Notes on the history of inquisitive semantics

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1 Truth-conditions and answerhood-conditions

The meaning of a sentence is traditionally identified with its informative content. The proposition expressed by a sentence is then taken to be a set of worlds, those worlds where the sentence is true. The semantics recursively states the truth-conditions for the sentences of the language. To know the meaning of a sentence is to know its truth conditions.

Giving a dynamic twist to this classical notion, we could view the meaning of a sentence as a proposal to update the common ground with the proposition that the sentence expresses, where the update consists in eliminating all worlds from the common ground that are not contained in the proposition. The semantics then recursively states the update potential of the sentences of the language. To know the meaning of a sentence is to know its update potential.

Knowledge of the informative content of the sentences of a language is certainly an essential part of semantic knowledge needed for the appropriate use of that language in communication. It should be captured by any semantic theory.

However, one of the obvious limitations of the traditional notion of meaning is that it only pertains to purely assertive sentences. It does not apply to questions, for instance, which are not true or false, and are primarily used to request information, rather than to provide it.

A standard way to react to this is to maintain a truth-conditional analysis of the meaning of assertions, and to deal with questions seperately, devising some additional notion of meaning for their analysis. A widely adopted strategy, originating

in the work of Hamblin (1958, 1973), is to characterize the meaning of questions in terms of answerhood conditions: to know the meaning of a question is to know which propositions provide an answer to it. Questions, then, correspond to sets of sets of possible worlds, sets of possibilities in our terminology.

2   Data and issues

Giving a dynamic twist to Hamblin's idea, we could view the update effect of a question as partitioning the common ground into a number of alternative possibilities. The notion of the common ground must then be enriched in such a way that besides data it may also contain issues. One way to do this, suggested by Jäger (1995), Hulstijn (1997), and Groenendijk (1999), is to formalize the common ground not just as a set of possible worlds, but as a set of possible worlds plus an equivalence relation on that set, partitioning it into several blocks. The semantics, then, still recursively defines the update potential of the sentences of the language, only now some sentences *eliminate* worlds, while others *disconnect* worlds. The former provide data, the latter raise issues. To know the meaning of a sentence is still to know its update potential, but now this update potential may pertain either to data or to issues.

One characteristic aspect of the approach of Jäger (1995), Hulstijn (1997), and Groenendijk (1999) is that it maintains a sharp syntactic distinction between assertions and questions. Sentences are taken to be either informative or inquisitive, they cannot be both informative and inquisitive at the same time. Another charateristic feature is that issues are taken to *partition* the common ground into mutually exclusive blocks: they induce an equivalence relation (cf. Groenendijk and Stokhof, 1984).

As discussed in detail by Mascarenhas (2009), these features have certain problematic consequences. On the partition view, for instance, it is notoriously difficult to deal with alternative questions and conditional questions.[1] As for the sharp distinction between informative and inquisitive sentences, there are arguably many constructions in natural language, typically involving disjunction or indefinites, that are both informative and inquisitive at the same time.

These were the main pieces of motivation for early installments of inquisitive semantics (Groenendijk, 2009; Mascarenhas, 2009; Balogh, 2009). These systems stayed rather close in spirit to (Jäger, 1995; Hulstijn, 1997; Groenendijk,

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[1]Although see Isaacs and Rawlins (2008) for an account of conditional questions within a partition framework.

1999): the common ground of a conversation was still modeled as a set of possible worlds plus a 'relation of indifference', representing the current issue. Only this indifference relation was no longer necessarilly an equivalence relation. Moreover, the syntactic distinction between questions and assertions was dropped, and disjunctions were taken to be both informative and inquisitive at the same time.

3 Propositions as proposals

However, as argued by Ciardelli (2008), and later more extensively by Ciardelli and Roelofsen (2009), representing issues by means of an indifference relation has certain undesirable consequences, even if the indifference relation is not necessarilly an equivalence relation. This observation led to a different implementation of inquisitive semantics, in which the common ground is simply modeled as a set of possible worlds, and sentences are associated with sets of possibilities, each representing a possible update of the common ground. The semantics recursively defines what the possibilities are for the sentences of the language, and to know the meaning of a sentence is to know what the updates are that the sentence proposes. This system is the current 'state of the art'. It is discussed in detail in (Ciardelli, 2009a; Ciardelli and Roelofsen, 2009; Groenendijk and Roelofsen, 2009).

Let us briefly comment on how this framework preserves and unifies some of the key ideas mentioned above. First, the suggested notion of meaning still captures the informative content of sentences. For, if we know what the possibilities for a sentence are, i.e., what the updates are that a sentence proposes, then we also know which worlds are bound to be eliminated if any of the proposed updates is effectuated, namely those worlds that are not included in any of the possibilities for the given sentence. Thus, in inquisitive semantics it is the *union* of all the possibilities for a sentence φ that characterizes the informative content of φ: all worlds that are not contained in this union are eliminated if any of the proposed updates is realized. A key result in all the above-mentioned work is that the union of the possibilities for φ always coincides with the proposition that is classically assigned to φ. So inquisitive semantics preserves the classical treatment of informative content in a very precise sense.

Second, the framework also preserves Hamblin's idea that knowing the meaning of a question involves knowledge of what the possible answers to that question are. For, the possibilities that a question is associated with in inquisitive semantics correspond directly with what Hamblin takes to be the answers to that question. Hamblin's idea is not only preserved, but also generalized: it is not taken to ap-

ply just to questions, but rather to sentences in general. Knowing the meaning of a sentence always involves knowledge of what the possible responses to that sentence are, not just in case the sentence is a question. Key examples of informative sentences that invite a range of different responses, in much the same way as questions do, are sentences involving disjunction or indefinites:

(1) Pete will play the piano or Sue will sing tonight.

    a. Pete will play the piano.
    b. Sue will sing.

(2) Someone will play the piano tonight.

    a. Pete/Sue/Mary will.

Inquisitive semantics captures the answerhood-conditions of these sentences in exactly the same way as it captures the answerhood-conditions of questions.

Third, and finally, inquisitive semantics does not make a syntactic distinction between questions and assertions. Instead, the distinction is made semantically. A sentence φ is defined to be inquisitive iff it proposes at least two alternative updates,[2] and it is defined to be informative iff there is at least one possible world that is eliminated by any of the updates that φ proposes. Questions, then, are sentences that are inquisitive but not informative; assertions are sentences that are informative but not inquisitive. And there is a third category of so-called *hybrids*, which are both informative and inquisitive.

Thus, the central idea that has emerged is that sentences express proposals to enhance the common ground in one or more ways. This conception of meaning captures, in a uniform way, several essential aspects of how sentences are used to exchange information. It captures their informative content, but also the issues they may raise, and the responses they license. In short, the proposal expressed by a sentence does not merely embody its information change potential, but rather more generally its information *ex*change potential.

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[2]This is a simplified definition. A slightly more refined definition is necessary to deal appropriately with the first-order case. See (Ciardelli, 2009a) and (Ciardelli *et al.*, 2009) for discussion.

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