

A Notion of Epistemic *Might* with Explanatory Value

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We present and motivate an interpretation of epistemic *Might*, which is as indexical as its dynamic predecessor, but which is formulated in a static semantic framework, which does account for the dynamic pragmatics of information exchange. *Might*(ϕ) is used to state that ϕ holds in a future resolution of the current discourse. These statements are given the intuitively correct truth-conditions, and this enables an account of their use in inquisitive discourse.

Epistemic Modality Epistemic modal operators like *Might* and *Must* in English, and semantically related verbs, adverbs and markers, express a kind of possibility or necessity relative to some body of knowledge or evidence. A sentence formalized as *Might*(ϕ) (or: $\diamond\phi$) is used to express that ϕ is not excluded relative to some source of evidence, and *Must*(ϕ) (or: $\Box\phi$) that it is or seems to be entailed by it. In a Kratzer-style semantics such a body of knowledge or evidence K is conceived of as a set of possibilities (situations, worlds, . . .), relative to which $\diamond\phi$ ($\Box\phi$) is true iff ϕ is true with respect to some (all) possibilities in K . This basic interpretation of modalities has been modified in two respects.

Firstly, epistemic modals are inherently contextual, or indexical. The relevant body of knowledge against which to evaluate epistemic modals can (only) be found relative to the discourse situation in which these modal sentences are uttered.¹ Secondly, the relevant bodies of information seem to be those of the interlocutors in an ongoing discourse. Building on Stalnaker's idea of establishing common grounds, an utterance of *Might*(ϕ) is taken to express consistency of ϕ with the current information state of the interlocutors in a discourse.² None of these approaches to *might*, neither truth-conditional nor dynamic, however, brings to light relevant and non-trivial facts about these epistemic or discourse states. What is the interest of realizing that at a certain stage in a discourse, the possibility that ϕ is not excluded?

Recent treatments of epistemic modalities (like those of Hulstijn, Yalcin and Brumwell) build on the additional idea that modal statements serve to “raise”, and bring us to “attend to” or “focus on” possibilities. We claim that these ideas can be worked out formally, and given an intuitive explanation, in a discourse theoretical framework like that of (Dekker 2007).

1. This idea has been worked out in more detail in a contextualist or relativistic setting as recently in, e.g., Gillies and von Stechow.

2. In Veltman (1996) the dynamics of such an utterance has been worked out in the style of an update semantics.

Optimal Inquisitive Discourse Our interpretation of *might* originates from Veltman 1984. In Veltman’s paper *might*(ϕ) is not just a consistency test, it says that ϕ may come out true if we follow a path of information growth in an information space. In Veltman’s system this space is primitive, but we can realistically take it to be the possible developments of a current discourse. *Might* thus relates to a possible future state of the discourse, not any theoretical possibility, but one that is likely to emerge from the current situation given the participant’s information and prevailing questions. The key notion here is that of an optimal inquisitive discourse (Dekker 2007).

The basic idea of an optimal inquisitive discourse is that it relates a set of agents whose epistemic states carry information and questions. These states can be conveniently characterized by a symmetric (and transitive) relation on possibilities, as in Groenendijk (1999). Possibilities in a state are those considered possible, and unrelated possibilities are those whose difference(s) the state is interested in. The basic idea of an optimal inquisitive discourse is that, for as far as possible, the agents exchange information so as to get their current questions answered on the basis of information currently present, all this in a well-behaved way.³ (Actually, this is a mere formalization of a gricean notion of a cooperative conversation.)

Epistemic Modality in Discourse We now present the outlines of a definition.

- Let D_i be a stage of a discourse situation D of agents a_1, \dots, a_n , with information states i_1, \dots, i_n , and an oracle $O = i_0$; the common ground at D_i is a state $CG_i \supseteq \bigcap_{0 \leq j \leq n} i_j$ of beliefs and questions shared at state D_i ; a resolution of CG_i is a future stage D_r with $i \leq r$ which answers at least one of CG_i ’s questions; an utterance of $\diamond\phi$ at D_i states that ϕ is true in a possible resolution CG_r of CG_i .

This definition of epistemic *Might* directly accounts for a number of typical features of its use. In the first place it is obviously indexical. Whether an utterance of *might* is appropriate and acceptable depends on the information states of the interlocutors involved in the current discussion. In the second place it is non-persistent. Once new relevant information enters the common ground, either from communication, or from external resources (the oracle O), the possibility that ϕ may have to be given up. By the same token, in the third place, it is correctable: once one of the participants has evidence to the contrary of the possibility stated. In the fourth and fifth place, the possibility which is stated should not be entailed by the current common ground—otherwise it would be superfluous—and it should not concern *any* theoretically possible extension of it: it should be a likely update entailing the resolution of current issues, and not be loaded with unsolicited detail.

The Use of Might The just mentioned features of epistemic *Might* by and large concern what one may label a short-sighted perspective of an inquisitive situation, basically dealing with what the world is like and what one may find about

3. These ideas and relevant notions of content, question, update, support, and answerhood are given a formal definition in Dekker 2007.

it in one's limited deliberations. A use of epistemic *Might* gets more substance as soon as it is conceived against the background of agents involved in an actual investigation. Thus, a use of *Mary might be home* rightly focuses our attention and may be used to either solicit evidence with regard to that possibility, or instigate an actual search (calling Mary home, consulting the oracle *O*). Thus it may actually act towards the resolution of a current issue (like where Mary is). This view also indicates why some uses of epistemic *Might* (like with *Mary might be with her grandfather*) are odd, for instance if we have no clue about the whereabouts of Mary's grandfather. However, once we have Mary's grandfather's mobile number, the resolution of the original becomes directly tractable again. In a similar vein, epistemic modalities triggering opposing actions can cancel each other out. *There might be a Pizzeria in this direction*, may trigger us to try and find out going East, while, *Yeah, right, but there might be one in this direction, too*, may undo that effect and leave us again undecided on a junction for the present moment.

Concluding Remarks In this talk we have elaborated an interpretation of epistemic *Might* which is essentially indexical, as in current contextualist and dynamic theories, but which is given a truth-conditional analysis. It is based on Veltman's insight that *might* expresses truth in an extension of an information state, where the relevant notion of an extension has been implemented in terms of an optimal inquisitive discourse. This analysis does not only account for the correctness and use of *might* statements, but it also accounts for the use of *might* in belief reports, and for its role in modal subordination.

Selected References

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