact that "for *x*" is an expression operating on sentences, rather than on predicates or other sub-sentential expressions.

In the literature about predicates of personal taste, the intensional sentential operator view about expressions such as "for *x*" has been proposed by Kölbel (2009). Here is how Kölbel explains the view:

> In the relativist semantics for taste predicates, we can introduce a class of operators that are analogous to Kaplan's modal and temporal operators in that they shift the standard of taste parameter in the circumstance of evaluation, just as modal and tense operators shift the world and time parameter respectively. English seems to contain a construction that might intuitively be interpreted in this way, namely the "For *S*, *p*"-construction, as in "For Anna, whale meat is tasty", or "Whale meat is tasty for Anna". We can start with an operator-forming operator FOR on singular terms. A standard-shifting operator FOR *t* is formed by prefixing the expression FOR to a singular term *t* referring to a person. Such an operator can in turn be prefixed to a sentence *p*, thus yielding a sentence FOR *t*, *p*. Here are some syntactic and semantic instructions we might use to introduce FOR into a language of the sort we are considering:
>
> (S1) For all sentences φ and all singular terms α, FOR α, φ is a sentence.

[8] There are also views according to which "for" is vacuous (for example, Stephenson (2007)), but these are views that predicates of personal taste have a variable for judges in their logical form. Since I think "for *x*" is an adjunct and not an argument, I will leave such views aside.

> (S2) For all φ, α, w, s and a: if φ is a sentence and α is a personal name referring to a, w is a possible world, and s is a standard:
> FOR α, φ is true in a circumstance $<w, s>$ iff φ is true in $<w, s(a)>$. (where $s(a)$ is a's standard of taste)

> In other words, FOR α shifts the standard parameter in the circumstances to the standard of the referent of α. The operator thus removes sensitivity to a standard of taste, and a sentence that previously expressed a proposition that is standard-sensitive will, when prefixed with such an operator, no longer express a standard-sensitive proposition. (Kölbel, 2009: 384)

Kölbel thinks that this view has the advantage of offering a better alternative than contextualism for explaining "faultless disagreement", that it can explain the behavior of sentences containing predicates of personal taste in various situations, such as speech and "what is said" reports and that it neatly explains why assertions of the form "For Anna, whale meat is tasty, but whale meat is not tasty" are correct. More importantly for us, Kölbel thinks that the FOR operator could be a good choice for modeling natural language expressions such as "for John".

This last claim gives Kölbel the chance to argue for relativism on the basis of the existence of natural language expressions that behave as sentential operators[9]. As he himself mentions, this argument is similar to a traditional argument for the introduction of parameters other than possible worlds in the circumstances. This argument, aptly dubbed the Operator Argument, has indeed figured prominently in Kaplan's (1989) case for the introduction of unorthodox parameters in the circumstances of evaluation such as times an (possibly) locations. Thus, focusing mostly on time, Kaplan writes:

> If we built the time of evaluation into the contents (thus removing time from the circumstances leaving only, say, a possible world history, and making contents specific as to time), it would make no sense to have temporal operators. To put the point another way, if what is said is thought of as incorporating reference to a specific time, or state of the world, or whatever, it is otiose to ask whether what is said would have been true at another time, in another state of the world, or whatever. Temporal

[9] He is keen though to stress that the Operator Argument is not the only argument for relativism (in contrast with Stanley (2005c), for example), and thus not necessary for it (Kölbel, 2009: 393).

> operators applied to eternal sentences (those whose contents incorporate a specific time of evaluation) are redundant. Any intensional operators applied to perfect sentences (those whose contents incorporate specific values for all features of circumstances) are redundant. (Kaplan, 1989: 503)[10]

The argument offered by Kaplan is in essence an argument for the introduction of unorthodox parameters in the circumstance based on the existence of operators in language whose effect is not vacuous. Recently, however, this kind of argument has been under heavy fire. First, King (2003, 2007) has tackled the issue in connection to temporal and locational expressions, with the aim of arguing that the argument relies on some syntactic assumptions about the expressions investigated that, in light of current linguistic practice, should be rejected. Further, Cappelen and Hawthorne (2009) have addressed the argument in a more general form, and have argued against it by showing that in each case (temporal and locational expressions included) one or more premises of the argument have to be given up. We owe them the following reconstruction of the argument. First, they submit that the proponents of the Operator Argument rely on a number of assumptions, which they dub *Sententiality*, *Parameter Dependence*, *Uniformity* and *Vacuity*. The most important of these assumptions is *Sententiality*, which is a claim about the way a certain expression E combines with other expressions. According to the assumption, an expression E exhibits sententiality if it combines with one or more *sentences* (but not with sub-sentential expressions) to yield larger sentences, which is a way of saying that E is a sentential operator. The argument

> focuses on some complex construction of the form ES, where an expression E, manifesting *Sententiality*, combines with a sentence S to generate a larger sentence ES. (…) The argument then purports to show that, when S occurs in isolation, its semantic value is not propositional. The argument takes off from the following purported insight: there is some sentence S that can be evaluated for truth only once a value along a parameter is specified – if S's content does not specify a value along the relevant parameter, S's content will not manifest propositionality. With this alleged insight as its first premiss, the Operator Argument proceeds as follows:

[10] A similar point is made in Lewis (1998).

> *L1. Parameter Dependence*: S is evaluable for truth only once a value along parameter M is specified.
> *L2. Uniformity*: S is of the same semantic type when it occurs alone or when it combines with E.
> *L3. Vacuity*: E is semantically vacuous (i.e., it does not affect truth value) when it combines with a sentence that semantically supplies a value for M.
> *L4.* E is not redundant when it combines with S.
> *L5.* By *Vacuity* and (L4), S does not supply a value for M when it combines with E.
> *L6.* By *Uniformity* and (L5), S does not supply a value for M when it occurs alone.
> *L7.* By *Parameter Dependence* and (L6), S cannot be evaluated for truth. (Cappelen and Hawthorne, 2009: 71)

It is not my goal here to fully assess the Operator Argument or to discuss whether King and Cappelen and Hawthorne's rejection of it is successful.[11] Rather, I want to point out that Kölbel's argument above could be rendered using the argument-scheme Cappelen and Hawthorne provide. I am not sure whether Kölbel would ultimately use a form of the Operator Argument to argue for relativism or, if so, whether he would subscribe to the way in which Cappelen and Hawthorne have regimented it. But in any case, what is clear is that Kölbel does make one assumption about natural language expressions such as "for Anna", as modeled by the operator FOR: namely that they exhibit what Cappelen and Hawthorne have called *Sententiality*. That this is so can be seen in the definition of the FOR operator. Now, one line of attack of the Operator Argument for other expressions than predicates of personal taste that both King and Cappelen and Hawthorne take is that, for the expressions in question, the assumption fails. Thus, the latter claim that "*Sententiality* is unmotivated for many of the standard temporal, locational, modal, and precisional constructions that figure in these arguments" (Cappelen and Hawthorne 2009: 73). Cappelen and Hawthorne back up this claim by pointing towards certain widespread beliefs among linguists to that effect.[12] On his part, King (2003) goes at lengths to show that a treatment according to which temporal and

[11] I will present a different version of the argument, one that in my opinion is successful, in chapter 5 (section 5.2.).
[12] They explain the relativists' tendency to interpret such expressions as sentential operators by hypothesizing that they have been misled into thinking that the expressions in question are sentential by the possibility of fronting those expressions (that is, the possibility to move "in Boston" from its final position in "It is raining in Boston" to an initial position in "In Boston, it is raining"). I find this diagnosis doubtful.

locational expressions are construed as quantifiers over times and locations, respectively, is better than a treatment according to which they are construed as operators. It would take us far afield from the topic of this work to assess all these arguments; rather, what I want to signal is that the following possibility is open: namely, that it might turn out that the reasons to deny *Sententiality* for temporal, locational, modal and precisional expressions are reasons to also deny *Sententiality* for expressions such as "for Anna", and thus reasons for rejecting Kölbel's analysis of such expressions.

Now, besides this general and hypothetical point, there is one particular objection that Cappelen and Hawthorne raise to treating expressions such as "for *x*" as sentential operators. Thus, in a footnote, they consider Kölbel's account and present a case which they claim is problematic for it. Their sentence is

(19) Maria ate something that was tasty for Anna in a dignified way.

As I understand the objection, the problem stems from the fact that there are readings of (19) in which "tasty" is related to Anna, but "dignified" is not. (This is the way I interpret the set up they offer for the sentence: "[s]uppose something is tasty for Anna, while other things are dignified for Anna" (Cappelen and Hawthorne, 2009: 75, footnote 10)). Now, if "for Anna" would be sentential, then both "tasty" and "dignified" would need to be related to Anna. But, from the way the case was designed, they are *not* both related to Anna. The operator, Cappelen and Hawthorne say, is "insufficiently selective". If my way of understanding it is correct, the objection seems to be that if "for Anna" is a sentential operator, this reading is unavailable in a case in which it should be.

I don't find this objection very powerful, as it stands. Cappelen and Hawthorne seem to presuppose that "dignified" is a subjective predicate of the same kind as "tasty". But this doesn't seem very plausible to me. At least intuitively, the two predicates seem to belong to different categories. Now, if the two predicates are of different kinds, the relativist has two options: 1) refuse to give "dignified" a relativistic treatment; 2) give "dignified" a relativistic treatment, but connect it with other parameter than a judge (say, a moral or dignity standard).[13] In both cases, it is not true that "for Anna" is insufficiently selective, for since

[13] It might be the case that Cappelen and Hawthorne think that in a relativist framework all subjective predicates should be related to a unique judge parameter in the circumstance. But that would be a substantial assumption, for it is not obvious that the relativist would proceed in this way (she could claim that for each type of subjective expression there is a different parameter in the circumstance on which sentences comprising the subjective expressions are relative to). In any case, they are not explicit about such an assumption.

there is just one predicate of personal taste in the sentence, and since expressions like "for *x*" track only predicates of personal taste, there is nothing to be selective about.

However, a related objection could be raised, one involving only predicates of personal taste. For example, in

(20) Maria ate something that was tasty for Anna in a funny way,

it is hard to deny that "tasty" and "funny" are both predicates of personal taste. In a setting similar to the one Cappelen and Hawthorne propose, there should be a reading in which "tasty" is related to Anna, but "funny" is not. If "for Anna" is sentential, this reading is unavailable in a case in which it should be.[14]

Even if there is a way for Kölbel to answer the objection above, there is another problem that besets the view: namely, that it is incomplete. There is no mention in Kölbel's view (at least, not as it is presented in Kölbel (2009)) of cases featuring bound predicates of personal taste – sentences like our (1). We have seen how such sentences could be used to mount an argument against relativism. So far as I can see, then, Kölbel has no answer to the Binding Argument for predicates of personal taste. But unless Kölbel takes up this issue, I think it is fair to say that his account is incomplete.

Before moving to the next view, let me note that the variadic functions approach doesn't have to face any of the problems Cappelen and Hawthorne have raised for Kölbel's account. First, the variadic functions approach is perfectly compatible with the denial of *Sententiality* for such expressions as "for *x*". As a matter of fact, as noted from the very beginning when I introduced variadic operators (chapter 3, subsection 3.3.) and as illustrated above (section 4.3.), variadic operators are *not* sentential[15]: they operate on sub-sentential expressions. Second, sentences such as (20) don't pose any problems for the view, either: since "for Anna" will be interpreted as a subjectual additive variadic operator, it will operate on "tasty" in the usual way (by creating a different predicate that differs from "tasty" by its increased adicity and providing a value for the extra argument place for the newly-created predicate, and not on the whole sentence). There is a question of what happens with "funny"

[14] Kölbel (p. c.) seems to be persuaded by examples of the type Cappelen and Hawthorne give above that the best way to go is to treat "for Anna" as a predicate intensional operator, instead of treating it as a sentential intensional operator. I will explore this option in the next subsection. In connection to these two views about expressions such as "for *x*", Kölbel notes that the crucial feature of his relativist framework is that such expressions could be treated as *intensional* operators (that is, shifting a parameter in the circumstance), and takes the issue of whether they are construed as sentential or predicational as being less important.

[15] They are also not intensional. This is the crucial difference between the variadic functions approach and views that treat "for *x*" as predicate intensional operators, such as Lasersohn's (to be explored shortly).

in (20), but I the answer to that question will depend on the details of one's theory. For example, the relativist will hold that "funny" will be evaluated with respect to the value of the judge parameter that is salient in the context. Regardless of this, however, the variadic functions approach to expressions like "for *x*" seems better than a view holding that they are intensional sentential operators.

4.4.2. "For *x*" as an intensional predicate operator

A related view to the one presented above consists in treating "for *x*" as an intensional operator, but construing it as predicational rather than sentential. In the literature about predicates of personal taste, the intensional predicate operator view about such expressions has been proposed by Lasersohn (2005, 2008). Like Kölbel, Lasersohn is operating within a relativistic framework, according to which the circumstances of evaluation (the index, in Lasersohn's Lewisian jargon) comprise a parameter for judges.[16] Thus, for Lasersohn, sentences will be true relative to a model, an assignment, a context and an index – index which comprises, besides possible worlds and other unorthodox parameters[17], a parameter for judges, so that a sentence is true in a context iff the proposition expressed by the sentence in that context is true relative to the world of the context and a judge. In this setting, Lasersohn's clause for "for" is the following:

(21) If α is a term and β is an intransitive verb, then $[[\beta \text{ for } \alpha]]^{M,g,c,w,u} = [[\beta]]^{M,g,c,w,a}$, where $a = [[\alpha]]^{M,c,w,u,g}$ (Lasersohn 2008: 313),

where *M* is a model, *g* an assignment, *c* a context, *w* a world, and *u* an individual (the judge).

The first observation that could be made about this treatment of "for *x*" is that, unlike Kölbel's, it is compatible with the denial of Cappelen and Hawthorne *Sententiality*. "For *x*" is *defined* as a predicate operator[18], and not as a sentential one. Also, since "for *x*" is not sentential, the problem posed for Kölbel's account by sentences such as (20) doesn't arise.[19]

[16] The main difference between the two views is that Lasersohn admits the judge parameter to be set in other contexts than the context of utterance, whereas for Kölbel it is the context of the utterance that provides the judge parameter. Thus, Lasersohn's view is closer to MacFarlane's framework. In the terms of MacFarlane (2009), Kölbel's view is an instance of "non-indexical contextualism" rather than of "relativism". As I've shown in the first chapter, I take this difference to have no impact on the issues discussed in this work.

[17] As I did when presenting Lasersohn's view about locations, I will simplify by pretending that the parameter for judges is the only unorthodox parameter in the index.

[18] Lasersohn talks about intransitive verbs in his clause for "for *x*", but it is obvious that he takes the definition to apply also to predicates like "tasty".

[19] Again, something needs to be said about "funny", but I will not pause to give an explanation on Lasersohn's behalf. I assume that he will agree with the solution I gave above (end of previous section).

Now, it is an interesting question whether Lasersohn could appeal to a modified form of the Operator Argument, one that drops the assumption of *Sententiality*, in order to argue for relativism. Lasersohn seems to argue for relativism on the basis of other phenomena, such as faultless disagreement (Lasersohn (2005)) or belief reports (Lasersohn (2009)), but the question remains open for a supporter of the view that expressions like "for *x*" are predicate intensional operators. However, in order to successfully argue for relativism by means of a version of the Operator Argument that drops *Simplicity* one would need to show that the other assumptions spelled out by Cappelen and Hawthorne resist their criticism. I will not attempt to do so here, although I will propose myself such a modified version of Operator Argument in section 5.2. of chapter 5.

