

# SEMANTICS

## CRITICAL CONCEPTS IN LINGUISTICS

Edited by  
JAVIER GUTIÉRREZ-REXACH

# SEMANTICS

Critical concepts in linguistics

*Edited by Javier Gutiérrez-Rexach*

Volume VI

Discourse and dynamics

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# INTRODUCTION

The analysis of certain subjects such as the topic–focus articulation, the interpretation of pronouns across fragments of discourse, and other related empirical issues pushes the standard “static” semantic theory to its limits. New theories of a more dynamic nature have been devised to capture the intrinsic nature of information flow, as well as to explore the boundaries between semantics and pragmatics, and the potential advantages of integrating these areas into more general theories of discourse processing and understanding.

Barbara Partee (84) explores the possibility of combining the insights of the Prague School of linguistics and the treatments of focus and focus-sensitive expressions in contemporary formal semantics. She hypothesizes that topics are mapped into the restrictive term of a Kamp–Heim-style tripartite structure, and focal elements into the nuclear scope. She also analyzes several theoretical and empirical consequences of this hypothesis.

Manfred Krifka (85) develops a compositional semantics for multiple focus constructions in the framework of “structured meanings.” A structured meaning is a pair consisting of a background part and a focus part. Multiple-focus constructions seem to be problematic for this theory at first if compositionality is to be preserved.

Sjaak de Mey (86) analyzes the semantics of focus in generalized quantifier theory. He argues that neither presupposition-sets nor salient sets provide a viable semantics for focus constructions with *only*, and that characterizing *only* as the superset relation captures its relation to other quantificational elements such as universal quantifiers.

Daniel Büring (87) extends Rooth’s theory of focus to the analysis of topics. He also shows how focus and topic interact with the semantics of adnominal quantifiers, yielding a variety of readings (partitive, proportional, and focus-affected).

Peter Geach, in a seminal chapter (88) of his book *Reference and Generality*, observes that the interpretation of pronouns uniformly as variables, following Frege’s view, is problematic when considering certain examples such as so-called “donkey sentences.” For example, the sentence *every man who*

*owns a donkey vaccinates it* is true just in case every man who bought at least one donkey vaccinated every donkey he owned.

Gareth Evans (89) distinguishes four classes of pronouns and, especially, he emphasizes the differences in interpretation in the fourth class, which he labels as “E-type pronouns”. In the sentence *few MPs came to the party but they had a good time*, the pronoun *they* is not a bound pronoun, but an E-type pronoun, which corresponds to the description *the MPs who came to the party*. He discusses the proper semantics for these pronouns.

Hans Kamp (90) develops a new theory of sentence and discourse interpretation that addresses the main problems in the interpretation of pronouns and indefinites in donkey sentences. This new theory, which he calls Discourse Representation Theory (DRT), is a dynamic theory of meaning similar to the one proposed by Heim (32). It implies a constructional, non-compositional approach to meaning in which interpretation is mediated by the construction of Discourse Representation Structures, which are in turn embedded in models.

Craige Roberts (91) studies the phenomenon of modal subordination and how it affects and restricts anaphoric relationships. She proposes an enrichment of Kamp–Heim’s DRT to deal with modal subordination and generalized subordination in discourse, including cases of what she calls “telescoping.”

Paul Dekker (92) presents a system of dynamic interpretation, based on Groenendijk and Stokhof’s compositional version of dynamic semantics, and introduces an operation that he calls “existential disclosure.” This operation can be employed to model the specification of implicit arguments of nouns and verbs by means of adnominal modification, adverbial modification, and temporal operators.

Gennaro Chierchia (93) discusses two different readings of donkey sentences: the existential reading and the universal reading. The existence of these two readings is problematic for classical DRT. He proposes an extension of DRT in which determiners and adverbs of quantification are not completely unselective and can choose the arguments they quantify over. He implements his results in a dynamic version of Montague’s intensional logic.

Jeroen Groenendijk, Martin Stokhof, and Frank Veltman (94) argue that update semantics, a dynamic framework, can best handle contextually restricted quantification and anaphoric definite descriptions. They combine the view of context and information from update semantics with Westerståhl’s (19) use of context sets and show how this treatment of quantificational restriction can be applied to anaphoric relations between indefinites and pronouns, donkey sentences, superlatives, and correlative structures.

