

INTRODUCTION

JERUSALEM LECTURES

In 1992, I was a Lady Davis Fellow in the English Department at the Hebrew University of Jerusalem. In the context of this, Edit Doron asked me to present a series of weekly evening lectures.

The idea was that I would be talking about my own current research on plurality in an event based theory, without the restraints that a normal seminar format would impose: i.e. the idea was that I would actually get to the part where I would talk about my own work.

At the same time, Edit added, it would be nice if, rather than just presupposing or presenting a neo-Davidsonian framework to develop my analysis of plurality, I could provide a more general setting of the problems by discussing in some depth the architecture of event arguments and thematic roles. In particular, Terry Parsons' book, Parsons 1990, had appeared relatively recently, and there was real interest among the audience in discussing Parsons' arguments for events and roles.

I have no recollection of how I arrived at the lunatic idea of interpreting the expression 'my own current research' as 'the research to be done in this year'. But this is by and large what happened. I arrived in January with only a very initial version of most of the material which is now in section 4 of lecture Five and the first three sections of lecture Six. At the end of the year, a complete first version of this book had come into existence in the form of extended lecture notes which I handed out during the talks. It was great, but not to be repeated or recommended.

Of course, since after this I spent six years reworking the material, the relations between the original lectures and the present book are complex and diverse - as they should be, because it is a book, and not an historic record (though I hope that some of the spirit and fun of the lectures shines through).

There is a more pedestrian reason for the lecture structure of this book. If you do not have the enviable temperament for writing a Book - a Coherent and Comprehensive Account of a Certain Topic, and you find yourself writing a book instead, you have to find a way of tricking yourself into actually getting it done. This is because the Book is always hovering over the horizon: you are swimming in an ocean of topics that cannot possibly be left out, and literature which obviously needs to be not just mentioned but analyzed and discussed thoroughly, and it's just impossible. And while the book takes shape, these problems actually increase, and with them the threat of paralysis.

Since I liked the structure and content of the original lectures well enough, I used them to structure the content of the book, and in this way to get it done. This means that if your favorite topic or analysis is not in the book, you can be pretty sure that I am

sorry too that it isn't. At the same time, we can console ourselves with the thought that the reason that it isn't in here is, in a way, merely an historic accident.

ROAD MAP

The ten lectures divide in three parts. The first three lectures are on Events; lectures Four and Five are on Plurality; and lectures Six through Ten are on Events and Plurality.

I have tried to make sure that certain parts of the book can be read relatively independently from the rest. For instance, the first three lectures can be read as a relatively self-contained part on Davidsonian event theories (I twice taught a seminar on just those three lectures). Similarly, if you want to get to the plurality right away, you can safely start in lecture Four, but I would advise backtracking a bit along the road: section 3.3. contains discussion that is relevant to section 5.4., and lecture Six builds on section 2.2. I have myself used a smaller selection, namely sections 1.1, 1.2., 2.2., and 3.2. as a two-week topic in my advanced semantics class (which is the class that in the old days we used to call Montague Grammar), discussing how to add events and adverbials to a semantically interpreted (type shifting) grammar.

TOUR GUIDE

Lectures One to Three discuss the Davidsonian and the neo-Davidsonian event theories and the Unique Role Requirement. The Davidsonian theory here is the assumption that verbs have an (implicit) event argument, and that adverbs are interpreted as predicates of, or relations to, this event argument. The neo-Davidsonian theory is the assumption that noun phrase arguments relate to the verb interpretation through thematic roles, which are relations between the event argument of the verbs and the noun phrase interpretations. The Unique Role Requirement is the assumption that thematic roles are partial functions: a thematic role specifies per event at most one bearer of that role.

Lecture One discusses arguments for the Davidsonian theory. The most important, and convincing, of these is Parsons' modifier argument: the Davidsonian theory provides an account of adverbial modification which captures the semantic parallels between adverbial expressions and adjectives. I argue that the other arguments that Parsons discusses do not have the same convincing power. I discuss arguments concerning explicit reference to events, and show that they are either spurious, or reduce to the modifier argument, or are really arguments for the Unique Role Requirement. In the discussion of Parsons' argument from perception verbs, I argue that the facts about perception verbs are more complex than Parsons assumes, and that, as a consequence, perception verbs do not provide a clear argument for the Davidsonian theory either. This means that, at the end of this lecture, we find on the Davidsonian side of the scales, the modifier argument and some reason to be interested in the Unique Role Requirement.