Another advantage of Lasersohn's account over Kölbel's is that it takes into consideration cases of bound predicates of personal taste – sentences like our (1). As we have seen in the preceding chapter when discussing locational expressions (sub-section 3.2.2.), Lasersohn has an account of how binding works in a relativist framework that permits him to answer the instance of the Binding Argument for locations dealt with in chapter 3. His solution was to replace quantification over locations in the object language with quantification over indices (thought of as comprising a location parameter) in the meta-language. In the same vein, his answer to the instance of the Binding Argument for predicates of personal taste dealt with in this chapter is to replace quantification over judges in the object language with quantification over indices (thought of as comprising a parameter for judges). Lasersohn's main claim is that quantifiers are able to bind both variables in the object language and parameters in the index (which are variables in the meta-language). A certain quantifier, such as "every man" (see example (24) below) could bind both a variable for individuals in the object language and a certain parameter in the index – say, the judge parameter. For Lasersohn, quantifiers are sentence-abstract forming operators: when they bind variables in the object language, their effect could be described as in (22); when they bind variables in the meta-language – specifically the parameter for judges – their effect could be described as in (23):

(22) $[[\lambda n \varphi]]^{M,g,c,w,l} = \{x \in U \mid [[\varphi]]^{M,g[x/n],c,w,l,} = 1\}$

(23) $[[\mu n \varphi]]^{M,g,c,w,u} = \{x \in U \mid [[\varphi]]^{M,g[x/n],c,w,x} = 1\}$ [20],

[20] I modified slightly Lasersohn's clauses to align with the simplifications made (see footnote 15). For Lasersohn's original clauses of the two operators, see Lasersohn (2008), page 313 and 331, respectively.

where φ is a sentence, M is a model, g an assignment function, c a context, w a possible world, u an individual (the judge), $g[x/n]$ is that sequence in which x is the n-th element and which agrees with g in all other positions, U the set of individuals and λ and μ are the two sentence-abstract forming operators. As (22) and (23) show, λ manipulates the assignment function (lambda-abstraction), whereas μ manipulates the parameter for the judge in the index, so that the truth of φ is dependent on the values taken by x. To illustrate, sentence

(24) Every man rode some ride that is fun,

will be represented as

(25) [[every man]μ_1 [[some [ride that λ_2 [pro$_2$ is-fun]]]λ_3 [pro$_1$ [rode pro$_3$]]]],

where the quantifier "every man" binds both a variable for individuals in the object language (pro_1) and the parameter for judges in the index. (1) is represented in Lasersohn's system as

(26) [[everyone]μ_1 [[something] λ_2 [pro$_2$ is-tasty] λ_3 [pro$_1$[got pro$_3$]]]],

where the quantifier "everyone" binds both a variable for times in the object language (pro_1), and the parameter for judges in the index.[21]

Now, as in the case of locations, Lasersohn admits that this way of accounting for binding imposes some limitations regarding the expressive power of the view, in comparison with that of standard variable binding. Specifically, Lasersohn holds that his view excludes a reading of the sentence

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

[21] Although not the exact topic of the discussion here, it is worthy to note that this treatment of (1), as in the case of locations, blocks the instance of the Binding Argument presented in this chapter. In (26), the representation of (1) in Laseroshn's system, no variable for judges appears. Since there is no variable for judges in the object language, no such variable can be bound. Thus, it would seem that Lasersohn's account avoids the conclusion of the aforementioned instance of the Binding Argument (namely, that the judge needs to be represented at the level of the logical form of "Avocado is tasty") by denying premise 3 (namely, the premise saying that there is no binding without a bindable variable). But this is not true, since *there is* a variable that is bindable: namely, the parameter for judges of the index, which is a variable in the meta-language. Thus, premise 3 of the argument holds. Instead, the problem with the argument is that the conclusion doesn't follow: although there is a bindable variable (the parameter for judges), and although it is of the same type, it doesn't appear at the same linguistic level than the one the conclusion urges us to postulate.

according to which the judges associated with "fun" and the ones associated with "tasty" are different, a reading which is not excluded by standard variable binding. In his own words:

> For example, sentence [(27)] should have a reading in which the hidden argument for *fun* is bound to *every man*, but the hidden argument for *tasty* is bound by *some woman*. (…) But in fact, this sentence does not have such a reading. It can be interpreted at least three ways: The speaker might be expressing his or her own opinion that the rides were fun and the dishes were tasty, or claiming that the each man gave a ride that was fun for him and a dish that was tasty for him, or that each woman received a ride that was fun for her and a dish that was fun for her; but the sentence cannot mean that each man gave some woman a ride that was fun for him, and a dish that was tasty for her. (Lasersohn, 2008: 325)

Lasersohn then goes on and shows how these three readings can be accounted for in his system. However, as with the case of locations, I don't think that things are that simple here. For it seems to me that scenarios in which the reading of (27) that is excluded by Lasersohn's account is the one the sentence should, in fact, have, could be constructed. Imagine, for example, a TV game in which men are trying to entertain women, for instance by taking them to amusement parks or cooking from them. The winner of the game is, say, the man who makes the woman he is trying to entertain to have the best time (suppose that there is a precise way to test the women's degrees of enjoyment – say, by comparing reports sent to the jury of the game by each woman).[22] Imagine that, as it happens, in their effort to entertain the women, each man offers the woman he is trying to entertain a rollercoaster ride and a dish he cooked himself. Now, it is irrelevant for the outcome of the game whether or not the men themselves enjoy the particular activities they engage in together with the women they are trying to entertain, but (for some reason) commenting on each man's state after a certain activity is something that the host of the game thinks the viewers would be thrilled to know. So, each performance is accompanied by these kinds of comments. Suppose now that, as it happens, each man enjoyed the rollercoaster ride but none of the women did (say, for example, that none of them feels good after getting off the rollercoaster); an suppose that each woman enjoyed the dish, but none of the men did (say, for example, that none of them feels

[22] I'm focusing here on the case in which "every man" takes wide scope over "some woman", so that each man sends things to a different woman, but nothing hinges on that choice; the example will have the same illustrative power if I would have opted for the reading in which "a woman" takes wide scope over "every man".

good after finishing the dish). It seems to me that in this scenario someone – say, the host of the game – could felicitously utter (27) to describe the situation. We thus have a scenario in which a reading of (27) that is excluded by Lasersohn's account is actually the one the sentence should have. The scenario is pretty complicated, no doubt, but it is nevertheless possible. So, if my intuitions are on the right track here, the fact that under Lasersohn's analysis both "fun" and "tasty" will be evaluated with respect to the same value of the judge parameter of the index does not speak in its favor.

Now, I don't think one particular case is enough to sink a view, so I don't want to put more weight on the case just given than one should. But the case is significant, I think, in that it points toward a principle that, to me, seems very intuitive. The principle is that a semantic theory shouldn't exclude readings of sentences it purports to account for even if those readings are not widespread or they require elaborated set ups such as the one just presented. It might well be true that certain readings of certain sentences are ruled out for pragmatic reasons; it might be, for instance, that those readings will rarely be the ones appropriate for the sentences in question to have. But the important point is that those readings should not be excluded by one's semantics (let alone one's syntax). In the example above I tried to make salient a reading that is excluded in Lasersohn's system. If my intuitions are on the right track, then Lasersohn violates the principle I alluded to. This seems to me to be a pretty serious drawback of one's theory.[23]

Does the varaidic functions approach offer a better result than Lasersohn's account when it comes to (27) and the scenario provided? I think it does. It is easy to see that, under the variadic functions approach, treating both occurrences of predicates of personal taste as being connected to a single judge is not forced on us. Remember, under the approach mentioned quantifiers like "everyone" or "each man" are to be treated on the same par as the expression "for *x*": namely, by appeal to subjectual additive variadic operators. Since in (27) there are two quantifiers, "each man" and "a woman", and since they operate independently of each other, any of the various readings of (27), including the one I tried to make salient in the game example, are possible. They are possible simply by having one quantifier operating on one of the two predicates, and the other quantifier operating on the other predicate. Thus, the value for the judge parameter introduced by one quantifier need not be the same as the value for the judge parameter introduced by the other quantifier, and therefore the reading I

[23] In any case, even if one does not agree with the intuitions in the game example, and thus sees no related worries for Lasersohn's view, the variadic functions approach could be seen as a less radical alternative to Lasersohn's, in the sense that quantification over judges in the object language is still preserved.

tried to make salient by the game example is accounted for. Now, the fact that such a readings is not only allowed but also easily accounted for under the variadic functions approach, while in Lasersohn's view it is excluded, suggests, in my opinion, that the variadic functions approach should be preferred. Of course, things might not be on as solid a ground as one would want here, because the intuitions driving the case are highly contestable, but conditional on those intuitions being on the right track, I submit that the variadic functions approach should be given the upper hand.[24]

4.5. Two objections and replies

In this section I will address a couple of objections to the application of the variadic functions approach to the case of predicates of personal taste. According to the first objection[25], even if we agree that the variadic functions approach is correct for locations (as I claimed in the preceding chapter), it does not automatically follow that the approach is correct for predicates of personal taste as well. The reason is that there is an important disanalogy between the two cases. More exactly, the disanalogy is between quantifiers such as "every time" and "everywhere", on one hand, and quantifiers such as "everyone", on the other. Let me spell out the disanalogy in more detail. I take it that in all cases of quantification there is a connection between specific quantifiers and the types of variables these quantifiers bind: the quantifier "everywhere", for example, binds location variables, the quantifier "every time" binds temporal variables, and so on. In the variadic functions approach, quantifiers like the ones mentioned not only bind a specific variable, but they actually introduce a prepositional element that has the role of creating a new predicate that differs from the predicate they apply to by its increased adicity. Now, in the case of "every time" or "everywhere", the objection goes, not only there is a connection between the quantifier and the type of variable it binds, but there is also a connection between the quantifier and the preposition it introduces, preposition that is responsible with increasing the predicate's adicity. Both connections, it is claimed, are made by a prepositional element that is present in these quantifiers themselves. For example, the particle "where" in the quantifier "everywhere" not only assures that there is a connection between the quantifier and the type of variable it binds (in this case a location variable), but it also assures that the preposition contributed by the quantifier is of the right

[24] A problem for the view proposed here could arise from sentences similar to (27), but without quantifiers, such as sentences without quantifiers, such as "John gave Mary a fun ride and a tasty dish". I guess the answer will be to appeal to generalized quantifiers: in such sentences, "John" and "Mary" will be treated as quantifiers and thus able to contribute suitable variadic operators in the logical form of the sentence given.
[25] Voiced by Recanati (p. c.)

type – namely, a locational preposition such as "in", "on", "at", etc. That partially explains why we can apply the account to sentences such as "Everywhere I go, it rains": the particle "where" is essentially connected with locations, and thus with locational prepositions such as "in". Now, when considering sentences such as (1), featuring the quantifier "everyone", the prepositional element that is supposed to make these connections is lacking. Therefore, the two cases are not analogous: there's nothing in the quantifier "everyone" that would play the role of creating a new predicate that differs from the one it applies to by its increased adicity, and thus there is nothing that would contribute the preposition "for", as I claimed it happens in the case of (1). Therefore, in the case of predicates of personal taste, the account simply cannot get off the ground.

I don't think this objection is decisive. It is not because the connection between the quantifier and the type of preposition it introduces is not as tight as the objector supposes it to be. That this is right is intuitively supported by looking at cases in which binding is achieved by means of a more complex quantifier. One example at hand is precisely the type of sentence that was my focus in chapter 3: "Every time John lights a cigarette, it rains". Here we can see that there is no mention of location in the quantifier; yet, it is claimed, the location of rain is bound by it. Now, this seems to me to be a case in which nothing in the quantifier, no prepositional element or other expression belonging to it[26], could be singled out as being responsible for the type of variable that gets bound (in this case a location variable). It is, I think, more plausible to say that the whole phrase is the one responsible for the type of variable needed. But if so, I don't see why it isn't open to the defender of the variadic functions approach to claim that the preposition that is responsible with increasing the adicity of the predicate the quantifier applies to need not be so tightly connected with a particular prepositional element in the quantifier. She could equally claim that the type of preposition contributed by the quantifier is connected to the whole phrase, and not to any parts of it. And if this is true in the case of more complex quantifiers as "every time John lights a cigarette", why shouldn't it be true in the case of simpler ones, such as "everyone"? Secondly, the connection between the quantifier and the type of variable that gets bound, on one hand, and that between the quantifier and the type of preposition that, according to the variadic functions approach, it contributes, is one that is certainly mediated by the type of predicate that the variable bound by the quantifier belongs to. However, the aim of establishing these

[26] One could claim that the expression "light" or "light a cigarette" introduces a location, since any lighting of a cigarette has to take place at some location. But this, it seems to me, is simply a metaphysical claim, not a linguistic one.

connections certainly don't pertain to the variadic functions approach alone: it is a general problem that all views have to face. Bottom line: the connection between the type of the quantifier, the predicate and the type of variable pertaining to the predicate that gets bound by the quantifier is a delicate matter which goes beyond the purpose of this work, and the lack of a clear view on that matter cannot, in itself, constitute an objection to the view.

The second objection to the variadic functions approach that I consider is the following. According to the view, quantifiers like "everyone" are accounted for by appeal to additive variadic operators, having the double role of creating a new predicate which differs from the predicate they apply to by its increased adicity and of providing binding the extra argument place of the newly-created predicate. The question that arises is whether the variadic operator effect of the quantifier is suitably limited. Such a limitation lacking, one could suspect the view of overgeneration. That is, one would expect the quantifier to apply indistinctly to all kinds of predicates, regardless of whether they belong to the class of predicates of personal taste or not, having the sought after effect in cases when it should not.

To make the point clearer, let's focus on a concrete example. Consider thus the comparison made by Schaffer (forthcoming) between (1) and (2), reproduced here for convenience:

(1) Everyone got something tasty.
(2) Everyone got something frozen.

For Schaffer, the reason why we get a bound reading in (1) but not in (2) is that "tasty" in (1) has an argument place for the judge, whereas "frozen" in (2) doesn't have such an argument place. It seems that under the variadic functions approach the difference between (1) and (2) is hard to explain, given that the quantifier is the one responsible for the introduction of the extra argument place for "tasty" in (1). If the entire job is done by the quantifier, the objection goes, then we should get a bound reading for (2) as well. But we don't, hence the view overgenerates.

Is there any way to explain this difference within the view proposed? I think there is. The proponent of the variadic functions approach is not committed to the claim that the entire effect of the variadic operator is produced by the quantifier *on its own*. It is open to her to claim that the effect of the variadic operator is the upshot of the combination of the quantifier and the predicate it applies to. The source of the effect of the variadic operator is equally distributed between the two components, the quantifier and the predicate. As I said above

when introducing predicates of personal taste, predicates such as "tasty" are special, in that in order for sentences in which they occur to be evaluated for truth the provision of a judge is needed. One case in which their special character becomes manifest is precisely under binding. Also, it is significant to note in this connection that expressions such as "for *x*", where *x* is the judge, don't combine with any predicate: that something is tasty for a certain person is common parlance; that something is frozen for a certain person is not.[27] The fact that some predicates are special is reflected at the semantic level by their capacity to combine with certain expressions and to not be able to combine with other expressions: the case of the predicate "tasty" and expressions like "for *x*" or "everyone" (in the latter case with the effect of binding the predicate) is just one example of this general claim. This is something that the proponent of the variadic approach can appeal to, as well as anybody else. In contrast, there is nothing special about predicates such as "frozen": they don't require the provision of a judge in order for the sentences in which they occur to be evaluated for truth. Looking to the problem from a different angle, note also that Schaffer's explanation of the difference between (1) and (2) takes the effect of quantification to be produced by the interaction between the two elements, the quantifier and the sentence it operates on. Under the variadic functions approach, the same holds: what the proponent of the variadic functions approach claims is that the way in which the two expressions combine is different from the way Schaffer thinks they do. But in both cases the effect of the combination should be distributed over the two elements involved.

4.6. Other expressions: temporal expressions, epistemic modals and knowledge attributions

One of the most common reactions to the varaidic functions approach has been that it is ad-hoc. Now, the usual way to respond to an ad-hocness objection to a certain semantic account is to show that the account could be applied to a significant number of types of expressions. In chapter 3 I introduced the variadic functions approach as a way to avoid the conclusion of a particular instance of the Binding Argument for locations. From this, a certain treatment of locational expressions such as "in Paris" and certain quantifiers has resulted, and along with it a general view about how implicit contents related to locations could be treated (relativism about locations). In this chapter I dealt with a similar instance of the Binding Argument for

[27] Of course, one could imagine that different people perceive something as frozen at different temperatures, so that something is frozen for one person, but not for another. I think such people would use the word "frozen" significantly different from the way we use it.

judges, with the result of providing a certain account of benefactive expressions such as "for John" and of certain quantifeirs, together with a general view about how implicit contents related to judges could be treated (relativism about predicates of personal taste). In this section I will very schematically show how the variadic functions approach could be extended to expressions other than the ones mentioned and how it could be used to avoid instances of the Binding Argument for those expressions. In particular, I will deal with temporal expressions, epistemic modals and knowledge attributions, but the hint to be taken here is that the account could be applied at least to all expressions over which the debate between contextualism and relativism has been carried out. Moral terms, indicative conditionals, "oughts" – they could all, in principle, be dealt with by applying the variadic functions approach.[28] Note, however, that what follow has a purely programmatic character: I will not pause to consider all the details of the phenomena related to the expressions in question, which most often than not are very complex. Also, I will refrain from giving very detailed representations of the sample sentences, limiting myself to using the notation in which Recanati has originally cast the view and which has been introduced in chapter 3 (section 3.2.).

