Preface

The articles in this volume testify to the diversity of current research in the semantics of natural language. Together, they cover a wide range of descriptive topics, such as anaphoric relationships (Chierchia, Keenan, Koene, Krifka, Szabolcsi, Van der Sandt), interpretation of cases (Keenan, Szabolcsi), scope ambiguities (Keenan, Koene, Szabolcsi), the dependence of interpretation on intonation (Koene), verb classes (Krifka), vagueness (Pinkal), and propositional attitudes (Chierchia, Moore, Muskens). Moreover they exemplify current tendencies in semantic theorizing: in particular, careful attention to the construction and modification of context. Thus we find the use of partial interpretation (Muskens), flexible processing-oriented grammatical models (Szabolcsi), and various forms of dynamics: dynamic logic (Meyer), and dialogue logic (Pinkal).

The articles are based on papers selected from those presented at the Sixth Amsterdam Colloquium in April 1987. They are printed here in an alphabetical order, because their various interrelationships defy any rigid separate grouping. Nevertheless, for the purpose of this introduction we shall chose a sequence of presentation that is motivated by the fact that some of them are more linguistically oriented, and others more logically or computationally.

The main proposal of *Keenan's* paper "Semantic Case Theory" consists of a semantic definition of the notion of 'case', based on the categorial phenomenon of lifting NP meanings from simple contexts to more complex ones. By a theoretical analysis, it is shown that, given some reasonable denotational constraints, there are only two ways in which an NP denotation construed as a set of properties (i.e. an ordinary generalized quantifier in subject position) can induce an operator from binary relations to properties (as is needed in sentences with transitive verbs having both a subject and an object NP). These two semantic transformations are then associated with 'nominative' and 'accusative' case. This analysis still leaves open four different ways of interpreting a transitive sentence 'NP1 TV NP2'. In the empirical part of the paper, a number of universal constraints are given on this interpretation process, including the claim that the independent NPs in such a sentence must be interpreted by distinct case extensions. Specific natural languages then turn out to add various constraints of their own. Finally, a number of consequences is surveyed for such topics as quantifier scope ambiguities, passives, and reflexives.

Szabolcsi's paper "Bound Variables in Syntax (Are There Any?)" employs the apparatus of flexible categorial grammar, enriched with combinators, to describe a number of syntactic phenomena which are usually handled, across various grammatical theories, by means of bound variables at some level of grammatical form. The counter-proposal here is that natural language syntax essentially involves a small set of variable-free combinators, some of which occur freely in syntactic construction, and some of which are explicitly lexically triggered. Specific descriptive topics discussed include anaphora, two-complement verbs and pied piping. In particular, it is argued that the combinator of 'duplication' is essentially all that is needed in order to account for the role of both, reflexives and anaphoric pronouns in general. A further point made is that the combinator-based approach, although notationally equivalent to other type-theoretic formalisms, reflects the workings of human language processing in a particularly intimate way.

"Nominal Reference, Temporal Constitution and Quantification in Event Semantics" by *Krifka* treats the semantics of nominal constructions (count nouns, mass nouns, measure constructions, plurals) and corresponding verbal classes (telic and atelic expressions). For this purpose, it presents a model theory of lattice structures for objects and events equipped with measure functions, which allows for a precise description of various kinds of denotational behaviour: such as cumulativity, quantized reference, and the like. With appropriate truth conditions couched in terms of this framework, the paper investigates three basic descriptive issues in the area: It explains the often observed denotational analogies between nominal and verbal expressions; it gives a compositional account of how various linguistic operations (such as providing a verb with a direct object) affect the denotational behaviour of expressions, thus providing what is sometimes called an 'aspectual calculus'; and it, finally, makes a series of proposals for incorporating negation and quantification into the event-based semantics (based on the notion of 'maximizing' over events or numbers), thus tackling what is usually taken to be a major stumbling block for this kind of approach.