In the first section of lecture Two I discuss finegrainedness of events. I argue, with Parsons, that arguments from adverbial modification (including, for the purpose of this discussion, the neo-Davidsonian analysis of nominal arguments through thematic roles) show that the events that fill the event arguments of verbs need to be considerably finegrained in order to prevent arguments and adverbs from swapping incorrectly from one verb to another. While the main arguments here are in Parsons, I go through some effort trying to close some loopholes by discussing some options that coarsegrained event theories might consider in order to deal with these problems. I use this discussion to introduce the Unique Role Requirement as the main constraint through which the neo-Davidsonian theory prevents argument and adverb swap.

In the second section of lecture Two, I introduce the first formal theory. I present the syntax and semantics of a neo-Davidsonian Language of Events, which is a type logical language, enriched with Davidsonian apparatus, and I present a (type shifting) grammar. This grammar analyzes verbs as n -place event types, functions from n arguments into sets of events. The grammar deals with verbs and singular noun phrase arguments, scope, and adverbials.

Lecture Three deals with three neo-Davidsonian themes. The first is the analysis of passive-sensitive adverbs (a topic that Parsons 1990 does not deal with) and passivization.

I present and discuss a Davidsonian analysis of these adverbs and argue that the Unique Role Requirement allows for an analysis of passivization which improves upon classical accounts of passive. The second theme is the analysis of collective readings of plural noun phrases. Without the Unique Role Requirement, we could assume that collectivity means that more than one individual fills a (relational) role of an event. I argue against this account of collectivity, and for the alternative, which, in agreement with the Unique Role Requirement, assumes that collectivity implies that a single object, a collection, fills a role. At this point, we have added to the modifier argument on the Davidsonian side of the scales the Unique Role Requirement. The final theme of this lecture is the question whether there is an alternative. I argue that there is. I discuss McConnell-Ginet 1982's argument-extension approach to adverbial modification and argue that we can formulate a version of this which deals adequately with all the problems. This theory does not assume that verbs denote functions into sets of events, but functions into sets of sets of role-argument pairs. I argue that this theory is almost-neo-Davidsonian: while it doesn't contain events, verbs do have an implicit argument, the theory does have thematic roles, and the theory incorporates the Unique Role Requirement. I argue that while this theory can be made to cover the facts, it is, for me, unsatisfactory as a framework for linguistic theory. The reason is that it explicitly does not try to capture the parallels between adjectives and adverbs by assuming that in essence the same semantic operations apply to both.

For me, this is a serious methodological reason to prefer the Davidsonian theory, since the reason that I got interested in the Davidsonian theory in the first place is pre-

cisely the belief that there are deep parallels between what goes on in the nominal domain and the verbal domain, and the desire to have a framework in which these parallels can be explored. This sets the stage for the discussion of plurality in the remainder of the book: I argue that semantic plurality provides another case where we want to argue that the very same notions of singularity and plurality and the same operation of pluralization apply both in the nominal domain and the verbal domain. And I argue that the Davidsonian theory is a natural framework to capture these parallels.

In lecture Four, after introducing the plurality ontology that I will use in these lectures, I present and discuss Scha 1981's theory of plurality. This involves an extensive presentation of Scha's *Language of Plurality* and his grammar. The lecture centers around four topics: plurality, collectivity, distributivity, and cumulativity. I argue that Scha's account of plurality is inferior to Link's account, which is presented in the next lecture. In Scha's analysis of collectivity, I find much to sympathize with (excepting his analysis of so-called cover readings). I argue that Scha's account of distributivity is inadequate. Scha's paper provides the first formal account of cumulativity. However, cumulativity is dealt with through a special complex grammatical mechanism of binary quantification. This mechanism includes rules for forming binary determiners out of determiners of noun phrases that do not form a constituent. This mechanism is problematic, and it will be the main topic of this book to provide a motivated alternative account of cumulativity.