4.6.1. Tenses and temporal expressions

The idea of treating temporal expressions (including tenses) as variadic operators has already surfaced in Recanati (2007b). Discussing the issue whether an extensional account of time is better than an intensional ("modal", in Recanati's jargon) account, with the specific aim of rebutting King's (2003) claim that we can do without temporal propositions in our semantics[29], Recanati contends that temporalism can be withhold even if one opts for an extensional treatment of tenses and temporal expressions of the kind King urges us to adopt. I will not be concerned here with Recanati's actual argument for temporal propositions (an argument from "temporal innocence")[30]; rather I'm interested in the technical implementation of a mixed system committed both to temporal propositions and to an extensional treatment of tenses and temporal expressions. Regarding this issue, Recanati says:

[28] Recently, the apparatus of variadic operators has been employed to deal with belief attributions (Villanueva, ms). Villanueva, however, constructs variadic operators as being sentential operators, whereas in my view they are conceived as applying to sub-sentential elements. Despite this difference, there two approaches are pretty close in spirit.

[29] A powerful attack on the eternalist view and, in my opinion, a successful defense of temporalism is offered in Weber (ms). Weber's main idea is that the temporalist has the means to account for all the problematic examples by appealing to contextual restrictions of the quantification domain of temporal instants.

[30] I will discuss this argument in connection with predicates of personal taste in chapter 5 (section 5.4.).

> If we want to represent tense in such a mixed system, we will have to do two things. First, we will have to analyse e.g. the past tense as a variadic operator, 'for some past time *t*, at *t* it is the case that'. (Likewise for the future tense.) Second, sentences in the present will be construed as temporally neutral. (Recanati, 2007b: 74)

I won't go into much detail here, since by now the reader surely has a firm grasp on how variadic operators are supposed to work. Let me just say that the application of this apparatus to the case of tenses and temporal expressions involves defining a temporal additive variadic operator, $\mathbf{Circ}_{\text{time}}$, which, as in the case of the other additive variadic operators defined, has the role of creating a new predicate that differs from the predicate it applies to by its increased adicity. Tenses and temporal expressions would then be accounted for by appeal to temporal additive variadic operators, having the same dual role as the other expressions accounted for in this way ("in Paris" and "for John"). In the quote above, Recanati suggests construing temporal variadic operators as sentential, but nothing forces us to do so. In line with previous considerations, especially the ones offered in 4.3. in connection with the Operator Argument, one could hold that $\mathbf{Circ}_{\text{time}}$ is predicational rather than sentential. Thus, sentence

(28) Socrates is sitting

could be represented in the variadic functions approach as

(29) $\mathbf{Circ}_{\text{time: present}}$ (sitting (Socrates)) = sitting_at (Socrates, t_u),

where t_u is the time of utterance.[31] Similarly for past and future tenses, temporal expressions such as "yesterday", "tomorrow" or quantifiers such as "every time" or "some time", etc. In these latter cases, each such expression comes with a certain lexical baggage which needs to be captured in the semantics, and the most natural way to do so in the present framework would be by imposing certain conditions on the value of the temporal variable introduced by the variadic operator. For example, in the case of the past time, the condition on the value of the temporal variable is to be a time before the time of utterance ($t < t_u$); in the case of the future tense, the condition is to be a time after the time of utterance ($t > t_u$); and so on. Of

[31] This differs slightly from Recanati's view. In continuation of the quote above, he writes: "This means that we will give the present tense no temporal value whatsoever, in contrast to other tenses such as the past or the future." In my treatment of present tense, I gave it a temporal value. This holds for the other tenses as well, as suggested in the next sentence.

course, the account cannot be complete without an account of more complex phenomena, such as deictic uses of tenses, anaphoric reference to times, interaction with adverbs, sequence of tenses phenomena, etc. It is not obvious that the view will yield satisfactory results in accounting for these phenomena, but establishing whether this is so is something that I will leave for future research. Perhaps more importantly in the context of this work, it should be clear that such a treatment would block any instance of the Binding Argument for times which purports to show that we need to postulate temporal variables in ordinary sentences such as "Socrates is sitting".

4.6.2. Epistemic modals

Epistemic modals – expressions such as "might", "could", "possibly", "must", "necessarily" etc, taken in an epistemic sense (that is, as claiming that a certain sentence is possible or necessary according to some body of knowledge, usually called "the epistemic base") – have been considered by some authors (e.g., Stepheson (2007), Schaffer (forthcoming)) to be similar in certain regards to predicates of personal taste. There has thus been a tendency to give them similar semantic treatments. It is not surprising, then, that some arguments that Schaffer mounted against relativism about predicates for personal taste are duplicated so to apply to epistemic modals as well. For example, Schaffer uses an instance of the Binding Argument for epistemic bases to argue against relativism about epistemic modals. One of the sentences he uses to build his case is

(30) Every boy has a father who might be a genius,

which has the reading that every boy has a father who is, in view of each boy's evidence, a genius. How to use an instance of the Binding Argument for epistemic bases involving such a sentence to argue against relativism about epistemic modals should be obvious.

Now, it is equally obvious that the same strategy as used in the other cases could be used to avoid the conclusion of an instance of the Binding Argument for epistemic bases that employs (30). As usual, we start with defining a particular additive variadic operator, $\mathbf{Circ}_{\text{epistemic base}}$. Then we show how this operator models expressions connected to our use of epistemic modals, such as "in view of *x*'s evidence" (Schaffer's phrase above), "for all *x* knows", "according to *x*'s body of knowledge/epistemic base" etc. – where *x* stands for the

person who's epistemic base is relevant for evaluating the claim the epistemic modals apply to.[32] Thus, sentence

(31) According to John, the treasure might be under the palm tree

could be represented in the variadic functions approach as

(32) **Circ**$_{\text{epistemic base: John}}$ (might (the treasure is under the palm tree)) = might_according to (the treasure is under the palm tree, John).

In Schaffer's more complex example (30), we will treat the quantifier "every boy" both as contributing an epistemic base additive variadic operator which increases the adicity of "might", creating a new predicate (symbolized as might_according to) and binds the extra argument place of the newly-created predicate. This treatment parallels that given to the quantifier "everyone" in our sentence (1) which involved predicates of personal taste. As in that case, the conclusion of the present instance of the Binding Argument for epistemic bases as used against relativism about epistemic modals is avoided.

4.6.3. "Know" and knowledge attributions

Finally, the account can be applied to epistemic terms such as "knows", which appear in knowledge attributing sentences (such as "John knows that he has hands") or knowledge denying sentences (such as "John does not know he has hands"). As above, define another additive variadic operator, **Circ**$_{\text{know}}$, with the same double role as the others. The expressions that could be treated as variadic operators of this kind could be some of those that, for example, DeRose (2009) calls "clarification devices": "by ordinary standards", "beyond any reasonable doubt", "with a high degree of precision" – but also "by *x*'s standards', where *x* stands for a person who's epistemic standards are relevant for evaluating the knowledge attributing or knowledge denying sentence. For instance, sentence

(33) By John's standards, Mary knows that the flower is red,

[32] There are tricky issues related to which is the relevant epistemic base when evaluating a sentence comprising en epistemic modal – issues having to do with how the evidence that forms the epistemic base is to be gathered, whether it comprises other people's knowledge than the speaker, whether the speaker's knowledge is always necessary to evaluate the sentences in question, etc. I will leave such issues aside, but see Hacking (1967), DeRose (1992), among others, for discussion.

could be represented in the variadic functions approach as

(34) $\mathbf{Circ}_{\text{know: John}}$ (know (Mary, the flower is red)) = know_by (Mary, the flower is red, John)

Now, bound cases involving standards of knowledge are harder to come by, but the idea is that such cases shouldn't threat the relativist about knowledge attributions. In the variadic functions approach, the need to postulate variables for epistemic standards in the logical form of knowledge attributing or knowledge denying sentences is avoided.[33]

The purpose of this chapter was to show how the variadic functions approach as substantiated in chapter 3 could be applied to other expressions than locational ones. The bulk of the chapter focused on predicates of personal taste and expressions such as "for John" and the quantifier "everyone" as used in (1), with the result of providing an account of such expressions by appeal to subjectual additive variadic operators that would deflect the instance of the Binding Argument for judges used by Schaffer (forthcoming) to argue against relativism about predicates of personal taste. A comparison with two alternative semantic accounts of "for *x*" was made, and I argued that the variadic functions approach is better positioned to deal with some objections that these accounts face. In the last part of the chapter I sketched how the account could be applied to more expressions, namely temporal expressions, epistemic modals and knowledge attributions.

[33] As with predicates of personal taste, I assume that "know" is context sensitive in a broad sense.

Chapter 5
Three Arguments against Truth-Conditional Semantics

This chapter aims at investigating three arguments related to predicates of personal taste: the Operator Argument, the argument from disagreement and what I call "the argument from innocence". The first and the third argument will be adapted from similar arguments that have been proposed in connection with other types of expressions; the second argument has been at the center of discussions involving predicates of personal taste since their inception. Philosophers proposing variants of these arguments for different expressions have usually taken them to support relativistic treatments of those expressions. However, my aim here is to show not that the versions of the arguments involving predicates of personal taste support relativism, but that they can be used against truth-conditional semantics.

The version of the Operator Argument that I will propose is an adaptation of a traditional argument used by Kaplan (1989) to argue for the introduction of unorthodox parameters in the circumstance of evaluation, such as times, locations and standards of precision. This argument, however, has come under heavy fire in recent literature. In section 5.2. I will survey the objections Cappelen and Hawthorne (2009) have raised to the argument in its original form, and propose a version for predicates of personal taste that drops certain assumptions that the proponents of the original argument made. I then show that this version is immune to considerations of the type Cappelen and Hawthorne raise to the original version and how it could be used against truth-conditional semantics. However, before getting there I will engage with two recent arguments to the effect that the original version of the Operator Argument, even valid, cannot be used to argue for relativism (section 5.1.). In section 5.3. I move to a discussion of the notion of "disagreement", with the specific aim to argue that truth-conditional semantics about predicates of personal taste faces a dilemma in that it either leaves some cases of disagreement unaccounted for, or it incurs additional theoretical costs. Finally, in the last section I construct an argument against truth-conditional semantics for predicates of personal taste adapted from Recanati's recent defense of temporalism, an argument based on the idea of "judge-innocence".

5.1. Arguments against the use of the Operator Argument

In this first section I will focus on two arguments raised against the original version of the Operator Argument claiming that, even if valid, the argument cannot be used to argue in favor

of relativism. Now, the version of the Operator Argument that I will offer in section 5.2. differs from the original version in some important respects, but since discussions of this argument can be found pretty frequently in the literature on relativism, it will be useful to have an idea about what the argument can or cannot prove. The specific objections to the usefulness of the Operator Argument in its original version for relativism can be extracted from certain observations made by Lopez de Sa (2011, forthcoming) and Ninan (forthcoming a, forthcoming b). Their main claim, which I will try to resist in this section, is that the Operator Argument is neither sufficient nor necessary for relativism, and thus that contemporary discussions in favor or against the Operator Argument, construed as a way to argue for relativism, are misguided.

Before moving to the discussion, let me present the argument they criticize. I will use a general form of the argument provided by Cappelen and Hawthorne (2009). This will come handy, since both Lopez de Sa and Ninan are interested in the argument in general and not in specific instances of it. With E standing for expressions exhibiting *Sententiality* (the fact that the result of E's combination with a sentence is another sentence), S for sentences and M for parameters in the circumstance of evaluation, the argument in its general form could be put as follows:

> *L1. Parameter Dependence*: S is evaluable for truth only once a value along parameter M is specified.
> *L2. Uniformity*: S is of the same semantic type when it occurs alone or when it combines with E.
> *L3. Vacuity*: E is semantically vacuous (i.e., it does not affect truth value) when it combines with a sentence that semantically supplies a value for M.
> *L4.* E is not redundant when it combines with S.
> *L5.* By *Vacuity* and (*L4*), S does not supply a value for M when it combines with E.
> *L6.* By *Uniformity* and (*L5*), S does not supply a value for M when it occurs alone.
> *L7.* By *Parameter Dependence* and (*L6*), S cannot be evaluated for truth. (Cappelen and Hawthorne, 2009: 71)

5.1.1. Lopez de Sa's objection

Lopez de Sa's (2011) focus is on the issue, present in recent literature on relativism, of which kinds of considerations would motivate introducing new parameters in the circumstances of evaluation with respect to which sentences are to be evaluated, as opposed to introducing the

new parameters in the content of those sentences. One extreme view, held for example by Stanley (2005c), is that the only reason for introducing new parameters in the circumstances is the existence of operators in the language that shift those parameters. Such a view contrasts with that of MacFarlane (2009), who claims that

> (…) we should not posit a parameter of circumstances of evaluation without a good reason, but why suppose that the only thing that could be such a reason is an operator that shifts the parameter? To see how unreasonable [this claim] is, consider what it would recommend if we were doing semantics for a language devoid of modal operators or counterfactual conditionals. Since this language would not contain any world-shifting operators, [it] would forbid us from relativizing propositional truth to worlds. But we would still be interested in knowing how the truth values of sentences of this impoverished language depend on features of the context of use, including the world of the context. A sentence S in the language (…) might be true at C_1 (occurring at world w_1) and false at C_2 (occurring at world w_2). The only way we could account for this without relativizing proposition truth to worlds would be to say that different propositions are expressed at C_1 and C_2. But this is highly undesirable. We would like to be able to say that a speaker at C_1 expresses the same proposition by S as does a speaker at C_2, though the former speaks truly (in her context) and the latter speaks falsely (in her context). [The claim] would forbid us from saying this, and this seems to me sufficient grounds for rejecting it (…) (MacFarlane, 2009, 245)

Lopez de Sa's claim is that these two authors are not really in conflict, since they fail to distinguish between two senses in which the term "circumstances of evaluation" can be used. The two senses to be distinguished have to do with different roles we want the entities postulated by our semantic theories to fulfill. Thus, Lopez de Sa urges us to distinguish between Lewisian indices and what he calls "points of evaluation":

> A feature of a context figures as coordinate in an index in virtue of there being an operator in the language that shifts it. By contrast, a feature of the context gets in as a parameter of a point of evaluation in virtue of being something to which the object of attitudes' truth is relative. (Lopez de Sa, forthcoming)

Now, Lopez de Sa's main clam is that, although the index and the point of evaluation might coincide, this is not more than an accident. Simply being an element of the index is neither a necessary nor a sufficient condition for being an element of Lopez de Sa's points of evaluation. It is not a necessary condition because, as we have seen in the quote from MacFarlane above, one might want to relativize truth of one's beliefs to certain parameters without there being corresponding operators in the language; it is not a sufficient condition because the fact that we have evidence that, say, precisional constructions such as "strictly speaking" should function as operators, that does not mean that one's beliefs are true relative to standards of precision.

How is this observation relevant for the uselessness of employing the Operator Argument to argue for relativism? The Operator Argument is an argument that is supposed to establish that if certain expressions are to be interpreted as operators of sorts, then we need to postulate in the circumstances of evaluation parameters corresponding to those expressions. Since Lopez de Sa thinks that the term "circumstances of evaluation" is ambiguous between what he calls "index" and "point of evaluation", it simply follows that the Operator Argument cannot be used without caution – not, at least, without a clarification of what is meant by "circumstances of evaluation". Since such clarification are not given, Lopez de Sa's considerations seem to be in tension with using the Operator Argument to argue for relativism.

In order to answer Lopez de Sa's objection, let me introduce some terminology. A broader issue of dispute underlying the debate between contextualism and relativism is one related to the aim of semantic theorizing in general. Semanticists generally agree that the reason a certain type of entity should be accepted in semantic theory is the fact that that type of entity is able to play certain roles that are considered desirable by the theory itself. Although not immune to modification, I think the following list gives us an accurate picture of the main roles semanticists have thought the types of entities accepted in a semantic theory should play:

- be the semantic values of sentences in context;
- be the contents of assertions and other speech acts;
- be the contents of attitudes such as belief, doubt, etc;
- be the bearers of truth-values;
- be the input to modal (and other intensional) expressions such as necessity and possibility, etc.