Chris Barker (95) addresses the “proportion problem” in donkey sentences with proportional adverbial quantifiers and defends a homogeneity hypothesis with respect to the presuppositions involved.

Robert Stalnaker (96) presents a theory of the representation of content and contexts within a general theory of speech. Conversation takes place in a common ground of mutually-known or presupposed presuppositions.

David Lewis (97) proposes to model conversational interaction in terms of a game metaphor. Presuppositions evolve according to rules of accommodation specifying, for example, that any presuppositions that are required by what is said come into existence provided that nobody objects.

Enric Vallduvi (98) analyzes information packaging as part of an autonomous module that he calls “informatics.” Speakers have a knowledge store and elements are “filed” in that store according to their informational role: focus or ground (link/tail). He discusses several phenomena from English and Catalan, showing how the linguistic encoding of information packaging can be different in each language.

Kai von Fintel (99) studies the context dependence of quantifiers and claims that quantifiers are restricted by resource-domain arguments.

Dov Gabbay and Ruth Kempson (100) build a formal model of the process of utterance interpretation from a procedural perspective. They use a variant of Gabbay’s own Labeled ~~Deductive~~ Systems, in which the notions of databases and proof theory based on them are clearly identified. They also pay attention to the analysis of empirical phenomena such as tense, quantification, and crossover phenomena.

Finally, Nicholas Asher (101) presents a theory of discourse context as a structured domain which integrates semantic and pragmatic information. This theory is Segmented Discourse Representation Theory (SDRT), an extension of DRT which is intended to model the semantics–pragmatics interface. He presents several applications and a model-theoretic approach.



## Part A

### TOPIC AND FOCUS



# TOPIC, FOCUS AND QUANTIFICATION

*Barbara Partee*

Source *Proceedings of Semantics and Linguistic Theory (SALT)*, 1, Ithaca, NY: CLC Publications, Cornell University, 1991, pp 159–187

In this working paper I explore the possibility of fruitfully combining some aspects of the contemporary Prague School perspectives on topic and focus (Hajičová and Sgall et al), and other contemporary work such as Rooth's, Krifka's, and Kratzer's on focus-sensitive constructions, with the kind of analysis of quantificational structures found in the work of Heim and Kamp. In particular I am interested in seeing how far one can push the thesis that topic (or probably rather "focus-frame") corresponds to restrictive clause (or domain restriction) and focus to nuclear scope in tripartite structures. In surveying a range of focus-sensitive constructions, we observe that most of them are quantificational in some sense, and require something like a tripartite structure for their interpretation. I pursue the suggestion that the quantificational role of focus and focus-frames is a natural extension of their discourse role: in a discourse context, the set of alternatives provided by the focus-frame locates the ("new") conversational content with respect to common ground or background; with focus-sensitive operators, the focus-frame's set of alternatives contributes to the specification of the domain to be quantified over (or of some analogous argument of other essentially binary operators.) I will discuss some apparent problems and possibly conflicting generalizations. I will not claim to settle the issue of the extent to which the correlation between focus-frame/focus and restrictive clause/nuclear scope is grammaticized in languages like English, and in fact most of the hard questions relating to how and where focus relates to the grammar are left open by the informal observations discussed here.

## 0 Introduction

I begin with some brief background comments about quantification, principally in order to be able to presuppose in what follows the notion of tripartite structures and their division into operator, restrictive clause, and nuclear scope. The central section of the paper, section 2, is concerned with an examination of the claim that there is a linguistically significant correlation

