
The volume contains 13 papers from a workshop held in 1976. "The avowed aim of the workshop was in fact to assess the progress made in the application of formal methods to semantics, to confront different approaches to essentially the same problems on the one hand, and, on the other, to show the way in relating semantic and pragmatic explanations of linguistic phenomena" (from the Preface). The first two blocks of papers deal with quantification/pronominalization and temporal expressions and the third block is devoted to the relation between semantics and pragmatics, with a special emphasis on the treatment of non-indicatives. All the papers are logically oriented, most of them within the model theoretic paradigm.

Well reflecting the state of the art, the forte of the papers is semantics whereas their concept of pragmatics seems rather vague or, at least, fragmentary. From a narrower angle, problems of pronominalization and tenses are within the hunting ground for pragmatics, as it were, by definition, insofar as they are related to indexicality; nevertheless, I would agree with those who (including most of the contributors) prefer the label 'indexical semantics' in this case. A broader concept of formal pragmatics would no doubt comprise a systematic treatment of a variety of speech act or conversational phenomena, based upon formal models of the abstract linguistic system; nevertheless, even though research in this direction is flourishing, current models either fail to provide very explicit links with syntax and semantics (and thus tend to set up another paradigm, instead of extending the given one with a new level of abstraction) or tend to be fragmentary to the extent that the overall scope and basic notions of pragmatics remain undefined. The proposals in this volume capitalize widely on our current knowledge of pragmatics but do not contribute substantially to its theoretical outlines. It is not uncharacteristic that even Kamp (the only author to discuss the relation between semantics and pragmatics explicitly) tends to define the realm of pragmatics in a negative way. Yet many of the papers draw the reader's attention to interesting pragmatic aspects while tackling semantic questions.
Most of the papers are happily explicit about their methodology and are thus accessible to ‘outsiders’ as well. This is further facilitated by the appendixes, which provide rigorous definitions of the frameworks employed.

Hintikka and Carlson’s contribution (‘Conditionals, generic quantifiers, and other applications of subgames’) may also be viewed as an excellent introduction to game theoretic semantics. The idea that the interpretation of a sentence should correspond to how one may in fact process it semantically is illustrated by, among others, the treatment of ‘generic’ sentencees like If Bill owns a donkey, he beats it. Here a is shown to be a true existential quantifier and it not to be a pronoun of laziness, and the desired interpretation is brought out by a generally valid conditional strategy.

The most pragmatics-oriented pronominialization paper is R. Snaby’s (‘Ambiguous coreference with quantifiers’). He is interested in cases where the interpretation of a pronoun is affected by both contextual and relevance considerations, e.g. John tickled Bill. He didn’t squirm. The concepts of context and relevance are formalized in terms of informing semantics, where the meaning of a sentence is a partial function on the set of information states (of communicants). As a matter of fact, the placement of informing semantics with respect to pragmatics remained rather unclear to me.

T. Reinhart (‘Syntactic domains for semantic rules’) sets up a compelling hypothesis concerning all possible strictly grammatical relations:

"(5) Sentence-level semantic interpretation rules may operate on two given nodes just in case one of these nodes is in the domain of the other (...)"

Specifically, the working of the hypothesis is demonstrated on how interpretation options are constrained in the case of coreference and relative scope relations. Instead of obeying the precede-and-command restriction, these options are claimed to be constrained by

"(7) If a rule assigns node A some kind of prominence over node B, A must be a head of a domain which contains B."

Note that (5) + (7) can be conceived of both as an empirical hypothesis and as a manifesto concerning the legitimate form of (non-logically based) grammars, and although the examples Reinhart presents are mostly strikingly convincing in themselves, this Janus-faced character of the proposal does raise certain difficulties. Namely, Reinhart’s claim is made about surface structures; nevertheless, what the surface structure of an intricate sentence should be like is usually not self-evident and thus one prefers to accept a structure as its surface structure only if it can be shown to be the output of a well-defined (and comprehensive) grammar. Now, Reinhart’s analyses are sometimes in conflict with current results. E.g. they are mostly dependent on the assumption that any preposed constituent is adjoined immediately under S (that is, since such preposing rules a not uninteresting to point posal for the treatment of I opposite assumption (Kiss I higher S’s, Hungarian would

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immediately under S (that is, not under some S'), which is at least not indisputable. Since such preposing rules are crucial for the generation of topic-focus variants, it is not uninteresting to point out that a recent and empirically well-supported proposal for the treatment of Hungarian word order, which is 'free', had to make the opposite assumption (Kiss 1979). However, even if one finally got rid of all those higher S's, Hungarian would still provide a counter-example to the claim that

"(13) Two NP's must be interpreted as non-coreferential if one is in the domain of the other and is not a pronoun".