It is a further question, one that has sparked much more controversy than what the roles themselves are, whether these roles are to be played by a single type of entity or whether we need more than one type of entity in our semantic theory to cover all of them. The idea that there is one single type of entity playing all these roles has certainly been an attractive view for many, and it is still widespread today – if for no other reasons, then simply for the fact that it enhances theoretical economy. Usually, the type of entity supposed to play all the roles above (and maybe more) was thought to be *propositions* (by "proposition" here I mean a set of possible worlds, or a function from possible worlds to truth-values). Just to illustrate, the idea that propositions are the single type of entity to play all the roles mentioned above has been recently defended by philosophers such as King (2003, 2007) and Cappelen and Hawthorne (2009)[1] – although the idea that propositions play at least some of these roles has a long series of defenders (prominently Stalnaker (1970), Soames (1989), among others). However, the opposite view has also been present: Lewis' famous paper "Index, Context and Content", for example, is usually seen as a plea for the idea that we need more than one such type of entity to take care of all the roles mentioned above. Various two-dimensionalist views also instantiate this type of view, as well as other views, among which that of Perry (2001). It is not my goal to argue here that there is (or should be) one single type of entity that plays all these roles, be it propositions or not, nor to defend the view that it is impossible that all these roles be played by one single type of entity; rather, my purpose is simply to distinguish this two general views, which I label as follows:

> **Semantic value monism**: There is one single type of entities that plays all the roles listed above.
> **Semantic value pluralism**: There is no single type of entities that plays all the roles listed above.

Now, with this distinction in place, how could one answer Lopez de Sa's objection? The answer has to do precisely with paying attention to the many roles the types of entities accepted in our semantic theory are supposed to play, and taking into considerations one's stance in the semantic value monism vs. pluralism debate. Lopez de Sa seems to be a semantic value pluralist: at a minimum, his distinction between indices and points of

[1] They call such a view ***Simplicity*** and their whole book is a forceful defense of it.

evaluation suggests that there are at least two types of entities that correspond to two of the roles listed above: one type of entity that plays the role of being the semantic value of sentences in context and another type of entity that plays the role of being the content of attitudes. His point was that the existence of operators is neither necessary nor sufficient for the introduction of parameters in his points of evaluation. But this certainly leaves open – indeed, it follows trivially – that the existence of operators is both necessary and sufficient for the introduction of parameters in the index. Now, the question one needs to ask is the following: is the relativist committed to either semantic value monism or to semantic value pluralism? The answer should be a clear "no": there is nothing in the relativist view itself that would push one to take sides in this debate. Semantic value pluralism is open to the relativist as it is to anyone else. If the relativist, for whatever reasons, is a semantic value pluralist, then the answer to Lopez de Sa's challenge is a careful distinction between the different roles the types of entities accepted in the theory are supposed to play and the corresponding distinction between the different types of entities that are said to play those roles. Thus, one could distinguish several debates in which the relativist could enter, each related to a specific role the types of entities accepted in a theory are supposed to play: the debate between relativism and its contenders could be indexed, so to speak, to a certain goal of the semantic theory, which consist in coming up with the best suited type of entity to play a certain role. For example, one could be a relativist when what is at stake is the issue of what type of entity is best suited to play the role of being the semantic values of sentences in context, or when what is at stake is the issue of what type of entity is best suited to play the role of being the content of attitudes, etc. So, even if Lopez de Sa is right that considerations related to the existence of operators (such as the Operator Argument) cannot be used to argue for relativism about the type of entity that is supposed to play the role of being the content of attitudes, there is still room for the relativist to claim that the Operator Argument (on the assumption that it is sound) can be used to argue for relativism about the entity that is supposed to play the role of being the semantic value of sentences in context. It is by no means trivial that, when it comes to this specific role, relativism is the way to go. Thus, the Operator Argument constitutes a substantial argument for this claim.

To be fair to Lopez de Sa, it should be acknowledged that one does not find very often in the literature a clear reference to the role the types of entities accepted by a semantic theory are supposed to play. Most of the discussions surrounding relativism have involved the notion of disagreement, and that seems to suggest that the roles to be played by the types of entities accepted by the semantic theory are (or are related to) those types of entities being the content

of our beliefs or the content of our assertions. But sometimes one does find a more explicit reference to the roles the type(s) of entities accepted in a theory is supposed to play: for example, Glanzberg (2007) frames the discussion between contextualism and relativism in terms of the types of entities playing the role of being the semantic values of sentences in contexts. Thus, he sees the debate as going on between two views which he defines as follows:

> **Semantic value absolutism**: The semantic values of sentences are sets of worlds.
> **Semantic value relativism**: The semantic values of sentences are sets of tuples of worlds and other parameters, relative to which the truth of a sentence in a context is determined. (Glanzberg, 2007: 2)

The specification in the very definition of those views of the role the types of entities advocated by each theory are supposed to play ("semantic values of sentences") seems to me to be a clear example of role-awareness.[2] As for the claim that the relativist can be a semantic value pluralist, a nice example is Recanati's (2007b) "moderate relativism". In Recanati's framework, a distinction is made between the *lekton* and the *Austinian proposition*. The lekton is what (roughly) corresponds to Kaplanian contents: temporal propositions, or any other parameter-neutral propositions (location, standard of taste, etc - neutral propositions). The Austinian proposition, on the other hand, is what corresponds to the lekton supplemented with the values of the parameters in the circumstance with respect to which the lekton is evaluated. Thus, suppose you utter the sentence "It is raining" in Barcelona. In normal circumstances, Barcelona is the value of the location parameter with respect to which the sentence is supposed to be evaluated. According to Recanati's view, the lekton of the sentence uttered is simply that it is raining; but the Austinian proposition is that it is raining in Barcelona. The important point for us is that, in Recanati's view the Austinian proposition is the entity that is supposed to play the role of being the content of our assertions (possibly among other roles), whereas the lekton is the entity that is supposed to play the role of being the semantic value for sentences in context (possibly among other roles). So Recanati seems to accept semantic value pluralism – at least in the version of there being two types of entities that are supposed to play (at least) two distinct roles.

[2] As Ninan (forthcoming a)) notes, the same is true for King (2003, 2007), but King is, in the jargon introduced above, a semantic value monist.

Recanati thinks that all sentences are associated with these two entities, the lekton and the Austininan proposition, but the relativist needs not be committed to such claims. Indeed, it seems to me that other proponents of relativism, such as MacFarlane, Lasersohn or Kölbel, tacitly endorse certain versions of semantic value monism. I want to remain here neutral between semantic value pluralism and semantic value monism, but the important point to make is that if the relativist, for whatever reason, is a semantic value monist, then Lopez de Sa's objection simply doesn't get off the ground, since there is only one type of entity that is supposed to play all the roles mentioned above. Given independent reasons to be a semantic value monist, the Operator Argument is as good as any other argument to the same conclusion that relativism is to be the way to go – that is, that the type of entity that plays all the roles envisaged is *relativized propositions*, or something of that sort.

This concludes my answer to Lopez de Sa's challenge that the Operator Argument cannot be used to argue for relativism. I showed that, regardless of whether the relativist is a semantic value monist or pluralist, there is at least a sense in which the Operator Argument could be a substantial argument for the view.[3]

5.1.2. Ninan's objection

A similar line of attack of the significance of the Operator Argument for relativism has been given by Ninan (forthcoming a, forthcoming b). Ninan's focus is on the relationship between compositional semantics and the question of what the objects of assertion are, and his main aim is to argue that this relationship is less direct than thought to be. More specifically, Ninan sets up to prove that the following claims, which he dubs "two Kaplanian dogmas", are false:

[3] Lopez de Sa might want to refrain from calling "relativist" the view that the type of entity that is supposed to play the role of being the semantic values of sentences in context is relativized propositions, but, if so, I confess I cannot see this as being more than a merely terminological choice. Lopez de Sa thinks that the feature that makes a view truly relativist is that there are expressions that are assessment-sensitive, in the sense of MacFarlane (2009). But this is simply a different way of carving the logical space than the one I adopted in this work. In a different paper than the one I was concerned with above, Lopez de Sa construes relativism as "the attempt to endorse appearance of faultless disagreement, constituted by contrasting judgments without fault on the part of any of the subjects" (Lopez de Sa, 2011: 114). I will be concerned with faultless disagreement in the following section, but for now observe that if that is the definition of relativism that we are supposed to adopt, it is not automatic that my claim that the Operator Argument could be used to argue for relativism (in my sense of the term) should be rejected – at least not without getting clear on the issue of what type of entities disagreement is based on (in case it involves contents at all). It could turn out, for example, that the type of entities relevant for disagreement is precisely the one that is supposed to play the role of being the semantic values of sentences in context.

> **First Dogma**: If the index of a semantic theory contains a parameter X (e.g. world, time, "judge"), then the semantic theory entails that the objects of assertion vary in truth value over X.
>
> **Second Dogma**: If the index of a semantic theory does not contain a parameter X, then the semantic theory entails that the objects of assertion do not vary in truth value over X. (Ninan, forthcoming a.: 2)

Ninan starts from Kaplan's (1989) picture of semantics and notes that Kaplanian contents were designed to play two roles: that of *compositional semantic values* of sentences in context (the input to intensional operators such as modal or other (temporal, locational, etc) expressions) and that of *assertoric contents* (encoding the information communicated by assertions of sentences). This contrasts with a view like Lewis's (1980), in which the constraints put by these two types of contents result in a tension. This tension is the reason why Lewis has argued that we actually need two different types of contents (or entities, to retort to the jargon I used before) to play these two roles: he thought that relativized propositions (that is, contents relative to possible worlds, times, locations and standards of precision) are the type of entity best suited to play the first role, whereas he found traditional propositions (that is, contents relative only to possible worlds) to be the best choice for playing the second role. This gives us a straightforward rejection of the first dogma. But Ninan's point is actually more general: abstracting from the details of Lewis' view, the point to be taken is that there is no direct connection between the semantics (understood as yielding the compositional semantic values of sentences in context) and the objects of assertion: the latter could be traditional propositions, as Lewis and others have contended, temporal propositions or even centered propositions. Thus, "the question of what is communicated by an assertive utterance of a sentence in a context is relatively independent of our compositional semantics for things like modality and tense" (Ninan, forthcoming b) – and, by extension, independent of our compositional semantics for expressions such as "for John". The Operator Argument is thus of no help in arguing for relativism.

Related to the second dogma, Ninan starts with listing some of the philosophers engaged in the debate between contextualism and relativism that seem to have endorsed variants of it: Stanley (2005a), King (2003), Schaffer (ms.). The way Ninan proves that the second dogma is false is by showing how one can construct theories in which a certain parameter is not in the index, but nevertheless the objects of assertions are not specific with respect to that parameter. For illustration Ninan uses the case of time: assuming a standard

extensional treatment of tense (in the case at hand, the one given in Kusumoto (1999)), the logical form of the sentence

(1) Elliot danced

is

(2) t* PAST λt_2 t_2 Elliot dances,

where t_2 is a time variable, argument of "dance" and t* is an argument of the past tense that directly picks out the utterance time. If PAST is given the following semantic value:

$[[\text{PAST}]]^{c,w,g} = \lambda p_{<r,\,t>}.\ \lambda t_r.$ there is a time t' < t such that p(t') = 1,

where *c* is a context, *w* an index (containing only the possible worlds parameter), *g* an assignment function, *p* a variable in the meta-language for temporally neutral propositions, and *t* a meta-language variable for times (the subscripts indicate semantic types: times are of type *r*), then an assertion of (1) will directly receive a truth-value; abstracting over the index, which in this case consists only in the possible worlds parameter, and specifying the contribution of PAST, we get the semantic value of (1):

(3) λw: there is a time t < t* such that Elliot danced at t in w,

which is time-specific. But now Ninan asks us to consider a theory that instead of containing the indexical t* contains a time variable which is bound by a λ-binder occurring at the top of the structure. Under such a theory the logical form of (1) will be

(4) λt_1 t_1 PAST λt_2 t_2 Elliott dances;

assuming the same semantic value for PAST and calculating it's contribution, we get the following semantic value for (1):

(5) λw. λt. there is a time t' < t such that Elliot danced at t' in w

which is time-neutral. We thus have a theory in which the only parameter in the index is the possible world, yet the objects of assertion are time-neutral.[4] And the same trick can be done for extensional treatments of other parameters, such as the possible world parameter. Thus, "one cannot argue from an extensional treatment of tense or modality to the claim that the objects of assertion are temporally or modally specific." (Ninan, forthcoming a)

Thus, summarizing his findings with respect to the two dogmas, Ninan concludes:

> As Lewis observes, we can treat modals, tenses, and location expressions as operators, and still take the objects of assertion to be propositions. (…) [T]he converse is also true: we can, for example, treat modals and tenses as object language quantifiers, and still take the objects of assertion to be things whose truth values vary across possible worlds and times. (Ninan (forthcoming b))

> The resulting picture is one on which the connection between semantics and the question of what the objects of assertion are is much less direct than it is often thought to be. (Ninan (forthcoming a))

One could answer to Ninan's arguments using a similar line to the one I used to answer Lopez de Sa's challenge above. Let us take his rejection of each dogma in turn. Thus, in connection to the first dogma, note first that Ninan follows Lewis in endorsing what I called above semantic value pluralism. Now, we have seen that the relativist can be a semantic value pluralist, case in which it is open to him to claim that the Operator Argument could be used to argue for relativism when the issue is finding the best suited type of entities that play the role of being the semantic values of sentences in context (what Ninan calls compositional semantic values). The relativist could thus agree that the Operator Argument *cannot* be used to argue for relativism when the issue is finding the best suited type of entities that play the role of being the objects of assertions (what Ninan calls assertoric contents). Recanati's view briefly presented above is a clear example of someone who is both a relativist and a semantic value pluralist at the same time. So the relativist could easily agree with the

[4] To prove the same point, Ninan offers another possible theory as an alternative to Kusumoto's, but I leave it aside for the sake of simplicity.

first dogma being false, and still claim that the Operator Argument can play a substantial role in arguing for the her view.[5]

In connection to the second dogma, it is obvious that its rejection does not affect the relativist. From Ninan's way of setting up the problem, it is clear that, if indeed a problem, it is one for the contextualist rather than the relativist. More importantly, the dogma is certainly independent from the Operator Argument. Let us be clear on this. The Operator Argument is an argument to the effect that, if certain expressions in the language studied are operators of sorts, then we need to introduce parameters in the index corresponding to those expressions. What the first dogma challenged was the idea that simply introducing such parameters in the index is not enough to claim that the objects of assertions are relative to the parameter introduced in the index. But in the second dogma the reasoning is different, because it starts from a different premise: if a parameter X is not in the index (premise), then the objects of assertions need not be X-specific (conclusion). It is an open question whether the relativist could use this premise to support the view, but for sure the Operator Argument makes no use of it. So the relativist can agree with Ninan's rejection of the second dogma, because the Operator Argument is untouched by it.

Again, note that I'm not arguing here for semantic value pluralism nor for the opposite claim – my only point is that both these options are open to the relativist. This is significant in that it allows the relativist to carefully distinguish the roles the types of entities accepted in her theory are supposed to play. Of course, the connection between these types of entities and the possible constraints that each puts on the others is something that needs elucidation. But this is not something that pertains only to the relativist: each proponent of semantic value pluralism is supposed to give us an account of the interaction between these entities. Although important, this issue cannot be tackled within the confines of this work.

We have seen how the considerations put forward by Lopez de Sa and Ninan could create trouble for using the Operator Argument to argue for relativism, and we have also seen how their worries could be assuaged. Before moving on to the next section, let me briefly assess the implications of those considerations to a principle that I took for granted when introducing relativism in chapter 1, namely

[5] It is true that Ninan thinks that versions of relativism such as temporalism are essentially connected to the issue of what is the right type of entities that play the role of being the content of assertions, but to claim that *that* is the only truly relativistic position is no more than a terminological choice. See footnote 11 for more on terminological issues connected with the term "relativism".

> ***Distribution***: The determinants of truth-value distribute over the two basic components truth-evaluation involves: content and circumstance. That is, a determinant of truth-value (…) is either given as an ingredient of content or as an aspect of the circumstance of evaluation. (Recanati, 2007b: 34)

Lopez de Sa's considerations seem to undermine this principle, at least in the sense that it fails to distinguish between the two senses he thinks the term "circumstance of evaluation" has been used in recent debates. As for Ninan, his rejection of the "two Kaplanian dogmas" seems to suggest that the principle is false: that is, a parameter X could be both in the index with respect to which a sentence is evaluated in a context and contribute to the assertoric content of that sentence (first dogma); also, a parameter X need not be in the index with respect to which a sentence is evaluated in a context, nor to contribute to the assertoric content of that sentence (second dogma). But to me the principle seems not as much false as underspecified. For, in light of their considerations, the principle should specify at least what type of entities truth-evaluation concerns and what exactly is meant by "circumstance of evaluation". Taking this into account, we could thus specify a version of the principle that seems to be safe from both Lopez de Sa and Ninan's misgivings.

