First Amsterdam Colloquium (1976)

A Computer Program for Montague Grammar: Theoretical Aspects and Proofs for the Reduction Rules

This paper deals with a computer program that follows the proposals presented by R. MONTAGUE in his article "The Proper Treatment of Quantification in Ordinary English"'. The problems are discussed which arose during the design of the algorithm. The reduction rules which were needed to simplify the formulas of intensional logic, are presented. The correctness of these rules is proved. Examples of generated sentences are discussed, inaccuracies and errors in Montague's articles are signalized.

Second Amsterdam Colloquium (1978)

Compositionality and the Form of Rules in Montague Grammar

Two fundamental principles concerning Montague grammar are proposed and a formalization of the principles is given. It is investigated which consequences these principles have for the possible forms of the rules in a Montague grammar.

Third Amsterdam Colloquium (1980)

Compositional Semantics and Relative Clause Formation in Montague Grammar

The principle of compositionality (or the Fregean principle) reads as follows:

The meaning of a compound expression is built up from the meanings of its constituent parts.

This principle is a fundamental principle for Montague grammar. It implies that for each construction step in the syntax, there has to be a corresponding semantics step. Formulated in the algebraic terminology of `Universal Grammar' (MONTAGUE 1970), the principle says that the syntax and semantics are algebras, and that the meaning assignment is a homomorphism relating these two algebras. We now may ask the question to what extend this organization of the grammar restricts the options we have in the syntax to describe a particular phenomenon.

(…) In the present article I will investigate the thematic question: *does the framework of Montague grammar compel us to a specific choice for the syntactic analysis for restrictive relative clauses?* The arguments from the literature [PARTEE (1973), CHOMSKY (1975), BACH & COOPER (1978)] are considered, and new arguments are put forward. In the course of the discussion positive and negative answers to the thematic question will alternate. An answer to the general version of the question is obtained as well. It will turn out that syntactic variables (like he_n) play an important role in relative clause constructions. This role is investigated, and this gives rise to the introduction of a new principle for Montague grammar: the variable principle.

Fourth Amsterdam Colloquium (1982)

Individual Concepts

In PTQ individual concepts are used essentially in the treatment of the temperature paradox. Several authors reject Montague's treatment of this paradox, and for this reason they abandon individual concepts completely. The aim of the present paper is to show that there are a lot of phenomena which ask for a treatment by means of individual concepts, and which have nothing to do with temperatures or numbers. For one of these phenomena (discourse pronouns) a comparison will be made with a treatment that does not use individual concepts.

Fifth Amsterdam Colloquium (1984)

Individuals and Individual Concepts

An individual concept is a function from reference points to individuals, At the 1982 Amsterdam colloquium I argued that they are useful for dealing with several semantic phenomena. I recall two of the examples from Janssen (1984).

(1) This year the president is a republican, but next year it will be a democrat

This sentence is ambiguous between the reading that another person becomes president, and the reading that the same person remains president, but changes his political position.

(2) The president decides on matters of war and peace

On the one reading this sentence states that a certain authority decides, and on the other it states that a certain person decides, At the present occasion this idea will be worked out. The limits of the applicability of the approach will be considered, as well as technical details of its formalization. The following questions will be considered

1. When does ambiguity between an individual reading of a term and its individual concept reading arise? Not in all contexts a term like 'the president' does exhibit this ambiguity. Sentence (3) only has an individual reading (Carlson 1978).

(3) The president is ill

2. For which terms the ambiguity can arise? The term 'the linguist' seems to have only an individual reading, see e,g. sentence (4) (cf. Loebner 1981).

(4) The linguist is looking for a counterexample

3. What is the source of the ambiguity of the term 'the president'? Is it the noun, the determiner, or has the ambiguity another source?

4. Is there a systematic semantic relation between the indi-vidual reading and the individual concept reading of (5)?

(5) The president lives in Rome

5. Is there a connection between the individual concept reading of (6) and the kind reading of (7)? Does this tell us something about the semantics of kinds (cf. Carlson 1978)?

(6) The pope lives in Rome
(7) A pope lives in Rome

Sixth Amsterdam Colloquium (1987)

Compositionality and Machine Translation

A general theory of translation will be sketched, which will be abstract in the sense that it aims at providing a mathematical framework for translation, and which will be concrete in the sense that it will be based on two systems for machine translation which are currently heing developed. These are the EEC's Eurotra project, and the Rosetta project of the Philips Research Laboratories. The mathematical framework used is that of Montague's {\em Universal Grammar\/}. It will be shown that there are similarities between the two translation projects: in both cases the principle of compositionality of meaning and the corresponding principle of compositionality of translation function as starting points. An algebraic explication of these principles is presented. Next, it is investigated lo what extent they are `implemented' in the two translation systems under discussion, and how this relates to other features of the systems.

Seventh Amsterdam Colloquium (1989)

Models for Discourse Markers

This contribution deals with a model theoretic problem concerning discourse markers, which will be introduced below. The formal framework in which we work is the extension of Montague grammar as developed by Groenendijk and Stokhof. A related problem arises in the semantics of programming languages when assignments to pointers of arbitrary reference level are considered.