It follows from (13) that any sentence in which the reflexive pronoun is a head of a domain containing the antecedent must be ungrammatical. The following result of a regular topic-to-topic raising is represented in a fashion as close to Reinhart's as possible:

\[ S_1 [\ddot{\text{ömmagánnak}} \quad \text{for himself}] \quad S_2 [\text{nem hiszem,} \quad \text{I don't believe}] \quad S_2 [\text{hogy Péter rosszat akar}] \quad \text{that Péter harmacie wishes} \]

Here the reflexive pronoun (\ddot{\text{ömmagánnak}}) inescapably dominates the antecedent (Péter), assuming that parallelly with the case of quantifiers, the domain of the PP is relevant to be considered.

The overall significance of Reinhart's conception of the role of dominance cannot be fully appreciated without noticing that by now it has become a key notion to generative grammar and has proved most fruitful (although the structures over which it ranges are modified by the presence of traces) cf. Koster (1978) and Chomsky (1979).

E. Keenan ('Negative coreference: generalizing quantification for natural language') extends his Natural Logic with reference restricting operators for coreference and quantification. Their motivation is twofold, i.e. logical and typological, as is usual with Keenan. The most perspicuous logical observation is that these restrictions are presuppositional, wherefore their standard treatment misses the point; typologically speaking Keenan's operators are motivated by the presence of overt positive and negative coreference operators in many languages.

Having read Reinhart's paper one would like to see the relation between the two proposals spelt out, e.g. whether Keenan's operators obey the dominance principle (in which case his positive coreference operator I, for instance, should be supplemented with a 'filter' like \(*(\text{I Con },x)(\text{I x,y})F\) where F is a logical structure of a sentence in which y is a head of a domain containing x) or may perhaps overrule it.

Keenan keeps comparing his Natural Logic formulae with those offered by standard logic, pointing out that besides semantic superiority, his formulae correspond to sentence structures more closely. I believe that deeper and more interesting comparisons might be made if, instead of some rather unsophisticated standard logic, the machinery of Montague Grammar were exposed since this latter
makes rather advanced attempts at achieving such a natural correspondence, facilitated by lambda calculus. A comparison with MG results would be even more important since by forcing quantification upon all sentences, Keenan cannot handle opaque contexts, and the fact that even pronominalization cannot be covered without keeping an eye on opacity is well illustrated by Cooper's discussion of *John is looking for a unicorn but he won't find one* (versus *it*).

Rodman (1976) suggested that quantifier scope relations obey the Complex NP Constraint; R. Cooper ('Variable binding and relative clauses') discusses and invalidates a number of apparent counterexamples to this claim and in the course of this makes some challenging proposals to exploit the possibilities of indexicality in Montague Grammar.

Skipping the section on temporals, let me turn to the last block of papers.

H. Kamp ('Semantics versus pragmatics') investigates a paradox of *disjunctive permission sentences*. While intuitively (1) and (2) follow from (3), the consequence relation deontic logics would postulate is the other way round:

1. You may take an apple
2. You may take a pear
3. You may take an apple or take a pear

The consideration of conceivable solutions to the puzzle leads to an extensive methodological discussion of whether we should require that semantics and pragmatics be separated. This question is invoked because it seems that in order to account for the liberal reading of (3) we must either (i) derive the truth conditions of permission sentences from the effects they produce when used performatively, or (ii) treat the assertoric and performative uses separately but allow for an interaction between recursive semantic rules and conversational maxims — either of these violating the principle that no notion to which the recursive component of the theory refers may belong to pragmatics. Hence Kamp concludes that there is no real reason for preferring a theory which strictly separates semantics and pragmatics over one which does not. While his discussion is most insightful, I do feel uneasy about its conclusion (since semantics and pragmatics correspond to different levels of abstraction, it may not be a 'technical' matter whether we separate them) and therefore try to sketch an alternative which makes it possible to escape it.