5.2. The Operator Argument revisited

In this section I will offer a new version of the Operator Argument for the specific case of predicates of personal taste. In section 4.4. of the preceding chapter, when presenting Kölbel's view about expressions such as "for John", I alluded to the fact that, although the original argument might be problematic for views that construe temporal, locational and expressions such as "for John" as sentential operators, one could treat these expressions as predicational operators. Both Lasersohn's view, also discussed in the aforementioned section, and the variadic functions approach take this latter stance on expressions such as "for John". This solves the problem of being committed to what Cappelen and Hawthorne called *Sententiality* (an expression exhibits *Sententiality* if the result if it combining with a sentence is another sentence) right from the outset. With *Sententiality* out of the way, can the Operator Argument be used to argue for relativism – or, at least, against certain alternatives to relativism? This is the question that I will survey in this section. My answer is that, even if the argument cannot be used to argue only for relativism, it could be used to argue against a certain alternative to it, namely truth-conditional semantics.

Let us first, closely following Cappelen and Hawthorne (2009), reformulate the argument in its general form so that to reflect the fact that *Sententiality* has been dropped. In its original formulation (see above), the Operator Argument was supposed to show that, given certain assumptions about a sentence S and an expression E which exhibits *Sententiality*, one could arrive at the conclusion that the truth of S is truth is relative to a certain parameter M of the same type as the expression E (so that, for example, if E is a locational expression such as "in Paris", parameter M is a location). Since now our expression E is predicational, not sentential, we will mark this change by symbolizing our target expression (now a predicate) using the letter P instead of S. Since predicates have denotations[6], not truth-values, we will make the corresponding substitution in the argument. The rest remains basically the same. Thus, the argument in its general form will look like this:

> *L1'. Parameter Dependence*: P is evaluable for denotation only once a value along parameter M is specified.
> *L2'. Uniformity*: P is of the same semantic type when it occurs alone or when it combines with E.
> *L3'. Vacuity*: E is semantically vacuous (i.e., it does not affect denotation) when it combines with an expression that semantically supplies a value for M.
> *L4'.* E is not semantically vacuous when it combines with P.
> *L5'.* By *Vacuity* and (*L4'*), P does not supply a value for M when it combines with E.
> *L6'.* By *Uniformity* and (*L5'*), P does not supply a value for M when it occurs alone.
> *L7'.* By *Parameter Dependence* and (*L6'*), P cannot be evaluated for denotation.

Since here I will be concerned with a specific instance of this argument, namely that for predicates of personal taste, let me exemplify how the argument works using the predicate "tasty". Thus, where E is the expression "for John", P the predicate "tasty" and M stands for the judge parameter of the circumstances, the argument could be put as follows:

> *L1*. Parameter Dependence*: "tasty" is evaluable for denotation only once a value along the judge parameter is specified.

[6] I take the denotation of a predicate as the set of things that satisfy the predicate. To say, as *Parameter Dependence* states, that a predicate is evaluable for denotation only once a value for a certain parameter is specified is that the set of things satisfying the predicate cannot be established without the provision of that value.

L2. Uniformity*: "tasty" is of the same semantic type when it occurs alone or when it combines with "for John".

L3. Vacuity*: "for John" is semantically vacuous (i.e., it does not affect denotation) when it combines with an expression that semantically supplies a value for the judge parameter.

*L4**. "for John" is not semantically vacuous when it combines with "tasty".

*L5**. By *Vacuity* and (*L4**), "tasty" does not supply a value for the judge parameter when it combines with "for John".

*L6**. By *Uniformity* and (*L5**), "tasty" does not supply a value for the judge parameter when it occurs alone.

*L7**. By *Parameter Dependence* and (*L6**), "tasty" cannot be evaluated for denotation.

As I said in section 4.4., one of the complaints that Cappelen and Hawthorne had against the argument with *Sententiality* in place was precisely that this assumption doesn't seem to be motivated in the first place. But their case against that argument also rested on noting that the other assumptions that the proponents of the argument are said to make (namely, *Parameter Dependence*, *Uniformity* and *Vacuity*) are equally unmotivated. Let us start with listing the main objections Cappelen and Hawthorne raise against the Operator Arguments for time, location, modal and precisional constructions. Thus, they claim that

- *Sententiality* is unmotivated for many of the standard temporal, locational, modal, and precisional constructions that figure in these arguments, the *Uniformity* premiss even more so.
- For temporal constructions, *Uniformity* is particularly questionable (and, in so far as one is a presentist, *Parameter Dependence* is questionable as well).
- For precisional and modal terms, *Parameter Dependence* is particularly questionable. (Cappelen and Hawthorne 2009: 73).

The interesting question for me here is whether any if these claims apply to expressions such as "for John". As I said, we don't need to worry about *Sententiality*. But it is not entirely obvious that the reasons Cappelen and Hawthorne offer against the other assumptions holding in the case of temporal, locational and precisional expressions do not transfer, *mutatis mutandis*, to expressions such as "for John". Let us thus see what the specific reasons they give for the failure of the assumptions for each of these expressions in part are.

Start with *Parameter Dependence*. The reasons the two authors give for this assumption failing are different for each type of parameter. Thus, regarding dependence of truth of sentences on possible worlds, they point out that philosophers arguing for this dependence have overstated the implications of contemporary semantics.[7] Their argument basically consists in stressing the plausibility of actualism – the fact that "no semanticist has shown that actuality is just one reality among many" (Cappelen and Hawthorne, 2009: 78). The idea is simply that, both intuitively and from a metaphysical point of view, a sentence like "There are no talking donkeys" is true or false if there are or there aren't any talking donkeys. If this is true, then, fundamentally, truth and falsity of propositions are monadic properties, and not relational ones such as being true/false-at-a-world. They also note that, for this to be true, one need not claim, as some philosophers do (e.g., Schlenker (2004), Schaffer (ms.) among others) that possible worlds are represented in the logical form of sentences (and thus the sentence above expresses the proposition that there are no talking donkeys in the actual world). However, this doesn't mean that semanticists should abandon talk of possible worlds or not use the notions of truth/false-at-a-world, for such notions certainly prove useful in analyzing modal expressions such as "possibly" and "necessarily" – as far as they are aware that the fundamental properties are those of being true and false simplicter, rather than the more theoretical being true/false-at-a-world.

The argument in the case of time is similar to the one above, with the difference that here two metaphysical views about time are equally plausible: presentism and eternalism. According to the presentist, past and future times are not real; the only real time is the present. Thus, all propositions will be true at the present time by default. So no relational notions of being true/false-at-a-time are needed. In contrast, for the eternalist, past and future times are real, and thus specification of time is important for evaluating sentences. It thus seems that for eternalists *Parameter Dependence* does hold. In any case, Cappelen and Hawthorne's point is that the assumption doesn't hold across the board, and thus whether it holds or not depends on one's preferred view on time.

Moving now to locations and standards of precision, Cappelen and Hawthorne note first that there are many sentences that don't depend in their evaluation on the provision of a location. "Ernie is dancing" is one such sentence. True, for the sentence to be true Ernie needs to dance at some place or another, but it is just a metaphysical fact about dancing (and about

[7] This is also the main point of Glanzberg (2009).

events in general) that it cannot but take place at a location.[8] And, finally, commenting on the idea of the truth of sentences is relative to standards of precision, Cappelen and Hawthorne say that expressions such as "by loose standards" could be interpreted as a function from propositions to a proposition consisting in a disjunction of propositions close enough to the initial proposition (this disjunction is called "the loosening" of the original proposition). If that is a way to go, then *Parameter Dependence* doesn't hold in the case of standards of precision.[9]

Let us now see whether these considerations against *Parameter Dependence* cut any ice in the case of parameters for judges, the ones relevant for the evaluation of predicates of personal taste. First, note that one could accept all what Cappelen and Hawthorne say about *Parameter Dependence* in the case of possible worlds and times, and still hold that the assumption is perfectly safe in the case of predicates of personal taste. For, at least under the subjectivist picture I assumed for the kind of properties predicates of personal taste stand for (see section 4.1. of the preceding chapter), what happens is exactly the opposite: a sentence such as "Avocado is tasty" cannot be true simpliciter; the whole idea of the subjectivist framework was to make room for conceiving properties such as those predicates of personal taste stand for as being dependent on there being a judge, or a subject. There is nothing corresponding to "the only reality there is" or "the only time there is" for these sentences to be true with respect to. It is not my intention here to argue for "perspectival facts"[10] or kindred notions; the only point is that, within the subjectivist framework, such predicates don't get an extension, and thus sentences in which they occur don't get a truth-value, unless a judge is somehow provided.[11] So it seems to me that the case of possible worlds and times (under the presentist view) is essentially different from that of judges.

As for the reasons Cappelen and Hawthorne offer against *Parameter Dependence* in the case of locations, let me first remark that their task is much more difficult than finding one example in which the assumption doesn't hold. It would be enough, I think, for the supporter

[8] They also remark that doesn't seem plausible to postulate a maximal location in the logical form of the sentence above (so that it would express the propositions that Ernie is dancing at M, where M is the maximal location). This is in tune with my rejection of such a view in chapter 2 (section 2.2.).

[9] The general idea that certain expressions are to be conceived as functions from propositions to propositions is applied not only in the case of precisional expressions, but also in the case of modal, temporal and locational expressions as well.

[10] See Einhauser (2008) for a view that reality itself is relative. I take Einhauser to expand on previous ideas that have been voiced by advocates of good old conceptual relativism. For a particularly clear rejection of the idea of conceptual schemes and the corresponding relativist view, see Davidson (1974).

[11] A possibility would be to hold an objectivist view about the properties standing for predicates of personal taste. But it seems quite clear that in Cappelen and Hawthorne (2009) they expose a subjectivist view of such properties. Their preferred semantics for predicates of personal taste is a contextualist one.

of *Parameter Dependence* in the case of locations to find *one* example for which it does. Furthermore, the example they give, involving the verb "dance", is not very significant: as I noted in chapter 2, "dance" seems indeed to be a verb for which there is not much controversy related to its truth-evaluableness in the absence of a location; however, for a great many other verbs the discussion is very much open – including, as we had the chance to see in detail, meteorological verbs such as "rain". Finally, consider their idea that precisional expressions such as "by loose standards" are functions from propositions to loosenings of those propositions. Even if this is right, I don't see any clear sense in which the proposition expressed by the sentence "Avocado is tasty for John" is a loosening of the proposition expressed by the sentence "Avocado is tasty". As for their hint that all the expressions investigated should be treated as functions from propositions to propositions, I'm afraid that it is not more than that: just a hint. It is difficult to make sense of such a view without the necessary amount of details – and, more importantly, without the necessary arguments in its favor. Neither of those is actually provided by Cappelen and Hawthorne in their book, for none of the expressions they investigate. Moreover, if they would claim that expressions such as "for John" should receive a similar treatment, the burden of proof is certainly on their side, as well as to task to provide the details of how such a view would work.

I thus conclude that the arguments Cappelen and Hawthorne give to the effect that *Parameter Dependence* fails in the case of modal, temporal, locational and precisional expressions do not transfer to the case of predicates of personal taste. Moreover, in the latter case there is a strong intuitive case that the assumption holds – at least under a subjectivist picture of the properties they stand for.

Let me next address the assumption of *Vacuity*, before moving to *Uniformity*. Cappelen and Hawthorne make the following observation concerning *Vacuity*: namely, that in some cases locational expressions felicitously combine with expressions that already contain specification of a location. Their example is

(6) John is dancing in Boston in New England.

Also, the same phenomenon can be observed in the case of temporal expressions. (7) below is perfectly felicitous:

(7) Yesterday, between 2 and 4, it rained heavily.

As they themselves note, these cases are special. The peculiarity of (6) stems from the fact that some locations are proper subparts of other locations: Boston is part of New England. The peculiarity of (7) stems from the fact that the temporal interval referred to by the expression "between 2 to 4" is part of the interval referred to with "yesterday". But, the point is, I take it, that *Vacuity* doesn't holds across the board.

I'm not sure how powerful an objection this is. I guess the discussion could continue on whether a weaker thesis, namely that locational and temporal expressions exhibit *Vacuity* only in cases in which one specified location or time is not proper part of the other specified location or time, is still solid enough to be considered worthy of defense. Be that as it may, the point I want to make here is that nothing like this is true in the case of expressions such as "for John". A sentence like

(8) For Anna, avocado is tasty for John

might be felicitous, but "for Anna" surely doesn't have the sense we are interested in, and thus cannot be interpreted as an operator of the kind we are focusing on.[12] To use Cappelen and Hawthorne's phrase, expressions such as "for John" cannot be stacked. I thus conclude that we haven't been given any reason why *Vacuity* shouldn't hold for expressions such as "for John".[13]

However, the more pressing objections that Cappelen and Hawthorne raise have to do with the assumption of *Uniformity*. They claim that *Uniformity* is simply not warranted for locational and temporal expressions such as "somewhere", "sometimes" or the tenses of verbs. They point out that there are several models in the literature that are compatible with the denial of *Uniformity*. For example, one could hold that certain expressions invariably have a hidden pronoun associated with them (the "hidden pronoun model"). The logical form of a sentence like "It is raining" is something that could be paraphrased as "It is raining at *x*",

[12] The sense "for Anna" has here is that of Anna *believing* that avocado is tasty for John (see Kölbel (2009) or Lasersohn (2008) for discussion). Also, I use sentence (8) because it is indeed felicitous (although with "for Anna" having the meaning just specified) instead of clearly infelicitous sentences such as "Avocado is tasty for John for Anna". I tried to find sentences containing different expressions to be interpreted as operators, such as "according to *x*'s taste" and "for *x*", but they don't seem to me to make more sense than the one previously considered (examples: "Avocado is tasty for John, according to Anna's taste" or "According to Anna's taste, avocado is tasty for John").

[13] Cappelen and Hawthorne make two further observations about *Vacuity*: that in some cases E and ES have the same truth value but make different truth-conditional contributions (for example, when E is "actually") and that an expression can be communicatively significant even if it is semantically vacuous. But in making these observations, they assume that E exhibits *Sententiality*, which is not the case in my view. For their considerations to hold when the assumption of *Sententiality* is dropped, they should provide some clear examples.

where *x* is a location; when an expression like "somewhere" is combined with such a sentence, as in "Somewhere it is raining", what happens is that "somewhere" combines with something tantamount to an open sentence. However, this doesn't mean that when "It is raining" appears alone it is also an open sentence – it actually expresses a full proposition (the value for the variable *x* being provided by context). Alternatively, one could hold that the surface structure of "Somewhere it is raining" is generated by "somewhere" moving in the logical form from a final position, movement which leaves a trace that gets bound (the "trace-generation model"). On this model also "somewhere" combines with something tantamount to an open sentence. Thus, on both these models *Uniformity* doesn't hold, since "It is raining" has a different type when it occurs in isolation (it is a closed sentence) than when it occurs embedded (it is an open sentence). As we have seen in previous chapters, one of these models has been presupposed by truth-conditional semantics and by the proponents of the instances of the Binding Argument presented. As for tenses, the main flaw they find with the view that tenses function as operators is the implausibility of the claim that "there is some constituent of "Ernie danced" that (i) involves stripping a past-tense-marking constituent from "Ernie danced" and (ii) can stand alone as a vehicle of assertion" (Cappelen and Hawthorne, 2009: 85). But, if in the case of "Somewhere Ernie is dancing" it could be claimed that there is a stand-alone assertable expression that gets combined with "somewhere" (namely, the sentence "Ernie is dancing"), in the cases of tenses this is not so: the tenseless "Ernie dance" cannot be felicitously asserted. Thus, they claim, the argument doesn't even get off the ground.