Koene, in her paper "Ambiguity: Syntactic and Prosodic Form in Empirical Semantics", argues that sentences that traditionally have been taken to be ambiguous due to different scope assignments for negation and noun phrases involved, are unambiguous if prosodic form is considered as an additional source of linguistic information next to syntactic information. The interesting point of this paper is that certain oppositions in the prosodic form of a sentence are correlated with semantic restrictions on the interpretation of noun phrases in the sentence. These not only explain the different readings in sentences with negations, but also predict certain subtle semantic differences in the interpretation of sentences without negation, which can indeed be observed. The latter differences cannot be

explained by the well-known approaches that use only scope ambiguity for explaining the different interpretations.

In his article "Presupposition and Discourse Structure", *Van der Sandt* discusses several implementations of presupposition projection in theories of discourse representation. It is shown that, despite some recent claims, approaches which adopt Karttunen type inheritance rules are bound to fail. The alternative defended relies crucially on the method of contextual acceptability: certain expressions are acceptable with respect to a preceding context only if their antecedents are in discourse positions such that they can be bound by them. It is argued that the problem of presupposition projection can be reduced to the problem of anaphora resolution.

Chierchia's article on "Anaphora and attitudes *De Se*" tackles the syntactic-semantic problem of anaphoric boundedness of the content of a propositional attitude *de se* to the subject of the attitude. He argues that this boundedness should be treated by taking the subject to 'self'-ascribe a relation between himself, who is the bearer of the attitude, and a property which is what the subject ascribes to himself, i.e. the content of the propositional attitude. Arguments are presented against a 'propositional' analysis of the attitude content and in favour of a 'property' analysis. The proposed treatment admits generalization to other kinds of anaphoric relationships involving infinitives and gerunds, and to long-distance use of reflexives.

In "Propositional Attitudes and Russelian Propositions" *Moore* argues that the treatment of propositional attitudes in natural language requires a very fine-grained notion of proposition where it seems necessary to have them individuated almost up to the level of sentences. The author presents such a treatment based on a reconstruction of the 'Russelian' interpretation where a proposition consists of a relation with a list of arguments.

Muskens' paper "Going Partial in Montague Grammar" incorporates partiality of interpretation in Montague Grammar, and thus defuses the claim sometimes made by proponents of competing theories, such as Situation Semantics, that these theories should be superior because they can incorporate partiality quite easily, whereas Montague Grammar cannot. The contribution of this paper is the development of a partial type theory, based on a four-valued logic, which can serve as an alternative logical engine for Montague Grammar. The key to a smooth set up here turns out to be the choice of a format with relational, rather than functional types. On the technical side, the paper contains some basic model theory as well as a completeness theorem for its partial relational type theory, and a precise account of its relations to a functional variant. More descriptively, Montague's PTQ fragment of natural language is treated in this framework, as well as a number of propositional attitudes and verbs of perception. In the course of this treatment, some central notions

of Situation Semantics, such as 'persistence of information', turn out to have direct partial Montagovian correlates.

In his article "Using Programming Concepts in Deontic Reasoning", *Meyer* presents two extensions of his earlier treatment of Deontic Logic as a theory of action and evaluation based on the Computer Science originated mechanisms of Dynamic Logic. A DONE predicate makes it possible to express that some action has just been performed, and a connection is established with the strongest postconditions, which is valid for a restricted class of uninterpreted actions. The scope of validity of this result can be extended by the introduction of a 'non pardon' principle and a 'remission' action.

Pinkal, in his paper "Imprecise concepts and Quantification", presents two approaches for the treatment of vague concepts, attending to the problems of indefiniteness and imprecision. The first approach extends the Tableau method for classical propositional and predicate logic to the case of vague concepts. Also, a Dialogue Tableau method is presented which operates correctly for the four central examples discussed in the paper. In order to preserve the semantic relationships of classical logic in the treatment of imprecise concepts, use is made of two semantic notions: one is 'tolerance' applied to irrelevant differences, and the other is 'precisification'. A modeltheoretic treatment which provides a convincing interpretation for the same four test cases completes the paper.

The editors