

Double access and acquaintance

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Intro: Arguably the biggest challenge in analyzing English tense is to derive the so-called *double access* interpretation, which arises when a present tensed verb is embedded under a past attitude. We argue that previous analyses of double access make unnatural stipulations about the status and role of acquaintance relations, first proposed by Lewis (1979) to analyze propositional attitudes (see also Percus & Sauerland 2003, Maier 2010 and references therein). We focus on Abusch's (1997) pioneering analysis and argue that her psychological constraint on acquaintance should be treated semantically. In particular, we argue that the relevant question for an analysis of double access is what counts as a suitable acquaintance relation and propose that the key source of acquaintance in an indirect report is the original utterance prompting the report.

Data: Since Smith (1978), it has been generally held that sentences such as (1) below make reference to two times (hence the term *double access*); (1) is true if the time of the described pregnancy includes *both* the time of John's attitude and the utterance time of (1). As discussed by, e.g. Abusch (1997) and Schlenker (2004), this explains the infelicity of (2): human pregnancies cannot possibly last 2 years.

(1) *John thought that Mary is pregnant.* (2) *#John thought two years ago that Mary is pregnant.*

Subjective now: Although these intuitions about (1)-(2) appear to be well founded, it has turned out to be quite difficult to make them precise within a more general theory of tense and attitude reports. One of the difficulties is that—unlike the above description of (1)-(2) leads one to believe—there is, in fact, no direct link between the time of the event described in the complement of an attitude and the time of the attitude itself. Imagine that John mistakenly thinks that it is 10am when it is really 9am. In such a context, (3) is true when uttered at 9am.

(3) *John thinks that it is 10am.*

As noted by von Stechow (1995), if we were to let the present tense refer to the time of John's thinking, we would derive that John believes that 9am is 10am, which is absurd. Moreover, if we subscribe to the idea that propositions are sets of worlds, the result is that John believes the empty set and therefore that he believes everything. But John is simply mistaken about the time, something that happens to us all the time! von Stechow's solution is to say that the present tense does not refer to the time of John's thinking, but rather to the time that John thinks it is (at the time of his reported thinking), his so-called *subjective now*. To make this work, the object of belief is no longer a proposition, but a property of times. The interpretation of (3), then, is that John locates his subjective now at 10am, which is perfectly sensible.

Acquaintance: Another difficulty for an analysis of sentences like (1) is to determine the role that the utterance time plays in the semantics. In particular, we need to capture the fact that (1) does say something about the utterance time t^* , but t^* need not have played any role in John's mind. Moreover, the semantics of (1) should not entail that Mary is actually pregnant at t^* or any time before it.

Arguably the most influential analysis that deals with these issues comes from Abusch (1997). She proposed that an analysis of (1) requires *time concepts*, i.e. acquaintance relations about times. These relations can be seen as the meanings of descriptions by which an attitude holder might represent a time to himself. Following Heim (1994), we can recast Abusch's analysis of a sentence like (1) as follows. It can be uttered felicitously only if the context provides a time concept f that satisfies (i)-(ii) below:

- (i) f evaluated with respect to the actual world and the time of the attitude should overlap with the actual utterance time;
- (ii) f evaluated with respect to the attitude holder's world and now (at the time of his attitude) should not follow the attitude holder's now completely.

(i), together with a Hintikka semantics of attitudes, ensures that the actual utterance time need not play a role in the attitude holder's mind: *de facto* the time concept yields the actual utterance time, but not necessarily in his mind. It is only (ii) that puts constraints on the attitude holder's thoughts and thus captures the subjective now element: it requires that the time-concept implies non-futurity *for John*. As long as the attitude holder is not mistaken (neither about the moment he locates himself at, nor about the time that the time concept yields when evaluated at this time), the two constraints conspire to straightforwardly derive the double access interpretation in (1) and explain the infelicity of (2).

The problem: However, as noted with respect to (3) and discussed extensively by Heim, the major challenge is to derive double access when the attitude holder is mistaken. And it turns out that the constraints (i) and (ii) don't always make the correct predictions in such scenarios. Consider the following scenario, provided by Heim (1994, fn. 28). John thinks that Bill's 40th birthday is in the past and that Mary was pregnant on that day. However, Bill's birthday is, in fact, today (the day of John's

thinking)! In this context, it seems natural to take the time concept to be 'at Bill's 40th birthday'. In this case, (i) would ensure that this time concept—evaluated with respect to the actual utterance time and world—overlaps with the actual utterance time, while (ii) would ensure that this time concept—evaluated with respect to John's time and world at the time of his attitude—is not entirely in the future of John's time. Both constraints are satisfied and a pregnancy (which lasts 9 months) can well include both time points alluded to by (i) and (ii). Hence, the prediction is that (1) can be uttered felicitously in this scenario. Our intuitions, however, tell us that it cannot.

Abusch seems to be aware of this problem when she formulates the psychological constraint in (4):

(4) *The time line of the attitude holder and the actual time line have to be isomorphic, i.e. what is in the present/past/future for the attitude holder should actually be in the present/past/future (ibid, pp. 43-44).*

Note, however, that (4) seems rather implausible in light of the fact that the subjective now was introduced in the semantic interpretation of attitude reports precisely because people are often mistaken about time, i.e. what is actually the case.

Relating an indirect report to its original utterance: We claim that rather than formulating the additional, psychological constraint in (4), the data should be explained by a theory of what counts as a suitable time concept—a question that has yet to be addressed to the best of our knowledge. In the talk, we discuss possible ways to make head-way. We begin with the possibility, suggested by Heim (1994, fn. 28), of a general prohibition on temporally *neutral time-concepts*, i.e. time-concepts that are not inherently related to the past, present or future, such as 'on Bill's 40th birthday'. We show that such a prohibition accounts for many of the problematic cases, but it also incorrectly rules out neutral time concepts like 'today', which can be used with all tenses. Moreover, such a prohibition would not be explanatory, leaving us with the question of *why* (particular) neutral time concepts should be ruled out in the first place. Based on this discussion, we suggest an alternate path. We note the contrast below, in (5) and (6), which we believe to be relevant to the analysis of (1) in the context considered.

(5) #Mary is pregnant on Bill's 40th birthday.

(6) Mary is pregnant today.

(5) is infelicitous because presumably the use of *on Bill's 40th birthday* is blocked by *today*, which can be felicitously used as in (6). An in general, it is well-known that many time-neutral adverbs are blocked by more informative temporal adverbs (cf. Kamp & Reyle's (1993, Chpt. 5) discussion of *on Sunday*, which cannot be uttered on a Sunday). But if (5) is not a possible utterance, why should 'on Bill's 40th birthday' be chosen as a time concept for the indirect report in (1)? If John wanted to use *on Bill's 40th birthday* in his report of Mary's pregnancy and he thought that the day denoted by this expression was in the past, then he would have expressed his thought as follows:

(7) Mary was pregnant on Bill's 40th birthday.

In this way, pastness becomes inextricably linked to the time concept, i.e. it is no longer neutral. In other words, the context will never provide a time concept that is temporally neutral. Descriptions on their own do not provide suitable time-concepts, only descriptions uttered in a context do. The temporal feature that the time concept then inherits from a given utterance (e.g. being past in (7)) is to be retained in the report of this utterance, which excludes the counterexample discussed above.

Conclusion: In sum, we assume, following Abusch (1997), Heim (1994) and others that the semantics of attitude reports requires time concepts. Moreover, we think that the derivation of double access crucially relies on a theory of what counts as a suitable time concept. To this end, we propose that the original utterance prompting an indirect report is the natural source of determining such concepts. While the idea of going back to the original utterance is not new, to the best of our knowledge, it has never been noticed that the original utterance is the very source and hence explanation of the prohibition on temporally neutral time concepts. In this way, we contribute to the larger philosophical debate about the use of acquaintance relations. Moreover, we contribute to a more a more general theory of temporality. Building on prior work, we conclude the talk by showing how it is possible to think of time concepts as *reference time* concepts which are independently required by anaphoric temporal expressions (e.g. tense and aspect) in intensional contexts.

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