In lecture Five, I introduce a *Language of Plurality* and discuss the theories of plurality of Link 1983, 1984 and Landman 1989a,b. Link introduced an operation of semantic pluralization for nominal predicates, and an operation of group formation. With Link, my analysis assumed that plural noun phrases can have a plural interpretation, or they can shift to a singular interpretation, a group interpretation. I briefly discuss some of the arguments. The difference between my analysis and Link's lies in the verbal predicates. I argued that the same operation of pluralization that we find in the nominal domain is also available in the verbal domain. This allowed me to reduce distributivity to plurality: if we apply a pluralized verbal predicate to a semantically plural interpretation of a noun phrase, we get a distributive interpretation. In this theory, collective interpretations are singular interpretations: groups are singular objects, and collective predication is applying a semantically singular predicate to a singular, collective noun phrase interpretation.

In this lecture, I argue that this theory correctly predicts that verbs have the same lexical thematic implications when they apply to collections as when they apply to singular objects. And I propose to turn this observation into a collectivity criterion: the presence of thematic implications concerning the plural argument of a verb indicates that we are dealing with a collective interpretation, and the absence of such implications indicates that the interpretation is not collective. I show that the collectivity criterion entails that distributive interpretations cannot be reduced to collective ones. And I show

that, contrary to what I assumed in Landman 1989a, the collectivity criterion entails that also cumulative readings cannot be reduced to collective readings.

This means that Scha was right in his assumption that the grammar needs to account for cumulativity. However, against Scha, I argue that the close similarity between distributivity and cumulativity indicates that, rather than providing a special mechanism to deal with cumulative readings, we need a unified theory which reduces both distributivity and cumulativity to plurality. Such a theory is developed in the next three lectures.

In lecture Six I merge the Language of Events from lecture Two and the Language of Plurality from lecture Five into a Language of Events and Plurality: this is a type logical neo-Davidsonian language which incorporates the theory of plurality of lecture Five by assuming, in strict analogy to pluralization in the nominal domain, that plural events are sums of singular events and that, in agreement with the Unique Role Requirement and the Collectivity Criterion, their roles are plural roles, where the value of a plural role for a sum of events is the sum of the values of the singular roles of the singular events which make up that sum of events.

In this theory we indeed get collectivity if a singular, group, interpretation of a plural noun phrase fills a (singular or plural) role of the verb; we get distributivity if a plural noun phrase interpretation fills a plural role of the verb; and we get cumulativity if two or more plural noun phrase interpretations simultaneously fill plural roles of the verb. Thus, indeed, both distributivity and cumulativity are reduced to plurality. This means that we can do without Scha's special mechanism of binary quantification to deal with cumulativity. The observation that in a neo-Davidsonian theory of plurality we get, for simple cases, cumulativity for free, I call Schein's observation. What Schein 1986 observed was that, in a neo-Davidsonian theory, plurality operations on the roles in an event type are scopally independent of each other, and this creates the cumulativity effect.

I present a grammar which extends the grammar of lecture Two to plurality. The grammar generates (if there are no lexical restrictions) two readings for one-place verbs with plural noun phrase arguments: a collective and a distributive reading. For two-place verbs with plural noun phrase arguments, we generate four scopeless readings: a double collective reading, a collective-plural reading and a plural-collective reading, and a double plural reading: the cumulative reading.

I then discuss matters of scope. I argue that there is strong evidence that, for two-place verbs with plural arguments, the grammar needs to generate at least one more reading, a reading where both noun phrases are plural, but with the object scopally dependent upon the subject. For this, we need to add a scope mechanism. In the present theory, a scope mechanism is a mechanism for building derived plural predicates, and, given the two parameters collective/plural and scopal/non-scopal, it adds four scopal readings. I compare this theory with earlier theories of scope and plurality.

Finally, I discuss cover readings. Cover readings are, like cumulative readings, scopeless plural readings, but in cover readings the plural roles are not filled by the

Events and Plurality

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Landman, F.

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