If Cappelen and Hawthorne's arguments above are on the right track, it seems that they could easily apply them to the case of predicates of personal taste and the expression "for John". But I'm not sure that the arguments given really *are* on the right track. It is certainly true that there are models that don't require the assumption of *Uniformity* to be true. But the mere fact that there are such models does not show that they are the correct ones, or the ones we should embrace. Cappelen and Hawthorne cite King (2003) as showing that the operator treatment of tenses is problematic, due to the existence of a series of phenomena such as temporal anaphora, deictic uses of tense, interaction between tenses and temporal adverbs, "sequence of tense" phenomena, etc. that, apparently, cannot be handled by the operator approach. It is a matter of dispute whether in the paper mentioned King really reached the conclusion that it is often attributed to him, namely that the operator treatment of tenses is wrong (or just more cumbersome),[14] but even if that is right, it is simply not true that the

[14] For a discussion of King's view on these issues, as it appears in King (2007, chapter 5), see Martí and Zeman (2010).

phenomena mentioned cannot be accounted for under an operator view of tenses. For example, such phenomena could be accounted for by combining an operator treatment of tenses with the view that the temporal domain referred to by temporal expressions and tenses is always restricted (Recanati (2007b), Weber (ms.)).[15] As for their second argument, in connection to tenses, it is far from obvious that the expression with which tenses (interpreted as operators) combine needs to be assertable. To my knowledge, it is not part of Lewis' view or of the other proponents of the Operator Argument that this claim needs to hold. If anything, Lewis (1998), for example, claimed that we need two kinds of semantic values, one to account for compositionality (call it *compositional semantic value*) and another for other roles semantic contents are supposed to play, among which being to be that what is asserted by an utterance in a context (call that *assertoric semantic value* – see below more on this distinction). Compositional semantic values, I take it, need not be expressed by expressions that are assertable. Thus, the issue of assertability seems to me to be orthogonal to the issue of *Uniformity*.[16]

I don't want to rest my case solely on the preceding observations. For I want to claim that *Uniformity* is actually *supported* by the variadic functions approach to expressions such as "for John". To see this, remember that the natural language expressions that are accounted for by appeal to variadic operators (including expressions such as "for John") are treated as predicational operators having a dual role: that of creating a new predicate that differs from the predicate they apply to by its increased adicity and that of providing a value for the extra argument place of the newly-created predicate. This has the consequence that the predicate the variadic operator takes as its input has the same adicity (i.e., type) both when it occurs as the input of the varidic operator and when it occurs in isolation. As we have seen both in the case of "in Paris" and "for John", the predicates they applied to ("rain and "tasty", respectively) were of the same type in isolation and when combined with the aforementioned expressions. The aim of the variadic functions approach was precisely to allow that, in order to block certain instances of the Binding Argument applied to sentences in which the predicates occurred. Cappelen and Hawthorne mostly speak about *Uniformity* under the assumption that the expressions they investigate are sentential operators, but there is a clear sense in which one could speak about *Uniformity* of sub-sentential (e.g., predicational)

[15] I also have high hopes that such phenomena could be successfully accounted for under a variadic operator view of temporal expressions and tenses. Materializing such hopes will constitute a big part of my future research.
[16] A similar observation is made by Weber (ms.).

expressions as well. If so, the way variadic operators function assures that *Uniformity*, in the sense distinguished, holds.

Now, as we have seen, the two authors mention a couple of models of how quantifiers work. However, no arguments to embrace those models have been given. It is precisely the goal of this work to challenge those models and offer an alternative one – a model in which the semantic effect of quantifiers could be accounted for by appeal to variadic operators. I haven't strictly speaking given any arguments against the two models presented by Cappelen and Hawthorne, but I did my best to substantiate the alternative model in chapters 3 and 4. Of course, much more needs to be said about this issue, but also I don't think we should take the fact that the two rival models are widespread as a sign of their correctness, nor that they are the only models available. I thus conclude that, under the variadic functions approach advocated in this work, *Uniformity* holds – if not generally, at least for predicates of personal taste.

So, it seems that the reasons Cappelen and Hawthorne have found for the assumptions above failing in the case of modal, temporal, locational and precisional expressions do nothing to hinder the assumptions holding in the case of benefactive expressions such as "for John" – at least not if one assumes subjectivism as the underlying metaphysical picture of taste properties and a treatment of the expressions in question that makes appeal to variadic operators. In many cases Cappelen and Hawthorne's arguments show that *Parameter Dependence*, *Vacuity* and *Uniformity* hold only because *Sententiality* holds, and since *Sententiality* is rejected, the other assumptions also need to be rejected. But, as we have seen, *Sententiality* is not crucial for the Operator Argument (or, at least, a suitably modified version of it) to go through. Also, in many cases they claim that even if all the assumptions (including *Sententiality*) hold, this does not preclude treating modal, temporal, locational or precisional expressions as propositional operators. But this doesn't mean that one should automatically adopt such a view. Certainly, which is the best view of these matters is precisely the question at issue, and it would be question begging on their part to simply assume that their preferred view is the one that should be selected – in the absence of extra arguments, of course.

If the Operator Argument, in the version I presented, is sound, as I claim it is, there still remains an interesting question: namely, what kind of views could one argue for using that version? The original version of the argument was used by Kaplan and Lewis to argue for relativism (in the sense given to the term in this work) about times, locations and standards of precision. Although I expressed at times doubts about Cappelen and Hawthorne's objections, I wish to remain neutral whether the version given above can be used for the same conclusion.

What I want to claim is that the version above could be used to argue, if not in favor of relativism about predicates of personal taste, at least *against* one alternative view: namely, truth-conditional semantics. This is so because of conclusion L6' of the general form of the argument, which states that P does not supply a value for M when P occurs alone. What this amounts to, in the case of predicates of personal taste, is that such predicates like "tasty" don't supply a value for a judge when they occur alone (conclusion L6* above) – that is, the lexical entry for "tasty" neither contains instructions for the provision of a judge (there is no mentioning of judges in the character of "tasty"), nor does the predicate have an argument place for judges in its logical form. We have seen in the previous chapter how the variadic functions approach allowed both the relativist and the truth-conditional pragmatist about predicates of personal taste to block the opposite claim presented as the conclusion of a certain instance of the Binding Argument for judges. But now we go one step further: if the Operator Argument is sound (and I take myself to have shown above that it is), such a view should be rejected. That is, the Operator Argument provides us with a positive argument against the claim that, in the case of predicates of personal taste, the judge is specified along with the predicate itself. Not only we now have a way to avoid a conclusion of truth-conditional semantics that would jeopardize rival views, but the view itself is thus ruled out.

I have said above that the present version of the Operator Argument cannot be used to argue in favor or relativism about locations. The reason for this claim is that relativism about predicates of personal taste is not the only view that could benefit from the version of the Operator Argument given above. I think there is a way to interpret the argument that makes it consistent with a truth-conditional pragmatic view about such predicates. Here is how this can be achieved. The key is to understand some of the argument's claims in a certain way. For example, L1', our version of *Parameter Dependence*, says that P is evaluable for denotation only once a value along parameter M is specified. Now, I take it that one could interpret "parameter M" not necessarily as an element of the circumstance of evaluation, and thus "specified" as the provision of such an element, but as, for example, a parameter that needs to somehow be made explicit in order for the predicate to be given a denotation. But the parameter need not appear at a certain level of representation – for example, the specification of the parameter M can be part of the truth conditions of an utterance, but not, say, part of its logical form. This is precisely what truth-conditional pragmatics claims. Thus, it seems, the

argument above is compatible with truth conditional pragmatism about predicates of personal taste.[17]

5.3. Disagreement

In this section I will focus on a phenomenon that has been invoked by many proponents of relativism as the main motivation for the view, namely the phenomenon of "faultless disagreement". Cases of faultless disagreement are cases in which, although there is a perceived disagreement between two parties entertaining contradictory or contrary contents (or an intuition to that effect), neither of them is at fault (neither cognitively, not in any other way). To use the example of predicates of personal taste, the phenomenon consists in the fact that when confronted with exchanges like the following:

(9) A: Avocado is tasty.
B: No, it's not. It's horrible,

ordinary people have the tendency to interpret A and B both as having a disagreement (signaled by the expression "No" at the beginning of B's line) and as being faultless (see, e.g., Wright (1992) and Kölbel (2003) for more about this phenomenon).

Following our intuitions in order to philosophically illuminate a certain topic has never been a bullet-proof method, so one needs to be very cautious here. One problem with relying unconditionally on intuitions in cases like the one above is that it is not clear, for example, whether those intuitions will lead to a single and coherent notion of disagreement. Disagreement seems to be a very subtle and volatile notion, and philosophers studying it have been keen to stress this feature. In the same vein, one could claim the same about faultlessness: is there a single sense of faultlessness that surfaces when people judge the cases above as cases of faultless disagreement or do those intuitions track different notions? In what follows I will leave aside the issue of faultlessness and concentrate exclusively on the notion of disagreement.[18]

What is then disagreement? I propose here to follow the methodology adopted by MacFarlane (forthcoming b, ms.). That is, instead of trying to isolate one notion of disagreement that will stand for all the cases of "real disagreement", MacFarlane lays out a

[17] Again, I wish to remain neutral whether this version of the argument can be used to argue for a truth-conditional pragmatist view about times, locations and standards of precision.
[18] But see MacFarlane (2011, chapter 6) for distinguishing several senses of "faultless" and for discussing the implications for what "faultless disagreement" could mean.

number of notions, each of which captures one legitimate sense of what people take disagreement to be. The claim is thus that all these notions are useful in characterizing some but not all the cases judged as disagreement. To this end, let me start with one very intuitive definition of faultless disagreement, and work my way from there in the more contrived issues having to do with disagreement only. In his paper "Faultless Disagreement", Kölbel proposes the following definition of the phenomenon:

> A faultless disagreement is a situation where there is a thinker *A*, a thinker *B*, and a proposition (content of judgement) *p*, such that:
>
> (a) *A* believes (judges) that *p* and *B* believes (judges) that not-*p*.
>
> (b) Neither *A* nor *B* has made a mistake (is at fault). (Kölbel, 2003: 53–4)

Now, it seems that the notion of disagreement that Kölbel has in mind in this definition (clause (a)) is something that could be characterized by retorting to what MacFarlane has named

> **The Simple View of Disagreement**: To disagree with someone's belief that *p* is to have beliefs whose contents are jointly incompatible with *p*. (MacFarlane, forthcoming: 145)

As I said, our strategy here will be to distinguish different notions of disagreement, and I will closely follow MacFarlane here. Thus, what we called above **The Simple View of Disagreement** is an instance of what MacFarlane calls "non-cotenabilty" – that is, "I disagree with someone's attitude if I could not coherently adopt that same attitude – an attitude with the same content and force – without changing my mind – that is, without dropping some of my current attitudes" (MacFarlane, forthcoming b: 144). In **The Simple View of Disagreement**, the attitude involved is belief, so it is thus one instance of *doxastic* non-cotenability. But doxastic non-cotenability is not the only type of non-cotenability: we also have *practical* non-cotenability, when the attitude involved is liking an object, for example. Thus, if A likes C but B doesn't, A's and B's attitudes are non-cotenable, since A could not adopt the attitude B has towards C (and vice versa), on pain of practical incoherence.

A more sophisticated notion of disagreement is that of *preclusion of joint satisfaction*, which can be characterized as follows: "I disagree with someone's attitude (…) if its satisfaction precludes satisfaction of my own" (MacFarlane, forthcoming b: 147). This notion

captures the insight that disagreement involves somehow not only a difference in attitudes (as in the case of non-cotenability), but also a kind of conflict or dispute – a state of tension that can be resolved only by one (or both) of the parties change their minds. Now, note that two parties can disagree in the preclusion of joint satisfaction sense of disagreement above, but nevertheless be both *accurate* (where accuracy is defined by MacFarlane as follows: "[t]o say that the attitude or speech act is accurate is, roughly, to say that it is true relative to the circumstance that matters" (MacFarlane, forthcoming b: 150)). Thus, if we plug in the notion of accuracy into the former notion of disagreement, we get to an even more sophisticated notion, *preclusion of joint accuracy*, which is defined as follows: "to disagree with someone's attitude (…) is to have attitudes the accuracy of which would preclude its accuracy" (MacFarlane, forthcoming b: 149). But since accuracy can be unpacked in different ways (for example, in a relativistic framework such as that of MacFarlane, accuracy is relativized both to contexts us use and contexts of assessment, being thus a relative notion), there are two readings of the preclusion of joint accuracy notion of disagreement. One is that "[t]he accuracy of my attitudes (as assessed from any context) precludes the accuracy of your attitude (as assessed from that same context)"; the other, dubbed *preclusion of joint reflexive accuracy*, is "[t]he accuracy of my attitudes (as asesssed from my context) precludes the accuracy of your attitude (as assessed from your context)" (MacFarlane, forthcoming b: 154). We thus have a plethora of notions that capture most (hopefully all) senses of disagreement.

MacFarlane claims that his relativistic view allows all these notions of disagreement up to the last one, which amounts to a more objective notion of disagreement. He also contends that his view is the only one that can make sense of preclusion of joint accuracy, and since he thinks that disputes of taste involve precisely such a notion of disagreement (mainly because of phenomena of retraction), he sees his view as the best positioned to account for disagreement involving predicates of personal taste. I will not pause here to assess these claims. I am ready to accept the idea that relativism (in MacFarlane's, but also in my sense of the term) cannot satisfactorily account for the relevant notion of disagreement present in disputes of taste – whatever that is.[19] In any case, my aim in the reminder of this section is to show that, on the view that disagreement involves, at least as a minimal requirement, contradictory or contrary content (that is, if one takes the notion of disagreement spelled out

[19] See Montminy (2009) for doubts that relativism in MacFarlane's sense has the ability to account for the preclusion of joint accuracy sense of disagreement. My own doubts concern the claim that we retract previous assertions involving predicates of personal taste, and therefore that the notion of disagreement involved in their case is preclusion of joint accuracy. For complaints that relativism in general cannot account for disagreement, see, among others, Iacona (2008), Rosencrantz (2008).

in **The Simple View of Disagreement** above to be a necessary, but not sufficient condition for disagreement), some contextualist views (especially truth-conditional semantics) cannot account for it either, not at least without incurring extra theoretical costs – despite claims to the contrary.

Some might find the assumption of having contradictory or contrary contents as a minimal condition for disagreement unrealistic and the condition too strong. I acknowledge the fact that there are contextualists who reject this notion of disagreement. It is not my aim here to insist that such a notion is nevertheless the right one. As we have seen above, there are many ways in which one could conceive of disagreement, and I am sympathetic to MacFarlane's attitude to the effect that each such notion might be suitable for some, and not all, cases of what people judge as disagreement. But this attitude itself gives us one argument in favor of using a notion of disagreement that requires as a minimal condition contradictory or contrary contents: there might just be cases in which such a notion is appropriate, and the minimal condition fulfilled. A second argument in favor of using such a notion is that it has been employed by some contextualists themselves: witness, for example, the recent contextualist view in Cappelen and Hawthorne (2009: 96-98). So, the assumption is not unreasonable.

Now, what I want to show is that contextualists who claim that they can account for disagreement while adhering to this notion have to face a dilemma: either they leave some cases of disagreement unaccounted for, or they incur some additional theoretical costs that are not always made explicit. So, the idea is, even if such a notion of disagreement is not always appropriate, contextualists employing it cannot make good on the promise to account for disagreement.

Let me begin with telling a story about the dispute between contextualism and relativism about predicates of personal taste. As I see it, the dispute so far has gone through two stages. Stage one consists in the appearance of relativist doctrines claiming that rival views cannot account for cases of faultless disagreement. Data like the exchange between A and B in (9) above have been taken to form the basis of an argument in favor or relativism and against contextualism for predicates of personal taste. The argument has been that, since contextualism treats utterances such as those of A and B in (9) as making the judges be part of the content of those utterances (so that the content of A's utterance will actually be that avocado is tasty for A, or for some other relevant person or group, depending on the version of contextualism at stake, and the content of B's utterance will be that avocado is not tasty for B, or for some other relevant person or group), although it does get the faultlessness part of

the phenomenon right, it fails to capture the disagreement part. Thus, critics of contextualism such as Kölbel (2004), Lasersohn (2005), MacFarlane (2005a) have concluded that contextualism cannot account for faultless disagreement, thus leaving a crucial feature of predicates of personal taste unaccounted for. Since the contextualists' failure consists in not being able to account for the disagreement part of the phenomenon, I will refer to the problem with the phrase "the disagreement problem", leaving aside the faultlessness aspect of the problem.

The second stage of the dispute I'm considering consists in the contextualist reaction to relativists' allegations and has been materialized in a series of answers to the disagreement problem. I think one could distinguish three different strategies to answer this problem in recent contextualist literature. Thus, some authors simply go on and deny the data, claiming that the intuition of disagreement is absent in exchanges like the one between A and B above. As I noted in the beginning of this section, intuitions are a delicate issue, and certainly much needs to be said about when and in which conditions they could be trusted, but for the purposes of this paper I will take it that the intuition of disagreement in cases like the one above is strong enough to constitute the starting point for an objection. Other authors have rejected the relativist argument on the basis of using a too narrow notion of disagreement. As we have seen above, disagreement is a multifaceted notion, and the relativist's focus on disagreement as involving contradictory or contrary contents (or, indeed, content at all) amounts to overlooking other senses of disagreement, which when taken on board would not support the relativist argument. But, on the other hand, there are contextualists that accept both something like the relativist notion of disagreement and that the intuition of disagreement is present in cases like the one above. Among them, some just bite the bullet, claiming that contextualism simply cannot make sense of faultless disagreement, but assuage the worry by usually accompanying this sort of claim with the postulation of some form of semantic blindness, to the effect that the semantics of such expressions is hidden to normal speakers and, as a consequence, they are systematically wrong in judging as being the case what is not – for example, judging that there is disagreement in the exchange between A and B above when in fact there is none. So, according to those contextualists, the intuition of disagreement one has in alleged cases of faultless disagreement is to be explained away, rather than accounted for. But there are also contextualists that try to fix the problem by addressing it head-on: they claim and purport to show that, despite the relativist allegations, contextualism can after all make room for disagreement.