I would say that, leaving out the possibility that we just redefine deontic logic, from a semantic point of view for (3) to be true it is sufficient if either (1) or (2) is true, which is in keeping with standard calculi. The fact that in case the truth of (1) or (2) in the world we are talking about is guaranteed by a use of a permission sentence like (3) then both (1) and (2) will be true remains a fact about that world even if it is not a logical consequence of (3). The truth of (1) and (2) under such circumstances will follow from conversational-pragmatic considerations to be hinted at below. In other words, I would distinguish the truth conditions of (3) as an abstract sentence from the effects the uttering of (3) usually has, which latter
may include pragmatically invited inferences as well.

G. Fauconnier ("Implication reversal in a natural language") points out that certain environments reverse implications in general (i.e., if $P \Rightarrow Q$ then $U \cdot Q \cdot V \Rightarrow U \cdot P \cdot V$) and thus polarities and pragmatic scales in particular. In (F-2) and (F-4)

(F-2) Max can solve the most difficult problem $\Rightarrow$
Max can solve any problem
(F-4) Max cannot solve the simplest problem $\Rightarrow$
Max cannot solve any problem

this environment is negation; nevertheless, the same holds for if clauses, negative matrix, comparatives, too...to..., questions etc. as well, which is far less self-evident. This in turn enables Fauconnier to generalize two well-known rules of logic as

$$
\exists \quad \exists \quad \exists \\
\forall \quad \forall \quad \forall \\
(25) \quad U \cdot V \cdot xR(x) \cdot V \Rightarrow \exists \cdot U \cdot R(x) \cdot V \quad \text{(cf. Quantifier Negation)}
$$

(42) $U \cdot P \text{ or } Q \cdot V \Rightarrow U \cdot P \cdot V \text{ and } U \cdot Q \cdot V \quad \text{(cf. De Morgan's Law)}$

for any context $U \cdot V$ that reverses implication.

I am now tempted to suggest that in a looser pragmatic sense permission contexts are implication reversing environments. E.g., if both father and son recognize that breaking a vase or torturing the cat will make Ma furious then the permission You may make Ma furious probably implies permission to do any of these things. If it is so, then (42) predicts Kamp's reading of (3). Furthermore, (25) predicts that an unspecified permission like (1) will allow you to take any of the apples. Since this application of the implication reversal idea establishes a close relation between deontically unpredicted phenomena and the actual semantic structure of the sentence, it seems useful to take it to be a principle of conversation strategy. At the same time, the fact that the above 'entailments' are shaky, or at least, conversation specific suggests that these properties of permission need not concern semantics. Note that on this view pragmatics is not a wastebasket either since semantics is only necessary but not sufficient for us to understand what happens with permissions.

Hauser and Zaefferer ("Questions and answers in a context-dependent Montague grammar") outline an elegant and comprehensive treatment of direct questions. To put it in a somewhat simplified fashion, questions are interpreted as functions from grammatically appropriate minimal answers to redundant answers. Minimal answers are in turn truth value denoting expressions containing a context-variable which determines with respect to which question they are to be evaluated. Thus in
What does Mary kiss?
A fish.

\[ \text{Mary kisses a fish} \]

This redefinition of Montague's notion of context to supply richer linguistic information has proved profitable in Hauser (1979) as well.

While this proposal is both syntactically and semantically very attractive, it fails to account for grammatically relevant aspects of topic-focus structure. Namely, in 'Mary kisses a fish' itself the focus can be either Mary, or kisses, or a fish but (8a) may only correspond to the last of these possibilities. Here by 'focus' I mean a surface syntactically motivated position (cf. Kiss (1979)), and the operation corresponding to it has various purely semantic consequences as well. Nevertheless, an amendment along these lines would not weaken the status of the present proposal.

Rather than focusing on some particular problem, J. Petöfi ('Structure and function of the grammatical component of the text-structure world-structure theory') outlines a comprehensive semiotic approach to natural language. The component discussed provides intensional-semantic representations for the texts it generates; these representations, which already contain certain communicative features, are then assigned coherent interpretations by the World Semantic Component.

The papers in the volume that have not been explicitly dealt with are 'Adverbs of space and time' (by M. Cresswell), 'Time schemes, tense logic and the analysis of English tenses' (by F. Guenthner), 'A system of chronological tense logic' (by L. Åqvist), and 'The introduction of truth predicates into first-order languages' (by W. Kindt).

Given that the contents of the volume come from a workshop and the topics are so closely related, the reader may only regret that contributors' comments on each other's proposals are not included.

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Kiss, Katalin E. 1979. Structural relations in Hungarian, a “free” word order language (to appear in Linguistic Inquiry).

Publications related to the topic of the review: