

A Formal Pragmatic Account of Double Access

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This paper presents a formal analysis of Double Access (DA) readings as being due to imprecision. (1) is an example of DA.

- (1) Dorothy said that Trish is sick. (2) Dorothy said that Trish was sick.

DA is typified by the embedding of a Present-Tensed clause beneath a Past-Tensed attitude verb. (1) entails the simultaneous reading of (2), i.e., that the time of Trish's alleged sickness was the time of Dorothy's saying (modulo *de se*), but also seems to convey that Trish is sick at speech time (ST). This is puzzling, since typical cases of embedded tense, like (2), only identify the embedded event-description with a single time, but additionally, the nature of this second inference, relating to ST, is mysterious, since (1) clearly does not entail that Trish is actually sick at ST, nor that what Dorothy said entails that Trish is sick at ST (Ogihara 1995). *De re* theories of DA (e.g., Ogihara) have had considerable success accounting for these basic facts for certain cases of DA, but Gennari (2003) has provided several important examples of DA that the temporal *de re* theory cannot explain.

Analysis (1) is acceptable, and has the meaning it does, because of imprecision. Imprecision is the phenomenon by which sentences may be uttered felicitously in a discourse even when strictly false, so long as the distinction between what they describe and the actual truth is irrelevant for the purposes of the discourse (Laserson 1999, Lauer 2012, Klecha 2014). A typical case of imprecision is one in which I felicitously utter John is 6 feet tall even though his actual height is 5 ft. 11.5 in., because the distinction between John's being 6 ft. tall and his being 5 ft. 11.5 in. is simply unimportant for the purposes of the discourse in which the utterance takes place. Our indifference to distinctions of half an inch can be thought of as imposing a kind of low resolution on the logical space, coarsening our measurement of heights to (in this case) round inches. On my analysis, (1) contains a deictic Present Tense embedded under a Past-Tensed-attitude verb. Thus its literal meaning is that Dorothy said x in the past, where x entails that Trish is sick at ST. This is a violation of the Upper Limit Constraint (ULC, Abusch (1997)), which requires that the reference time of the embedded clause not be any later than the attitude holder's now. So (1) is utterable only if the distinction between the time of Dorothy's saying and speech time is simply irrelevant for the purposes of discussing Trish's alleged sickness, and we are therefore operating at a low enough temporal resolution to conflate the two.

I adopt a formal analysis of imprecision along the lines of Lauer and Klecha who analyze it as a pragmatic phenomenon. However, they both assume a global theory of pragmatics, whereby lexical/compositional semantics determines a literal meaning for an utterance, after which point the pragmatics determines a pragmatic meaning (implicature), in part on the basis of the literal meaning. A globalist analysis is clearly insufficient for this phenomenon, however. According to the present theory, on its literal meaning, (1) is a violation of the ULC. On any well-formalized implementation of the ULC (e.g., Schlenker 2004, Klecha 2016) a violation of the ULC leads to crash of the semantic derivation, thus no literal meaning is generated, and no pragmatic enrichment can take place. So the theory must allow the embedded clause to first be interpreted imprecisely, then compose with the attitude verb. In other words, DA must be treated as a case of embedded implicature.

Per Klecha (2014), the pragmatic interpretation of S is just whatever the speaker would have to believe in order to utter S cooperatively, where "cooperatively" is defined in Gricean terms, taking a baseline (literal) interpretation of S as a starting point. A context in which a

past time and speech time are conflated for the purposes of discussing the state Trish sick is one in which the interlocutors are not considering the possibility that Trish sick holds at one of the two times but not the other; thus while the literal meanings (3a-b) are distinct, their pragmatic enrichments (4) are not. Following Klecha (2016), the t argument of (3a-b) corresponds to the temporal limit imposed by attitude verbs; by default it is $(-\infty, g(0))$.

- (3) a. $\llbracket \text{Trish is sick} \rrbracket^g = \lambda t, w[\text{Sick}(g(0) \cap t, w)]$
 b. $\llbracket \text{Trish was}_2 \text{ sick} \rrbracket^g = \lambda t, w[\text{Sick}(g(2) \cap t, w) \ \& \ g(2) < g(0)]$
- (4) $\llbracket \text{Trish is sick} \rrbracket^{g \cdot P} = \llbracket \text{Trish was}_2 \text{ sick} \rrbracket^{g \cdot P} = \lambda t, w[\text{Sick}([g(2), g(0)] \cap t, w) \ \& \ g(2) < g(0)]$

Composition of a past tensed attitude like *said* that imposes its reference time as an upper limit (Klecha 2016) with (3a) creates a crash, whereas with (4) it yields a meaning equivalent to (2).

- (5) $\llbracket \text{Dorothy said}_2 \text{ S} \rrbracket^g = \lambda t, w[g(2) < g(0) \ \& \ \forall v \in \mathcal{B}_{d, g(2) \cap t, w}[\llbracket \text{S} \rrbracket((-\infty, g(2)))(v)]]$

Thus if the embedded clause is interpreted imprecisely, the compositionally determined meaning of (1) is identical to (2) – but because *said* composition can only occur successfully if the speaker means for the embedded clause to be interpreted imprecisely, any use of (1) also gives rise to the additional inference that the past reference time and speech time ought to be conflated.

Benefits This correctly predicts the felt inference that Trish is sick at ST in the Dorothy-said-worlds, without actually strictly entailing that Trish is sick at ST in any of the relevant worlds; the implicature is that ST is not worth distinguishing from the time of Trish’s alleged sickness for the purposes of discussing said alleged sickness, which implies that the intervening interval is not enough time for the alleged sickness-state under discussion to have changed or ended. This captures the well-known fact that DA sentences tend to impose a limit on the length of the interval separating the attitude-holder’s now and ST (i.e., the time between the two points of Access); it also captures the fact that the limit varies from predicate to predicate.

- (6) a. $\{\text{Yesterday/?Last month/#2 years ago}\}$, John said that Mary is pregnant.
 b. $\{\text{A minute ago/#Yesterday}\}$, Mary said that John is in the kitchen.
 c. The ancient Romans thought that the sun revolves around the earth.

Since the lengths of pregnancies are usually measured in months or weeks, simply using the predicate *pregnant* requires a temporal resolution at least fine enough to distinguish intervals on the order of months or weeks (6a). Since a person typically only stays in a room for a few hours at most, *be in the kitchen* requires a temporal resolution at least on the order of hours, if not a finer one (6b). But since patterns of movement of heavenly bodies typically last billions of years, a temporal resolution coarse enough to conflate ST with a time thousands of years prior is acceptable (6c). This is supported by the novel observation that if our discourse makes relevant distinctions even finer than those imposed by given predicates, otherwise utterable DA cases can become bad.

- (7) a. A: Mary hasn’t given birth yet; but they think she will sometime in the next few hours.
 b. B: Whoa, wait, how is it you know that Mary’s pregnant?
 c. A: $\{\text{A minute ago/#Yesterday,}\}$ John told me she is.

Compare (7c) to (6a). Because our discourse makes relevant the distinction between now and a few hours from now, our temporal resolution is a few hours (or less), so we cannot conflate ST with a time 24 hours prior to ST; thus the yesterday variant of (7c) is bad. Note that in this discourse Mary is (believed to be) still pregnant, which makes this example problematic for *de re* accounts.