It is the third kind of response, in both its forms, that I want to address in what follows. This is a debate that has its amount of intricacy, and I will not enter it deep enough here; my goal is only to have a closer look on this third type of response and argue that contextualists that take this route have either (a) disregarded the real problem, giving answers that miss the target or (b) their response involves postulating, in some form or another, semantic blindness on the part of the speakers, thus incurring additional theoretical costs.

Related to (a), the usual contextualist answer has been to present cases in which the intuition of disagreement is born out, even under the assumption that contextualism is true. The strategy has been to point out that there are uses of predicates of personal taste in which the predicate is used exocentrically (when one speaks from a different person's perspective), or group uses (when the predicate is used to speak about what a certain group finds the case). The answer typically comes in the form of a list of such cases; textual evidence for such lists can be found in Glanzberg (2007), Stojanovic (2007), Lopez de Sa (2008), Cappelen and Hawthorne (2009). Here is an example of such a list, taken from the latter work. In the case of an exchange between a speaker uttering "That will be fun" and an interlocutor uttering "That will not be fun" ("that" referring to the same thing), the following cases are possible:

(i) The speaker is using "fun" autocentrically, the hearer realizes this, but exocentrically points out that the relevant event will not be fun for the original speaker.

(ii) The speaker is claiming that the referent of "that" will be fun for a group that includes the interlocutor. While it will be fun for the speaker, it will not be fun for certain other members of the group. Here the interlocutor is quite within his rights to correct the speaker. Once corrected, the speaker will in that case not stick to his guns unless he feels the alleged counterevidence is faulty.

(iii) The original speaker was in fact merely expressing the claim concerning the referent of "that" that it will be fun for him. The interlocutor misunderstands the speaker and corrects him when it is not appropriate to do so. (Cappelen and Hawthorne, 2009: 110-111).

However, this kind of answer misses the relativist challenge. For, it is not enough to point out that there are some cases in which the intuition of disagreement is born out, assuming contextualism is true; it is in some *specific* cases in which the relativist claims the intuition is

present – cases that are *not* on the contextualist's list. Here are two such cases, which the relativist takes to be crucial:

(iv) The original speaker is using "fun" autocentrically and the hearer also uses "fun" autocentrically (even if he realizes that the original speaker uses "fun" autocentrically);

(v) The speaker is claiming that the referent of "that" will be fun for a group that does not include the interlocutor. The interlocutor, in her turn, is claiming that the referent of "that" will be fun for a group that does not include the original speaker.

On the contextualist view, these cases remain unaccounted for. While it might be true that in the initial formulations of the disagreement problem exocentric and group uses of predicates of personal taste have been overlooked, it is cases like (iv) and (v) that constitute the thrust of the relativist challenge. Assuming that relativism can account both for cases like (iv) and (v) *and* for the cases on the contextualist's list (there is nothing in relativism precluding a principled treatment of exocentric, or group uses of the relevant expressions), it should be preferred to contextualism. Of course, as a last resort, the contextualist could deny that the intuition of disagreement is present in specific cases like (iv) and (v), but then it is not very clear whether contextualism is supported by intuitions or the other way around.

The main point of the considerations above was to highlight the fact that the contextualist answer to the disagreement problem considered above is, at best, incomplete. This creates the need from the contextualist part to say something more about cases like (iv) and (v). Now, I have noted above that one way contextualist answered the problem was to explain away the intuition of disagreement by embracing *semantic blindness*. This has been the preferred solution of some traditional contextualists (featuring prominently in Keith DeRose's defense of epistemic contextualism). However, in recent contextualist answers to the disagreement problem this solution is not always mentioned – or, if mentioned, it is not given the weight it deserves. In the absence of other claims about cases like (iv) and (v) (as seems to be the case in Glanzberg (2007)), this silence simply means that an answer is still needed. Some authors, though, do mention semantic blindness as a solution. Thus, Cappelen and Hawthorne, in connection to a semantics of "hot", which they take as a model for a semantics of predicates of personal taste, write:

> [T]he contextualist will explain the relevant datum by appeal to a dose of semantic blindness (...) [O]wing to misjudgments about semantic uniformity, some disagreement judgements are accepted when they ought not be. (Cappelen & Hawthorne, 2009: 118)

Also, Schaffer writes in a recent paper:

> There remains a sense in which the contextualist could still claim to deliver the appearance of faultless disagreement (...) [T]o do so she will need to posit a certain sort of performance error concerning indeterminacy in covert arguments, which I will call *semantic fogginess*. Semantic fogginess involves the very specific sort of error of blurring over different possible values of covert arguments in cases of indeterminacy. (Schaffer, forthcoming)

It is comforting to see that appeal to semantic blindness (or similar notions) is acknowledged, but it seems to me that this is far from being an innocent concession on the contextualists part. Having to posit semantic blindness was found by many philosophers, famously starting with Schiffer (1996), to be quite an unattractive feature of any semantic view. One major advantage that contextualists claim their view has over relativism is that the contextualist view does not incur any additional theoretic costs. But if it turns out, as the authors above themselves acknowledge, that contextualists needs to posit semantic blindness, this advantage seems to vanish. So, contextualists either don't have a complete answer to the disagreement problem, by not addressing cases like (iv) and (v) or their response involves postulating, in some form or another, semantic blindness on the part of the speakers, thus incurring additional theoretical costs.[20]

On simple versions of contextualism, semantic blindness is related to a lack of knowledge on the speakers' part with respect to the workings of their own language. However, there are other, more sophisticated versions of contextualism in which semantic blindness takes different forms. Let me illustrate this point by considering Lopez de Sa's (2007, 2008) (also defended in Kölbel (2007)) version of contextualism.

In Lopez de Sa's presuppositional view, the contextualist has the means to account for disagreement in exchanges such as the one between A and B above because disagreement is

[20] See also Almér and Westerståhl (2010) for making the point that adopting semantic blindness is not an innocent concession.

possible only under the presupposition that there is a common standard of taste that the participants in the exchange share. This presupposition is triggered simply by the use of predicates of personal taste. If this presupposition is not fulfilled, Lopez de Sa claims, nothing propositional has been expressed by any of the participants, and hence there is no disagreement to be accounted for.[21]

One might question the details of Lopez de Sa's view, but the point I want to make here is that the presuppositional view also leads to the postulation of a kind of semantic blindness. If on the simple versions of contextualism semantic blindness is connected with speakers' use of expressions of a language, on Lopez de Sa's view semantic blindness is, obviously enough, related to the presuppositions triggered by the use of such expressions. Since, on his view, predicates of personal taste function like presupposition triggers, it follows that the intuition of disagreement stems from sheer ignorance about the presuppositions triggered by uses of certain expressions. I take this result to be implausible. The following exchanges between an ordinary person (A) and a Lopez de Sa-style contextualist (B) seem perfectly natural to me:

(10) A: The cat is on the mat.
B: So, you presuppose that there is exactly one cat and exactly one mat around.
A: Yes, I do. That's why I used "the".

(11) A: Avocado is tasty.
B: So, you presuppose we share a standard of taste.
A: No, I don't. I actually know you cannot stand avocado. Why did you ask that?[22]

Let me finish this section with making a point that hasn't been explicitly found in the in the literature so far. The point is that truth-conditional pragmatics about predicates of personal taste can also accommodate disagreement in the sense we have been interested above.[23] Here is what the truth-conditional pragmatist could claim. Since pragmatic processes are by definition optional, the provision by such processes of the judge is optional as well. Then it is open to the truth-conditional pragmatist to claim that in dialogues as the ones above

[21] At least if we think of disagreement, as I do here, as involving entertaining contradictory or contrary contents.
[22] I'm assuming here that A's use of "tasty" in both (10) and (11) is autocentric.
[23] I owe this point to Neftali Villanueva.

what happens is that the pragmatic processes that are usually triggered in contexts in which, say, someone wants to convey that avocado is tasty for a certain judge (possible the speaker herself) by uttering the sentence "Avocado is tasty", are not triggered at all. That is, cases like the dialogue between A and B in (9) are similar to the weatherman scenario in the case of locations, where the location of rain was not provided by a pragmatic process (since there is no need, in such scenarios, for the provision of a location). Since no pragmatic process takes place, the content of A and B's utterances are contradictory – namely that avocado is tasty and avocado is not tasty. The intuition of disagreement is thus accounted for also under the truth-conditional pragmatic approach. This has the consequence that, under the assumption that disagreement requires as a minimal condition contradictory or contrary contents, no argument from disagreement will solely favor relativism, but could be used in favor of truth-conditional pragmatics as well.

5.4. "The argument from innocence"

In this section I will provide another argument against some versions of contextualism and in favor of relativism about predicates of personal taste. Before diving directly into the issue, it might be useful to recapitulate where we stand. So far we have established that, from the three initial positions that I focused on in this work (truth-conditional semantics, truth-conditional pragmatics and relativism) the first one was rejected by the variant of the Operator Argument I gave in section 5.2. As I noted, truth-conditional pragmatics is still not ruled out, since there is a reading of the argument that is compatible with it. I then moved to investigating the notion of "disagreement" with the aim of showing that, under a certain relatively widespread way of understanding disagreement, some versions of contextualism (including truth-conditional semantics) cannot account for a minimal requirement for disagreement. However, I also showed that the truth-conditional pragmatist has the means to account for disagreement in the sense specified. As it will turn out, the argument given in this section can also be made compatible with truth-conditional pragmatics.

The argument I want to propose is an adaptation of a similar argument given by Recanati in his recent book *Perspectival Thought. A Plea for (Moderate) Relativism* in favor of an operator treatment of temporal expressions and tenses. The debate Recanati engages in is that between temporalism and eternalism, a debate that I touched upon in section 5.1. when talking about the Operator Argument. More specifically, Recanati considers a couple of arguments for eternalism, one given by King (2003) and the other by Richard (1981). The argument from innocence is related to Recanati's answer to the first argument.

Let us see what the argument Recanati is offering is. He starts from the observation that one of the essential features of our experience of time is that time is given to us in a way that privileges the present time in favor of the past or the future times. This is a consequence of the fact that we live *in* time, that we are situated inside the temporal flow. This feature of our experience of time has been stressed by many philosophers, especially those working within the tense-logic tradition initiated by Arthur Prior in the '50s. According to those philosophers, there is a dissymmetry between the present and the other times, a dissymmetry that for Recanati consists in "the fact that the current state is antecedently *given* and does not have to be represented, in contrast to the other states which have to be explicitly introduced" (Recanati, 2007b: 65). This "internal view of time" needs to be captured in the way we represent time, in particular in our thought and talk. Thus, Recanati claims, "one may accept, as a deep constraint on our theorizing, the need to capture the primacy of the internal perspective in dealing with the representation of time in language and thought" (Recanati, 2007b: 65).

Now, in responding to King, Recanati makes the point, correctly I think, that King is overstating the case for eternalism by pointing towards the current practice among linguists to treat tenses and temporal expressions in a quantificational, extensional framework. Not only there still are linguists and logicians working within the tense logic framework, Recanati remarks, but also some of the linguists working within the quantification framework see this as a purely methodological choice (especially Ogihara (1996)), and not resting on something substantial. Contrary to King's claim, if there is a substantial reason for choosing one alternative over the other, it is on the temporalist side. Recanati thinks that such a substantial reason is precisely the ability to account for the internal character of time, and that this desideratum can be satisfied only under a temporalist view.

In order to clearly understand this claim, let us closely follow Recanati's reasoning here. The argument is based on an analogy with the modal case. Recanati starts with asking us to consider a language devoid of means of talking about worlds, including modal expressions, and that the population speaking that language entertains only non-modal thoughts. Imagine further that the members of the population speaking that language start thinking about metaphysical issues, such as what is actually the cases vs. what could be the case, and consequently they develop the linguistic tools to do so (i.e., they start using modal expressions). Now, with respect to the primitive language and the acquisition of the more sophisticated tools that allows them to entertain modal thoughts, Recanati makes two points. The first is that for the theoretician who is studying the primitive language will still employ

possible worlds in evaluating the sentences uttered by the members of the population. The second is that in giving the semantics for the fragment of the language consisting in the newly acquired tools to entertain modal thoughts, the theoretician should try to preserve as much as possible from the primitive language, since it is not the case that just by developing tools to speak about possible worlds the population has lost the ability to entertain non-modal thoughts. To do so would be to give an account for a different language, not the one that the population is speaking after becoming modally sophisticated. But adopting an extensional account about possible worlds will have precisely the consequence that modal innocence is not preserved, along with the fact that there will be no difference between modal and non-modal thought. Thus,

> [t]o maintain that distinction, we have to see modal sentences as *constructed from* simple sentences by the application of modal operators to them. In this way we can analyse the ability to use and understand modal sentences as resting on two distinct abilities: the (modally innocent) ability to use and understand simple sentences; and the (modally sophisticated) ability to imagine other possible worlds and to contrast the actual world with them. The first ability is independent of the second: we can use and understand simple sentences (…) even if we lack the ability to think reflectively about the actual world. (Recanati, 2007b: 68)

We find a similar situation with time. Without duplicating the scenarios to be imagined, one can see that adopting an extensional account of tenses and temporal expressions would render all talk time-specific, thus losing temporal innocence. Recanati quotes Dummett in this connection, and so am I:

> We think of adjectives such as 'warm', 'smooth', 'slender' and so on as denoting *properties*; properties that a thing may have at one time, and not at another, but nevertheless properties rather than relations between objects and times. And this goes with the way in which we come to understand such adjectives. (…) We do not begin by learning in what relation an object must stand to an arbitrary time for it to be warm or wet at that time, and then, having learned what time is referred to by the adverb 'now', derive from this a grasp of what it is for it to be warm now. Rather, we first learn what it is for something to be warm, wet, smooth or slender, that is to say, for the

> predicate '*is* warm (wet, smooth, slender)' to be applicable to it, where the verb 'is' is in the true present tense. From this we advance to an understanding of what is meant by saying of an object that it was or will be warm, etc., at some other time. The advance is made by our acquiring a general grasp of the past and future tenses. That is to say, to understand 'was warm' or 'will be warm', we apply to our prior understanding of what is meant by saying that something is warm our general comprehension of what it is to speak of how things were or will be at another time. In so doing, we are in effect treating the tenses (and other indications of time) as operators applied to sentences in the present tense of which we have previously acquired an understanding, just as the tense-logical semantics treats them. We could not learn the language in any other way. (Dummett, 1997: 53–4)

I think a similar argument could be mounted for predicates of personal taste. It strikes me as quite plausible to claim that, as in the modal and temporal case (and, if one believes Perry, in the locational case as well – see Perry's (1993) story of the Z-landers), we have something that could be called *judge-innocence*. Imagine thus a population that is very unsophisticated when it comes to food, members of which are not exposed to a great variety of dishes and not used to exhibit their sensibility towards them. Suppose that it is so uninteresting for them to keep track of who likes what that, although they do use predicates of personal taste, they haven't developed expressions to signal whether the food is tasty for themselves or for others. But now imagine further that this population becomes more sophisticated by being exposed to a larger variety of dishes and tastes, and that its members become aware that some of those are pleasurable to some people in the community and others to other people in the community. Having become more interested in food and in who likes what, the members of this population consequently develop linguistic tools to represent the new situation more accurately; for example, they start using expressions such as "for John". The same observations Recanati made in the modal and temporal case seem to me to apply here as well: if one wants to treat the old expressions in the language of that population as judge-neutral (the predicates of personal taste they were using so far), it is not a good idea to appeal to an extensional framework in which predicates of personal taste always come with a variable for judges. Judge-innocence, for what's worth, needs to be rescued, and an operator view of expressions such as "for John" will give us such a result.[24,25]

[24] As in the case of modal and temporal expressions, innocence can be sustained in the case of predicates of personal taste even under an extensional framework, by appeal to variadic functions. See Recanati (2007, ch.8).