Eighth Amsterdam Colloquium (1991)

Invariants of the Zielonka-Lambek Calculus

A new notation for category names in categorial grammar will be introduced. This notation gives a new view on the Zielonka calculus. Two new invariants are obtained: the /-count and the /-balance. We also obtain new proofs for the van Benthem-count and the Roorda-balance. Furthermore we show that in the non-associative Lambek calculus it is decidable whether two categories X and Y are conjoinable.

Ninth Amsterdam Colloquium (1993)

Synchronous TAG-grammars and Montague grammar

In recent papers the notion `synchronous TAG grammar' is introduced. Two TAG grammars are synchronous if operations are applied simultaneously to related nodes in pairs of trees. As applications of such grammars are proposed: meaning assignment (if one of the grammars is for a logical language), and translation (if the grammars are for different natural languages). It is claimed that synchronous TAG grammars are preferable over traditional methods such as Montague grammar.

The aim of this contribution is to show that the synchronous TAG grammars resemble the framework presented by R. Montague in his Universal Grammar. This observation creates a connection between two theories which were developed independently. The

method for meaning assignment in synchronous TAG grammars will be compared with that in Montague grammar. This leads to several suggestions for improvement. Furthermore, the proposals for translation will be compared with those in Rosetta (a translation system based upon Montague grammar).

Tenth Amsterdam Colloquium (1995)

Compositionality

The principle of compositionality of meaning is a principle that has raised many emotions. At the occasion of this 10th Amsterdam colloquium I intend to give an overview of recent argument (from Pelletier and Higginbotham) and some older ones (of Hintikka) against compositionality and to discuss them. Furthermore the formal results (of Janssen and of Zadrozny) concerning the power of compositionality will be compared. The conclusions will be that

1. there are some general methods to obtain compositional solutions for difficult problems
2. the two formal result are complementary, and show both that compositionality is not a restriction of possibilities, but a principle of methodology.
3. seeking a compositional solution means providing answers to fundamental questions concerning syntax and semantics.

Eleventh Amsterdam Colloquium (1997)

A Compositional Semantics for the Game-Theoretical Interpretation of Logic

In a number of publications J. Hintikka argues for a variant of game theoretical semantics for predicate logic in which information can be hidden. Hintikka claimed that no compositional semantics was possible for such an interpretation. However, W. Hodges designed one. Hodges formalization made clear that there are ways to use information in an unexpected way: by giving signals to oneself. One might considering it as (unintended) cheating, or say that it is all in the game. The present contribution gives an alternative to Hodges proposal that is considerably simpler, and that tries to avoid such signals.

Twelfth Amsterdam Colloquium (1999)

IF Logic and Informational Independence

In game theoretical semantics the truth of a formula is determined by a game between two players, ∀belard who tries to verify the formula, and ∃loise to refute it. He chooses on ∧ and ∀, she on ∨ and ∃. A version of such games, introduced by J. Hintikka, is IF logic: inde-pendence friendly logic. The quantifier $\exists(y/x)$ means that y has to be chosen independent of x, and $\psi(\vee/x)\theta$ that a subformula has to be chosen independent of x. A formula is true, if ∃loise has a winning strategy. Hodges has given a compositional interpretation for the logic: trump semantics. It will be argued that this interpretation gives results that are not in

accordance with intuitions concerning independence of information. Two -equivalent- alternative interpretations will be proposed that do correspond with intuitions, one based on playing games, and one on sets of assignments.

Thirteenth Amsterdam Colloquium (2001)

Implicit Slashing in IF-Logic

Independent choices arise in Hintikka's IF logic: the quantifier ?*y*/*x* used in IF logic says that *y* must be chosen independent of *x*. However, it has been argued that Hintikka's semantics for Independence Friendly logic does not formalize the intuitions about independent choices. One of the arguments is that 'signaling' is possible: to transfer the value of *x* by means of another variable. Hintikka adopted a convention (`implicit slashing') which prevents signalling. In this contribution it will be argued that this convention introduces several new conflicts with intuition and another solution will be proposed.

Fourteenth Amsterdam Colloquium (2003)

On the Semantics of Branching Quantifier Sentences

An example of a branching quantifier sentence is

(1) Some friend of each townsman and some neighbor of each villager envy each other.

The intended reading of such sentences is that the choice of the friend should be made independent of the choice of the neighbor. There has been discussion whether such sentences are grammatical and/or have the meaning attributed to them, but we will accept both points. Our aim is to investigate the formal analysis given to such sentences and argue that they do not formalize the intended reading: the desired independence is not captured. As for an application of branching quantifiers in physics, the same will be argued.

Fifteenth Amsterdam Colloquium (2005)

Independence Friendly Logic as a Strategic Game

The traditional game interpretation of IF logic has sometimes been criticized. Here we propose an alternative: IF logic as a strategic game. The game is played by two teams, the A-team that tries to refute the formula, and the E-team that tries to confirm the formula. We base our semantics on two assumptions: (1) the players are 'rational': they do not play a strategy if there is a better one (2) the players know that the others are rational. A formula is true if there is a Nash-equilibrium with value 1 (true). In this semantics signalling is not possible. The semantics has consequences for the linguistic applications.

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