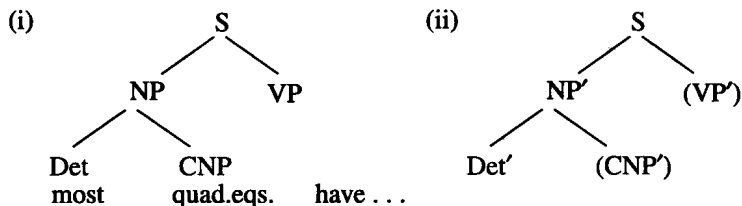
between restrictive clause and focus-frame on the one hand and nuclear scope and focus on the other. That section includes some informal discussion of the notions of topic and focus, mentions the Prague school claim that such notions are basic in the determination of such matters as quantifier scope, proceeds to an annotated inventory of focus-sensitive constructions which seems to substantiate the central correlation, and concludes with some speculations about the possible explanatory basis of the correlation. The brief section 3 notes some limits to the correlation and suggests that the correlation has the status of a kind of “default”, one that can be overruled by the syntax. Section 4 takes up some apparent problems and possibly conflicting generalizations which I believe can be largely explained away, either by clarifying the notion of contrastive topic or by suitably articulating the recursive properties of focus constructions and the possibility of contextual “inheritance” of focus structure across sentences in a discourse. The paper ends with some brief concluding remarks and pointers towards some of the many open problems left untouched or unresolved.

## 1 Quantificational structures

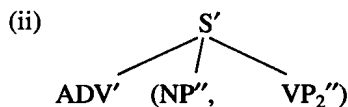
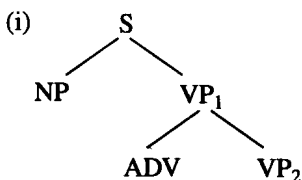
### 1.1 *A-quantifiers vs. D-quantifiers*

Partee, Bach and Kratzer 1987 introduce the terminology “D-quantifier” for determiner quantifiers and “A-quantifier” for adverbial quantifiers (and some other “verb-oriented” quantificational devices not of direct concern here). D-quantification, well-studied since Lewis (1970) and Montague 1973 and subsequent work on generalized quantifiers, is illustrated in (1); A-quantification, brought to prominence by Lewis 1975 and richly exploited in subsequent work by Kamp 1981 and Heim 1982, are illustrated in two different constructions in (2) and (3). In each case, a rough syntactic structure is given in (i) and a rough semantic function-argument structure in (ii). Sentences (1) and (2) have virtually identical truth conditions although syntactically structured in rather different ways; sentence (3) is a classic donkey-sentence whose analysis in a Kamp–Heim framework exploits the “unselective binding” properties of adverbs of quantification, first noted by Lewis.

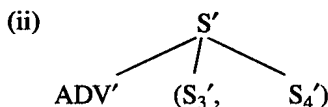
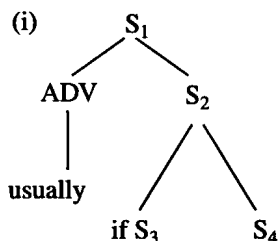
- (1) Most quadratic equations have two different solutions.



- (2) (a) A quadratic equation usually has two different solutions.  
 (b) Usually,  $x$  is a quadratic equation,  $x$  has two different solutions

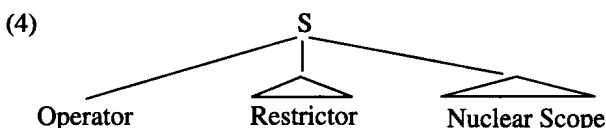


- (3) (a) Usually, if a man owns a donkey, he beats it.  
 (b) Usually,  $x_1$  is a man and  $x_2$  is a donkey and  $x_1$  owns  $x_2$ ,  $x_1$  beats  $x_2$



### 1.2 Tripartite structures as a unifying generalization

The terminology of tripartite structures shown in (4), used by Heim to represent what the D-quantification and A-quantification structures have in common, is useful at least at a metalevel in discussing the properties of various kinds of quantificational structures. The concept of restricted quantification which lies behind such structures is of course much older (back to Aristotle, at least) and has a long history in logic, philosophy, and linguistics.



It is possible that these tripartite structures do not actually represent the linguistic structure of any of the examples; it could be the case, for instance, that there is always some binary-branching nested structure in each instance. So I use the tripartite structure for the purposes of discussing certain generalizations without intending any further commitment to its application within the grammar of any particular construction in English or any other language.

Among the issues concerning tripartite structures that we will be concerned with in what follows are the following: What aspects of linguistic structure determine/constrain logical structure? And among the relevant