Now, I don't think that the argument from innocence, for all the cases envisaged here, cannot be resisted. For example, a common reaction to it is to say that even if we once were modally-, temporally- and judge-innocent (maybe at some stage of our language learning process, or at some stage in the evolution of our species), since now we do have the means to entertain modal, temporal and judge specific thoughts, we are not innocent anymore. So innocence is lost, but this is how it should be. An appeal to an extensional framework is therefore as adequate as one might want. I think this is a reasonable answer, but I also think that nevertheless we still behave as if we were innocent in some, possibly rare, cases. To use the example of predicates of personal taste, if we were always aware that judges need to be specified every time we use such a predicate, we would probably never use them without specifying a judge: we would probably never use a sentence like "Avocado is tasty". If this is so, then adopting an extensional framework would need to be backed up with an error theory or an appeal to semantic blindness. As I stressed above in connection to the issue of disagreement, I think a theory that postulates semantic blindness should be avoided. But I agree that such an answer makes sense, although it is hard for me to see what argument would be given to transform semantic blindness in a positive feature of a theory.[26]

Finally, let me spend a moment on assessing what views could be argued for using the argument from innocence. I take this argument to clearly work against truth-conditional semantics: if the judge is provided as the value of a variable in the logical form of sentences comprising predicates of personal taste, then the judge must be there in the content of any utterance of such sentences. This means that the speakers are forced to always represent the judge, thus robbing them from their judge-innocence. Note that this is so even on the view that predicates of personal taste are indexicals, and thus require the specification of a judge before their meaning is computed. On both these views, it is practically impossible to utter a judge-free content, since the predicate of taste itself requires the judge to be provided. It is not that clear, however, that this argument can be leveled against truth-conditional pragmatics.

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[25] The argument from innocence might seem an argument for the same conclusion as the Operator Argument presented in section 5.2. But in the light of the discussion in section 5.1., this will be so only on the assumption that the relativist is a semantic value monist. It should be clear that the Operator Argument and the argument from innocence could be used to argue for relativism, but if one is a semantic value pluralist, then each can be used only to argue for relativism with respect to a certain issue, as I noted above. Although it is not clear what issue Recanati has in mind when discussing temporalism, the fact that he thinks that Austinian propositions are the entities best suited to play the role of being the content of assertions would suggest that his discussion of temporalism has to do with the issue of finding the best suited entity to play the role of being the semantic value of sentences in context – temporal propositions, in his case.

[26] Also, one could argue for or against innocence based on experimental studies. The only study I know related to expressions such as "for John", although not in connection to predicates of personal taste, is Gu and Roeper (2010). I have to confess that I am not sure at the moment on the implications of their results for the discussion at hand. This could be a topic for further research.

Recall that at the end of the preceding section I made the point that truth-conditional pragmatics has the means to account for faultless disagreement by claiming that in cases like the exchanges between two parties the content expressed are not the enriched ones, but the judge-neutral ones. Now, one could argue that the same happens across the board, that enrichment happens only in a very few cases and that the default reading of sentences comprising predicates of personal taste is in the non-enriched, judge-neutral sense. Thus, I conclude that truth-conditional pragmatics is not ruled out by the argument from innocence.

This chapter has been dedicated to investigating some arguments against truth-conditional semantics about predicates of personal taste – a new version of the traditional argument known as the Operator Argument, the argument from disagreement and an argument adapted for the case at hand from other areas (time and location) which I dubbed "the argument from innocence". These arguments have been originally proposed as arguments for various relativist positions, but, if the remarks I made in connection to each argument are correct, they don't rule out truth-conditional pragmatics. Thus, they will not allow us to choose between relativism and truth-conditional pragmatics; nevertheless, they do amount to a pretty powerful case against truth-conditional semantics. I also hope that the discussions surrounding each argument have shed some light on the issues involved in those arguments.

Conclusions

The main topic of this work has been implicit content. By "implicit content" was meant the content that is communicated in what I called "implicit communication" – a type of communication in which, as Frege put it, "the mere wording (…) does not suffice for the expression of the thought". The particular type of implicit communication I focused on was characterized by appeal to examples in which a speaker is using less linguistic material than she could use in order to communicate the same information. The cases of implicit communication of this particular type considered were locations, in connection to sentences such as "It is raining", and judges, in connection to sentences such as "Avocado is tasty". I offered a relativist account of implicit content in those cases, coupled with an approach to certain natural language expressions (such as locational phrases like "in Paris" and benefactive phrases like "for John") consisting in appeal to variadic operators.

The way in which I approached the topic of implicit content was via the notion, widespread in contemporary philosophy of language, of an "unarticulated constituent". As I noted in the Introduction, this notion has come to play a central role in the debates surrounding several crucial issues in semantics, such as what is semantic content, what is the role of context in determining semantic content, what is the nature of the processes by which content determines semantic content – among others. This is why I started, in chapter 1, with an analysis of the notion of an "unarticulated constituent". My analysis was based on drawing some distinctions found in the literature, which allowed me to do two things: give a workable definition of "unarticulated constituent" and provide a map of positions involved in the debate about unarticulated constituents. From all the possible positions, I singled out three, which correspond to the main contenders in the debate about unarticulated constituents and which constituted the focus of the next chapters: truth-conditional semantics, truth-conditional pragmatics and relativism. In the last section of the chapter I scrutinized two extant criteria for (un)articulatedness and showed that they are inadequate, without myself providing such a criterion.

Starting with chapter 2, I focused on the debate between the three views mentioned. Specifically, chapter 2 was dedicated to the debate between truth-conditional semantics and truth-conditional pragmatics about the semantics of meteorological sentences such as "It is raining". The chapter contained an investigation of how several views (the two above, plus other three) account for a certain reading of the sentence "It is raining" as used in a certain

scenario devised by Recanati – "the weatherman scenario". I tried to show that the alternative views to Recanati's version of truth-conditional pragmatics cannot account for the reading that sentence has in the weatherman scenario. However, I noted that showing that the other views don't capture that specific reading shouldn't be taken as a direct defense of Recanati's position, but rather a defense of a more general view, according to which the location of rain need not be articulated at the level of logical form of sentences such as "It is raining". In the last part of the chapter I presented an instance of what I take to be the most powerful argument against truth-conditional pragmatics (and, by extension, to relativism): the Binding Argument.

Continuing the debate between truth-conditional semantics and truth-conditional pragmatics about "It is raining", in chapter 3 I presented several ways to defuse the conclusion of the particular instance of the Binding Argument presented at the end of the previous chapter. Four such ways were presented and criticized. However, my aim in chapter 3 was not so much to show that those views are incorrect, but to introduce an alternative way to answer the argument, which is more "orthodox" than the other views presented, in that it preserves quantification over object-language variables for locations. The alternative consisted in appeal to what Recanati (2002) has called "variadic functions". A big part of the chapter was dedicated to spelling out the view in as much detail as possible and to offering two implementations of it. However, although I use Recanati's variadic functions approach, I think Recanati's (2002) view is incorrect in certain respects – specifically, in its treatment of bound sentences such as "Every time John lights a cigarette, it rains". I presented my reasons for this claim in the last section of the chapter and showed how the view I prefer (which is a combination of relativism with the variadic function approach) differs from Recanati's.

In chapter 4 I moved from the investigation of meteorological predicates and locations to an investigation of predicates of personal taste and judges. I started by presenting an instance of a similar Binding Argument that has been used in the literature to argue against relativism about predicates of personal taste. I then applied the variadic functions approach to deal with that instance, thus blocking its conclusion in the same way it was blocked in the case of locations. I contrasted this approach with two alternative views which were found to have problems with certain examples. Finally, in the last section I showed, very schematically and in a purely programmatic manner, how the account could be extended to cover other expressions associated with time, standards of knowledge and epistemic bases.

In the last chapter I presented and discussed three arguments against truth-conditional semantics about predicates of personal taste. The first is a version of a traditional argument

known as the Operator Argument. Using the regimentation of the argument offered by Cappelen and Hawthorne (2009), I showed how the argument could be made to work for the specific case of predicates of personal taste, under the condition that one drops a certain assumption made by the proponents of the original version of the argument and that the variadic functions approach is adopted. Second, I investigated the phenomenon of disagreement in matters of taste and showed, using a certain controversial but still widely accepted notion of disagreement, why truth-conditional semantics cannot account for this phenomenon. Finally, I adapted an argument for temporalism given by Recanati (2007b), which I labeled "the argument from innocence", to the case of predicates of personal taste and showed that truth-conditional semantics cannot account for what I called "judge-innocence". However, I noted that each argument given against truth-conditional semantics was compatible not only with relativism but also with truth-conditional pragmatics, and thus that the arguments given cannot be used to support relativism alone.

Thus, the general conclusion of this work was that, from the three views investigated only one was touched by the arguments given in chapter 5. So, although I claimed I favor a relativist view about predicates of personal taste, no actual argument for preferring it to a truth-conditional pragmatic analysis has been actually given.[1] In what follows I will try to remedy this situation not by offering an argument as such, but by showing that one very general, but fundamental objection to truth-conditional pragmatics doesn't arise for relativism. Not having to put up with this objection is, in my view, a clear advantage on the relativist side.

The general but fundamental objection to truth-conditional pragmatics is that it makes semantic theorizing impossible. As traditionally conceived, the role of semantics (or, at least one of its roles) is to provide a theory that gives us the semantic content of utterances of various natural language expressions. Now, we have seen that it is crucial for truth-conditional pragmatics that the processes by which we arrive at the semantic content of utterances are essentially pragmatic. In the version of truth-conditional pragmatics I focused on in this work – that of Recanati (2002, 2004) – those processes were primary pragmatic processes – mechanisms such as free enrichment and the like. What is characteristic of this kind of processes (in Recanati's version of the view, but also according to other versions) is that they are optional, in the sense that the semantic content of utterances yielded by those

[1] I offered some arguments against Recanati's truth-conditional pragmatic treatment of location in chapter 3 (section 3.4.), but those concerned only his treatment of the bound readings of sentences such as "Every time John lights a cigarette, it rains". Although those arguments could probably apply to the case of predicates of personal taste as well, I don't think they amount to a full rejection of the view.

processes are unconstrained by the literal, conventional meanings of the expressions uttered. But, the objection goes, if secondary semantic processes are optional and the semantic content of utterances is not constrained by the conventional meanings of the expressions uttered, and if those pragmatic processes play a crucial role in giving us the semantic content of utterances (as truth-conditional pragmatists claim), then the very enterprise of semantics is endangered. More specifically, the worry is that, if the semantic content of utterances is not constrained in any way by the conventional meanings of the expressions uttered, semantics will have no systematic way of predicting what the semantic content of a certain utterance of a certain expression is. Thus, it has been claimed, this way of seeing things results in a picture according to which a speaker could mean anything she wants by using a certain expression (absent any constraint from the conventional meaning of the expression) – a very Humpty-Dumptiesque scenario that no doubt should be avoided.

Now, it might well be true that supporters of truth-conditional pragmatics are not particularly moved by this objection. They might take the lack of constraint from the conventional meaning of expressions on what one could say by using those expressions as a brute fact that we should learn to live with (which, given that communication goes so smoothly, doesn't seem to be such a difficult thing to do). Alternatively, they might point towards certain ways in which the conventional meaning of expressions will constrain what one could say by using those expressions. It is not my aim here to assess these answers. Let me note, however, that the objection is a very important one, and truth-conditional pragmatists *do* need to say something to address it. Now, the point I want to make is that this objection doesn't arise in the case of relativism. According to the relativist, there are no pragmatic processes that contribute elements in the semantic content of utterances (at least not in the cases investigated, locations and judges). In cases of implicit communication, the relativist's claim is that the implicit content is provided by the circumstances of evaluation. Now, if the view is read as applying unrestrictedly to a wide range of expressions, and to various types of implicit communication, then one could object that, on the face of it the relativist is simply trading indeterminacy at one level with indeterminacy at a different level. But this is not so. Advocates of truth-conditional pragmatics have been keen to stress that the intrusion of context into the semantic meaning of utterances is very widespread, possibly extending to language as a whole. Moreover, they have sought to unify the treatment given to various types of implicit communication, including both literal and non-literal talk, for example. In contrast, the relativist (or, at least the relativist as how I construe her in this work)

claims that the view should be applied only to certain expressions that are used in a certain type of implicit communication. Let me explain.

As I see it, the relativist account of implicit content is best applied to those implicit contents that depend on "objective" features of context. Locations and times are prototypical examples of such features. However, the term "objective" is not entirely felicitous here, because, as we have seen, I applied the view to judges, and in some sense being a judge has something to do with people's subjective assessments. But the existence of a judge, appeal to which needs to be made in order to evaluate sentences such as "Avocado is tasty" for truth, is a more "objective" feature of context than the intentions of speakers to use expressions in certain ways. (Compare: "Avocado is tasty" vs. "The ham sandwich left without paying"). This is not to say that the intentions of the speaker (or those of the relevant person) have no role in establishing the values of the parameters in the circumstances of evaluation. But those intentions play a much more reduced role in establishing the values of certain parameters of the circumstances[2] than the role they play, according to truth-conditional pragmatists, in determining the way in which a speaker uses certain expressions. In this sense, then, there is a much stronger connection between the conventional meaning of expressions and the circumstances of evaluation with respect to which sentences in which those expressions occur are evaluated: namely, the connection given by the objective features of context corresponding to those expressions. At bottom, this connection is based on certain metaphysical facts, such as the fact that an event of rain needs to take place in a certain location, or the fact that (at least according to the metaphysical picture of the properties for which predicates of personal taste stand for) something is tasty only in connection to a judge and not tasty simplicter. Thus, relativism doesn't face the problem raised by opponents to truth-conditional pragmatics, namely that the connection between the conventional meaning of expressions and the semantic contents of their utterances is severed. Since relativism provides everything that the truth-conditional pragmatist does, while at the same time not being threatened by the objection of severing this connection and of endangering semantic theorizing itself, it should be chosen over truth-conditional pragmatics.

Let me close by considering one objection to the view proposed in this work, what I called the "enhanced relativist view" about locations and judges, consisting of a proper relativist view coupled with a variadic functions approach to certain natural language expressions. This is an objection I have encountered many times when presenting parts of the

[2] For example, the intentions of the speaker could be relevant in determining when a predicate of personal taste has been used autocentrically or exocentrically.

material in this work. The objection is related to the possibility of combining relativism with the variadic functions approach in such a way as to arrive at a view that remains essentially relativistic. More specifically, the objection is that, by treating the quantifiers in the sentences "Every time John lights cigarette, it rains" and "Everyone got something tasty" as contributing a variadic operator in the logical form of these sentences (in contrast to Recanati's (2002) view according to which the variadic operator is contributed by a primary pragmatic process), the proponent of the enhanced relativist view concedes to the truth-conditional semanticist that locations and judges need to be represented at the level of the logical form of those sentences. That is, if the relativist adopts the variadic functions approach to such expressions, the view becomes too close to a truth-conditional semantic view and thus loses its distinctive relativist character.

I admit that by treating the expressions mentioned by appeal to variadic operators the enhanced relativist concedes something to the truth-conditional semanticists. But this concession will not deprive the view of its distinctive relativistic character. First, note that, by treating expressions such as "in Paris" and "for John" as they appear in the sentences uttered by appeal to variadic operators, the enhanced relativist is not doing anything that would put the relativistic character of the view in danger: on everybody's view, the location and the judge contributed by those expressions (Paris and John, respectively) are to be represented at the level of the logical form of the sentence in which they occur. Now, it is true that in the case of the sentences mentioned in the previous paragraph the enhanced relativist postulates variables for locations and judges in the logical form of those sentences (or, to be more precise, in the logical form of those sentences when they have a certain reading – namely, the bound reading). But far from being a mere accident, this treatment is actually one of the enhanced relativist view's strengths: it is this particular feature of the view that allows it to avoid the conclusions of the two instances of the Binding Argument dealt with in chapter 3 (for locations) and 4 (for judges). One of the aims of this work, as a step towards offering an account of implicit content in the particular case of locations and judges, has been to account for the bound readings of sentences involving the expressions at stake in such a way as to block the two instances of the Binding Argument mentioned. Looking at the issue from a different angle, the variadic functions approach takes very seriously one of the premises of both instances of the Binding Argument dealt with – namely, that "there is no binding without a variable to be bound" – and this not only in the sense that there is *some* variable, not necessarily a variable for locations or judges, that needs to be bound in order to account for the bound readings of the sentences mentioned, as all the views surveyed in chapter 4 hold.

Thus, the approach attempts to give to the truth-conditional semanticist as much as she wants, but without actually having to go along with her in drawing the conclusions of the two instances of the Binding Argument mentioned.

Now, it is clear that so much is perfectly consistent with a relativistic treatment of simple cases in which locations and judges are neither explicitly mentioned nor bound – sentences such as “It is raining” or “Avocado is tasty”. Those cases are, in my opinion, the more important ones – especially when the issue is, as it has been in this work, implicit content and implicit communication. Representing locations and judges at the level of the logical form of more complex sentences that have bound readings certainly poses no obstacle to treating the simple sentences in a relativistic way. Thus, the combination of relativism with the variadic functions approach *does* have a distinctively relativistic character, showing the objection to be misguided. Relativism is indeed a legitimate contender for accounting for implicit content and implicit communication.

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